Model 3000 & Access 4000

PROGRAMMING, APPLICATIONS AND REFERENCE MANUAL

P/No: 631022

INSTALLER PIN CODE.

The Default Installer PIN Code is 01.
This default PIN Code should be changed by the Installer as soon as possible.
i.e. As soon as programming commences.

UPDATES AND ADDITIONAL INFORMATION:

Check the Website regularly for:

-Additional Applications and Tables not included in this manual.
-Updates and/or changes to existing documents.
-New documents to be added to this manual.

Advanced Tech Support:
http://support.innerrange.com/restricted/index.phtml (Logon required)
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Please send any comments regarding this manual to:
Donald Sargent at the Head Office address. *(See page 4)*
Or e-mail to: donald.sargent@innerrange.com

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Current Document Revision numbers.

Revision number relates to the Control Module Firmware Version when the document was last changed.
e.g. No changes have been made to "Area List programming" (MENU, 2, 3, 1) since V3.0 release.

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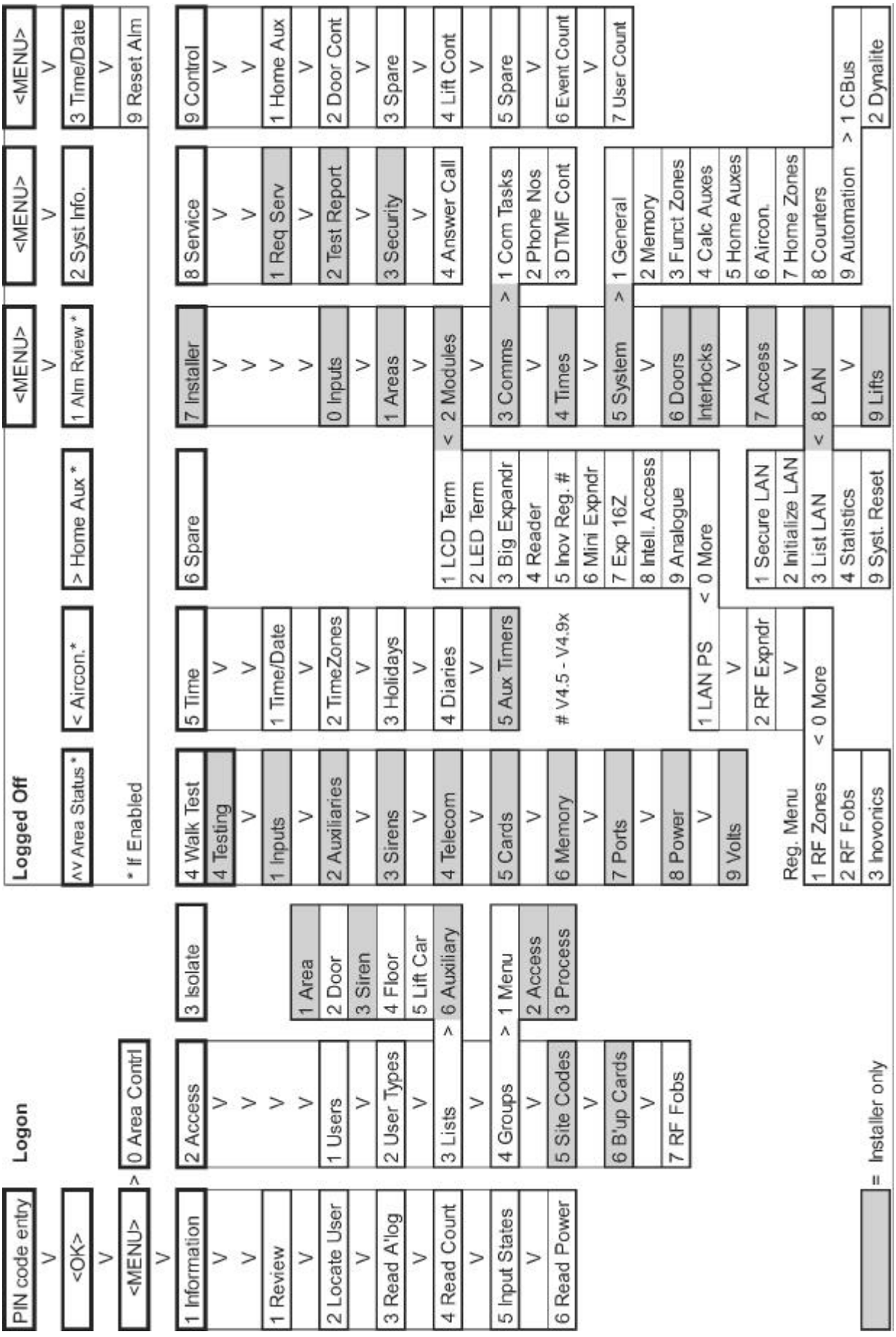
Model 3000 / Access 4000

SYSTEM OVERVIEW & INTRODUCTION TO PROGRAMMING

This section provides both an overview of the programming structure of the system along with specific information about identifying items to program, selecting and identifying options, configuring the LAN and using the LCD Terminal.

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MENU FLOWCHART



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SYSTEM OVERVIEW

System Hardware

The system utilizes different types of modules to achieve the expandability and the broad range of functionality it offers. Several of the modules also have additional expansion and interface board options to further enhance their capabilities.

Modular Design & Expandability.

Modular hardware design provides the ability to adapt and expand the system to cater for virtually any configuration or application required - small or large. Large numbers of LCD Terminals, Input/Output Expanders and Reader Modules can share a secure, monitored LAN system utilizing a fast, efficient communications format. Up to 250 modules can be connected on the system, with a limit of 99 modules of any particular type. (Actual numbers of each module type varies with Memory size and configuration selected) With the current range of modules available, this arrangement can provide up to 2000 Zone inputs and hundreds of Auxiliaries on a single system with 512k Memory Expansion fitted.

System LAN.

The system LAN (Local Area Network) is a 3 or 4 wire network used to connect the modules in a system. Using the recommended cabling, modules on the LAN can be installed up to 1500 metres from the Control Module, or even further when LAN Isolators or Optical Fibre modems are used.

Data protection ensures secure LAN communications, while the programmable supervisory reporting system continuously monitors the network to detect cable tamper, cable fault conditions, module off-line and module substitution. The data format used in the LAN has been developed to ensure fast, reliable communications regardless of system size.

For larger systems and complex sites, LAN Isolators are used to provide opto-isolation between sections of the LAN, eliminate potential earth loop problems, improve surge protection, provide signal level restoral for improved performance over longer cabling distances and offer a monitored “loop” LAN wiring option for a higher level of LAN integrity.

The Modules.

- The heart of the system is the **Control Module**. This unit stores all data, communicates with all modules connected to the system LAN, and reports alarms & system activity to the Central Station. The Module has on-board power supply & battery charger and connections are provided for 16 Zone Inputs, 2 Sirens and 2 Auxiliary outputs (expandable to 10).
- To operate the system and edit databases an **Elite LCD Terminal** is normally used. The LCD Terminal provides a 20 key backlit keypad, a backlit Liquid Crystal Display and connections for several Zone Inputs and Auxiliary outputs.
- **Zone Expanders** are used to provide 16 or 32 additional Inputs, 2 Sirens and 8 to 32 Auxiliaries, and can be installed remotely in suitable locations to greatly reduce the amount of cabling required to detectors and output devices.
- **8 Zone Mini Expanders** also provide additional Inputs (8) and Auxiliaries (8) as well as providing special input processing options for Event Counting and Duress/Holdup buttons.
- **1 Door and 2 Door Access Modules** are installed near the Door/s to provide Reader interfacing and up to 10 Inputs and 8 outputs (2 Door Access Module, 995012), including lock relays, for complete Door monitoring & control. In the rare event of loss of communications, Door Access can be provided for 15, 31 or 127 “Backup Card” holders.
- **Intelligent 4 Door Access Modules** are installed near the Door/s to provide Reader interfacing and all necessary Inputs and outputs, including lock relays, for complete Door monitoring & control. In the rare event of loss of communications, the on-board database ensures that normal Access control operation is maintained and logged.
- **Analogue Modules** provide an interface to monitor analogue quantities from up to 4 independent sensors allowing values to be viewed, and events activated when values exceed or drop below programmable trigger points.
- **LAN Power Supply Modules** provide flexible, general purpose, battery-backed power supply solutions with the added advantage of immediate status reporting of Power Supply conditions and problems via the LAN network.
- **RF Expander Modules** provide reliable Wireless Detector monitoring & also allow 4-button Fobs to be used. Fob programming options allow an Area, Auxiliary or Zone control action to be defined for each button on each Fob.

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Summary of Module Inputs and Outputs.

Module Type			Zones	System Inputs	Total Auxes	Physical Auxes
No.	**Letter**	**Name**				
0	C	Controller	16	32	32	10
1	T	LCD Terminal	2	8	8	4
2		Spare				
3	B	Big Expander (Universal Expander configured for 32 Zones)	32	10	32	32
4	R	Reader (1 / 2 Door)	8	8	8	8
5	N	Wireless Network	16	4	4	
6	M	Mini Expander	8	9	8	8
7	E	Expander (16Z) (Universal Expander configured for 16 Zones)	16	10	16	16
8	Q	Analogue	6	3	8	4
9	I	Intelligent 4 Door Access	16	24	16	12
10		Spare				
11	P	LAN Power Supply	2	16	4	2
12	F	RF Expander	32	6	4	0

System Management.
Upload/Download software is available for system Programming and Management, allowing the option of local or remote connection with operator password protection.

-DOS based PCDirect supports all versions up to V4.0.
-WDirect is Windows based and supports V3.0 to V4.5.
-Insight is Windows based and supports V5 and later. (Can Upload from all Type 2 Control Modules, V4 or later)

Windows based system management software incorporates dynamic graphics capabilities and is available for use with the 3000 (V3 or later) and Access 4000 (V2 or later).

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Alarm System

Introduction

Areas

Security management operation is designed around the concept of Areas. Areas are groups of Inputs (points) such as movement detectors that can be collectively enabled when the Area is turned on or disabled when the Area is turned off. The system determines which Areas each User can control during which times and with which options.

Inputs

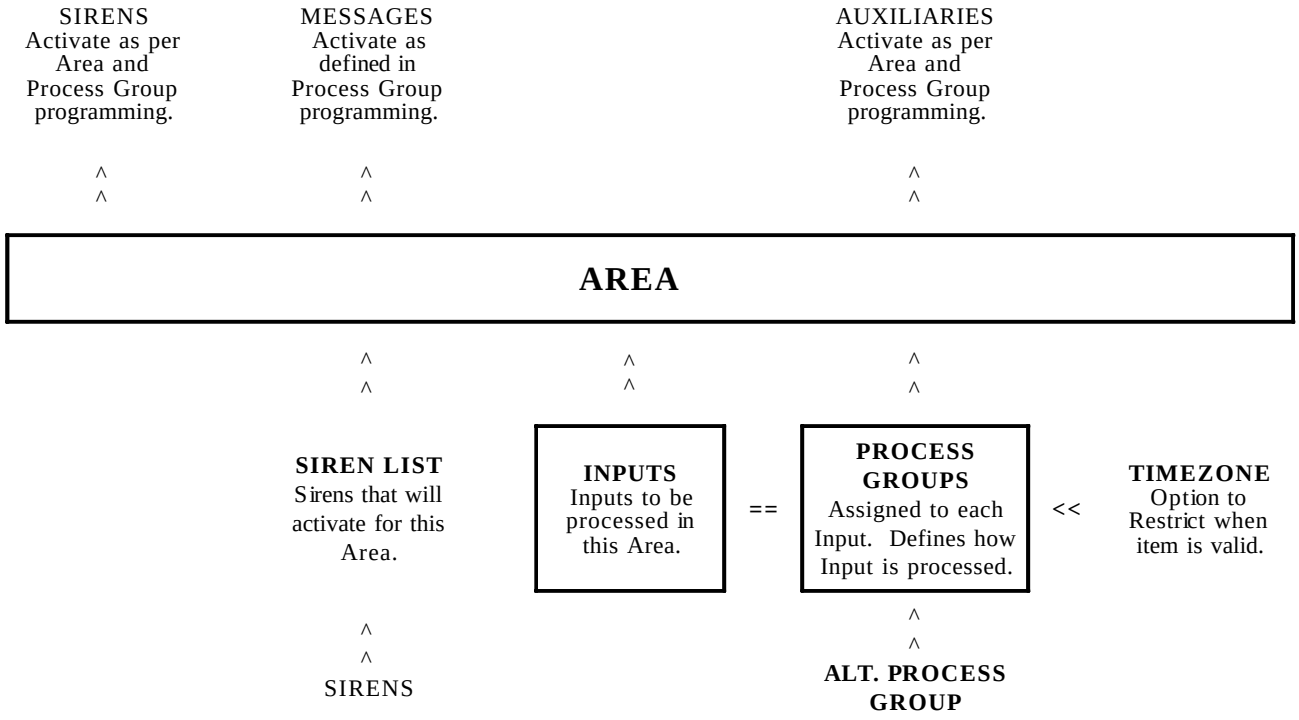
An Area can contain one or more detection devices or other devices (wired to Zone Inputs) and/or one or more System Inputs. If a Zone detects an intruder or a System Input is activated (e.g. Low Battery, Cabinet Tamper, etc.) it will only be actioned if the Area that the Input is in, is turned ON. The action which is taken when an Input is activated in a particular Area (e.g. activate Siren/s, activate Auxiliaries, report to Central Station, etc.) is determined by how that Input is programmed in that particular Area.

An Input can be programmed into more than one Area. The Alarm action taken by an Input when in the Alarm condition is dependent on how that Input is programmed in each Area, and on the Area/s being turned ON.
This allows a particular Input alarm to be actioned in different ways depending on what Areas it is assigned to, and which of those Areas are ON.

Process Groups

Defining how an Input will be actioned in each Area is primarily done by allocating an appropriate Process Group, to every Input in each Area that it is assigned to. Process Group programming includes defining the Input states (Seal/Alarm/ Tamper/Isolate) that will be recognised, Entry/Exit delay processing options, Reporting & message options, and Auxiliary and Siren control options.

The chart below shows how Area and Process Group programming will detemine how the Input/Output items such as Inputs, Sirens and Auxiliaries will be processed.



NOTE: The Expanders, LCD Terminals and Reader Modules fitted and programmed into your system will determine:
-the Zone Inputs and System Inputs that will need to be programmed and assigned to Area/s,
-the Siren Outputs available for inclusion in the Siren Lists
-the Auxiliaries available that can be assigned to Area actions and functions.

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Access Control

Introduction

The "3000" & "Access 4000" products integrate Access Control, Security Management and Building Automation. Access Control functionality and Building Automation operations can be kept completely separate from Security Management or can be fully integrated, if desired. Access Control operation is designed around the concept of **Doors.** The system simply determines which Users are allowed to use which Doors, at which times and with which options or restrictions.

Security Management operation is designed around the concept of **Areas.** Both Access Control and Security come together at Doors. For each Door in the system, one side is defined as the "outside" Area and the other side as the "inside" Area. Each Door can optionally be programmed as to which Area is on the outside and/or inside of the Door. If Area/s are programmed at a Door, then access at that Door will also be controlled by security considerations (via Areas).

e.g. 1) A User requiring access at a Door may be denied access because the Area they are about to enter is turned on, and they are not allowed to turn that Area off. If the User was allowed to turn that Area OFF then this may be done automatically on un-locking the Door, if programmed.

2) A User requesting access at a Door may be denied because the system has not seen the User leave the Area they are attempting to enter (Anti-Passback).

Basic Concepts

Doors

When designing an access system, Doors are the logical place to start. Each Door is numbered from Door 001 (D001), to the maximum available on your system. (Up to 250) Each Door is individually programmed to define the functionality (via an Access Group) and the related Area/s, Auxiliaries and Timers, etc.

Access Modules (Single Door, 2 Door & Intelligent 4 Door)

These Modules are required whenever access Cards are required, such as Proximity, Wiegand, Mag swipe, etc.
-Single Door Access Modules can control 1 Door with an Entry Reader.
-2 Door Access Modules can control either 1 Door fitted with Entry and Exit Readers OR 2 Doors with Entry Readers.
-Intelligent 4 Door Access Modules can control 4 Doors with Entry and/or Exit Readers for all 4 Doors.
Each Access Module is individually programmed to define the Door/s controlled, Off-line operation, Zone input and Auxiliary options, Area control options and the direction (in or out), format, read mode, etc. for each Reader.

LCD Terminals

LCD Terminals can be used for Door Access Control if access to a Door is to be gained via a PIN code. Each Terminal may be individually programmed to define the Door controlled, Zone input & Auxiliary options & the direction (in or out).

Access Groups when Applied to Doors

Access Groups are a set of options that can be applied as a group to a Door. The typical system may have up to 32 Access Groups (depending upon system configuration) and each group may be individually programmed. A Door is assigned one of these Access Groups to use in determining the basic access control at the Door. The basic options that can be programmed for each Access Group are the modes of operation for Entry and Exit readers, Anti-passback options, REN/REX button options, Area control options, etc.

TimeZones

TimeZones are a set of time periods that define when that TimeZone is valid. At all other times the TimeZone is in-valid. Once a TimeZone is programmed it can be used by any programming item that needs to be made Valid/Invalid according to the time of day and/or day of the week. A TimeZone, once programmed, can be assigned to more than one item.

Alternate Access Groups

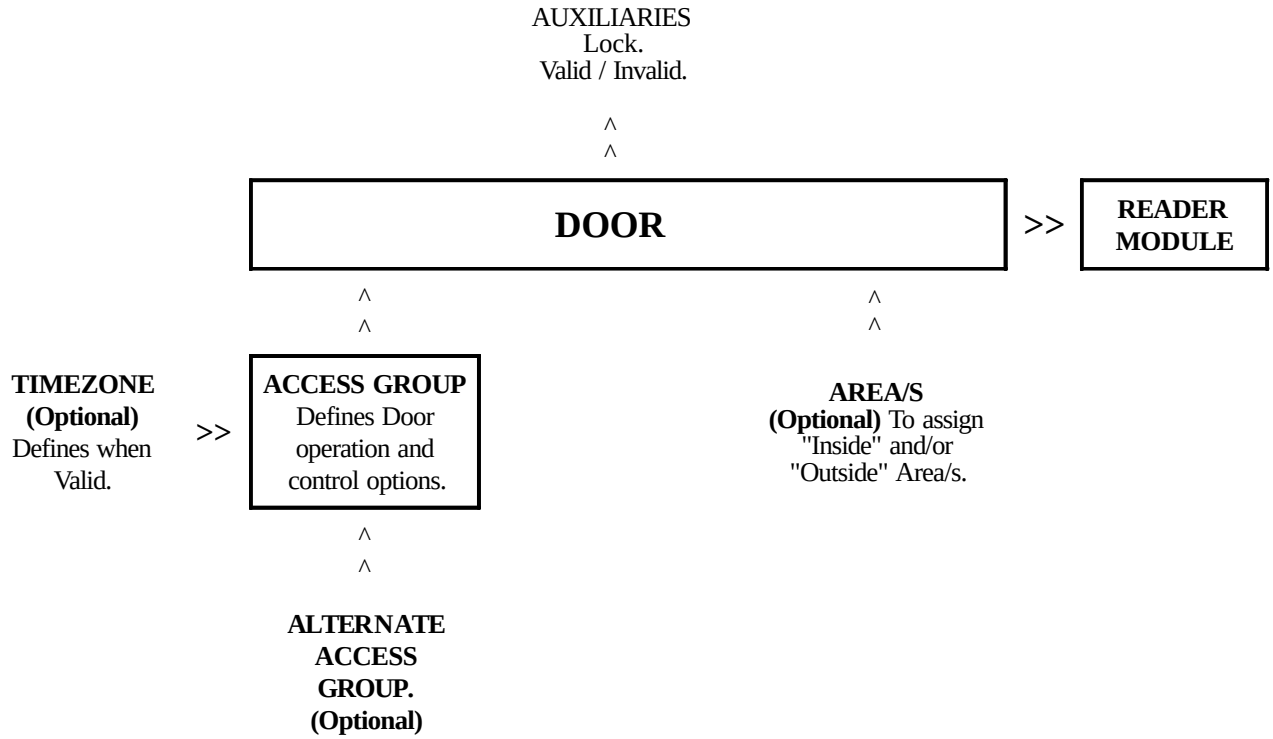
If a TimeZone is defined for an Access Group and the alternate Access Group is set to 000, no access will be granted when the TimeZone is in-valid. However, if an alternate Access Group is chosen, then instead of no access being granted, the settings of the alternate Access Group will be used to determine access.

Holidays

A holiday comprises a start date and an end date and is used to set specified TimeZones in-valid when a holiday occurs. Each holiday can be defined as to which TimeZones it will effect.

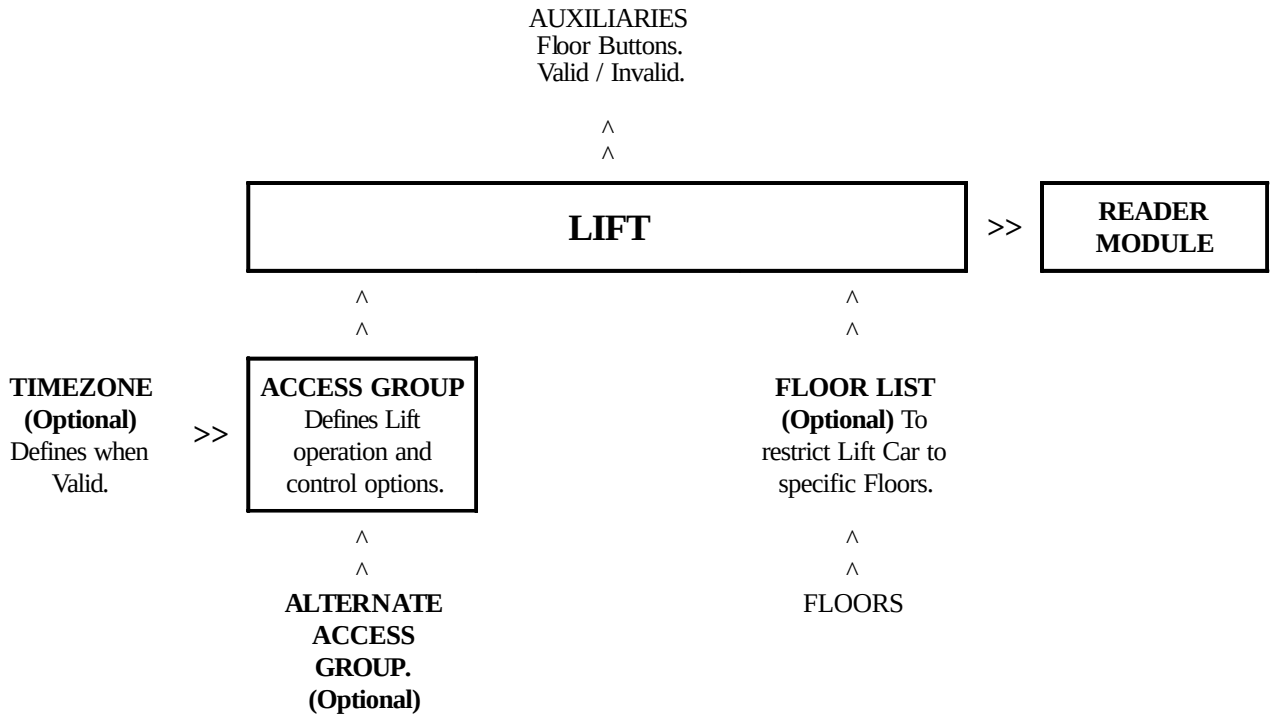
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The chart below shows how Access Groups form the basis of Door programming and how security is integrated into the access control system through the assignment of Areas to Doors.



Lifts

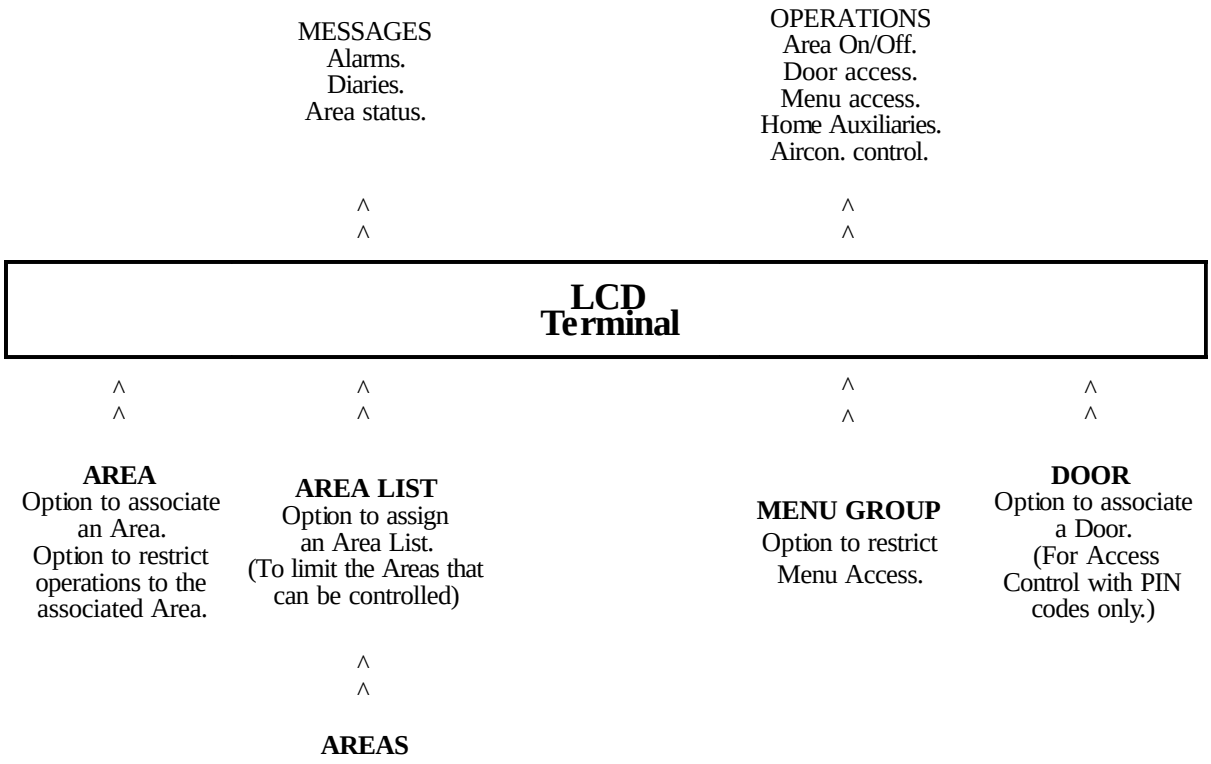
Lifts are programmed in a similar manner to Doors. Each Lift is numbered from Lift 001 (L001) to the maximum available on your system. Each Lift is individually programmed to define the functionality (via an Access Group) and the related Auxiliaries, Zone Inputs and Timers, etc.



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LCD Terminals

LCD Terminals are used to turn ON and OFF Areas, view System status, review system activity and access Menu options. Additionally they can be used for access control where PIN numbers are going to be used to control access through a particular Door. Each LCD Terminal can control one Door and is individually programmed to define the Door controlled, direction (in or out) and Zone Input options, etc.



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User Programming

User programming is the starting point for allowing a person to operate the system. User programming allows options to be defined for each individual User, such as User name, PIN code, Card details, etc. A User Type must also be assigned to define what operations the User may perform and the items that they can control. Two special Users are pre-defined, User 00001 (U00001) is known as the Installer and has special privileges. User 00002 (U00002) is known as the Master and also has special privileges.

Alarm System Control

In a Security system Users are required to perform operations such as turning Areas On and/or Off, acknowledge alarms, review alarm and event information, check the system status and Isolate faulty devices, etc. This normally requires the User to logon to an LCD Terminal using their PIN code then User programming detemines which Areas they can control, which operations they can perform and which Menus each User can access.

Access Control

The basic purpose of an access system is to control access through specified Doors for specified Users. An access system may also control access to specific Lift Cars and/or Floors for specified Users. For a User to have any access rights at all, their access permissions must be defined in User programming.

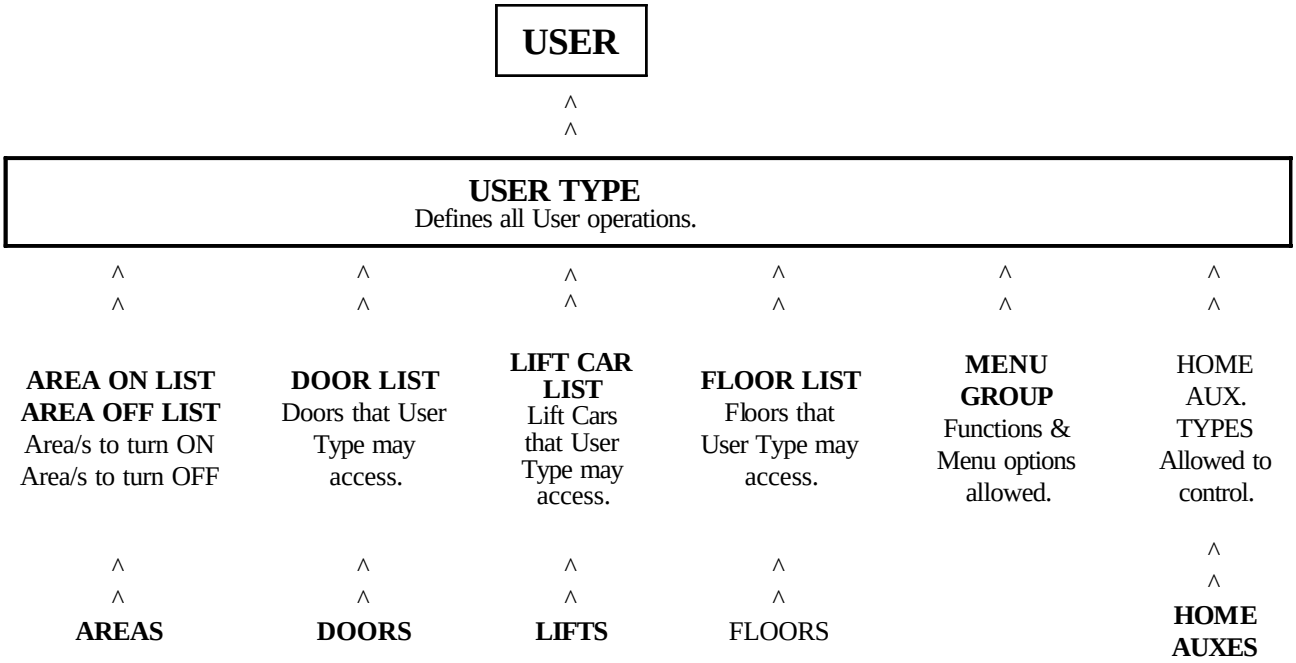
Building Management

When the system incorporates Building Automation functions, Users may be able to logon to an LCD Terminal and manually control specified Auxiliary outputs ("Home Auxiliaries"), adjust TimeZone periods, view Input states, Counter values or analogue values, etc. User programming detemines which Auxiliaries they can control, which operations they can perform and which Menus each User can access.

User Types

Users Types are a set of options that can be applied to Users. Each User in the system is allocated a User Type that will determine all access, security and building management permission's for that User. The basic options that can be programmed for each User Type include Area ON and OFF Lists, Door List, Lift Car List, Floor List, Menu Group (to define access to Menu options) and other operational options.

This Flowchart shows how User Types are at the heart of User programming, utilizing other programming such as Lists and Menu Groups to define all the functions that a User may perform. Bold type indicates items that have programmable options.



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Alternate User Type

If a TimeZone is defined for a User Type and the alternate User Type is set to 000, Users with that User Type assigned will have no operations or access permissions available when the TimeZone is in-valid. However, if an alternate User Type is chosen, then instead of no permissions, the settings of the alternate User Type will be used to determine the User's permissions.

Alternate Lists and Menu Group

If a TimeZone is defined for a List or a Menu Group and the alternate List/Group is set to 000, the permissions defined by that List/Group will be void when the TimeZone is in-valid. However, if an alternate List/Group is chosen, then instead of no permissions, the settings of the alternate List/Group will be used to determine permissions.

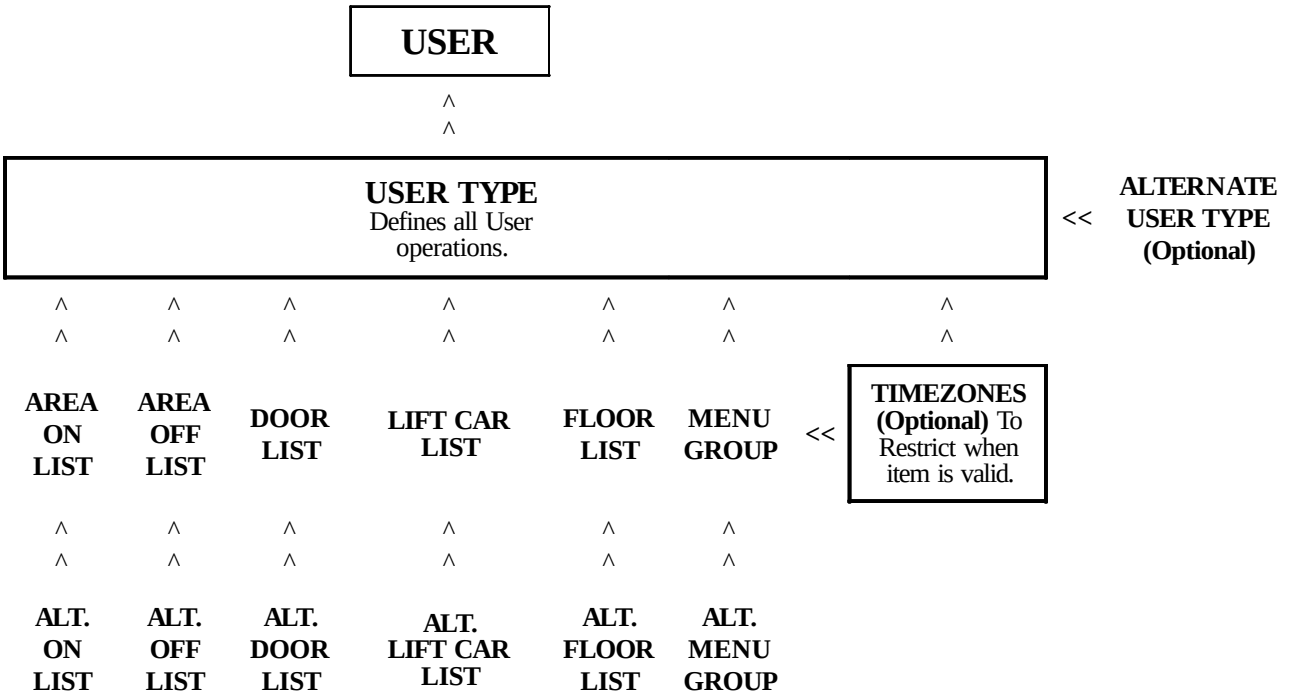
The option to assign a TimeZone and Alternate to each List or Group allows for minor changes in a User Type's permissions (e.g. A change in Door Access permissions only) to be easily implemented. The User Type's Door List can have a TimeZone and Alternate Door List assigned, instead of having to create an alternate User Type.

TimeZones

TimeZones are a set of time periods that define when that TimeZone is valid. At all other times the TimeZone will be in-valid. Once a TimeZone is programmed it can be used by any other programming item that needs to be made Valid / Invalid according to the time or day and/or day of the week. A TimeZone, once programmed can be assigned to more than one item.

The chart below shows how TimeZones can be assigned to:

- User Types to Invalidate the User Type or provide the facility for an alternate User Type to be defined, and
- Individual Lists or Groups, to invalidate the permissions provided by the List/Group or provide the facility for an alternate List/Group to be defined.



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Conventions & Abbreviations

When programming the system, many items and databases can be assigned a name to aid in further programming and system operation. e.g. "Entry Foyer" (Area name) or "R&D Laboratory PIR" (Zone name) provide for easier identification than A005 or E03:Z12.
All items and databases have a descriptive ID number for identification. For items that cannot be named, or have not been named, this provides a way of conveniently referring to a specific item.
e.g. T14 = LCD Terminal 14. SL002 = Siren List 2.
A consistent set of abbreviations is used, which allow the installer to quickly locate the item that they wish to program, edit, or service. In the case of physical items, such as Inputs, Auxiliary outputs, Sirens, etc. the ID instantly provides the installer with details of the location of the item.

Module IDs

The system uses external modules on a 3 or 4 wire Local Area Network (LAN) to provide additional Inputs, Outputs, Access Control interfaces, etc. The module types are referred to by a single abbreviating letter:

Type:	Module	Abbreviation Letter	
0	**C**ontrol Module	"C"	
1	LCD **T**erminal	"T"	
2	LED **K**eypad	"K"	(Not yet available)
3	**B**ig Zone Expander Module (16-32 Zones)	"B"	
4	**R**eader Module (1 or 2 Door Access Module)	"R"	
5	Wireless **N**etwork (SpreadNet or Inovonics receiver) -"Virtual" Module connected via UART Port.	"N"	("Was Spread**N**et" from V2 to V3.5x Inovonics introduced in V4.)
6	**M**ini Expander	"M"	(V2 or later)
7	Zone **E**xpander Module (16 Zones)	"E"	(V2 or later)
8	**I**ntelligent 4 Door Access Module	"I"	(V3.5 or later)
9	Analogue Module	"Q"	(V3 or later)
10	**G**eoquip -"Virtual" Module connected via UART Port.	"G"	(Under development)
11	LAN **P**ower Supply.	"P"	(V4.5 or later)
12	R**F** Expander Module.	"F"	(V5.1 or later)

Two digits (01 to 99) after the module "letter" specify the actual module numbers that the ID is referring to.
For example: T04 is the 4th LCD Terminal module
E27 is the 27th Zone Expander module.
NOTE: There can only be one Control Module per system, i.e. C01.

To refer to an actual item on a module an additional letter is used:

Abbreviation	Item	ID Example	Name Field (Characters)	Example Name
"Z"	Zone Input	E01:Z16	24	R&D Lab PIR West wall.
"S"	System Input	B01:S05	Pre-defined	B01 Low Battery
"X"	Auxiliary output	T01:X02	None	

For example: E03:Z09 refers to the 9th Zone Input on the 3rd Zone Expander Module.
T36:X01 refers to the 1st Auxiliary output on the 36th LCD Terminal.

User and User Type Abbreviations

Abbreviation	Item	ID Example	Name Field (Characters)	Example Name
"U"	User	U00001	16 *	Billy Baxter
"UT"	User Type	UT003	16	Production Staff

* Memory configuration may limit the number of users with name field.

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Area and Door Abbreviations

Abbreviation	Item	ID Example	Name Field (Characters)	Example Name
"A"	Area	A001	16	Reception
"D"	Door	D078	16	Rear Fire Door
"LC"	Lift Car	LC001	None	

List Abbreviations

Abbreviation	Item	ID Example	Name Field (Characters)	Example Name	
"AL"	Area List	AL001	16	All Areas	
"DL"	Door List	DL004	16	Admin. Doors	
"SL"	Siren List	SL003	None		
"LL"	Lift Car List	LL008	None		
"FL"	Floor List	FL005	None		
"XL"	Auxiliary List	XL001	16	Strobe Outputs	(V2 or later)

Group Abbreviations

Abbreviation	Item	ID Example	Name Field (Characters)	Example Name
"PG"	Process group	PG001	16	Burglary
"MG"	Menu Group	MG002	16	Control Menus
"AG"	Access Group	AG004	16	External Doors

Other Abbreviations

Abbreviation	Item	ID Example	Name Field (Characters)	Example Name or Text	
"AC"	Air Conditioning	AC001	None		(V2 or later)
"BC"	Backup Card	BC015	None		
"CA"	Calculated Auxiliary	CA010	None		
"CB"	C-Bus Auxiliary	CB002	None		(V4 or later)
"CR"	Counter	CR001	16	Camera 1 Film (V3 or later)	
"CT"	Comms Task	CT001	None		
"DA"	Diaries	DA001	32	Happy New Year from Acme Co.	
"DN"	Dynalite Auxiliary	DN001	None		(V4.5 or later)
"DC"	DTMF Control	DC008	None		(V3 or later)
"FZ"	Function Zone	FZ002	None		
"H"	Holiday	H004	16	New Year's Day	
"HA"	Home Auxiliary	HA001	16	Pool Pump	
"HZ"	Home Zone	HZ001	16	Office PIR	(V3 or later)
"IL"	InterLock group	IL001	None		(V2 or later)
"SC"	Site Codes	SC001	None		
"TN"	Telephone Number	TN004	16	XYZ Monitoring	
"TZ"	TimeZone	TZ002	16	Night Shift	

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Programming via the LCD Terminal.

Most programming via the LCD Terminal is done in a "spreadsheet" style. This provides quick and easy access to options by allowing the User to scroll through different options for the same item or the same option for different items.
e.g. You can select a particular Input to program & step through all the options for that Input. Alternately, one particular option may be selected such as "Input name" and the <DOWN> arrow used to step through the name fields of all Inputs.

The "spreadsheet" style programming also allows you to step forward or backward through items or options.
See "HELP, 9 & HELP, 0" on the following page for more details.

The uses of the major keys are listed below:

Key	Use of Key
Up Arrow	Selects the same question for the previous item.
Down Arrow	Selects the same question for the next item.
Left Arrow	Moves cursor to left or, if at the start of a field, selects the previous question for the same item.
Right Arrow	Moves cursor to the right or, if at the end of a field, selects the next question. In a multiple choice question screen, scrolls through the available options.
OK key	Saves the current screen and moves to the next question.
END key	Saves the current screen and exits the menu.
ON key	This key selects different modes for answering a question if available. E.g. Switches between ID field and Alpha-search field to enable selection of an item by ID number or by name.
OFF key	This key is used to clear the screen before entering an ID number or text. or, in the case of a multiple choice question, selects the first option.
HELP key	This key displays help about the item being edited. Up to 3 help messages may be available, selected by pressing the HELP key again.
MENU key	This key is used to gain access to the menu. PIN code & <OK> must be entered first or while logged off (PIN code & <OK> not entered) <MENU>, <1> will display alarm review, (V3 or later only) and <MENU>, <2> will display system specifications. (Note: In V2 or earlier, only the <MENU> key needs to be pressed to display system specifications) *See below.*
DIGIT keys	Used in selecting an item or option by number, or for programming alpha-numeric text and symbols where available.
5 and 9 keys	When programming options that require a Yes/No setting, the <5> (N) key selects No and the <9> (Y) key selects Yes.

Force Arming:

Normally, when a User attempts to turn an Area On from an LCD Terminal and there are one or more Zone Inputs in that Area that are not in the Sealed state, a "Zone Problem ..." message will be displayed on the Terminal. The User is then required to try and rectify the problem or Isolate the Zone Input/s before the Area can be turned On.

When commissioning and/or testing a system it is often useful for the Installer to be able to turn On an Area regardless of Zone Input states in order to enable the Zone Inputs and monitor activity in Review.
A special feature only available to the Installer Code allows the <1> key to be used, when the "Zone Problem ..." message is displayed, to un-conditionally skip the rest of the Zone Test and turn On the Area or Area List regardless of any un-sealed Zone Inputs.

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<HELP>, 9 & <HELP>, 0.

Use of the <HELP>, 9 & <HELP>, 0 keys provides the installer with a means of "jumping" between menus which have related programming options.
E.g. A new Door is being programmed (Fire Exit Door), and a different mode of access is required to other External Doors. When assigning the Access Group, it is found that there isn't a suitable Access Group available.
With <HELP>, 9 the Installer can jump to Access Group programming, create a new Access Group and then return to Door programming with the <HELP>, 0 keys. Other items which may be accessed for programming when required using <HELP>, 9 include User Types, Lists, Groups, TimeZones, Doors, Telephone numbers, etc.

The illustration below shows how the "Spreadsheet" style database editing can be used.
The LEFT and RIGHT Arrow or OK keys can be used to step through the options of a particular item while the UP and DOWN Arrow keys can be used to scroll through items on a particular option.
HELP, 9 can be used to "Jump" to a related database to create a new item or edit an existing one, then HELP, 0 is used to return to the original database.

< **DOORS** > or OK

^

Number	Name	Access Group	Lock Auxiliary	Open Time
D001	Front Door	Entry Door AG001	R03:X02	005
D002	Accounts Door	Internal Door AG003	R02:X01	005
D003	Managers Office	Internal Door AG003	R02:X02	005
D004	Conference Room	Internal Door AG003	R03:X01	005
D005	Fire Exit Door	AG???	R01:X01	005

v

HELP, 9

ACCESS GROUPS

Number	Name	TimeZone	Alt. Acc. Group	Entry Mode	Exit Mode
AG001	Entry Door	None	None	PIN or Card	Card & PIN
AG002	Exit Door	None	None	Card & PIN	PIN or Card
AG003	Internal Door	Working Hours	None	PIN or Card	PIN or Card

Alpha Searching

Alpha searching is available on Menus where Names are used. E.g. Any item that includes a name field enabling a text name to be programmed by the installer. Wherever an item to be selected has a name attached, the <ON> key can be used to toggle the screen between the "ID" field and the "Alpha-search" field, enabling items to be selected either by ID number or alphabetically, by name. This greatly simplifies many programming options by allowing items such as Users, User Types, Inputs, Areas, Door Lists, Telephone numbers, etc. to be located with ease.

In alpha-search mode you find an item by pressing the digit key that represents the first letter of the name. (You may have to press the key 2 or 3 times depending on the letter required and the names that have been programmed) If the item that you want is not displayed because of other names beginning with the same letter, you then use the <DOWN> arrow key to locate the item. (When using the Alpha-search option, names are listed in alphabetical order based on the first letter of the name only, and are then listed in order of the ID number. e.g. Users; Jason [U00008] and Jenny [U00005] will be listed in the order; Jenny, then Jason according to the User ID number.)

Some examples of Alpha Searching can be seen under the section "User Programming", when selecting the "User to Alter" and the "User Type selection".

e.g. User Type assigned by number

```
User 00011
Type:  UT003
```

User Type assigned by name.

```
U00011 Type   ->
Office Staff
```

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The LAN System

Introduction

The 3000 / Access 4000 Local Area Network (LAN) is a proprietary RS485 LAN system used to connect modules such as LCD Terminals and Zone Expanders into the system. The LAN is a 3 or 4 wire system; two signal wires labelled "A" and "B", a negative wire and an optional positive wire to provide power to modules. The following rules apply:

1. The "A" and "B" signal wires must be connected using twisted pair cable to provide the maximum immunity to electrical noise and create the least possible interference.
2. If un-shielded, the LAN cables should not be run near other cables such as mains power cables, intercom or telephone cables.

The LAN will operate at its best if modules are "daisy chained". This means that the LAN is best configured as 4 wires running the full length of the installation, keeping the length of branches from the main 4 wires to a minimum. However, a "star" configuration, or combination "daisy chain / star" configuration will also operate reliably when installed according to the specification. The power wires do not have to be twisted which allows heavier gauge wires to be used if desired, to minimise voltage drops.

Each module on the system has an optional "Terminating Resistor". The terminating resistor is normally turned on by a DIP switch, or by inserting a jumper Link, depending on the Module Type. For the LAN to work at its optimum, the two furthest modules apart should have their terminating resistors turned on, and all other modules should have their terminating resistors turned off.

See the "Installation and Troubleshooting" section for LAN installation details.

Configuring the Model 3000 / Access 4000 LAN

Every module is identified with a "Type" and "Number". The type identifies what kind of module is connected such as an LCD Terminal or a Zone Expander. The number indicates which module is referred to in any one type. For example the first LCD Terminal on the network would be referred to as an LCD Terminal type with a number of 01.

Before a module can be connected to the network it must be given a number so it can be identified in the system for programming etc. Any number between 01 and 99 can be chosen, as long as that number has not already been chosen for that module type. In most memory configurations the maximum number you can choose will be further restricted. The number of a module is set-up on the "number" DIP switch (except for Elite LCD Terminals), see individual module documentation for more details.

The LAN is a self configuring network. This means that once a number has been chosen for a module you simply connect it to the network. Connections can be made without powering down, although with non-electronic fuses, you will need to be careful you don't short the power wires and blow a fuse. TIP: It is best to carry out live LAN connections with the battery disconnected, only running on plug pack to lessen the maximum current available if a momentary short occurs.

All modules on the network are either "addressed" or "un-addressed". When a module is first connected to the network it is un-addressed meaning it has not been recognised by the system. In a very short period of time, the module will become addressed, meaning it is recognised by the system and operational. Sometimes a module will remain un-addressed for one of the following reasons:

1. The number of this module has already been used for another module of the same type on the network. You need to choose another number.
2. The number of this module is too big for the current memory configuration. You will need to choose a smaller number or use a different memory configuration.
3. This type of module is not recognised by the current system. You will need to upgrade the firmware before this module type can be used.

When modules are found (or lost) by the system a review message is saved and a system LAN fail Input will be restored/ alarmed as appropriate. In addition, when a module is powered up and connected to the network a "Module Powered Up" message is saved to review.

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Initial Power-Up

When the system is first powered up, it assumes that all possible modules that the memory configuration allows will eventually be connected. In most systems however this is not the case and the system needs to be told that the modules currently connected are the only ones we expect. This is done by "Securing the LAN" which tells the system that the current LAN configuration is all that we expect and therefore all other modules LAN fail Inputs should be sealed. In addition, when the LAN is secured, the system generates a secret encryption key that is transferred to all modules on the network.

See "LAN Secure", MENU, 7, 8, 1 in the Programming Reference section.

Whenever a module communicates alarm information to the system the encryption keys are compared, and if they don't match a "Module Substitution" message is generated, warning that this module was not present the last time a "Secure LAN" was performed.

(The encryption key is forgotten whenever a module is powered down, thereby preventing a substitute module being installed without the systems knowledge)

LAN Debugging

Detailed LAN Troubleshooting information is provided in the "Installation and Troubleshooting" section.
Some of the factors to be considered in debugging LAN problems are:

1. Check for low battery at all LAN modules, under worse case load. For most modules this means above 12 volts.
2. Check for "stop condition" at all modules. This means check that voltage between A (negative of meter) and B (positive of meter) should be greater than 200mV. If the voltage is negative this indicates an A – B reversal on one of the modules. This will cause VERY SLOW or NO LAN communications. If the voltage is less than 200mv this may indicate that too many termination resistors are inserted, or the wrong value termination resistors are inserted.
3. Check for legal "common mode" condition at all modules. This means check that the voltage between NEG and A is less than +/- 5 volts. Also check between NEG and B.
4. Use LAN statistics screens to check for noise. The statistics need to be cleared, then monitored over a period of time to look for problems. *See "LAN statistics", MENU, 7, 8, 4 in the Programming Reference section.*

Timing

The speed and performance of the system is a function of many factors. In general the larger the dimensions of the system, the slower it will be. While a 512k memory expansion offers larger dimensions, it is not intended that all dimensions will be used to their maximum simultaneously as this would result in much slower performance.
Issues that effect system speed are:

1. Amount of LAN activity including noise and collisions. Systems with many Function Zones or continuously triggered enabled zones will result in LAN traffic. Avoid programming schemes with many enabled, constantly triggering zones.
2. Systems with many LCD Terminals logged on simultaneously will slow down a system.
3. Lots of very busy Calculated Auxiliaries can also slow down a system.
4. The most time consuming task is Area on/off. Avoid programming operations that turn many Areas on or off simultaneously if possible. (Area lists for arming should be used sparingly)
5. Avoid having too many Comms Tasks, especially those with high baud rates. The maximum baud rate for a task should be 4800 to 9600 baud. As UART based Comms Tasks are added, lower the Baud rates to compensate. Look for fifo overflow as an indication of speed problems.
   See "Baud Rates" under Comms Tasks, MENU, 7, 3, 1 in the Programming Reference section.
6. Accept during download is the same as PC direct download – very expensive time wise.
7. The key technique in programming is to attempt to avoid large amounts of simultaneous activity. By staggering events even slightly, the system can be a lot faster.
8. Version 3 firmware greatly increases the processing speed of zone activity, especially noticeable in 512K chips. This is achieved with a smarter scan algorithm.

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Module Polling

In many RS485 LAN systems, the network communications is performed by a "Polling" method in which no module can pass it's information back to the controller until it is requested. This means that the controller always has control over the network traffic but presents a disadvantage in that all modules must wait in turn to send any data. In instances of very busy periods this can mean that events such as new alarms on remote modules or door access requests can be significantly delayed.

The 3000/Access 4000 LAN protocol overcomes this by allowing any module to check the LAN for busy/free status, and if free, send it's data to the Control Module without waiting to be polled. This, coupled with clever flow control techniques enable large amounts of traffic to be processed quickly and without error.

To further reduce the amount of traffic and additional processing in the Control Module, the onus is put on each remote module to regularly report it's presence to the Control Module. This report is done periodically as set by the "POLL TIME" within the programming of each Module in the system.

The "POLL TIME" is programmable from 1-255 seconds. However, practical values are between 30-240 seconds. (Values outside this range would only be used for testing purposes)
e.g. If a 5 second Poll Time was programmed for every module in an installation of 64 modules, LAN traffic would be increased unnecessarily, causing an effect of delays in response or under severe conditions, modules losing communications and then restoring. A value set above 250 will cause a module to always time out, this is because the controller will wait an additional time to allow for excessive LAN traffic which will then exceed a maximum time value of 255.

Poll times (or "time reports" as they might be better described) will have no effect on speeding a system up. As already noted a faster poll time can actually slow a system down. Default Poll time values are provided for all modules in the system. In some circumstances a poll time may need to be altered from the factory setting if a particular module was in a high-risk area and its presence was considered critical.
e.g. In an environment where a keypad was used as a PIN code entry point for DEADMAN operation, a Poll time of 240 seconds (4 minutes) would be unacceptable. The poll time for this particular module could be safely reduced to 30 seconds to give a much faster "LAN Comms" alarm at the Control Module should the terminal fail. As a general rule, the factory set poll times are adequate to maintain a balance between optimum LAN traffic flow and module security.

Factory Default Module Poll Time settings:

Module Type.	**Name.**	**Poll Time.**
1	LCD Terminal:	120 seconds.
3	"B" Type Universal Expander:	60 seconds.
4	Reader Module:	60 seconds.
6	Mini Expander Module:	60 seconds.
7	"E" Type Universal Expander:	60 seconds.
8	Intelligent 4 Door Access Module:	60 seconds.
9	Analogue Module:	60 seconds.
11	LAN Power Supply Module:	240 seconds.
12	RF Expander Module	60 seconds.

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System Information

Pressing <MENU>, <2> while logged off (or just <MENU> if V2 or earlier) will provide general information on the system, including PCB Serial number, version and configuration details. In V3 or later, there are two screens of information to view. The <UP> and <DOWN> Arrow keys are used to switch between the two screens.

```
System Info
SN: 1348     Vers:
```

```
System Info
Days: 0079  POpts:
```

There are a number of differences in the information provided for Type 2 Control Modules and Type 0 or 1 Control Modules. The details for Type 2 are provided below. The details for Type 0/1 are provided on the following page.

Type 2 Control Module PCB:

Information:	Example:	Description:
1st Screen		
Serial Number:	SN: 1348	The Serial Number of the Control Module PCB. Only used in factory procedures. The actual product Serial number is on a printed label on the PCB.
Version:	E04.01	Firmware Version currently fitted. (E = EPROM, F = Optional Flash Memory)
PCB:	2	Controller PCB Type. Type 2: Surface Mount PCB.
RAM:	128K-00-04.01	RAM size - Memory configuration option - Software version used when configured. Memory configuration options: 00 = Standard. 01 = Access. 02 = Enlarged. 03 = Apartments. (V4.5 or later - Formally V2 Standard) 04 = Access 2. (V4.5 or later - Formally V2 Access) 05 = Special. 06 = Alarms. Software Version: 00.00 = configuration performed before this feature was added)
Country:	AU	Defines country specific Version of firmware fitted. AU = Australia/NZ CZ = Czech Republic ES = Estonia HU = Hungary NL = Netherlands PO = Poland SW = Sweden UK = United Kingdom
Disty:	XX	Defines Distributor. Not currently used.
Cust:	000	LAN key number programmed. 000 = No LAN key.
2nd Screen		
Days:	00048	Number of days unit powered up since manufacture.
POpts:	F7011000	Panel Options enabled via PIC Micro Chip (U14). See details for "Type 2 Control Module Board" in the following chapter titled "3000 and Access 4000 Model Options".
SMode:	1	Security Mode of the firmware. 1 = Secure.
Vers:	M05.00	Version of the secure Microprocessor fitted. M00.00 = Security Mode is 0.
Gal:	S	Security Level of the Microprocessor. S = Secure.
SecOpt:	$00	Details (in Hex format) of Security options programmed. <MENU>, 8, 3. 00 No options set. 01 [N]o Code Default option set. 02 [O]wn Code only option set.04 [L]ockout Installer option set. If multiple options are set, the value displayed will be the sum of the options. e.g. All set = 07, N & O set = 3, etc.

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Type 0 (Australia &NZ only) and Type 1 Control Module PCB:

Information:	Example:	Description:
Serial Number:	SN: 1348	The Serial Number of the Control Module PCB. Only used in factory procedures. The actual product Serial number is on a printed label on the PCB.
Version:	E03.01	Firmware Version currently fitted. (E = EPROM, F = Optional Flash Memory)
RAM:	128K-00-03.01	RAM size - Memory configuration option - Software version used when configured. Memory configuration options: 00 = Standard. 01 = Access. 02 = Enlarged. 03 = Vx Standard. (x = V2 if V3 Firmware or later OR V1 if V2 Firmware) 04 = Vx Access. (x = V2 if V3 Firmware or later OR V1 if V2 Firmware) 05 = Special. 06 = Alarms. (V3.5 or later only) Software Version: 00.00 = configuration performed before this feature was added)
Days:	00048	Number of days unit powered up since manufacture.
Modem:	1200 Baud	Speed of the modem chip fitted.
PCB:	1	Controller PCB Type. Type 0: Supports 1Meg EPROMs (Requires 2 x EPROMs for V2 firmware) (Does not support V3 firmware or later) Type 1: Supports 2Meg EPROM (Requires 1 x EPROM for V2 or later firmware)
Lock Option:	00 01/02	00=Australia/New Zealand. (V3 or later only) 01=Export(English language or CZ). 02=Pacom. (V3 or later only) Upgrade firmware (V3 or later) should match existing Lock option.
Options:	$51	Identification of Options (GAL) chips fitted. (“RAMSIZE” & “FUNCTIONS”) 1st Digit = RAMsize. 2=32k (256KBit), 5=128k (1MBit) and 6=512k (4MBit). 2nd Digit = Functions. 0=Std C3000, 1=C4000, 3=Czech C3000, 4=Czech C4000 9=High Level Lift I’face.
Sec:	$00	Details (in Hex format) of Security options programmed. <MENU>, 8, 3. 00 No options set. 01 [N]o Code Default option set. 02 [O]wn Code only option set. 04 [L]ockout Installer option set. If multiple options are set, the value displayed will be the sum of the options. e.g. All set = 07, N & O set = 3, etc.
PO:		Panel Options. Indicates any Special options that may be enabled on the Control Module. (V3 or later only) L = High Level Lift Interface.
CN:	000	LANKey Customer ID. (V3 or later only)
Lang:	Eng	Language used in Firmware. Eng = English. CZV = Czech. (V3 or later only)
Ver:	M00.00	Secure Micro Version number. M00.00 = Not used. (V3 or later only)

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3000 and Access 4000 Model Options

The 3000 and Access 4000 versions of the product are essentially identical except for a small number of enhancements that are available in the Access 4000 only, or as an option.

Tables are provided that give details of the differences between the two models, and the upgrade options available.
The tables listed below cover all Types of Control Module Board and Firmware that have been produced, beginning with the latest type.
-Type 2.
-Type 1. Control Module firmware V3 to V4.
-Type 0 or Type 1. Control Module firmware. V2.

NOTE: In Version 1 Control Module firmware there was no "Access 4000" Version of the product and no special options available.

If features unique to the Access 4000, or other special features are required in a system where the Model 3000 has been installed, an upgrade kit is available to convert the Control Module to a Model Access 4000.
Note that in some cases Type 0 Control Module boards may have to be upgraded to Type 1 or Type 2.
See "Memory Defaulting" (MENU, 7, 5, 2) in the Programming Reference section for details.

Identifying the Type of Control Module Board.

Due to continual product improvement and enhancements, there have been three different Types of Control Module board produced since the release of the Concept 3000.

The table below can be used to identify the Type of the Control Module board.
The LCD Terminal "System Info" screen is the quickest method of identifying the Type of board.
This screen can be viewed by pressing <MENU>, 2 (OR just the <MENU> key, if V2 or earlier); without logging on to the Terminal.
i.e. No PIN code required.

	LCD Terminal "System Info" screen.	**PCB Assembly**	**ID Printed on PCB**	**Additional Notes**
Type 0	PCB: 0	Through-hole	933001	Australia & NZ only.
Type 1	PCB: 1	Through-hole	934001	
Type 2	PCB: 2	Surface mount	935001	CE approved

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Type 2 Control Module Board.

A special Options Micro chip is used to enable certain system options and upgrade options in the Control Module.
The Chip is labelled U14 and is located between the Zone 9 to 16 Input connections and Links LK3 to LK6.

The Options Micro chip is fitted with an identification label with the text "CEPIC_x Vn.nn"
Where: x = Options Micro Type as per one of the tables below. i.e. 1 to 9.
n.nn = Options Micro Version number.

A range of standard Options Micro chip types are available.
Special Options Micro chips can be supplied for combinations of features not provided by the standard types.
e.g. If High-level Lift Interface and Programmable Site Code are both required.
These chips can be purchased and changed over by the installer at any time to provide additional features.

The price of each Options Micro Chip Type will vary according to the feature/s that the chip will enable.

NOTE: If the additional feature required is new and was not available in the version of firmware currently in the Control Module, then the Control Module firmware AND the Options Micro will need to be changed.

When purchasing 128k (1MBit) or 512k (4MBit) Memory expansion for the Control Module, an Options Micro chip will also be supplied to enable the use of the additional memory.
The table below shows the current range of Options Micro chips.
This selection table may be expanded as further options become available.

* Factory fitted option for Model 3000. 32k (256kBit) Memory.
^ Factory fitted option for Model Access 4000. 128k (1MBit) Memory.
† Control Module firmware V4.5 or later only.
‡ Options Micro V1.15 or later only.
\# Options Micro Types 2, 3, 4 and 8 provide 32 Inovonics Zones.

STANDARD OPTIONS MICRO CHIP TYPES

FEATURE	OPTIONS MICRO TYPE AND DESCRIPTION. (Options Micro V1.14 & V1.15)								
	1 *	2 ^	3	4	5	6	7	8	9
	Standard 3000	Standard Access 4000		A4000 HLI512	A4000 Inov 96	A4000 Inov 208	Not available	A4000 Prog SC	Not available
	32k (256kBit)	128k (1MBit)	512k (4MBit)	512k (4MBit)	128k (1MBit)	512k (4MBit)		128k (1MBit)	
0 Aircon. Control		YES	YES	YES	YES	YES		YES	
1 Door Interlocking		YES	YES	YES	YES	YES		YES	
2 ACCEPT	YES	YES	YES	YES	YES	YES		YES	
3 High Level Lift I/F				YES					
4 "Card only" Users		YES	YES	YES	YES	YES		YES	
5 GSM SMS	YES	YES	YES	YES	YES	YES		YES	
6 Spare	YES	YES	YES	YES	YES	YES		YES	
7 Lift Access Control		YES	YES	YES	YES	YES		YES	
8 128k (1MBit) RAM		YES			YES			YES	
9 512k (4MBit) RAM			YES	YES		YES			
10 Spare									
11 Spare									
12 to 15 Spare									
16 GEOQUIP									
17 Inov. 96 Zones †		#			YES			#	
18 Inov. 208 Zones †						YES			
19 Prog. Site Code †			YES ‡					YES	
20 GSM FE3000 †	YES	YES	YES	YES	YES	YES		YES	

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EARLIER VERSION OPTIONS MICRO CHIP TYPES

The table below shows the range of Options Micro chips available up to Options Micro V1.09.

IMPORTANT NOTE: This table is for reference only.
Options Micro chips of V1.09 or earlier can no longer be purchased.

* Factory fitted option for Model 3000. 32k (256kBit) Memory.
^ Factory fitted option for Model Access 4000. 128k (1MBit) Memory.
(Up to V4 Control Module Firmware)

FEATURE	OPTIONS MICRO TYPE AND DESCRIPTION. (Options Micro up to V1.09)							
	1*	2	3	4^	5	6	7	
	Standard 3000			Standard 4000		A4000 HLI512	A4000 GEO128	
	32k (256kBit)	128k (1MBit)	512k (4MBit)	128k (1MBit)	512k (4MBit)	512k (4MBit)	128k (1MBit)	
0 Aircon. Control				YES	YES	YES	YES	
1 Door Interlocking				YES	YES	YES	YES	
2 ACCEPT	YES	YES	YES	YES	YES	YES	YES	
3 High Level Lift I/F						YES		
4 "Card only" Users				YES	YES	YES	YES	
5 GSM SMS	YES	YES	YES	YES	YES	YES	YES	
6 Spare	YES	YES	YES	YES	YES	YES	YES	
7 Lift Access Control				YES	YES	YES	YES	
8 128k (1MBit) RAM		YES		YES			YES	
9 512k (4MBit) RAM			YES		YES	YES		
10 Spare								
11 Spare								
12 Spare								
13 Spare								
14 Spare								
15 Spare								
16 GEOQUIP							YES	

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Identifying the PIC Micro Chip options enabled:

If the PIC Micro Chip cannot be physically identified, the System Information Screen as described in the previous chapter can be used to determine which options have been enabled via the PIC Micro Chip.

The second System Information screen provides the "Panel Options" field:
"POpts: xxxxxxxx"
Where "xxxxxxxx" is a Hexadecimal character string that represents the options that are enabled.

Each Hex character represents 4 bits of the options Bitmap.
Each bit represents an option where 1 = Enabled and 0 = Disabled.
The options represented by each character are as follows:

Character	1st Bit	2nd Bit	3rd Bit	4th Bit
1	07 Lift control	06 Spare	05 GSM SMS	04 Card Only Users
2	03 High Level Lift	02 ACCEPT	01 Door Interlocking	00 Airconditioning
3	15	14	13	12
4	11	10	09 512k (4MBit) Mem.	08 128k (1MBit) Mem.
5	23	22	21	20 GSM FE3000*
6	19 Prog. Site Code.*	18 Inovonics 208 Zones*	17 Inovonics 96 Zones*	16 Geoquip (Under Dev)
7	Spare	Spare	Spare	Spare
8	Spare	Spare	Spare	Spare
* Control Module Firmware V4.5 or later only.				

Step 1:
Convert the Hex character string to binary digits.
e.g. POpts: F7011800 is converted as follows:

F	7	0	1	1	8	0	0
1111	0111	0000	0001	0001	1000	0000	0000

Step 2:
Using the table above, it can then be determined that the following options are enabled:
Lift Control, GSM SMS, Card Only Users, ACCEPT software, Interlocking, Airconditioning, 128k Memory, GSM FE3000 and Programmable Site Code.

Step 3:
Using the "Options Micro Type" table below, it can then be determined that Options Micro Chip Type 7 is fitted.
This means that the Control Module is configured as a Model 3000 (32k) with the options listed above enabled.

CURRENT PIC MICRO CHIP OPTIONS TYPES.

PIC Type	POpts Character string and Description.			
	V1.14 and V1.15 (Current)		V1.09 (Earlier Version)	
1	64001000	3000 32k	64000000	3000 32k
2	F7011000	A4000 128k	64010000	3000 128k
3	F7021800	A4000 512k NOTE: V1.14 =F7021000 No Prog Site Code	64020000	3000 512k
4	FF021000	A4000 512k HLI	F7010000	A4000 128k
5	F7011200	A4000 128k Inovonics 96 Zones	F7020000	A4000 512k
6	F7021400	A4000 512k Inovonics 208 Zones	FF020000	A4000 512k HLI
7	64001800	3000 32k Prog Site Code (No longer available)	F7010100	A4000 128k GEO
8	F7011800	A4000 128k Programmable Site Code		
9	F7021800	A4000 512k Prog Site Code (Use PIC 3 V1.15)		

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Type 1 Control Module Board. Version 3 to Version 4

The table below provides details of the differences between the two models in Version 3 firmware or later, and the upgrade options available.

V3 FEATURE	Standard 3000	3000 Option	Standard Access 4000	Access 4000 Option
Lift Control	No	No	Yes	
High Level Lift I'face	No	No	No	Yes (Special Firmware)
Door Interlocking	No	No	Yes	
Card Only Users	No	No	Yes	
AirConditioning	No	No	Yes	
Spare				
32k (256kBit) Memory	Yes			
128k (1MBit) Memory	No	Yes	Yes	
512k (4MBit) Memory	No	Yes	No	Yes
Accept S'wareI'face	No	Yes	No	Yes

Type 0 or Type 1 Control Module Board. Version 2

The differences between the 3000 and Access 4000 Versions of the product in Version 2 firmware are detailed in the table below for reference purposes.

V2 FEATURE	Standard 3000	3000 Option	Standard Access 4000	Access 4000 Option
Lift Control	Yes		Yes	
Door Interlocking	No	No	Yes	
Card Only Users	No	No	Yes	
AirConditioning	No	No	Yes	
Zone control of Home Auxiliaries	No	No	Yes	
32k (256kBit) Memory	Yes			
128k (1MBit) Memory	No	Yes	Yes	
512k (4MBit) Memory	No	Yes	No	Yes
Accept S'ware I'face	No	No	Yes	

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Model 3000 / Access 4000

Programming Summary

The following is a list of Model 3000 and Access 4000 programming options:

Options only available in V2.0 or later; *are shown in Italic type.*

Options only available in V3.0 or later; **are shown in Bold type**.

Options only available in V3.5 or later; are shown in Arial font.

Options only available in V4 or later; ARE SHOWN IN SMALL CAPITALS.

Options only available in V4.5 or later; **are shown in Arial Bold type.**

Options only available in V5 to V5.2 or later; `are shown in Courier Font.`

* Asterisk indicates that actual numbers of items will depend on Memory size fitted and configuration option selected.

CONTENTS

Menu 2 Access 2
Menu 3 Isolate 5
Menu 4 Test 5
Menu 5 Times 6
Menu 6 Spare 6
Menu 7 Installer 7
Menu 8 Service 15
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Users [MENU, 2, 1]

- User Number (0 to 65500)*
- User Name (0 to 16 characters - Not available for “Card Only” Users)*
- User Type (0 to 250 types)*
- PIN Code^ (0 to 8 digits)
- Card Type (Credit Card / Site Code / Direct Entry)
- Account Number/Card & Issue Number/Raw Card Data (depending on Card type)
- User Expiry Date / Time.^
- User Rank^ (May be used to determine permission to change other Users)
- User Options^ (No Message Ack. / Duress Code / Area List default / *Extra Area Off* / **No Greeting**)
- User Extra Area.^
- **User Extra Door. (Only available in selected 512k or Custom configurations)**
- **User Extra Door List. (Only available in selected 512k or Custom configurations)**
- Fob Button 1 Action. (None / Area On/Off / Aux On/Off/Toggle / Zone Alarm / Zone Alm (Qualified) / Area List On/Off / Qualify Auxiliary)
- Fob Button 1 Area/Auxiliary/Zone/Area List to Control. (Depends on action selected)
- Fob Button 2 Action. (None / Area On/Off / Aux On/Off/Toggle / Zone Alarm / Zone Alm (Qualified) / Area List On/Off / Qualify Auxiliary)
- Fob Button 2 Area/Auxiliary/Zone/Area List to Control. (Depends on action selected)
- Fob Button 3 Action. (None / Area On/Off / Aux On/Off/Toggle / Zone Alarm / Zone Alm (Qualified) / Area List On/Off / Qualify Auxiliary)
- Fob Button 3 Area/Auxiliary/Zone/Area List to Control. (Depends on action selected)
- Fob Button 4 Action. (None / Area On/Off / Aux On/Off/Toggle / Zone Alarm / Zone Alm (Qualified) / Area List On/Off / Qualify Auxiliary)
- Fob Button 4 Area/Auxiliary/Zone/Area List to Control. (Depends on action selected)

^ Not available for “Card Only” Users.

Fob Button options; V5.1 or later only. Aux Toggle/Zone Alm (Q)/Area List On/Off/Qualify Aux, V5.2 or later only. (Only available for a limited number of Users. *See Memory Configuration tables for details.*)

User Types [MENU, 2, 2]

- User Type Number (0 to 250)*
- User Type Name (0 to 16 characters)
- User Type TimeZone (0 to 250)*
- Alternative User Type. (0 to 250)*
- Area ON List (0 to 250)*
- Area OFF List (0 to 250)*
- Menu Group (0 to 250)*
- Door List (0 to 250)*
- Lift Car List (0 to 250)*
- Floor List (0 to 250)*
- User Type Options (Allow Fob / **Disabled User** / Dual Code Provider / Dual User Override / AntiPassback Override / Cancel on PIN / Cancel on Card)
- User Type Rank. (May be used to determine which User Types a User may assign to other Users)
- Valid code Auxiliary (An Auxiliary which will activate upon entry of a valid User code)
- Home Auxiliary types allowed (1 to 8)

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Area List [MENU, 2, 3, 1]

- Area List Number. (0 to 250)*
- Area List Name (0 to 16 characters)
- Area List TimeZone (0 to 250)*
- Alternative Area List. (0 to 250)*
- Areas assigned to this List

Door List [MENU, 2, 3, 2]

- Door List Number. (0 to 250)*
- Door List Name (0 to 16 characters)
- Door List TimeZone (0 to 250)*
- Alternative Door List. (0 to 250)*
- Doors assigned to this List

Siren List [MENU, 2, 3, 3]

- Siren List Number. (0 to 250)*
- Sirens assigned to this list (up to 16)

Floor List [MENU, 2, 3, 4]

- Floor List Number. (0 to 250)*
- Floor List TimeZone (0 to 250)*
- Alternative Floor List. (0 to 250)*
- Floors assigned to this List

Lift Car List [MENU, 2, 3, 5]

- Lift Car List Number. (0 to 250)*
- Lift Car List TimeZone (0 to 250)*
- Alternative Lift Car List. (0 to 250)*
- Lift Cars assigned to this List.

Auxiliary List [MENU, 2, 3, 6]

- *Auxiliary List Number. (0 to 64)**
- *Auxiliary List Name (0 to 16 characters)*
- *Auxiliaries assigned to this List (Up to 8)*

Menu Groups [MENU, 2, 4, 1]

- Menu Group Number (0 to 250)*
- Menu Group Name (0 to 16 characters)
- Menu Group TimeZone (0 to 250)*
- Menu Group Alternative Group. (0 to 250)*
- Menu Group functional options allowed (Remote Access / Isolate on Exit / *Defer Area On* / *Cancel Holdup* / Sirens Off / Acknowledge messages / Multiple Area control / Tamper on/off)
- Menu Options allowed. (Read Info / Access / Isolate / Test / Times / SPARE / Service / Control)
- Sub-menu Opts allowed. (User Codes / User Types / Lists / Groups / TimeZones / **Review** / **Adjust Counters***)
- **Other Options allowed. (Reset latched alarms / Home Zone Isolate /** ONLY OWN AREA LIST / `Unlock ON Key`)

* **Event Counters** / `Area User Counters (V5 or later only)`

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Access Group [MENU, 2, 4, 2]

- Access Group Number (0 to 250)*
- Access Group Name (0 to 16 characters)
- Access Group TimeZone (0 to 250)*
- Alternative Access Group. (0 to 250)*
- Entry/Exit Modes. (PIN only / Card only / PIN or Card / Card & PIN)
- Entry/Exit Anti-Passback modes. (None / Soft / Hard)
- Entry/Exit Options. (Button facility / DeadLock function / Auto Area Off / Dual User)
- Access Group Options. (Isolate on Entry / De-isolate on Exit / No Entry if wrong area / No Exit if wrong area / *Two Zones mode* / `Defer Area Arming`)

Process Group [MENU, 2, 4, 3]

- Process Group Number (0 to 250)*
- Process Group Name (0 to 16 characters)
- Process Group TimeZone (0 to 250)*
- Alternative Process Group. (0 to 250)*
- Tamper/Alarm processing options. (Recognize Tampers / Recognize Alarms / **Latch Input**)
- Delayed/Primary processing options. (Entry Zone / Exit Zone / Primary entry zone)
- Pulse count processing options. (Pulse count / *Single Pulse*)
- Communications Reporting Options. (Isolates / Tampers / Alarms / Restores / Alarms during entry / Alarms during exit / *Unseal Restores* / **Single report**)
- Contact ID message.
- **4+2 Pulse message.**
- Area Auxiliary Options. (Tamper / Alm 1 / Alm 2 / Alm 3 / Alm 4 / Isolate)
- Alarm Siren tone selection. (None, Bell, Sweep, Fire or Evacuation)
- Tamper Siren tone selection. (None, Bell, Sweep, Fire or Evacuation)
- Siren Lockout.
- *Siren Re-trigger.*
- LCD Terminal Message types. (1 to 8)
- *Home Auxiliary on Seal options. (None / Turn on / Turn off / Toggle)*
- *Home Auxiliary on Alarm options. (None / Turn on / Turn off / Toggle)*
- *Home Auxiliary on Tamper options. (None / Turn on / Turn off / Toggle)*
- *Home Auxiliary options. (Override time / Minute timer)*
- *Home Auxiliary Time.*
- **Extra Options. (Refresh Only / No refresh** / `Cancel Exit Delay / Delayed Reporting` **/ Lift buttons)**
- **Pin Type. (** `0-None` **/ 1-Fire / 2-PA / 3-Intruder (Unconfirmed) / 5-Medical^ / 6-System / 8-Power †** **)**
- **Verify Group. (1 to 16)**
- **Transmit SMS options. (No SMS / One #, No Ack / One # with Ack / List with Ack / List, No Ack)**
- **SMS Telephone Number.**
- `SIA Type. (Burg / Fire / Gas / Holdup / Heat / Medical / Panic / Emergency / Sprinkler / Water / Freezer)`

`^ Removed in V5.1. (Changed to “Isolate” & cannot be assigned in Process Group)`
`† Changed from “Plant” to “Power” in V5.1.`

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Site Codes [MENU, 2, 5]

- Site Code Number. (1 to 128)*
- Site Code
- Card Number Offset
- Site Code Enabled / Disabled. (“Present”)

Backup Cards [MENU, 2, 6]

- Backup Card Number. (1 to 127)* Only 15 Backup Cards available prior to V3.56.
  (127 BACKUP CARDS ONLY AVAILABLE V3.56 OR LATER. - REQUIRES ENHANCED VERSION OF 1 OR 2 DOOR ACCESS MODULE)
- “Waiting for Backup Card ??? at Rxx” (Where Rxx = Reader Module number)

RF Fob Registration (V5.1 or later) [MENU, 2, 7]

- Select User
- Registration & Status

Isolate [MENU, 3]

- Select Input. (Zone or System Input).
- Select Action. Isolate / “Sticky” Isolate / De-Isolate.

Testing [MENU, 4]

- Inputs [1]
- Input to Test.

- Auxiliaries [2]
- Auxiliary to Operate.

- Sirens [3]
- Siren to Operate. (On / Off / 1-Bell / 2-Sweep / 3-Fire / 4-Evacuation / 8-Internal Only / 9-External only)

- Telecom [4]
- Loop / Unloop.
- Seize / Unseize.
- DTMF / Decadic.
- Impedance Switch On / Off.
- Dial digits.

- Cards [5]

- Memory [6]

- Ports [7]
  Input Status.
  Output Status. (1-Toggle DTR / 2-Toggle RTS)

- Power [8]
  Check System Inputs.
  Diagnostic Controls. (Off & On-Turn Off & On all Expander Battery Chargers / 7 & 9-Turn Off & On Controller Battery Charger / 1 & 3-Unlock & Re-lock all Door Lock Auxiliaries / < or >-Re-test LAN Comms / ^ & v-Check for other unsealed Inputs)

- VOLTS [9]
  CHECK CONTROL MODULE POWER CONDITIONS.
  DIAGNOSTIC CONTROLS. (ON-TURN OFF BATTERY CHARGER / ANY OTHER KEY-TURN ON BATTERY CHARGER)

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Time and Date [MENU, 5, 1]

- Set Time and Date.
- Set Weekday.

TimeZones [MENU, 5, 2]

- TimeZone Number (0 to 250)*
- **Current Status. (V)alid / (I)nvalid.**
- TimeZone Name.
- Start time / Stop time / Days of week (up to 4 periods).
- Holiday types to obey. (1 to 6)
- Function options. (Aux on/off / Area on/off / Area List on/off **/** *Door lock/unlock* **/** *Door List lock/unlock* **/** *Lift Car & Floor secure/unsecure* **/** *Lift Car & Floor List secure/unsecure* / Trigger Time Report / *Aux on/off sec* **/** *Aux on/off min.* / **Lift Car List & Floor List secure/unsecure / Lift Car List & Floor secure/unsecure / Area Defer On /**)
- Control options. (On when Tz goes Valid / Off when Tz goes Valid / On when Tz goes Invalid / Off when Tz goes Invalid.
- Entity/List to turn on/off. (Depends on Function option selected above)
- Auxiliary qualify options. (Qualify / Invert Qualify)
- Auxiliary to qualify against.

Holidays [MENU, 5, 3]

- Holiday Number (0 to 250)*
- Holiday Name
- Start date / Stop date
- Holiday type (1 to 6)

Diaries [MENU, 5, 4]

- Diary Number (0 to 32)*
- Diary Date and Time
- Valid Days of the week
- Diary Message. 16 characters X 2 (lines)
- Valid (Output) Auxiliary. (On whenever Diary is Valid)
- QUALIFY AUXILIARY. (IF ASSIGNED, MUST BE ON FOR DIARY TO BE VALID)
- Diary Function. (*Time Adjust Add 1 hr.* / *Time Adjust Subtract 1 hr.* / **Skip Subtract 1 hr.** / **Battery Test**)

Auxiliary Timers [MENU, 5, 5]

- Auxiliary to Time on.
- Auxiliary ON time (1 to 255 seconds / minutes).
- Save to Review Option.
- *Auxiliary Off on reset.*

Spare [MENU, 6]

- For future enhancement.

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Inputs (Zones) [MENU, 7, 0]

- Input (Zone) Number.
- Input (Zone) Name. (Up to 24 characters)
- Input options. (**Summary Zone** / Ignore Physical Zone Input -Calculated Zone / Save to review when C01:X01 is On / Swap Seal & Alarm / Don't save to Review / Allow Auto Isolate / No test on Exit / Zone Self Test)
- *Home Auxiliary to control.*

Areas [MENU, 7, 1]

- Area Number. (0 to 250)*
- Area Name.
- Internal / External Siren Mode. (No Siren / Instant / 2nd Hit / **Backup**)
- Siren List to sound.
- Siren Time. V1 to V4.99: 1 to 255 minutes.
  V5 or later: 1-200 = 1 to 200 minutes; 201-255 = 1 to 55 seconds.
- Exit Delay time. (seconds)
- Entry Delay time. (seconds)
- Pulse time. (seconds)
- Pulse count for this Area.
- Communications Reporting options. (Openings / Closings / Open after alarm / Not General Area / 24 Hour [Tamper] Off reports / Area Still Open reports)
- Area client code.
- Area Options. (Test for Users on arming / *Holdup Area* / *Defer Area On* / **No Siren cancel / Pulse Timer / WARN AUXILIARY=ALM4 AUX / FUNCTION ZONE AREA**)
- Self Test "ON" count. (Frequency of Zone self-test.)
- Auxiliaries to activate (Exit^ / Entry^ / Siren***** / Close***** / 24Hr (Tamper) / Alarm 1-4***** / Isolate / *Count* / **Test**)
  ***Aux List option available V3 or later**. ^AUX LIST OPTION AVAILABLE V4 OR LATER.
- Sub-Area to use.
- *Area User Count.*
- *Area Count control options. (On or Off when count met / On or Off when count+1 met)*
- *Trigger Count.*
- **Test Options. (Force Test of all "Self Test" Zones / Qualify for exit / Trigger Test Auxiliary / Arm Area for Test / Walk test on Arming / Exit to View Counters)**
- **Max Test Count. (Max time allowed for testing)**
- **Area Defer Time.**
- Zones/Process Groups in this Area.

LCD Terminal [MENU, 7, 2, 1]

- LCD Terminal Number (1 to 99)*
- Poll Time (1 to 255 seconds)
- LAN Priority (0 to 3)
- Area Alarm Message Types allowed. (1 to 8)
- Default Display message options. (Single Area / Multiple Area / Diary messages / Level messages / Single Area Alarms / All Area Alarms / `Display Time & Date` / Custom Diary message)
- *LED (Lamp) mode. (None / Area Array)*
- Associated Area.
- Keypad dual code/lockout time.
- Associated Door.
- Door access options. (Located Inside or Outside / OK key for REX or REN / Access Control Only / *Zone 2 REX on Inside / Single Area operations*)
- *Extra Options. (***Limit Messages** */ No key beep / Zone 2 REX button enable)*
- **Logged Off Options. (Area Status Array / Area status Text / View Latch Alarms / Alarm Review / Home Auxiliary Control / Air-Conditioning Control)**
- Menu Group
- **Area List Filter.**
- ENHANCED KEYPAD LOCKOUT.
- MAXIMUM PIN CODE ATTEMPTS. (0 TO 15)

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LED Terminal (Not yet available) [MENU, 7, 2, 2]

- LED Terminal Number (1 to 99)*
- Poll Time (1 to 255 seconds)
- LAN Priority (0 to 3)

32 Zone (Big) Expander Modules [MENU, 7, 2, 3]

- Expander Number (1 to 99)*
- Poll Time (1 to 255 seconds)
- LAN Priority (0 to 3)
- **Battery Test Time. (minutes)**
- **Zone Debounce time. Set by DIPswitch on Universal Expander only. (40mS / 400mS - Setting applies to all zones on the Expander.**

Single Door / 2 Door Access Modules [MENU, 7, 2, 4]

- Access Module Number (1 to 99)*
- Poll Time (1 to 255 seconds)
- LAN Priority (0 to 3)
- Purpose (Door Control / Lift Control / `Terminal Logon`)
- Associated Door/s / Lift.
- Access Module Options.
  -Comms (LAN) fail opts. (Backup Cards operate / REN operation / REX operation / First 2 Backup Cards only)
  -Other options. (**DOTL warning** / No Valid/Invalid LED control / Tongue sense / 2 Door mode)
- Reader Arming mode. (None / *Extra Area if PB / Exit Area if Count=0 / Exit Area if PB* / Entry Area if PB / *Exit Area if 3 swipes / Entry Area if 3 swipes*).
  "PB" = Pushbutton used in conjunction with Card (Connected via "Arm" Button Input on Module)
- *Turn Off Extra Area option.*
- Reader 1 / Reader 2 location (Inside / Outside)
- Reader 1 / Reader 2 format. (None / Swipe / Swipe Last / Insertion / Nbit Wiegand / *Nbit Fast* / 26 / 27 / 30 / 32 / 34 / 36 / 37 / 40 bit Wiegand / *ProxPIN*)
- Reader 1 / Reader 2 mode. (Credit Card / Direct Entry / Site Code / *Any Card*)
- *Reader 1 / Reader 2 keypad for PIN code options. (LCD Terminal / Motorola ARK-501 / HID 5355 /* **MR Access** / `26Bit Wiegand`)
- Reader 1 / Reader 2 associated module for PIN codes. (If LCD Terminal selected above)

Wireless Zone Registration [MENU, 7, 2, 5] (V5.1 or later: Moved to MENU, 7, 2, 0, 0, 3)

- **Register / Unregister Wireless Zone Transmitters. (Nxx:Zxx - Inovonics MF Series only)**

Mini Expander Modules *[MENU, 7, 2, 6]*

- *Expander Number (1 to 99)**
- *Poll Time (1 to 255 seconds)*
- *LAN Priority (0 to 3)*
- **Zone Type (per Zone) (Normal Zone / Counter / Holdup / Suspicion / Holdup+Suspicion)**
- **Zone De-bounce (per Zone in milliSeconds)**
  (5 / 10 / 20 / 30 / 40 / 50 / 75 / 100 / 200 / 300 / 400 / 500 / 600 / 750 / 1000 / 1250)

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16 Zone Expander Modules *[MENU, 7, 2, 7]*

- *Expander Number (1 to 99)**
- *Poll Time (1 to 255 seconds)*
- *LAN Priority (0 to 3)*
- **Battery Test Time. (minutes)**
- **Zone Debounce time. Set by DIPswitch on Universal Expander only. (40mS / 400mS - Setting applies to all zones on the Expander.**

Intelligent 4 Door Access Modules **[MENU, 7, 2, 8]**

- Intelligent 4 Door Access Module Number (1 to 99)*
- Poll Time (1 to 255 seconds)
- LAN Priority (0 to 3)
- Battery Test Time. (1 to 255 minutes)
- Review Pacing. (00 to FF)
- Intelligent Reader Module Options. (Detailed Review / Tongue sense)
- Associated Door/s. (Up to 4)
- Reader 1 to 8 format. (None / Swipe / Swipe Last / Insertion / Nbit Wiegand / Nbit Fast / 26 / 27 / 30 / 32 / 34 / 36 / 37 / 40 bit Wiegand / ProxPIN)
- Reader 1 to 8 mode. (Credit Card / Direct Entry / Site Code / Any Card)
- Reader 1 to 8 Arming mode. (None / Extra Area if PB / Exit Area if Count=0 / Exit Area if PB / Entry Area if PB / Exit Area if 3 swipes / Entry Area if 3 swipes)
  "PB" = Pushbutton used in conjunction with Card (Connected via "Arm" Button Input on Module)
- Reader 1 to 8 Turn Off Extra Area option.
- Reader 1 to 8 location (Inside / Outside - Door 1 / 2 / 3 / 4)
- Reader 1 to 8 associated module for PIN codes. (If LCD Terminal selected below)
- Reader 1 to 8 keypad for PIN code options. (LCD Terminal / Motorola ARK-501 / HID 5355 / **MR Access**)

- Process Lock Open Times in 100milliSecond increments.
  (This option set via Sw8 on Dipswitch 2 - Not via programming)

Offline options:
- "Inside Area" state assumed for Door 1 / 2 / 3 / 4. (Off / On / Deny)
- "Outside Area" state assumed for Door 1 / 2 / 3 / 4. (Off / On)
- "Interlock" state assumed for Door 1 / 2 / 3 / 4. (Closed / Open)

Analogue Modules **[MENU, 7, 2, 9]**

- **Analogue Module Number (1 to 99)***
- **Poll Time (1 to 255 seconds)**
- **LAN Priority (0 to 3)**
- **Auto Update Time (minutes)**
- **Options (Log Zone 1 / 2 / 3 / 4)**
- **Trigger 1 value (per Zone)**
- **Trigger 2 value (per Zone - Mode 4 only)**
- **Calibration String (per Zone - Includes Mode selection from Mode 0, 1, 2, 3, 4** or 5 **)**

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LAN Power Supply Modules [MENU, 7, 2, 0, 1]

- **LAN PS Module Number (1 to 99)***
- **Poll Time (1 to 255 seconds)**
- **LAN Priority (0 to 3)**
- **Battery Test Time. (minutes)**
- **Options (Invert Auxiliary 1 / Invert Auxiliary 2)**
- **Number of Slaves (1 to 3)**
- **Auxiliary 2 Tamper Current**
- **Battery Charger Maximum Current**
- **Detector Output Maximum Current**

RF Expander Modules (V5.1 or later) [MENU, 7, 2, 0, 2]

- RF Expander Module Number (1 to 99)*
- Poll Time (1 to 255 seconds)
- LAN Priority (0 to 3)
- Transmitter Poll Time. (1 - 255 hours)
- Options (US Jam detection / Zone report / Fob report)

RF Expander Zone Registration (V5.1 or later) [MENU, 7, 2, 0, 0, 1]

- RF Expander Module to use.
- Register / Unregister RF Zone Transmitters. (View / Program / Auto)

RF Fob Registration (V5.1 or later) [MENU, 7, 2, 0, 0, 2]

- Select User
- Registration & Status

Wireless Zone Registration (Moved from MENU, 7, 2, 5) [MENU, 7, 2, 0, 0, 3]

- Register / Unregister Wireless Zone Transmitters.
  (Nxx:Zxx - Inovonics MF Series only)

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Communication Tasks [MENU, 7, 3, 1]

- Comms Task Number (0 to 10)*
- Communication type. (Monitor [Factory Only] / Answer Call **(with DTMF control opts)** / PCDirect / IRfast / Contact ID / **EMS (Elevator Mgt System)** / EarthNet † / Securitel / Printer / External Modem / Inet (formerly Multi-Drop) **/ Accept** (formerly CommPass) **/ Poll Data / Pacom †** / *IRfast Backup* / *CID Backup* / GSM / *SpreadNet* / **4+2 Pulse** / **8 Pin** / C-BUS / INOVONICS / **PosData DVR / Dynalite /** `Insight / Internal Modem / External Modem / SIA`).
- Idle/Active status.
- Individual Format Programming
  (See separate listing following this summary)

† Not available in V5 or later.

Telephone Numbers [MENU, 7, 3, 2]

- Telephone Number to program (0 to 64)*
- Telephone Number name
- Telephone Number TimeZone (0 to 250)*
- Alternative Telephone Number.
- Telephone Number.
  Alpha-numeric editing (* / # / Pause)

DTMF Control [MENU, 7, 3, 3]

- **DTMF Control to program (0 to 16)***
- **Control Code (4 digit code)**
- **Function. (Area On / Area Off / Aux On (seconds) / Aux On (minutes) / Aux Off)**
- **Auxiliary to Control.**
- **Area to Operate.**
- **Auxiliary Time.**

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General Options [MENU, 7, 5, 1]

- Power fail delay time (0 to 255 minutes)
- Site Code Type (Standard / **General**)
- *Clock Adjustment options. (*60 Hz MAINS [TYPE 2 CONTROLLER ONLY] */ Disable mains sync. / Clock is Fast)*
- *Clock Error factor.*
- *Panel Options1. (No Aux Off on Reset / Detailed Review* / **Fast Zone processing** / **Force all events to Review** / `ON key Lockout enabled*` `[UK only]` **(Formerly Fast Zone De-bounce on Control Module-50mS)** / **+1 Duress Codes** / **Ignore AC fail inputs**)
  ***** Note: "ON key Lockout enabled" was "No ON key Lockout" in V4.5 to V4.99.
- Panel Options2. (Disable User Extra Area programming / Use Start Bit in Wiegand data / **Disable User Extra Door/DList programming**)
- *Reader to be used for User Card programming. (If using Direct entry mode)*
- *Area "Deferred On" time.*
- **Control Module Battery Test Time. (minutes)**
- **General Site Code Format. Total Bits (1 to 40)**
- **General Site Code Format. Site Code Number of Bits (1 to 19)**
- **General Site Code Format. Site Code Offset**
- **General Site Code Format. User ID Number of Bits (1 to 16)**
- **General Site Code Format. User ID Offset**
- **Holdoff Siren Time. (1 to 255 minutes)**
- `Delayed Report Time. (1 to 255 seconds)`
- `Dual User Wait Time.^ (1 to 255 seconds)`
- `Card Enrolment Wait Time.^ (1 to 255 seconds)`
- `RF Expander Module for Fob Registration.^`

`^ V5.1 or later only.`

Memory [MENU, 7, 5, 2]

- Memory default to use (Don't Default / Standard / Access / *Enlarged* / **Apartments [Formerly V2 Standard]** / **Access 2 [Formerly V2 Access]** / Special / Alarm / **XDoor**)
  See "Default Memory Configurations" table for details.
- Confirm Default. CAUTION - Erases all programming.

Function Zones [MENU, 7, 5, 3]

- Function Zone Number (0 to 128)*
- Function Zone Input definition (e.g. C01:Z09)
- Auxiliary control options. (On / Off when Seals / On / Off when Unseals)
- Auxiliary to turn on/off
- Area control options. (On / Off when Seals / On / Off when Unseals)
- Use Area List. (Y / n)
- Area (or Area List) to turn on/off

Calculated Auxiliaries [MENU, 7, 5, 4]

- Calculated Auxiliary Number (0 to 128)*
- Required Action or Function
  -Boolean Logic options. (Equal to 1st / Opp to 1st / On if 1st On / Off if 1st Off / On if 1st Off / Off is 1st On / 1st OR 2nd / 1st AND 2nd / 1st Opp 2nd (XOR) / *ON/OFF with 1st*)
  -Control options. (Area Control / Anti-passback Amnesty / Door; Lock & Unlock options / Lift; Free Access & Secure options */ Clear Area Counter options* / *Ripple Counter* / **Clear Event Counter options** / **Reset Alarms [On key lockout function]**)
- Option to Trigger a Zone Input. (Instead of a Result Auxiliary)
- Result Auxiliary to control OR Zone to Trigger (If a Logic option selected)

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- Area Control options. (If Area Control selected)
- Area (or Area List) to control (If Area Control selected)
- Door List to control (If Lock or Unlock options selected)
- Lift Car to control (If Lift Free Access or Secure options selected)
- Floor List to control (If Lift Free Access or Secure options selected)
- *Area Count to clear count. (If Clear Area count options selected)*
- **Counter to clear. (If Clear Event Counter options selected)**
- 1st Auxiliary Input.
- 2nd Auxiliary Input.
- *Result Auxiliary options. (Override time / Minute timer)*
- *Result Auxiliary time.*

Home Auxiliaries [MENU, 7, 5, 5]

- Home Auxiliary Number (0 to 128)*
- Home Auxiliary name
- Auxiliary *(or Auxiliary List)* to control (E.g. C01:X08 or XL003)
- *Auxiliary List control options. (OFof)*
- Home Auxiliary Type (up to 8)
- Home Auxiliary Options (Toggle from Keypad / SMS Control)

Air Conditioning [MENU, 7, 5, 6] ACCESS 4000 ONLY

- *AirCon Number (0 to 4)**
- *AirCon Mode (Disabled / Industrial / Domestic)*
- *Compressor minimum on time*
- *Compressor minimum off time*
- *Number of Zones (1 to 8)*
- *Return Air Zone*
- *Zones for Bypass*
- *AirCon Options (Domestic Heat & Cool / Terminal Operation / Force Return Air Zone / No Review)*
- *Zone Dampers 1st Auxiliary*
- *Control 1st Auxiliary*
- *Thermostats 1st Zone Input*
- *Control Inputs 1st Zone Input*
- *TimeZone*
- *Areas assigned to AirCon Zones*
- *Enable Auxiliaries*
- *Disable Auxiliaries*

Home Zones [MENU, 7, 5, 7]

- **Home Zone Number (0 to 64)***
- **Home Zone options (Allow Isolate)**
- **Input assigned.**
- **Home Zone name. (16 characters)**

Counters [MENU, 7, 5, 8]

- **Counter Number (0 to 32)***
- **Counter name. (16 characters)**
- **Input used. (Mini Expanders only - Mxx:Zxx)**
- **Counter Type (Dual Trigger point)**
- **Trigger Count 1.**
- **Trigger Count 2.**
- **Counter Options (4 digit display / Allow to Display)**

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C-BUS **[MENU, 7, 5, 9, 1]** (V4, MENU, 7, 5, 9)

- C-BUS PROGRAM NUMBER (0 TO 128)*
- C-BUS OPTIONS (2ND APPLICATION / AUXILIARY FEEDBACK / RESEND)
- AUXILIARY
- ON COMMAND (NONE / ON / OFF / 0S / 4S / 8S / 12S / 20S / 30S / 40S / 1M / 1.5M / 2M / 3M / 5M / 7M / 10M / 15M / 17M)
- ON GROUP ADDRESS
- ON RAMP LEVEL
- OFF COMMAND (NONE / ON / OFF / 0S / 4S / 8S / 12S / 20S / 30S / 40S / 1M / 1.5M / 2M / 3M / 5M / 7M / 10M / 15M / 17M)
- OFF GROUP ADDRESS
- OFF RAMP LEVEL
- RAMP THRESHOLD

Dynalite **[MENU, 7, 5, 9, 2]**

- **Dynalite Program Number (0 to 128)***
- **Dynalite Options (Resend)**
- **Auxiliary**
- **On Area Address**
- **On Preset**
- **On Fade Rate**
- **Off Area Address**
- **Off Preset**
- **Off Fade Rate**

Doors [MENU, 7, 6]

- Door Number (0 to 250)*
- Door Name (0 to 16 characters)
- Inside/Outside Areas.
- Access Group (0 to 250)*
- Lock Auxiliary to activate
- Lock Open time.
- Maximum Door Open time.
- *Door Options. (Extra Area Counting)*
- *Door Interlock Group.* ACCESS 4000 ONLY

Interlock Group *[via MENU, 7, 6]* *ACCESS 4000 ONLY*

- *Interlock Group Number (0 to 250)**
- *Interlock Group TimeZone (0 to 250)**
- *Alternative Interlock Group. (0 to 250)**
- *Interlock Group Options. (Qualify with Zone Input / Use Tongue Sense)*
- *Door List to Interlock*
- *Area List to Qualify against*
- *Qualify Auxiliary*
- *Qualify Zone*

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LAN [MENU, 7, 8]

- Secure LAN. [1]
- Initialise LAN. [2]
- List LAN (Option not yet available) [3]
- **Statistics . [4]**
  -Reset statistics.
  -View statistics.
- **Reset Control Module. [9]**

Lifts [MENU, 7, 9]

- Lift Car Number (0 to 512)*
- Access Group (0 to 250)*
- Floor List (0 to 250)*
- Number of Floors.
- 1st Floor Auxiliary.
- **Valid Auxiliary.**
- **Error Auxiliary.**
- **Button Area.**
- Button Time.
- **Disabled Access Time.**
- **Unused Floors.**
- **EMS ID Group/Lift**
- Floor Area assignment.

Service [MENU, 8]

- Request Service [1]
- Test Report [2]
- Security Options [3]
  -(No PIN default / Only own code edit / Installer Lockout)
- Answer Call [4]

Control [MENU, 9]

- Home Auxiliaries [1]
- Doors [2]
- Lifts [4]
- **Adjust Event Counters [6]**
- Adjust Area User Counters [7]

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Individual Communications Format Programming

Monitor

- Port to Use (0 to 4)
- Baud Rate (300 / 600 / 1200 / 2400 / 4800 / 9600 / 19200 / 38400)

Answer Call

- Rings to Answer (0 to 255)
- Answer Options (Fax Bypass / 300 Baud Only / Callback Only / Timed Bypass / **Single DTMF** / **DTMF Control**)
- Line Test time (0 to 255 minutes)

- Special Options. (Pulse dial Main No. / Pulse dial PABX No. / Dumb dial / Force 300 baud † / *Test Mode*† / *Max. Count*† / Abort Predial / **60 Sec. re-dial**†)
- PABX number. (Selected from pre-programmed “Telephone Numbers”)
- Callback number. (Selected from pre-programmed “Telephone Numbers”)
- Customer number. (Selected from pre-programmed “Telephone Numbers”)
- Seize Auxiliary.
- **Single DTMF Tone.**
- Line Test Count.
- DTMF Tone Wait.
- Answer Wait.

† Not used in this Comms Task Format.

PC Direct

- Port to Use (0 to 4)
- Baud Rate (300 / 600 / 1200 / 2400 / 4800 / 9600 / 19200 / 38400)

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IRfast / IRfast Backup

- Client Code (4 numeric digits)
- PABX Number (Selected from pre-programmed “Telephone Numbers”)
- Telephone Number/s (Up to 4 numbers selected from pre-programmed “Telephone Numbers”)
- Dial Options (Pulse dial Main No. / Pulse dial PABX No. / Dumb dial / Force 300 baud / *Test Mode* / *Max. Count* / Abort Predial / **60 Sec. re-dial**)
- Reporting Options (Multiple Area client codes / Look ahead opt. / Gen. Open/Close / Prevent Restores / No 24Hr Offs & Area still Open / Delayed Reporting)
- Area List Filter (AL001 to AL250)*
- Extra Filter (Enable / Open/Close / Alarms)
- Mapping Options (Standard / Map-1 / School 30 / School 19 / SIMS II / **Access-1** / **Pacom** / Standard2 / School19B)

- Dialer formats Special Options:
- Maximum Attempts.
- Backup Attempts.
- Backup Comms Task.
- Seize Auxiliary.
- Pass Auxiliary.
- PABX Dial Wait.
- Main Dial Wait.
- Handshake Wait.
- Maximum Online Time.
- Line Test Count.

- IRfast Special Options. (Send Review Text / Send Contact ID string / Send Time&Date / Link to PC / Send Panel Information / Update Panel time)
- IRfast Extra Options. (Installer/User access for Panel Control / *Allow Door Control* / Allow Auxiliary Control / Allow Area Control)

Contact ID / CID Backup

- Client Code (4 numeric digits)
- PABX Number (Selected from pre-programmed “Telephone Numbers”)
- Telephone Number/s (Up to 4 numbers selected from pre-programmed “Telephone Numbers”)
- Dial Options (Pulse dial Main No. / Pulse dial PABX No. / Dumb dial / Force 300 baud / *Test Mode* / *Max. Count* / Abort Predial / **60 Sec. re-dial**)
- Reporting Options (Multiple Area client codes / Look ahead opt. / Gen. Open/Close / Prevent Restores / No 24Hr Offs & Area still Open / Delayed Reporting)
- Area List Filter (AL001 to AL250)*
- Extra Filter (Enable / Open/Close / Alarms)
- Mapping Options (Standard / Map-1 / School 30 / School 19 / SIMS II / **Access-1** / **Pacom** / Standard2 / School19B)

- Dialer formats Special Options. *See IRfast details above.*

EMS

- **Port to Use (1 to 4)**
- **Baud Rate (300 / 600 / 1200 / 2400 / 4800 / 9600 / 19200 / 38400)**
- **Number of EMS Floors.**
- **Group 1-8 Floors. (Assign Floor List per Group)**
- EMS Options. V4.81 or later.
  (Kone protocol / Detailed Review [Factory only])

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EarthNet (Not available in V5 or later)

- Client Code (4 numeric digits)
- Reporting Options (Multiple Area client codes / Look ahead opt. / Gen. Open/Close / Prevent Restores / No 24Hr Offs & Area still Open)
- Area List Filter (AL001 to AL250)*
- Extra Filter (Enable / Open/Close / Alarms)
- Mapping Options (Standard / Map-1 / School 30 / School 19 / SIMS II / **Access-1** / **Pacom** / Standard2 / School19B)

- EarthNet Special Options. (Send Review Text / Send Contact ID string / Send Time&Date / Link to PC / Send Panel Information / Update Panel time)
- EarthNet Extra Options. (Installer/User access for Panel Control / *Allow Door Control* / Allow Auxiliary Control / Allow Area Control)
- **Polls before Test.**
- **Maximum alarms per Poll.**

Securitel

- Hard ID (4 numeric digits)
- Port to Use (1 to 4)
- Baud Rate (300 / 600 / 1200 / 2400 / 4800 / 9600 / 19200 / 38400)
- Reporting Options (Multiple Area client codes / Look ahead opt. / Gen. Open/Close / Prevent Restores / No 24Hr Offs & Area still Open)
- Area List Filter (AL001 to AL250)*
- Extra Filter (Enable / Open/Close / Alarms)

- Special Options.
  Poll Wait time
  CommandBack Aux
  Backup Comms Task

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Printer

- Port to Use (1 to 4)
- Baud Rate (300 / 600 / 1200 / 2400 / 4800 / 9600 / 19200 / 38400)
- Events Filter options.
  Screen 1 (Alarms / Comms Triggers / Auxiliaries / Sirens / Logon/Logoff / Area On/Offs / Isolates / Modules)
  Screen 2 (General / Times / Details / Comms / Lifts / Errors)
- **Area List Filter.**

External Modem

- Rings to Answer (0 to 255)
- Port to Use (1 to 4)
- Baud Rate (300 / 600 / 1200 / 2400 / 4800 / 9600 / 19200 / 38400)

- Special Options. (Pulse dial Main No. / Pulse dial PABX No. / Dumb dial / Force 300 baud† / *Test Mode*† / *Max. Count*† / Abort Predial† / **60 Sec. re-dial**†)
- PABX number.† (Selected from pre-programmed "Telephone Numbers")
- Callback number.† (Selected from pre-programmed "Telephone Numbers")
- Customer number. (Selected from pre-programmed "Telephone Numbers")
- Seize Auxiliary.
- DTMF Tone Wait.
- **Single DTMF Tone.**†
- Line Test Count.†
- Answer Wait.

† Not used in this Comms Task Format.

Inet

- Port to Use (1 to 4)
- Baud Rate (300 / 600 / 1200 / 2400 / 4800 / 9600 / 19200 / 38400)

- Client Code.
- Reporting Options (Multiple Area client codes / Look ahead opt. / Gen. Open/Close / Prevent Restores / No 24Hr Offs & Area still Open)
- Area List Filter (AL001 to AL250)*
- Extra Filter (Enable / Open/Close / Alarms)
- Mapping Options (Standard / Map-1 / School 30 / School 19 / SIMS II / Access-1 / Pacom / Standard2)

- Special Options. (Translate / Use Encryption / No CRC)
- Encryption Key (8 Hex digits)
- Alarm Format. (0=IRfast / 1=Text / 2=Contact ID)
- Alarm Acknowledge Time. (0 to 255 seconds)
- Test Time. (0 to 255 seconds)
- Pace Time. (0 to 255 100mSecond periods)
- Backup Comms Task

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Accept (formerly CommPass)

- *Port to Use (1 to 4)*
- *Baud Rate (300 / 600 / 1200 / 2400 / 4800 / 9600 / 19200 / 38400)*

- *Client Code.*
- *Reporting Options† (Multiple Area client codes / Look ahead opt. / Gen. Open/Close / Prevent Restores / No 24Hr Offs & Area still Open)*
- *Area List Filter† (AL001 to AL250)**
- *Extra Filter† (Enable / Open/Close / Alarms)*

- *Accept Special Options. (Single User / Packet Nos.‡ / CRC On‡ / Encryption Key default / Debug‡)*

† Not used in this Comms Task Format.
‡ Factory options only.

Poll-Data

- **Port to Use (1 to 4)**
- **Baud Rate (300 / 600 / 1200 / 2400 / 4800 / 9600 / 19200 / 38400)**

- **Client Code (4 numeric digits)**
- **Reporting Options (Multiple Area client codes / Look ahead opt. / Gen. Open/Close / Prevent Restores / No 24Hr Offs & Area still Open)**
- **Area List Filter (AL001 to AL250)***
- **Extra Filter (Enable / Open/Close / Alarms)**
- **Mapping Options (Standard / Map-1 / School 30 / School 19 / SIMS II / Access-1 / Pacom /** Standard2 / School19B**)**

- **Special Options.**
  Backup Comms Task

Pacom (Not available in V5 or later)

- **Port to Use (1 to 4)**
- **Baud Rate (300 / 600 / 1200 / 2400 / 4800 / 9600 / 19200 / 38400)**
  Pacom Options.

IRfast Backup. *See IRfast*

CID Backup. *See Contact ID*

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GSM Data

- Port to Use (1 to 4)
- Baud Rate (300 / 600 / 1200 / 2400 / 4800 / 9600 / 19200 / 38400)
- Service Number. (Selected from pre-programmed “Telephone Numbers”)
- SMS 1 Number. (Selected from pre-programmed “Telephone Numbers”)
- SMS 2 Number. (Selected from pre-programmed “Telephone Numbers”)
- Contact ID Number. (Selected from pre-programmed “Telephone Numbers”)
- GSM Registration Zone. (?xx:Zxx)

- GSM Options. (Backup Task / Send Contact ID Data / Send SMS Alarms / Answer Call / PIN code control only / `FE2000 interface` / Debug Display / Display RSSI data)
- GSM Special Options. (Area Control / Auxiliary Control / List / Isolate Zones / **No Error Replies**)

- SMS Area List Filter (AL001 to AL250)*
- SMS Extra Filter (Enable / Open/Close / Alarms)
- SMS Reporting Options (Multiple Area client codes / Look ahead opt. / Gen. Open/Close / Prevent Restores / No 24Hr Offs & Area still Open)
- Maximum messages per 5 minutes.
- Client Code.

- Mapping Options (Standard / Map-1 / School 30 / School 19 / SIMS II / Access-1 / Pacom / Standard2 / School19B)
- CID Area List Filter
- CID Extra Filter (Enable / Open/Close / Alarms)
- CID Reporting Options (Multiple Area client codes / Look ahead opt. / Gen. Open/Close / Prevent Restores / No 24Hr Offs & Area still Open)
- **SMS Acknowledge Time.** [Formerly Maximum attempts]
- Backup Comms Task.

GSM SPECIAL OPTIONS:

- FE2000 VERSION NUMBER. (V4 ONLY)

SpreadNet Wireless Interface

- *Port to Use (1 to 4)*
- *Baud Rate (300 / 600 / 1200 / 2400 / 4800 / 9600 / 19200 / 38400)*
- *Property Code.*
- *Channel Number*
- *SpreadNet Review options. (Log Review Events for: Levels / Timeouts / Errors / Changes)*
- *Specify Transmitters to poll.*
- *Specify High priority Transmitters.*

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4+2 Pulse

- **Client Code (4 numeric digits)**
- **PABX Number (Selected from pre-programmed "Telephone Numbers")**
- **Telephone Number/s (Up to 4 numbers selected from pre-programmed "Telephone Numbers")**
- **Dial Options (Pulse dial Main No. / Pulse dial PABX No. / Dumb dial / Force 300 baud / Test Mode / Max. Count** / Abort Predial /**60 Sec. re-dial)**
- **Reporting Options (Multiple Area client codes / Look ahead opt. / Gen. Open/Close / Prevent Restores / No 24Hr Offs & Area still Open** / Delayed Reporting**)**
- **Area List Filter (AL001 to AL250)***
- **Extra Filter (Enable / Open/Close / Alarms)**

- **Open/Close Codes**
- **4+2 Format Options. (2300Hz Ack / 1900Hz Data / 40 PPS / Hex / Checksum / Backup)**

- **Dialer formats Special Options**
- **Maximum Attempts.**
- **Backup Attempts.**
- **Backup Comms Task.**
- **Seize Auxiliary.**
- **Pass Auxiliary.**
- **PABX Dial Wait.**
- **Main Dial Wait.**
- **Handshake Wait.**
- **Maximum Online Time.**
- **Line Test Count.**

8 Pin

- **8 Pin Options (General Open/Close^ / Extended Verify Time /** No Confirm during Entry / Prevent Confirm after Entry**)**
- **Verify Time (0 - 255 Seconds/**Minutes**)**
- **Verify Count (0 - 255)**
- **Pin 1 Auxiliary**
- **Area List Filter (AL001 to AL250)***

^ Removed in V5.0

C-BUS

- PORT TO USE (1 TO 4)
- BAUD RATE (300 / 600 / 1200 / 2400 / 4800 / 9600 / 19200 / 38400)

- PC UNIT ADDRESS (0 TO 255)
- APPLICATION #1
- APPLICATION #2
- "C-BUS OK" ZONE INPUT
- C-BUS OPTIONS (SAVE TO REVIEW)

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INOVONICS WIRELESS INTERFACE

- PORT TO USE (1 TO 4)
- BAUD RATE (300 / 600 / 1200 / 2400 / 4800 / 9600 / 19200 / 38400)

- APPLICATION ID.
- SYSTEM ID
- HIGH POLL RATE (0 TO 255 MINUTES)
- LOW POLL RATE (0 TO 255 X HIGH POLL)
- "IR400 OK" ZONE INPUT
- "FA400 OK" ZONE INPUT
- INOVONICS REVIEW OPTIONS. (LOG REVIEW EVENTS FOR: ALL TRANSMITTER ACTIVITY / ONLY INPUT STATUS CHANGES / ALL TRANSMITTER TIMEOUTS / ID MISMATCHES / Polls)
- SPECIFY TRANSMITTERS TO POLL.
- SPECIFY HIGH PRIORITY TRANSMITTERS.

PosData DVR

- **Port to Use (1 to 4)**
- **Baud Rate (300 / 600 / 1200 / 2400 / 4800 / 9600 / 19200 / 38400)**

Dynalite

- **Port to Use (1 to 4)**
- **Baud Rate (300 / 600 / 1200 / 2400 / 4800 / 9600 / 19200 / 38400)**
- **Dynalite Panic Zone Input.**
- **Dynalite OK Zone Input.**

Insight

- Panel ID (8 Hex digits)
- Port to Use (1 to 4)
- Baud Rate (300 / 600 / 1200 / 2400 / 4800 / 9600 / 19200 / 38400)
- Insight Options. (No Ping / Use DSR / IPfast connection / Permanent Insight connection)
- EtherNet options. (IPfast Call/Answer Insight/Call Insight/Path Exists)
- RS232 options. (IPfast Call/Answer Insight/Call Insight/Path Exists)
- FE3000 options. (IPfast Call/Answer Insight/Call Insight/Path Exists)
- Ext Modem options. (IPfast Call/Answer Insight/Call Insight/Path Exists)
- Int Modem options. (IPfast Call/Answer Insight/Call Insight/Path Exists)
- Insight IP Address.
- Insight Encryption Key. (32 characters - 2 screens on LCD Term)
- IPfast IP Address.
- IPfast Encryption Key. (32 characters - 2 screens on LCD Term)
- Panel IP Address.^
- Router IP Address.^
- Subnet Mask IP Address.^
- Announce Port.^
- Maximum Attempts.

^ V5.1 or later only.

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Internal Modem (Insight Answer Call)

- Rings to Answer (0 to 255)
- Answer Options (Fax Bypass / 300 Baud Only† / Callback Only† / Timed Bypass^ / Single DTMF† / DTMF Control)
- Line Test time (0 to 255 minutes)
- Insight Phone number.
- IPfast Phone number.
- ISP Account
- ISP Password

- Special Options. (Pulse dial Main No./Pulse dial PABX No./Dumb dial/Force 300 baud†/Test Mode†/Max. Count†/Abort Predial/60 Sec. re-dial†)
- PABX number. (Selected from pre-programmed “Telephone Numbers”)
- Callback number. (Selected from pre-programmed “Telephone Numbers”)
- Customer number. (Selected from pre-programmed “Telephone Numbers”)
- Seize Auxiliary.
- Single DTMF Tone.
- Line Test Count.

^ V5.1 or later only. (Not used in V5.0x)
† Not used in this Comms Task Format.

Insight External Modem (V5.?? or later)

- Rings to Answer (0 to 255)
- Port to Use (1 to 4)
- Baud Rate (300 / 600 / 1200 / 2400 / 4800 / 9600 / 19200 / 38400)

- Special Options. (Pulse dial Main No./Pulse dial PABX No./Dumb dial/Force 300 baud†/Test Mode†/Max. Count†/Abort Predial/60 Sec. re-dial†)
- PABX number. (Selected from pre-programmed “Telephone Numbers”)
- Callback number. (Selected from pre-programmed “Telephone Numbers”)
- Customer number. (Selected from pre-programmed “Telephone Numbers”)
- Seize Auxiliary.
- Single DTMF Tone.
- Line Test Count.
- DTMF Tone Wait.
- Answer Wait.

† Not used in this Comms Task Format.

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SIA

- Account Prefix
- SIA Options (Use Decimal address / No Address / Send ASCII text / Send Time-Date / One alarm per packet)

- Client Code (4 numeric digits)
- PABX Number (Selected from pre-programmed “Telephone Numbers”)
- Telephone Number/s (Up to 4 numbers selected from pre-programmed “Telephone Numbers”)
- Dial Options (Pulse/Tone dialling / Dumb dial / 300baud † / Test Mode † / Max count)
- Reporting Options (Multiple Area client codes / Look ahead opt. / Gen. Open/Close / Sing Hit report / No 24Hr Offs & Area still Open/ Delayed Reporting)
- Area List Filter (AL001 to AL250)*
- Extra Filter (Enable / Open/Close / Alarms)

- Dialer formats Special Options. *See IRfast details.*

† Not used in this Comms Task Format.

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Model 3000 & Access 4000

Memory Configurations V5.1

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MODEL 3000 / ACCESS 4000 MEMORY CONFIGURATIONS. V5

A significant feature of the 3000/Access 4000 products is the ability to adapt the memory to suit the requirements of the particular system installation.

Memory Size.

Definitions: The Memory installed in Model 3000 / Access 4000 Control Modules has traditionally been specified in Bytes. Some manufacturers choose to specify memory capacity in Bits, thereby making the memory size sound much larger. (There are 8 Bits in a Byte of memory) This can create confusion for the specifier or installer.
In order to allow memory capacity to be compared in different products, memory sizes for the '3000/4000 are now being defined in both formats. The original "Byte" format will still be provided first, followed by the "Bit" format in brackets.

Initially, the Installer must choose the appropriate Memory Size to suit the size of the installation.
The 3000 is fitted with 32k (256kBit) Memory in the factory, but can be upgraded to 128k (1MBit) or 512k (4MBit) if required.
The Access 4000 is fitted with 128k (1MBit) in the factory but can be upgraded to 512k (4MBit) when necessary.

Memory Configuration

Secondly, the Installer has the option to choose an appropriate Memory Configuration so that the available memory is utilized in the most effective way for each particular system . In most cases the "Standard" configuration offers a practical mix of modules and items for the majority of installations. The other configurations cater for systems that have a greater emphasis on particular applications, while maintaining the concept of fully integrated systems.

Determining the Memory Size and Configuration.

System Information can be viewed at an LCD Terminal by Pressing <MENU>, <2> while logged off (or just <MENU> if V2 or earlier). The Memory information is provided in the following format:
RAM: 128K-00-04.56
This string represents the: - RAM size. **32K**, **128K** or **512K**.
- Memory configuration option selected:

00 = Standard.	**01** = Access.	**02** = Enlarged.
03 = Apartments. (Formerly V2 Std)	**04** = Access 2. (Formerly V2 Access)	**05** = Special.
06 = Alarms.	**07** = Extra Door (XDoor)	

- Firmware version used when Memory configured (defaulted) e.g. V4.56

Notes: 1) Firmware Version 00.00 = configuration performed before this feature was added.
2) If not 00.00, Firmware Version in this information string must match Firmware version fitted to Panel.

Choosing the right configuration.

The Memory Configuration Selection Guide tables on the following pages provide a summary of the different configurations in each memory size, providing suggested applications and numbers of the basic modules and items.
Full Memory configuration details are also provided for each of the three memory sizes in the larger tables that follow the summaries. Once a configuration is chosen with the summary information, the full table should be checked to ensure that the configuration is suitable for all aspects of the system.

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IMPORTANT NOTES:

1) The following system features are only available in the "Access 4000" version of the product, regardless of Memory size installed:
-"Card only" Users.
-Lift Access Control.
-Dedicated Door Interlocking logic.
-Dedicated, Zoned Air-conditioning control logic.

2) Potentially, a maximum of 250 Modules can be connected to the LAN in 512k (4MBit) Memory configurations. Note that the total numbers of Modules currently available in some 512k (4MBit) configurations may exceed this figure. (In practice the maximum number of modules installed in a single system will be determined by the module types used and the amount of system activity generated)

Memory configuration changes

Memory configuration options have been further enhanced in Version 5.1 to provide for additional features and provide more flexibility for the wide variety of installations where the product is now used.
The configurations currently available for each Memory size are "Standard", "Access", "Enlarged", "Apartments", "Access-2", "Special", "Alarms" and "XDoor" (512k only).

V5.1 Changes
Changes from V5 to V5.1 were primarily made to:
- Implement RF Expander Modules supporting RF Wireless Detectors and RF Wireless 4-button Fobs.

V5 Changes
Changes from V4.5 to V5 were primarily made to:
- Implement the IR-IP Communications Tasks for communication with Inner Range "Insight" Software products. ("IR-IP", "IR-IP IModem" and "IR-IP EModem")
- Add SIA Dialer Reporting format. Remove EarthNet and Pacom formats.
- Rework of "Apartments" & "XDoor" configurations for Extra Door/Extra Door List assignment in User database.
- Increase number of PIN Users in 512k Special to 4096.
  (Eliminates the gap in the User numbering between PIN Users and Card Only Users)

V4.5 Changes
Changes from V4 to V4.5 were primarily made to:
- Addition of "Apartments" and "Access 2" configurations. (Replaces the "V2 Std" and "V2 Access" configs)
- Increase the number of Auxiliary Lists in the 32k (256kBit) "Special" configuration to 8 for domestic applications.
- Add Automation Interface Auxiliaries (formally "C-Bus" Auxiliaries) to all 128k (1MBit) configurations.
- Add LAN Power Supply Modules to all 128k (1MBit) and 512k (4MBit) configurations.
- Increase the number of Telephone numbers to 32 for all 512k (4MBit) configurations for SMS List applications.
- Ability to cater for Extra Door/Extra Door List assignment in User database.

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V4 Changes

Changes from V3.5 to V4 were only made in 512k (4MBit) configurations to:

- Add C-Bus Auxiliaries to all 512k (4MBit) configurations.
- Increase the Zone Input, Standard Door, Intelligent Door and Lift Car List capacity of the 512k (4MBit) "Special" configuration.
  (Providing a configuration that supports 128 Intelligent Doors & 96 Standard Doors)
- Provide for up to 8 Intelligent Doors, 64 Calculated Auxiliaries and 48 Lift Car Lists in the 512k (4MBit) "Enlarged" configuration.

For Sites upgrading from V2 where it is important to preserve the V2 Memory configuration, the "V2 Standard" and "V2 Access" Memory configurations are available. These options largely maintain the V2 configurations and add a token amount of the newer V3 to V4 options where possible. Full details of the "V2" configurations can be found on the Inner Range Website.

Note that in all 32k (256kBit) and 128k (1MBit) configurations there is no difference between V3.5 and V4, and that the changes in the 512k configurations are minimal as detailed above and in the tables.

V3.5 Changes

Changes from V3 to V3.5 were primarily made to:

- Accommodate the Analogue Input Module and the Intelligent 4 Dr Access Module in 32k (256kBit) Memory configurations.
- Add the "Alarms" configuration to 128k (1MBit) and 512k (4MBit) configurations. This provides more Zone Inputs by increasing the number of "B" type Expanders (32 Zone Expanders) in each configuration.
  The 512k (4MBit) "Alarms" configuration also provides more TimeZones, Auxiliary Lists, Menu Groups, Phone Numbers and Function Zones and still allows for 128 Doors via a combination of Standard and Intelligent Reader Modules.

V3 Changes

Changes from V2 to V3 were primarily made to:

- Accommodate the Analogue Input Module and Intelligent 4 Door Access Module (Avail. V3.5) options.
- Add Home Zones, Counters and DTMF Remote Control.
- Provide more flexibility in all three Memory size options with some changes to the existing configurations and the utilization of the "Special" configuration for field use.

V2 Changes

In addition to the changes listed above, other changes made when V2 was released also need to be taken into account. The main changes made from V1 to V2 were to:

- Accommodate the 16 Zone (E type) and 32 Zone (B type) Expander module options. (Note that there is no physical difference between E and B type Expanders. A DIP switch is used to select whether the Expander will support 16 Zones/Auxiliaries or 32 Zones/Auxiliaries.)
- Add in support for 24,576 Card only Users (512k [4MBit] Access)
- Add Mini Expanders, SpreadNet, Interlocks and Airconditioning control.
- Provide more flexibility in the 32k (256kBit) and 512k (4MBit) Memory size options.

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Upgrading or Re-configuring the Memory

Note: Memory Size, Memory configuration and Control Module PCB Type can be checked from an LCD Terminal. *See "System Information" in the System Overview section for details.*

Type 2 Control Module Boards.

Two IC chips are supplied to upgrade the Memory Size; the "RAM" chip itself and the "PIC Micro chip" (U14) to enable the additional memory. This table provides details of the chipsets for each Memory size and can be used to ensure that the correct PIC Options Microchip is fitted.
If features unique to Access 4000, or other special features are required, this table can also be used to ascertain whether the Control Module is configured as a Model 3000 or Access 4000, or has any special options enabled.

Memory Size	Product	SRAM^	PIC Micro Chip (x.xx = Version no.)		Notes
			Up to V1.09	V1.15 or later	
32k (256kBit)*****	3000	DS1230	CEPIC_1 Vx.xx	CEPIC_1 Vx.xx	Standard 3000
128k (1MBit)*****	3000	DS1245	CEPIC_2 Vx.xx	N/A	Use Std Access 4000
128k (1MBit)	Access 4000	DS1245	CEPIC_3 Vx.xx	CEPIC_2 Vx.xx	Standard Access 4000
512k (4MBit)*****	3000	DS1250	CEPIC_4 Vx.xx	N/A	Use Access 4000 512k
512k (4MBit)	Access 4000	DS1250	CEPIC_5 Vx.xx	CEPIC_3 Vx.xx	Includes Prog Site Code
Special Options:					
512k (4MBit)	Access 4000	DS1250	CEPIC_6 Vx.xx	CEPIC_4 Vx.xx	High Level Lift I/F.
128k (4MBit)	Access 4000	DS1245	Not yet available.	Not yet available.	Geoquip.
128k (4MBit)	Access 4000	DS1245	N/A	CEPIC_5 Vx.xx	Inov Wireless 96 Zones
512k (4MBit)	Access 4000	DS1250	N/A	CEPIC_6 Vx.xx	Inov Wireless 208Zones
32k (256kBit)*****	3000	DS1230	N/A		
128k (4MBit)	Access 4000	DS1245	N/A	CEPIC_8 Vx.xx	Prog Site Code

***** Not currently available in Australia and New Zealand.
^ ST Brand equivalent: DS1230 = M48Z35 DS1245 = M48Z128 DS1250 = M48Z512

Type 0 (Australia & NZ only) and Type 1 Control Module Boards.

Two IC chips are supplied to upgrade the Memory Size; the "RAM" chip itself and the "Memory Size GAL" chip (U5) to enable the additional memory. This table provides details of the chipsets for each Memory size and can be used to ensure that the correct GAL is fitted.
If features unique to Access 4000 are required, this table can also be used to ascertain whether the Control Module is configured as a Model 3000 or Access 4000 by checking the Options GAL - U4.

Memory Size	Product	SRAM^	Mem. Size GAL (U5)	Options GAL (U4)
32k (256kBit)	3000	DS1230	U5-2	U4-0
128k (1MBit)	3000	DS1245	U5-5	U4-0
128k (1MBit)	Access 4000	DS1245	U5-5	U4-1
512k (4MBit)	3000	DS1250	U5-6	U4-0
512k (4MBit)	Access 4000	DS1250	U5-6	U4-1

^ ST Brand equivalent: DS1230 = M48Z35 DS1245 = M48Z128 DS1250 = M48Z512

General Information.

When upgrading the Memory size or choosing a new Memory configuration for an existing system, care must be taken to ensure that any existing programming that must be preserved, is not lost.

The *Programmer's Reference* section of the manual provides details of the procedures for upgrading and/or re-configuring the memory. This information can be found under "Memory Defaulting" [<MENU>, 7, 5, 2]. The procedure will require a PC with Upload/Download software installed.

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Upgrading the Control Module Firmware

On some occasions, when upgrading or re-configuring the Memory, you may also be required to Upgrade the Control Module Firmware Version.

Before attempting to upgrade Control Module Firmware, the following information should be taken into account.

V1 to V5 or later.

Extreme care should be excercised if also upgrading the Control Module firmware from V1 to V5, as the Memory configurations now differ quite significantly and the Control Module PCB will also have to be upgraded from Type 0 to Type 2 or later.

Type 1 Control Module Hardware.

These Control Modules can only be upgraded to V4.

V2 to V5 or later.

If upgrading from V2 to V5 there are also configuration changes that will need to be checked. The Control Module Type will also need to be checked, as it may have been a Version 1 panel (Type 0 PCB) that has been previously upgraded to V2. (Australia and NZ only)

Custom Memory Configurations.

If a Control Module Firmware Upgrade is required on a system that has a Custom Memory Configuration, a new Custom Memory Configuration must be purchased.
A Custom Memory Configuration is structured for a particular Firmware Version and must therefore be re-done if the Firmware Version is upgraded.

Control Module PCB Type and Firmware Version number can be checked from an LCD Terminal.
See "System Information" in the System Overview section for details.

The *Programmer's Reference* section of the manual provides details of the procedures for upgrading and/or re-configuring the memory. This information can be found under "Memory Defaulting" [<MENU>, 7, 5, 2]. The procedure will require a PC with Upload/Download software installed.

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Memory Configuration Selection Guide

32k (256kBit) Summary. V4.5 to V5.1. (Also applicable to V3.5 & V4 with the exception noted below)

V4.5 & V5 Config. (V3.5/V4)	Description	Users.	Areas.	Standard / Intelligent Drs. (Total Doors)	LCD Terminals	Total Zones on Expander Modules.	DTMF Remote Controls	Review Events
32K (256kBit) Standard	-Intruder alarm: 4 Expanders/1 Mini Exp. -4 Door Access control. -Extra Areas (24) -Extra DTMF codes (8)	100. 50 names	24	4 / 0 (4)	8	88	8	300
32K (256kBit) Access	-8 Door Access control. -Intruder Alarm: 3 Expanders/No Mini Exp. -Extra Review Memory (550 Events)	100. 50 names	16	8 / 0 (8)	8	64	4	550
32K (256kBit) Enlarged	Similar to Access. -Up to 8 Intelligent Doors. -2 Mini Expanders only.	100. 50 names	8	4 / 8 (12)	8	32	4	500
32K (256kBit) Apartments ^	-Intruder alarm: 2 Expanders/1 Mini Exp. -32 RF Exp Zones (Visonic) * -8 Door Access control. -Extra Areas (32) -100 Users with names.	100.	16	8 / 0 (8)	8	40	4	400
32K (256kBit) Access 2 ^	-8 Door Access control. -Intruder Alarm: 3 Expanders/No Mini Exp. -100 Users with names.	100.	16	8 / 0 (8)	8	64	4	400
32K (256kBit) Special	-Extra Auxiliary Lists (8) # DTMF codes (8) Home Auxes (16) HomeZones (16) (for Domestic installations) -4 Door Access control. -Intruder Alarm: 2 Expanders/3 Mini Exp. -32 RF Exp Zones (Visonic) *	50.	16	4 / 0 (4)	8	72	8	300
32K (256kBit) Alarms ^	More Zone Inputs. -Intruder alarm: 4 Expanders. -32 RF Exp Zones (Visonic) * -4 Door Access control.	50.	16	4 / 0 (4)	8	96	4	300

NOTES: 1) # 8 Auxiliary Lists only available in V4.5 or later. Previous Versions provided 2 Auxiliary Lists.

2) ^ Apartments, Access 2 and Alarms configurations are only relevant to V4.5 or later. "Apartments" and "Access 2" have replaced the "V2 Std" and "V2 Access" configurations respectively. In the 32k memory, "Apartments" is a new configuration, while the "Access 2" configuration is the same as the previous "V2 Access" configuration.

3) * RF Expander Modules available in V5.1 or later only.

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128k (1MBit) Summary. V4.5 to V5.1

V4.5 to V5.1 Config.	Description	Users	Areas	Total Doors. Total Lifts.	Standard Doors.	Intelligent Doors.	LCD Terminals	Total Zones on Expander Modules.
128K (1MBit) Standard	-Large intruder alarm 10 Expanders. 5 Mini Expanders. -64 RF Exp Zones (Visonic) * -32 S'Net/Inovonics Wireless Zones -32 Door Access control -Extra User Codes (2000)	2000. 100 names	96	32 3	32	0	32	264
128K (1MBit) Access	-64 Door Access control. -Intruder Alarm 8 Expanders. 4 Mini Expanders. -32 RF Exp Zones (Visonic) *	1000	32	64 6	64	0	16	192
128K (1MBit) Enlarged	-Enlarged Intruder alarm 14 Expanders. 10 Mini Expanders. -Extra S'Net/Inovonics Wireless Zones (96) -16 Door Access control -Extra Menu Groups (16) -Extra HomeZones (64)	1000. 100 names	96	16 3	16	8	32	400
128K (1MBit) Apartments	-Large intruder alarm 10 Expanders. 5 Mini Expanders. -64 RF Exp Zones (Visonic) * -48 Door Access control -6 LAN Pwr Sup Modules	500	48	48 4	48	16	32	232
128K (1MBit) Access 2	-64 Door Access control. -Intruder Alarm 6 Expanders. 4 Mini Expanders. -64 RF Exp Zones (Visonic) * -Extra Access Groups -6 LAN Pwr Sup Modules	1000	32	64 6	64	0	16	160
128K (1MBit) Special	-64 Door Access control. -Intelligent Reader module option* (Up to 32 Doors) -Intruder Alarm with additional Mini Expanders 3 Expanders. 16 Mini Expanders. -64 RF Exp Zones (Visonic) *	1000	32	48 4	16	32	16	192
128K (1MBit) Alarms	-Enlarged Intruder alarm 15 Expanders. ("B" type) 4 Mini Expanders. -64 RF Exp Zones (Visonic) * -16 Door Access control -Extra Menu Groups (16) -Extra HomeZones (64)	1000. 200 names	64	16 3	16	8	32	512

NOTES: 1) ^ Apartments and Access 2 configurations are only relevant to V4.5 or later.
"Apartments" and "Access 2" have replaced the "V2 Std" and "V2 Access" configurations respectively.
In the 128k memory, the parameters of these two configurations has remained unchanged.

2) * RF Expander Modules available in V5.1 or later only.

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512k (4MBit) Summary. V4.5 to V5.1

V4.5 to V5.1 Configs.	Description	Users	Card Only Users	Areas	Total Doors Total Lifts.	Standard Doors.	Intelligent Doors.	LCD Term.	Total Zones on Expander Modules.
512K (4MBit) Standard	-Extremely large intruder alarm configuration: 64 Exp./24 Mini Exp -128 Door Access control -128 S'Net/Inovonics Zones -128 RF Exp Zones (Visonic) *	4000	0	250	128 12	128	0	99	1536
512K (4MBit) Access	-240 Door Access control. -Additional Card Users. -Intelligent Doors (Up to 32) -Very Large Intruder Alarm 25 Exp./10 Mini Exp. -64 S'Net/Inovonics Zones -128 RF Exp Zones (Visonic) *	500	24576	128	240 16	150	32	48	560
512K (4MBit) Enlarged	-176 Door Access control -Very Large Intruder alarm 32 Exp./16 Mini Exp. -Max S'Net/Inov Zones (208) -256 RF Exp Zones (Visonic) *	4000	0	128	176 16	128	16	48	768
512K (4MBit) Apartments ^	-208 Door Access control. -Extra Door/DList for Users -Extra Automation entities. -Intelligent Doors (Up to 48) -32 Analogue Modules -16 LAN Power supplies. -Very Large Intruder Alarm 20 Exp./99 Mini Exp. -128 S'Net/Inovonics Zones -512 RF Exp Zones (Visonic) *	2000	0	128	208 8	198	48	99	1176
512K (4MBit) Access 2 ^	-208 Door Access control. -Additional Card Users. -Intelligent Doors (Up to 192) -Large Intruder Alarm 16 Exp./8 Mini Expanders. -64 S'Net/Inovonics Zones -128 RF Exp Zones (Visonic) * -12 LAN Power Supplies.	2000	16384	64	208 16	16	192	48	576
512K (4MBit) Special	-176 Door Access control. -Additional Card Users. -Intelligent Doors (Up to 128) -Very Large Intruder Alarm 24 Exp./16 Mini Exp. -64 S'Net/Inovonics Zones -128 RF Exp Zones (Visonic) *	4096† 2000 names	8192	128	176 16	96	128	64	896
512K (4MBit) Alarms	-Extremely Large Intruder Alarm 64 "B" Exp./16 Mini Exp. -96 Door Access control. -Intelligent Doors (Up to 32) -Extra TimeZones, Menu Groups & Function Zones. -64 S'Net/Inovonics Zones -256 RF Exp Zones (Visonic) *	4000	0	200	128 12	96	32	75	2176
512K (4MBit) XDoor†	-96 Door Access control. -Additional Card Users. -Extra Door/DList for Users -Intelligent Doors (Up to 96) -32 S'Net/Inovonics Zones -64 RF Exp Zones (Visonic) *	4096 500 names	20904	64	96 12	96	96	16	320

NOTES: 1) ^ Apartments and Access 2 configurations are only relevant to V4.5 or later.
"Apartments" and "Access 2" have replaced the "V2 Std" and "V2 Access" configurations respectively. In the 512k memory, these are both new configurations, and bear no resemblance to the "V2 Std" and "V2 Access" configurations.

2) † XDoor configuration is only relevant to V4.85 or later. 512k Special has 4000 Users prior to V4.85.

3) * RF Expander Modules available in V5.1 or later only.

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32k (256kBit) Memory Configurations. V4.5 to V5.1

(^ Also applicable to V3.5 & V4 with the exceptions shown in brackets)

V3.5^ / V4^ / V4.5 / V5 / V5.1 32k (256kBit)	Standard	Access	Enlarged	Apartments V4.5 or later	Access 2 V4.5 or later	Special	Alarm
Users	100	100	100	100	100	50	50
User Names	50	50	50	100	100	50	50
User RF Fobs ‡	0	0	0	10	0	10	10
User Types	16	16	16	16	16	8	8
Card Only Users *	0	0	0	0	0	0	0
Areas	24	16	8	16	16	16	16
Doors	4	8	16	8	8	4	4
Lift Cars *	0	0	0	0	0	0	0
Site Codes	3	3	3	3	3	3	3
TimeZones	8	8	8	8	8	8	8
Holidays	8	8	8	8	8	8	8
Diaries	5	5	5	5	5	5	5
Review Memory	300	550	500 (550)	400	400	300	300
Counters	4	0	0	4	0	4	4
Area Lists	16	16	8	16	16	16	16
Doors Lists	8	16	16	16	16	8	8
Siren Lists	8	8	2	4	8	8	8
Floor Lists *	0	0	0	0	0	0	0
Lift Car Lists *	0	0	0	0	0	0	0
Auxiliary Lists	2	2	2	8	2	8 (2)	2
Menu Groups	8	8	8	8	8	8	8
Access Groups	8	8	8	8	8	8	8
Process Groups	16	16	16	16	16	16	16
Interlock Groups *	0	0	0	0	0	0	0
Comms Tasks	5	5	5	5	5	5	5
Phone Numbers	6	6	6	6	6	6	6
DTMF Controls	8	4	4	4	4	8	4
Function Zones	32	16	16	16	16	32	32
Calculated Auxes	16	16	16	16	16	16	16
Home Auxiliaries	8	8	8	8	8	16	16
Home Zones	8	0	0	0	8	16	0 (16)
Automation Auxiliaries	0	0	0	0	0	0	0
LCD Terminals	8	8	8	8	8	8	8
Expander Modules 32Z	1	1	0	0	1	1	2 (1)
Expander Modules 16Z	3	2	0	2	2	1	2 (1)
Reader Modules	2	4	2	4	4	2	2
Mini Expander Modules	1	0	2	1	0	3	0 (3)
Analogue Modules	0	0	1	0	0	0	0
Intelligent 4Dr Access Modules	0	0	2	0	0	0	0
Wireless Network Modules	0	0	0	0	0	0	0
RF Expander Modules ‡	0	0	0	1	0	1	1
AirCon Control *	0	0	0	0	0	0	0

NOTES:
1) Only Users with names have Expiry dates in the 32k Memory configurations.
2) ***** Only available in Access 4000.
3) ^ Changes from V3.5 / V4. Where values differ from V3.5/V4, the old values are shown in brackets.
4) ‡ RF Expander Modules available in V5.1 or later only.

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128k (1MBit) Memory Configurations. V4.5 to V5.1

(Also applicable to V3.5 & V4 with the exceptions shown in brackets)

V3 / V4 / V4.5 / V5 / V5.1 128k (1MBit)	Standard	Access	Enlarged	Apartments V4.5 or later	Access 2 V4.5 or later	Special	Alarms
Users	2000	1000	1000	500	1000	1000	1000
User Names	100	1000	100	500	1000	1000	200
User RF Fobs ‡	25	25	0	25	25	25	25
User Types	32	64	32	64	64	64	48
Card Only Users *	0	0	0	0	0	0	0
Areas	96	32	96	48	32	32	64 (96)
Doors	32	64	16	48	64	48 (64)	16
Lift Cars *	3	6	3	4	6	4	3
Site Codes	6	5	6	6	5	6	5
TimeZones	32	32	32	32	32	32	32
Holidays	16	16	16	16	16	16	16
Diaries	10	10	10	10	10	10	10
Review Memory	2000	2000	2000	2000	2000	2000	2000
Counters	8	8	16	4	4	8	8
Area Lists	96	32	96	48	32	32	64 (96)
Doors Lists	48	64	32	48	64	48 (64)	32
Siren Lists	32	16	32	16	16	8 (16)	32
Floor Lists *	24	48	24	32	32	32 (48)	24
Lift Car Lists *	6	12	6	6	6	8	6
Auxiliary Lists	32	32	32	16	32	32	32
Menu Groups	16 (8)	8	16	8	8	8	16
Access Groups	16	12 (16)	16	12	16	16	8
Process Groups	32	24 (32)	32	32	32	32	32
Interlock Groups *	16	32	12	8	16	16 (32)	8
Comms Tasks	6	6	6	6	6	6	8
Phone Numbers	8	8	8	12	12	8	12
DTMF Controls	16	16	16	8	8	16	16
Function Zones	32	16	32	32	16	16	32
Calculated Auxes	32	16	32	32	16	16	32
Home Auxiliaries	64	32	64	32	32	32	32
Home Zones	32	16	64	16	16	16	64
Automation Auxiliaries ^	16 (0)	16 (0)	16 (0)	16 (0)	16 (0)	16 (0)	16 (0)
LCD Terminals	32	16	32	32	16	16	32
Expander Modules 32Z	4	2	6	2	2	1	15
Expander Modules 16Z	6	6	8	8	4	2	0
Reader Modules	16	32	8	32	32	8	8
Mini Expander Modules	5	4	10	5	4	16	4
Analogue Modules	2	4	4	2	2	4	4
Intelligent 4Dr Access Modules	0	0	2 (0)	4	0	8	2
LAN Pwr Supply Modules	2 (0)	2 (0)	2 (0)	6 (0)	6 (0)	2 (0)	2 (0)
Wireless Network Modules	2	0 (2)	6 (8) †	0 (2)	0 (2)	0 (2)	0 (4)
RF Expander Modules ‡	2	1	0	2	2	2	2
AirCon Control *	2	2 (4)	2 (4)	2	2	2 (4)	2 (4)

NOTES:
1) Only Users with names have Expiry dates in the 128k Memory configurations.
2) ***** Only available in Access 4000.
3) ( ) Changes from V3.5 / V4. Where values differ from V3.5/V4, the old values are shown in brackets.
4) ^ "Automation I/F Auxiliaries" were formerly called "C-Bus Auxiliaries".
5) † Requires Options Micro Chip upgrade to support more than 32 Inovonics Wireless Zones.
6) ‡ RF Expander Modules available in V5.1 or later only.

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512k (4MBit) Memory Configurations. V5.1

(Also applicable to V3.5, V4 and V4.5 with the exceptions shown in brackets)

V5 (V3.5 to V5.1) 512k (4MBit)	Standard	Access	Enlarged	Apartments V4.5 or later	Access 2 V4.5 or later	Special	Alarms	X Door NEW!
Users	4000	500	4000	2000	2000	4096 (4000)	4000	4096
User Names	4000	500	4000	2000	2000	2000	4000	500
User RF Fobs ‡	50	50	100	100	50	50	50	50
Extra Door/DList for PINs	0	0	0	2000	0	0	0	4096
Extra Door/DList for Cards	0	0	0	0	0	0	0	20904
User Types	128	250	250	128	128	250	200 (250)	250
Card Only Users *	0	24576	0	0	16384	8192	0	20904
Areas	250	128	128	128	64	128	200	64
Doors	128	240	176	208	208	176	96 (128)	96
Lift Cars *	12 (16)	16	16	8	16	16	12 (16)	12
Site Codes	16	16	32	8	16	16	16 (32)	8
TimeZones	64	64	64	64	32	64	96	64
Holidays	32	16	16	16	16	16	16	16
Diaries	32 (16)	32	32	16	16	32	16	16
Review Memory	6500	6500	6500	6500	6500	6500	6500	6500
Counters	16	16	32	128	16	16	16	16
Area Lists	240 (250)	128	128	128	128	128	200	64
Doors Lists	128	240	240	128	128	240	96 (128)	250
Siren Lists	128	64	64	32	16	64	64 (128)	16
Floor Lists *	96 (128)	200	250	128	64	250	64	128
Lift Car Lists *	16	32	48	16	16	64	16	16
Auxiliary Lists	32	32	32	32	16	32	64	16
Menu Groups	32	32	32	16	16	32	32 (64)	16
Access Groups	32	32	32	16	16	32	16 (32)	16
Process Groups	64 (128)	64	64	32	32	64	48 (64)	32
Interlock Groups *	16 (48)	64	64	8	48	64	16 (32)	16
Comms Tasks	8	8	8	8	8	8	10	8
Phone Numbers	32 (16)	32 (16)	32 (16)	32	32	32 (16)	32	32
DTMF Controls	16	16	16	16	16	16	16	16
Function Zones	64	32	32	128	48	32	128	64
Calculated Auxes	64	32	64	128	32	32	64	64
Home Auxiliaries	96 (128)	128	128	128	64	128	128	32
Home Zones	32 (64)	32	128	32	32	32	48 (128)	32
Automation Auxiliaries ^	48	48 (32)	64	128	48	64	64	64
LCD Terminals	99	48	48	99	48	64	75	16
Expander Modules 32Z	20	5	8	4	16	16	64	0
Expander Modules 16Z	44	20	24	16	0	16	0 (1)	16
Reader Modules	64	75	64	99	8	48	48	48
Mini Expander Modules	24	10	16	99	8	16	16	8
Analogue Modules	8	8	8	32	8	8	8	8
Intelligent 4Dr Access Modules	0	8	4 (2)	12	48	32	8	24
LAN Pwr Supply Modules	8 (0)	8 (0)	8 (0)	16	16	8 (0)	4 (0)	4
Wireless Network Modules	8 (13) †	4 †	13 (4) †	8 (13) †	4 †	4 †	4 (8) †	2
RF Expander Modules ‡	4	4	8	16	4	4	8	2
AirCon Control *	4	4	4	4	4	4	4	4

NOTES: 1) Only Users with names have Expiry dates.
2) ***** Only available in Access 4000.
3) ( ) Where values differ from the values in V3.5 through to V4.5, the old values are shown in brackets.
4) ^ "Automation I/F Auxiliaries" were formerly called "C-Bus Auxiliaries".
5) † Requires Options Micro Chip upgrade to support more than 32 Inovonics Wireless Zones.
6) ‡ RF Expander Modules available in V5.1 or later only.

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Model 3000 / Access 4000

BASIC PROGRAMMING GUIDE

This Basic Programming Guide provides a step-by-step approach to programming the general Alarm system and Access control features in the product.

For programming of additional features refer to the “Applications Programming Guide” section and/or the “Programming Reference” section.

For detailed explanations of individual programming options refer to the “Programming Reference” section.

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SYSTEM PROGRAMMING

Getting Started (General Options)

1. Power Up the System and check LAN communications

1.1 Check that all Terminals are operational and default messages are being displayed on the LCDs.

1.2 Check that all Modules installed on the LAN are powered up and communicating with the Control Module.

i) Enter **Module programming [MENU, 7, 2, ?]** to select the Module type to check.

1=LCD Terminal	**2**=LED Keypad	**3**=Big Expander	**4**=Reader Module
6= Mini Expander	**7**=Expander 16	**8**=Intelligent Reader	**9**=Analogue Module
0, 1=LAN Power Supply		**0, 2**=RF Expander Module	

ii) Press **<ON>** to display the "Module Present/Absent" screen.

iii) Press the **<DOWN>** Arrow key to scroll through the module numbers and check for "Module Present - nnn".

NOTES:

1) The number (nnn) indicates the number of times the module has failed to acknowledge a poll from the Control Module since the last **LAN Secure [MENU, 7, 8, 1]** or **LAN Initialize [MENU, 7, 8, 2]** was performed.
2) Note that the "Fault LEDs" on the Modules can be used to diagnose and rectify problems. *See the "Installation and Troubleshooting" section and/or the Installation manual/s supplied with each Module.*

2. Note equipment details.

2.1 Note the Address of any Expanders and Terminals on the system, and the purpose of any Zone Inputs & Auxiliaries connected to them. Note also any Control Module or Expander Sirens connected.

This information determines:

a) The Zone Inputs and System Inputs that will need to be programmed.
b) The Expanders, Terminals, Reader Modules, etc. that will need to be programmed.
c) The Sirens that are available for inclusion in any "Siren Lists".
d) The Auxiliaries that are available and/or need to be programmed.

You may choose to record these items using copies of the Blank programming sheets found on the latest Resources CD-ROM, or on the Advanced Technical Support section of the Web Site. (http://www.innerrange.com.au/techsupp.html) These programming sheets are available in PDF format, and also as MS Excel spreadsheets.
Three separate files are provided:

RECORDS-V5_1-Acc Menu.PDF	*Contains programming records for all databases in the Access Menu. [MENU, 2]*
RECORDS-V5_1-Comms.PDF	*Contains programming records for all Comms Tasks. [MENU, 7, 3, 1]*
RECORDS-V5_1.PDF	*Contains all other programming records.*

3. Default the Memory.

3.1 In a new installation, before any programming is done, you have the opportunity to ensure that the memory is defaulted to factory settings and/or to choose the best Memory Configuration for the installation.

3.2 Determine the Memory size fitted to the system and ensure it is appropriate for the system.
Press **<MENU>, 2** (or just <MENU> if V2 or earlier). The memory information is displayed in the form:
Ram: 128K-00-03.01
Memory (RAM) size - Current Memory configuration option - Software version used when last configured.
Memory configuration options:

00 = Standard.	01 = Access.	02 = Enlarged.	03 = Apartments
04 = Access 2	05 = Special.	06 = Alarm	07 = XDoor (512k Only)

3.3 Using the tables in the *Memory Configurations* section of the manual, choose the best configuration for this system installation. "Standard", "Access", "Enlarged", "Apartments", "Access2", "Special", "Alarm" or "XDoor".

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3.4 In the **Memory Defaulting** programming option **[MENU, 7, 5, 2]**, select the default option required using the **<RIGHT>** Arrow key (usually "Standard"), then Press **<OK>**. Press **<9>** to confirm the selection. CAUTION: Note that this will clear any previous programming and program certain pre-set options to simplify the programming procedure.

If the memory is being upgraded or re-configured in an existing system refer to "Memory Defaulting" in the Programming Reference section for procedures.

4. Program the General System options [MENU, 7, 5, 1]

4.1 AC Fail Delay Time. IF you do not want brief interruptions in the AC Mains supply to cause a Control Module AC Fail alarm , set an appropriate "Power Fail Delay Time". This is the time, in minutes, that an AC Fail condition must be present at the Control Module, before it will generate an alarm.

NOTE: AC Fail Delay Time for Universal Expander Modules is set with a DIPswitch option on the Module. SW1, Switch 3. Off = 20 seconds. On = 255 seconds.

4.2 Program any of the Panel Options required. [N D F R f + I .] The more common options are:

-**N**o Aux Off on Reset, IF Aux states are to be preserved after a System Reset.

-**D**etailed Review, IF you need highly detailed Review data for commissioning and program de-bugging. (NOTE: Don't forget to turn Detailed Review Off again, for general system operation)

-**I**gnore AC Fail Inputs, IF the entire system is running on a separate DC Power supply.

4.4 IF Battery Testing is to be implemented, program a general Battery Test time. This is the time period that will be used to perform battery testing on the Control Module.

5. Program Times

5.1 Set the current **Time and Date**. **[MENU, 5, 1]**

5.2 IF any User operation is required to be restricted or altered according to specific time period/s, then **TimeZones [MENU 5, 2]** need to be programmed (including a name), ready for use in the appropriate programming options.

5.3 If TimeZones are to take account of Holidays, program the **Holidays [MENU 5, 3]**. Holidays are specified in Date/Month format and can be a single date or a Holiday period with a start and end date.

5.4 If Holidays are programmed, they each must have at least one Holiday "Type" assigned (Usually just Type 1). Any TimeZone that is to be effected by Holidays must then have the appropriate Holiday Types assigned to it in **TimeZone programming [MENU 5, 2].**

NOTE: One or more of the default TimeZones may already suit your application. There are four default TimeZones with pre-programmed names and time periods. You may find them useful as programmed, or simply adjust the time periods to suit the system requirements.

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Alarm Processing

1. Program the Inputs. [MENU 7, 0]

1.1 Program the Names of all **Inputs [MENU 7, 0]** (Zone Inputs and System Inputs) present in your system, as determined in *Getting Started, Step 2*. (NOTE: System Input names are pre-defined)

1.2 Program any of the Input Attributes required for each input in the system. [s C X S R A N T]
The more common options are:

-**S**wap Seal and Alarm. IF the Input device's contacts are normally Open and then Close on the Alarm condition. (The vast majority of devices are normally Closed, and go Open on an Alarm, so this option is normally left at No)

-**A**llow Auto Isolate. IF the Input is allowed to Automatically Isolate if un-sealed when the Area is turned on.

-**N**o Test on Exit. IF the Input is likely to be un-sealed when the Area is turned on, and an Exit delay is programmed for the Area. (e.g. A PIR in an Entry Foyer where the LCD Terminal is located)

2. Check/Program Process Group requirements. [MENU, 2, 4, 3]

2.1 IF your system has any Input Processing requirements not covered by the default Process Groups, you may need to program additional **Process Groups**, and/or edit the default **Process Groups** as required. **[MENU 2, 4, 3]**

NOTE: The 14 Default Process Groups cover the majority of system requirements.

i.e.	BURGLARY	BURGLARY DELAYED	BURGLARY PRIMARY	
	LOCAL SILENT	FIRE ZONE	DURESS*	AUTOMATION*
	SYSTEM TAMPER	SYSTEM SILENT	SYSTEM LAN	SYSTEM LOCAL
	ACCESS LOCAL	ACCESS ALARM	ACCESS SILENT	

*V4.5 or later only.

3. Program any Siren Lists. [MENU 2, 3, 3]

3.1 Program the **Siren List/s** required. **[MENU 2, 3, 3]** A Siren List can be assigned to each Area to specify which Sirens will activate on relevant alarms in that Area. Use the details obtained in *Getting Started, Step 2*, to determine the Sirens available.

NOTES:
1) Alarms in different Areas can activate different Sirens (or combinations of Sirens) if required. Program a different Siren List for each combination of Sirens.
2) Keep a written record of Siren List programming details, as Siren Lists cannot be named in the on-board memory.

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4. Program the Areas. [MENU 7, 1]

4.1 Program the details of each of the **Areas** required in your system. **[MENU 7, 1]**

The following options are commonly programmed:
Area Name. (Should always be programmed)
Entry delay time. (seconds) Exit delay time. (seconds)
Siren Mode. (normally "Instant") Siren List to sound. Siren Time. (minutes)
Open/Close Reporting options. [O C A N 2 S]
-Report: **O**penings/**C**losings/Openings only after **A**larm/**N**ot general Area/**2**4 Hour Offs*/Area **S**till Open*
*If intending to use, first check that the options are supported by the Comms format and the Central station.

4.2 Program the Auxiliaries to be activated. The following Auxiliaries are commonly used:
-Exit Auxiliary. IF required for Exit timer warning devices, etc.
-Entry Auxiliary. IF required for Entry timer warning devices, etc.
NOTE: An LCD Terminal Beeper can be used as an Exit and/or Entry warning device by assigning the LCD Terminal Beeper Auxiliary as the Exit and/or Entry Auxiliary in an Area.
Assign Txx:X05 for Continuous Beeeeeep.
Assign Txx:X04 for Pulsing Beeper. Elite Terminals only. "Pulse Beep" option needs to be enabled in Terminal configuration options. To enter Terminal configuration mode, Hold down the <HELP> key; Short LK2 (RESET); Wait 2 seconds; then release the <HELP> key.
Note: An Auxiliary Timer should also be programmed for that Auxiliary with a time period in seconds to ensure that the Beeper will turn off again.

-Siren Auxiliary. IF required for additional Sounder device/s to follow Sirens.

-Close Auxiliary. IF required to indicate Area Closed (On)

-24Hr (Tamper) Auxiliary. IF required to indicate Tamper Alarm.

-Alarm 1 to Alarm 4 Auxiliaries. IF required Alarm indication such as Strobe, etc.

-Isolate Auxiliary. If required to indicate an Isolate condition in the Area for Mimic panels, etc.

NOTE: The 24Hr, Alarm 1-4, and Isolate Auxiliaries will only be activated if enabled in the particular Process Group/s assigned to the Input/s in this Area.

4.3 Assign the relevant Inputs to the Area using an appropriate Process Group for each Input. Use the details obtained in *Getting Started, Step 2*, to determine the Inputs that need to be assigned to each Area.

4.4 At least one Area will have System Inputs assigned. There are two ways of assigning System Inputs to Areas.
1) Individually in the same way that Zone Inputs are assigned.
2) Collectively by using the "Add System Inputs" option via the Area Default procedure. *See below.*

Add System Inputs.
In some systems all system inputs are simply assigned to a "System Area". Alternatively, several different Areas may be used for different types of System Inputs. e.g. Tampers, Power problems, Comms problems and Access Alarms. Either option is simple to achieve with the "Add System Inputs" feature.

With this option, the installer chooses which type of system inputs are to be added, then the system will add those inputs to the Area using appropriate Process Groups from the Default Process Groups available.
NOTE: Only System Inputs on Modules currently communicating on the LAN will be assigned.

i) Enter Area programming **[MENU, 7, 1]**, select the Area number or name, then press **<HELP> 9**.
ii) Use the **<RIGHT>** Arrow key to select "Add Sys. Inputs, then press **<OK>**.
iii) Select which types of System Inputs that you want to assign to this Area by setting the appropriate option/s to **[Y]es (9 key)**, then press **<OK>**.
iv) Press the **9 (Yes) key** to confirm the action.

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Module Programming

1. LCD Terminals [MENU 7, 2, 1]

Program the attributes required for each LCD Terminal in the system.

1.1 Adjust the LCD Terminal "Poll Time" and "LAN Priority" IF this is considered necessary. LAN Priority programming is accessed by pressing the <ON> key when the "Poll Time" is displayed.

1.2 Adjust the "Default Display message" options IF the default settings are not suitable.

1.3 Select the mode of LED operation. (V2 or later. Elite LCD Terminals only.)
IF the LEDs are not used, OR will be programmed to follow Terminal Auxiliaries, set Lamp Mode to "None".
IF the LEDs are to display Area Status, set Lamp Mode to "Area Array".

1.4 Assign an "Associated Area" to the Terminal. An Associated Area must be assigned when:
-Lamp mode is set to "Area Array"
-Any "Single Area...", or "Multiple Area..." options, are selected in the Default display message options.

1.5 IF the LCD Terminal is to be restricted to operations on the Associated Area only, in the Access options; [I O A . Z S], set the "S" option (Single Area operations) to Yes.

1.6 IF access to specific information screens and control options is required without logging on to the Terminal, set the required "Logged Off options" to Yes. [A T L R H C] (V3 or later)
-**A**rea Status Array.
-Area Status **T**ext. 8 Areas beginning with the associated Area.
-View **L**atched Alarms.
-Alarm **R**eview.
-**H**ome Auxiliary Control.
-Air **C**onditioning Control.

1.7 IF access to Menu options is to be restricted or disallowed at an LCD Terminal, assign an appropriate "Menu Group". (This is usually unnecessary as a User's Access to specific Menu options is already restricted by the Menu Group assigned to their User Type.)

1.8 IF operations at an LCD Terminal are to be restricted to specific Area/s, assign an appropriate Area List in the "Area List Filter" option.

2. Big Expanders (32 Zone) [MENU 7, 2, 3] and 16 Zone Expanders [Menu 7, 2, 7]

2.1 Adjust the Expander "Poll Time" and "LAN Priority" IF this is considered necessary. LAN Priority programming is accessed by pressing the <ON> key when the "Poll Time" is displayed.

2.2 IF Battery Testing is to be implemented, Program the "Battery Test time" required for each Big Expander/16 Zone Expander in the system. A battery test time of 1 to 3 minutes will effectively test for battery presence. Longer battery test times are preferrable, but must be carefully considered based on the current consumption of the module and it's peripherals. (V3 or later)

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3. Mini Expanders (8 Zone) [MENU 7, 2, 6]

3.1 Adjust the Mini Expander “Poll Time” and “LAN Priority” IF this is considered necessary. LAN Priority programming is accessed by pressing the <ON> key when the “Poll Time” is displayed.

3.2 Check that Zone Type is set to “Normal” for each Zone unless special functions for “Holdup”, “Suspicion”, or “Counter” are required.

3.3 Set Zone De-bounce to 300mS for each Zone unless faster de-bounce is required for special applications.

4. Initialize the LAN

If all modules are connected and operational and the system is complete, perform the **Secure LAN [MENU 7, 8, 1]** or **Initialize LAN [MENU 7, 8, 2]** functions. (“Secure LAN” Initializes the LAN and sets the Encryption)

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Door Programming

1. Note Door details.

1.1 Plan your Door programming requirements. For each Door note the:

-Door number to be used. (D002, D002, etc.)

-Door name (location)

-Reader Module being used. (R001, R002, etc.)

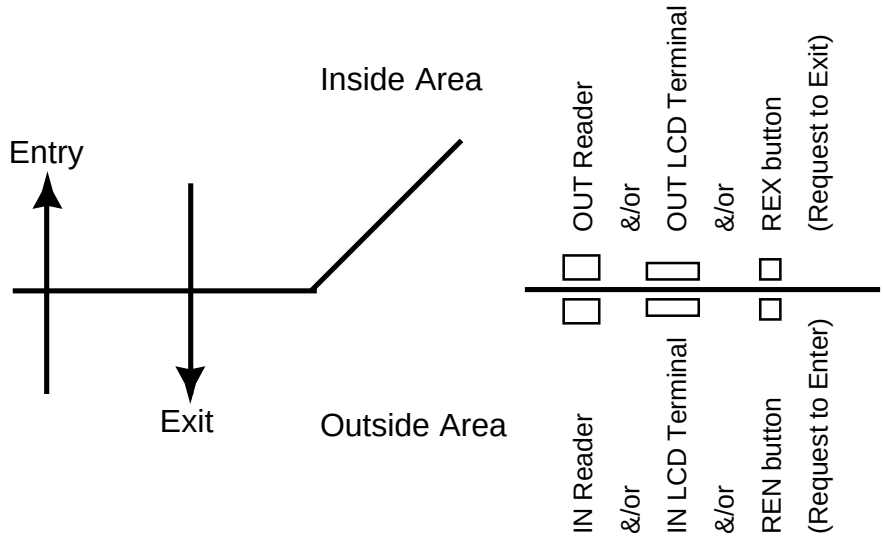
-Reader Module Port that the IN and/or OUT Reader is connected to. (Rdr 1 or Rdr 2)

-LCD Terminal/s used and their position/s. (IN or OUT)

-"Inside" and/or "Outside" Area assigned.
IF required for: -Prevention of entry/exit into Areas that are turned On.
-Area Off and/or On control by access Readers.
-"Anti-passback" and "Wrong Area" processing.
-Tracking of User location.
-User counting in Areas.

The diagram below illustrates the relationship between the Door, the IN and OUT devices and the Inside and Outside Areas.

The table at the end of this section may be copied and used to record this information before programming is commenced.



DOORS

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2. Program the Reader Module/s [MENU 7, 2, 4]

Program the attributes required for each Reader Module in the system.

1.1 Adjust the Reader Module "Poll Time" and "LAN Priority" IF this is considered necessary. LAN Priority programming is accessed by pressing the <ON> key when the "Poll Time" is displayed.

1.2 Check that the Reader Module Purpose is set to "Door Control".

1.3 Assign the 1st Door to be controlled by this Reader Module.

1.4 IF the Reader Module is to be used in "2 Door" Mode;
Assign the 2nd Door to be controlled by this Reader Module.

1.5 Program the Reader Module Options. [C E X F W N T 2]

Comms (LAN) Fail Options:
-Backup **C**ards operate. The Backup Cards enrolled into the system will still access the Door/s controlled by this Reader Module if it is Offline.
-R**E**N button (Request to Enter) operation. The REN button will operate if the Reader Module is Offline.
-RE**X** button (Request to Exit) operation. The REX button/s will operate if the Reader Module is Offline.
-**F**irst 2 Backup Cards only. Only the first 2 Backup Cards will operate if the Reader Module is Offline.

Other Options:
-DOTL **W**arning. (V3 or later Controller F'ware & V13 or later Reader Module F'ware required)
Set to Yes IF a DOTL Pre-alarm warning is required: via Aux 2 (Rdr 1 Valid Aux) for 1st Door.
via Aux 5 (Rdr 2 Invalid Aux) for 2nd Door.
See Programming Reference section for more details.
-**N**o Valid/Invalid LED control. Set to Yes IF the LED Auxiliaries need to be used for other purposes.
-**T**ongue Sensing. Set to Yes IF Zone 6 (1st Door) and/or Zone 7 (2nd Door) are used for Tongue sense.
-**2** Door Mode. Set to Yes IF Reader Module is to be used in 2 Door Mode.

1.6 IF the Reader/s are to be used for turning an Area ON, (e.g. At an external door when the User is leaving the building) choose the appropriate Reader "Arming Mode". *See Programming Applications Guide for details.*

1.7 Set "Turn Off Extra Area" to Yes IF Auto Area Off is allowed at this Door (via Access Group programming) and the User's Extra Area is to be turned Off instead of the "Inside Area" assigned to the door.

1.8 Program the parameters for the first Reader (Rdr 1) connected to the Reader Module.

-Reader location. Outside (the Reader is used to Enter) or Inside (the Reader is used to Exit).

-Reader Format. Choose the correct Card data format. *See Programming Reference section for details.*

-Reader Mode. Credit Card/Direct Entry/Site Code/Any Card. *See Programming Reference section for details.*

-Keypad for PIN code Entry. IF Door requires Card + PIN for access.
If "HID5355" is used, ensure Reader part number is 5355xxK00. The last 3 characters must be K00 for correct keypad option and PIN code buffering. (xx = Revision and color options, and will not affect operation)

-Module for PINs. IF "LCD Terminal" is selected as the Keypad for PIN in the previous option, program the module number (Txxx) of the LCD Terminal to be used.

1.9 Program the parameters for second Reader (Rdr 2) connected to the Reader Module.
Note: In 2 Door Mode, Rdr 1 controls the 1st Door and Rdr 2 controls the 2nd Door.
Options are the same as those for the first Reader.

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3. Program any LCD Terminals used for Door Access Control. [MENU, 7, 2, 1]

The following is relevant to LCD Terminals used to control Doors via a User's PIN code only.
Note that the additional programming outlined below is not necessary if the LCD Terminal is only used for PIN code entry after a Card has been presented. i.e. Card + PIN operation.

Follow the instructions for general LCD Terminal Programming provided in the "Module Programming" section. Additional programming for Door Access Control:

3.1 Assign the Door to be controlled by the LCD Terminal.

3.2 Program the Door Access options. [I O A . Z S]

-Terminal is **I**nside. Set to No if the LCD Terminal is Outside (used to Enter) or Yes if the LCD Terminal is Inside (used to Exit).

-**O**K key for REX. Set to Yes IF the OK key is to be used as REX (Request to Exit) button. (e.g. Terminal is located Inside the Door, and PIN code is not required to exit.)

-**A**ccess Control Only. Set to Yes IF LCD Terminal is only to be used for Access Control.
CAUTION! Disables access to all Menu options.

-**Z**one 2 REX on Inside. Set to Yes IF the LCD Terminal is located Outside the Door, and Zone 2 of the Terminal is wired to a REX button on the Inside of the Door.

-**S**ingle Area operations. See LCD Terminals in the Module Programming section.

3.3 To enable Zone 2 of the Terminal (Txx:Z02) to be used as a REX button, in the Extra Options; [. . . . . L N Z], set the "Z" option (Zone 2 REX button enable) to Yes.

4. Check/Program Access Group requirements. [MENU, 2, 4, 2]

4.1 IF your system has any Door Access Control requirements not covered by the default Access Groups, you may need to program additional **Access Groups**, and/or edit the default **Access Groups** as required. **[MENU 2, 4, 2]**
NOTE: The 3 Default Access Groups cover some basic Door access control requirements.

4.2 Program a name for any new Access Groups that you create.

4.3 IF it is necessary to restrict the valid period of the Access Group, or provide an alternate set of Access Group permissions for different times of day and/or days of the week, assign an appropriate TimeZone to specify when the Access Group is Valid.

4.4 If a TimeZone is assigned, you may then specify an Alternate Access Group that will be used when the TimeZone specified in the previous step is Invalid.

4.5 Program the Entry Parameters required.

-Entry Mode. PIN only / Card only / PIN or Card / Card AND PIN

-Entry Anti-passback Mode. None / Soft / Hard

-Entry Options. [B L A D]
-REN **B**utton operation.
-Dead**L**ock function. Disables REN button if Outside Area is On.
-**A**uto Area Off. If the Inside Area is On, allows the Area to automatically be turned off when the User Enters. (Note: Area must be in the Area Off List, in the User's User Type)
-**D**ual User. Set to Yes IF two User Codes / Cards are required to allow entry.

DOORS

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4.6 Program the Exit Parameters required.

-Exit Mode. PIN only / Card only / PIN or Card / Card AND PIN

-Exit Anti-passback Mode. None / Soft / Hard

-Exit Options. [B L A D]
-REX **B**utton operation.
-Dead**L**ock function. Disables REX button if Inside Area is On.
-**A**uto Area Off. If the Outside Area is On, allows the Area to automatically be turned off when the User Exits. (Note: Area must be in the Area Off List, in the User's User Type)
-**D**ual User. Set to Yes IF two User Codes / Cards are required to allow exit.

5. Program the Doors [MENU, 7, 6]

5.1 Program a name for each Door.

5.2 Assign an "Inside" and/or "Outside" Area.
IF required for: -Prevention of entry/exit into Areas that are turned On.
-Area Off and/or On control by access Readers.
-"Anti-passback" and "Wrong Area" processing.
-Tracking of User location.
-User counting in Areas.

5.3 Assign a suitable Access Group. This will determine the way in which the Door is controlled.

5.4 Define the Lock Auxiliary for the Door. Typically: Rxx:X01 for 1st Door on a Reader Module.
Rxx:X04 for 2nd Door on a Reader Module.
Txx:X01 for Door controlled by LCD Terminal.

5.5 Program the Lock Open Time. Default setting is 5 seconds.

5.6 Program the Maximum Door Open Time. Default setting is 30 seconds.

6. Assign the "Reader for User Programming". [MENU, 7, 5, 1]

6.1 Reader Module #001 is normally used for Testing Cards, Enrolling User's Cards & programming Backup Cards. IF another Reader Module is to be used for these purposes, program the Reader Module number in the "Reader for User Programming" option in the General System Options. **[MENU, 7, 5, 1]**

7. Program the Site Code/s. [MENU, 2, 5]

7.1 IF cards are to be entered into the system using the Site Code method, at least one Site Code will need to be programmed. The Site Code method simplifies card programming, allowing cards to be entered without the need to present the card at a Reader. Site Code method can be used with Inner Range Magnetic Swipe Cards, or Wiegand Cards/ID Tokens with a format in which the system supports Site Codes. e.g. 26 Bit Wiegand.

7.2 Program the Site Code in Hex or Decimal format.

7.3 Program a Card Offset if required.

7.4 Set "Site Code Present" to Yes.

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8. Enrol any Backup Cards required. [MENU, 2, 6]

8.1 Up to 127 "Backup Cards" can be enrolled into the system*. Backup card data is stored independently of the normal User Database, and is also stored on-board each Reader Module. If allowed via Reader Module programming, the Backup cards can continue to access Doors when the Reader Module is Offline.

8.2 Select the Backup Card number to program, then enrol each Backup Card when prompted by swiping/presenting it to the designated Reader.

* The number of Backup Cards is dependent on the Reader Module Type/Version and the Control Module Firmware Version. *See "Backup Card Programming" in the Programming Reference Section for details.*

9. Initialize the LAN

Whenever any programming is done that affects Module parameters, (especially Reader Modules, LCD Terminals and Mini Expanders) the LAN must be initialized to ensure that all changes take effect.

If all modules are connected and operational, and the system is complete, perform the **Secure LAN [MENU 7, 8, 1]** or **Initialize LAN [MENU 7, 8, 2]** functions. ("Secure LAN" Initializes the LAN and sets the Encryption)

10. Program Access Alarm processing

When Access Control is implemented in a system additional System Inputs are available to be processed and/or monitored as required. e.g.
Reader Module System Inputs:
Cabinet Tamper, Low Volts, 1st/2nd Door Forced, 1st/2nd Door Open too Long, Illegal Card and LAN Comms.
LCD Terminal System Inputs:
Cabinet Tamper, Panic, Door Forced, Door Open too Long, Operator Duress, Too many tries and LAN Comms.
These modules also have spare Zone Inputs that may have been used for additional PIRs, etc.

10.1 Identify the Access Control System Inputs that you wish to process and/or monitor in some way.

10.2 Return to "Alarm Processing"; Steps 1 (Program the Inputs), 2 (Check/Program Process Group Requirements), and 4 (Program the Areas) to add the System Inputs and any additional Zone Inputs on Reader Modules and LCD Terminals used for Access Control.

NOTE: You may choose to simply use the "Add System Inputs" default feature in Area Programming to add the Access Control System Inputs to an Area if this fulfils system monitoring requirements.

11. Automated Unlocking and/or Locking of Door/s

11.1 At Specific Times and/or for Specified period/s of Time. Program TimeZone/s. [MENU, 5, 2]
Refer to the "TimeZone Function" options under TimeZone programming in the Programmer's Reference section:
Door Unlock/Lock
Door List Unlock/Lock

11.2 As a result of any event in the system that can control an Auxiliary.
e.g. Keyswitch, Area On/Off, Alarm, etc.
Program Calculated Auxiliaries. [MENU, 7, 5, 4]
Refer to the "Calculated Auxiliary Action" options under Calculated Auxiliary programming in the Programmer's Reference section:
Lock on +ON
Unlock on +ON
Lock on -OFF
Unlock on -OFF

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Door Programming Planning Sheet

DOOR NUMBER [Menu, 7, 6]	DOOR NAME (Up to 16 characters)	IN READER connected to Reader Module: [Menu, 7, 2, 4]	IN LCD Terminal [Menu, 7, 2, 1]	OUTSIDE AREA [Menu, 7, 1]	OUT READER connected to Reader Module: [Menu, 7, 2, 4]	OUT LCD Terminal [Menu, 7, 2, 1]	INSIDE AREA [Menu, 7, 1]
D ___ ___ ___		R ___ ___ ___ Rdr 1 / Rdr 2	T ___ ___ ___	A ___ ___ ___ Name:	R ___ ___ ___ Rdr 1 / Rdr 2	T ___ ___ ___	A ___ ___ ___ Name:
D ___ ___ ___		R ___ ___ ___ Rdr 1 / Rdr 2	T ___ ___ ___	A ___ ___ ___ Name:	R ___ ___ ___ Rdr 1 / Rdr 2	T ___ ___ ___	A ___ ___ ___ Name:
D ___ ___ ___		R ___ ___ ___ Rdr 1 / Rdr 2	T ___ ___ ___	A ___ ___ ___ Name:	R ___ ___ ___ Rdr 1 / Rdr 2	T ___ ___ ___	A ___ ___ ___ Name:
D ___ ___ ___		R ___ ___ ___ Rdr 1 / Rdr 2	T ___ ___ ___	A ___ ___ ___ Name:	R ___ ___ ___ Rdr 1 / Rdr 2	T ___ ___ ___	A ___ ___ ___ Name:
D ___ ___ ___		R ___ ___ ___ Rdr 1 / Rdr 2	T ___ ___ ___	A ___ ___ ___ Name:	R ___ ___ ___ Rdr 1 / Rdr 2	T ___ ___ ___	A ___ ___ ___ Name:
D ___ ___ ___		R ___ ___ ___ Rdr 1 / Rdr 2	T ___ ___ ___	A ___ ___ ___ Name:	R ___ ___ ___ Rdr 1 / Rdr 2	T ___ ___ ___	A ___ ___ ___ Name:
D ___ ___ ___		R ___ ___ ___ Rdr 1 / Rdr 2	T ___ ___ ___	A ___ ___ ___ Name:	R ___ ___ ___ Rdr 1 / Rdr 2	T ___ ___ ___	A ___ ___ ___ Name:
D ___ ___ ___		R ___ ___ ___ Rdr 1 / Rdr 2	T ___ ___ ___	A ___ ___ ___ Name:	R ___ ___ ___ Rdr 1 / Rdr 2	T ___ ___ ___	A ___ ___ ___ Name:
D ___ ___ ___		R ___ ___ ___ Rdr 1 / Rdr 2	T ___ ___ ___	A ___ ___ ___ Name:	R ___ ___ ___ Rdr 1 / Rdr 2	T ___ ___ ___	A ___ ___ ___ Name:

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Basic Lift Programming

Lift control logic can be used to control Floor security for a number of Lift Cars. The security of up to 64 floors can be controlled for a maximum of 32 Lift Cars depending on interface method used, memory size, memory configuration and system traffic.

There are three methods of Lift Control available. All methods use a standard Reader Module normally mounted in each Lift Car for interface to the Reader. An optional LCD Terminal may also be installed in each Lift Car if Card+PIN is required for high security applications:

1) Floor Button Enable via simple Relay interface.
-Expander Module/s are installed in the Lift motor room to provide Auxiliary Outputs to enable/disable each Floor selection button. (The Auxiliaries control Relays that provide the interface to the Lift Controller.)

-When a User presents a valid card at the reader in the Lift Car, the system checks the User's "Lift Car List", "Floor List", etc. and enables all the floor buttons for the floor/s allowed. The buttons are enabled for a fixed period of time after the valid card has been presented.

-If a User is allowed access to more than one floor, it is possible for them to select multiple floors during the button enable time. While the "User access/denied at Lift Car ###" details are recorded to Review, there is no means of recording the floor selected.

2) Floor Selection via Button Feedback. (V3 or later)
-Universal Expander Module/s with Lift Interface board/s fitted are installed in the Lift motor room. These provide an Isolated Zone Input and Relay output that are effectively connected in series with each Floor selection button.

See "Lift Control with Button Feedback" in the Applications Programming Guide section.

3) High Level Interface via RS232 UART Port. (V3 or later)
-A single RS232 connection is established between a UART Port fitted to the Control Module, and a High Level Elevator Management System (EMS). This allows security mask information to be transferred to the EMS without the need for Expander modules to provide Auxiliaries and Zones for Button Inputs. At present the OTIS protocol is supported with logging of lift buttons.
The High Level interface drastically reduces the amount of cabling and labour associated with the installation which can also lead to a greater level of reliability.

See "Lift Control with High Level Interface" in the Applications Programming Guide section.

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Installation Notes:

1) CAUTION: If a Control Module is being upgraded from an earlier version firmware to Version 3 or later for Lift Control features, the Memory will beed to be re-configured as new Memory structures have been added.

2) State and/or National Building regulations may govern the type of Lift control allowed on any particular site.

3) The Lift Controller may already allow for security control of the floor selection buttons. Check if this is the case, and if so, ascertain the type of interface required.

4) Check that the button voltage and switched current value are within the specifications of the interface that you propose to use. i.e. Relays, Lift Interface board, etc.

5) The Reader, along with a standard Reader Module and Power Supply, are normally installed in the Lift Car.
i.e. Allow one Reader Module per Lift Car.
The Reader Module is connected to the LAN via twisted pair cable, preferably shielded, up the Lift shaft. It is recommended that a LAN Isolator is installed in the Lift motor room to isolate the LAN cable in the Lift shaft from the rest of the LAN. One LAN Isolator will provide isolated LAN branches for two Lifts.

6) In some circumstances, the Reader Module can be installed in the Lift motor room, and provide the interface to Readers in two Lift Cars. The following points must be noted:
-The total length of trailing cable from the Reader to the Reader Module must be within the maximum cable length allowed as specified by the Reader manufacturer.
-The cable from the Reader to the Reader Module must be as specified by the Reader manufacturer. i.e. shielded data cable and not twisted pairs.
-Only one of the two Readers can be processed at a time. i.e. While Lift buttons are enabled in one Lift Car, the Reader in the other Lift Car will not accept cards.

7) When No Floor button feedback is required any Expander Module(s) with enough auxiliary outputs, in conjunction with the appropriate Relay interface board/s, can be used to control the necessary floor button enables.

8) Expander Type must be chosen to support the number of Floors required.
a) Mini Expander if up to 8 floors and no button feedback required.
b) Universal Expander configured as “E” Type if up to 16 floors.
c) Universal Expander configured as “B” Type if up to 32 floors.
-Where less than 32 Floors are controlled, the Floor Auxiliaries (and Button Sense Inputs if required) must all reside on the same Expander Module.
-Where more than 32 Floors are controlled, the Floor Auxiliaries (and Button Sense Inputs if required) must all reside on two sequentially numbered “B” Type Universal Expander Modules.
-Expander Modules will be installed with the Lift Control equipment in the Lift motor room.
-If Button feedback is used, set Universal Expanders to 40mS (fast) Zone De-bounce. (SW1 switch 2 to ON)

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Terminology

The following terms are used in Lift control:

Lift Car. A Lift Car is the actual lift which is to be “controlled” . The system may be configured to control a number of individual lifts.

Floor A lift car is used to access floors. The number of floors may vary from lift car to lift car. At present the maximum number of floors is limited to 64 for any one lift car.

Lift Car List A particular User Type may be restricted as to what lift cars they are allowed to access at a particular time. A lift car list specifies what lift cars are allowed.

Floor List A particular User Type may be restricted as to what floors they are allowed to access at a particular time. A floor list specifies what floors are allowed. (Note that lift cars may also be restricted as to what floors they access via a floor list.)

Floor Area Each floor for each lift car may be assigned an area if desired. This can be used to further restrict floor access based on areas.

Access Group An Access Group is applied to a lift car and determines certain access options such as whether two cards are required.

Reader Module A reader module is a LAN module used to interface to actual readers (reader heads). A reader module can be situated anywhere on the 4 wire LAN and can control up to 2 doors or 1 lift car via up to 2 reader heads.

Reader Head A reader head is used to describe the actual reader connected to the reader module. Examples of reader heads are Swipe readers, Proximity readers, Smart Card Readers, etc. The reader module can support a number of reader head interfaces including magnetic swipe and wiegand formats.

Floor Auxiliary The system interfaces to the lift control system via auxiliaries connected via relays. The floor button is enabled when the auxiliary is off (relay off) and is disabled when the auxiliary is on (relay on).

Floor Button The system may read the state of a lift car button via a zone input. When the button is pushed the zone should seal. When the button is not pushed the zone should be in alarm. Electrical isolation should be provided via relays or opto-couplers. (As provided via the Lift Interface board)

Free Access A floor is in free access when the floor auxiliary has been turned off by a floor control function. When a floor is in free access the relevent floor auxiliary is left off, allowing the lift button to signal the lift at any time.

Secure Floor A floor is secure when the floor auxiliary has been turned on by a floor control function. When a floor is secure the relevant floor auxiliary is normally on disabling the floor button. The auxiliary may be turned off momentarily by a valid user.

Floor Control Function A floor can be placed in free access or secured by a floor control function. Floor control functions are available as time-zone and calculated auxiliary functions, via the control menu at an LCD Terminal and via the interpreter connected to a PC control program.
(Note that you can’t simply turn on/off the auxiliary as you can do with door locks !)

.

1st Floor The first floor controlled by the system. This may be a basement Car park level or the “Ground” floor.

EMS Short for Elevator Management system. Can be connected to the Concept system via hard wired auxiliaries and zones or via a high level interface.

Note that at present stand alone terminals may not be used to control lift access, although an LCD terminal may be used in conjunction with a reader for the entry of a pin with card.

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Operation with No button feedback.

The sequence below shows the logic that the system applies in determining what floor buttons to enable for a particular lift car when a card is presented at a reader.

- Process card according to reader format & mode.
- Check card exists in system. (Check Issue # if required)
- Check if card has an expiry date that has expired.
- Check if card is cancelled (User type = 0).
- Adjust user type by time-zone if required.
- Check if time-zone has cancelled the user type.
- Turn on valid code Aux for this user type if programmed.
- Ensure that a lift car has been assigned to this reader.
- Check that lift car access group is not zero.
- Adjust access group by time-zone if required.
- Check that lift car access group not cancelled by a time-zone.
- Check that a lift car list exists for this user type.
- Adjust lift car list by time-zone if required.
- Check that lift car list not cancelled by a time-zone.
- If need dual user & no dual code over-ride & allowed to provide 1st user, then go get 2nd user.
- If need pin then wait for this users pin to be entered.
- Cancel user type if required (“Card Cancel” option)
- Check that user type floor list is not zero.
- Adjust user type floor list by time-zone if required
- Set up required floor button list based on what floors are in the user type floor list. If time-zone disabled then no buttons.
- If lift car floor list is defined then adjust for time-zone if required and remove any buttons from the button list for any floors not in the lift car floor list. If time-zone disabled then no buttons.
- If a user type area off list is defined (non zero) then adjust area list for time-zone if required and for every floor in this lift car that has an area assigned to it that is not in the area off list remove the button from the button list. If the floor has no assigned area then ignore.
- Check if got no buttons enabled and if so exit with review message.
- Check that lift car has Number of floors not set to zero.
- Check that 1st floor aux is legal and that all button enable auxes are also legal.
- Save review messages “Lift Access” and “Buttons On”
- Turn off relevant auxes based on the button list for the button on time. (If user type has (d)isabled flag set then used disabled button time.
- At end of button time set all auxes back to their secure/free access
- Save “free access” review message.

Operation with Button feedback.

See “Lift Control with Button Feedback” in the Applications Programming Guide section.

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Programming

1. Note Lift details.

1.1 Plan your Lift programming requirements. For each Lift Car note the:
-Lift Car number to be used. (LC002, LC002, etc.)
-Reader Module being used. (R001, R002, etc.)
-Reader Module Port that the Reader for each Lift Car is connected to. (Rdr 1 or Rdr 2)
-Any LCD Terminal/s used for Card + PIN access in Lift Cars.
-Any restrictions on floors accessed by particular Lift Cars.
-Any Areas to be assigned to floors. IF required for prevention of entry into Areas that are turned On.
-The Expander Module Auxiliaries to be used for floor enable for each Lift Car.
Note: Where a smaller number of floors are used, the same Expander can be used for more than one Lift Car, although this will compromise redundancy.

The table at the end of this section may be copied and used to record this information before programming is commenced.

2. Program the Reader Module/s [MENU 7, 2, 4]

Program the attributes required for each Reader Module used for Lift Control.

2.1 Adjust the Reader Module "Poll Time" and "LAN Priority" IF this is considered necessary. LAN Priority programming is accessed by pressing the <ON> key when the "Poll Time" is displayed.

2.2 Check that the Reader Module Purpose is set to "Lift Control".

2.3 Assign the 1st Lift to be controlled by this Reader Module.

2.4 IF the Reader Module is to be used in "2 Door/Lift" Mode;
Assign the 2nd Lift to be controlled by this Reader Module. (NOT RECOMMENDED)

2.5 Program the Reader Module Options. [C E X F W N T 2]
Comms (LAN) Fail Options:
Not relevant to Lift Control.
Other Options:
-**N**o Valid/Invalid LED control. Set to Yes IF the LED Auxiliaries need to be used for other purposes.
-**2** Door/Lift Mode. Set to Yes IF Reader Module is to be used to control 2 Lift Cars.

2.6 Program the parameters for the first Reader (Rdr 1) connected to the Reader Module.

-Reader location. Set to Outside (the Reader is used to Enter).

-Reader Format. Choose the correct Card data format.

-Reader Mode. Credit Card/Direct Entry/Site Code/Any Card

-Keypad for PIN code Entry. IF Lift requires Card + PIN for floor access.

-Module for PINs. IF "LCD Terminal" is selected as the Keypad for PIN in the previous option, program the module number (Txxx) of the LCD Terminal to be used.

2.7 Program the parameters for second Reader (Rdr 2) connected to the Reader Module.
Note: In 2 Door/Lift Mode, Rdr 1 controls the 1st Lift and Rdr 2 controls the 2nd Lift.
Options are the same as those for the first Reader.

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3. Initialize the LAN

Whenever any programming is done that effects Module parameters, (especially Reader Modules, LCD Terminals and Mini Expanders) the LAN must be initialized to ensure that all changes take effect.

If all modules are connected and operational, and the system is complete, perform the **Secure LAN [MENU 7, 8, 1]** or **Initialize LAN [MENU 7, 8, 2]** functions. ("Secure LAN" Initializes the LAN and sets the Encryption)

4. Program Access Groups. [MENU, 2, 4, 2]

4.1 It is recommended that one or more new Access Groups are programmed to define Lift Control requirements.

4.2 Program a name for any new Access Groups that you create.

4.3 IF it is necessary to restrict the valid period of the Access Group, or provide an alternate set of Access Group permissions for different times of day and/or days of the week, assign an appropriate TimeZone to specify when the Access Group is Valid.
e.g. If "Card Only" operation is adequate during the day, but "Card+PIN" is required after hours.

4.4 If a TimeZone is assigned, you may then specify an Alternate Access Group that will be used when the TimeZone specified in the previous step is Invalid.

4.5 Program the Entry Parameters required.

-Entry Mode. Card only / Card AND PIN. ("PIN only" & "PIN or Card" are not relevant for Lift Control)

-Entry Options. [B L A D]
-**D**ual User. Set to Yes IF two User Codes / Cards are required to allow entry.

4.6 Program the Exit Parameters required.

-Exit Mode. Card only / Card AND PIN. ("PIN only" & "PIN or Card" are not relevant for Lift Control)

-Exit Options. [B L A D]
-**D**ual User. Set to Yes IF two User Codes / Cards are required to allow exit.

5. Program Floor Lists [MENU 2, 3, 4]

IF any Lift Cars are to be restricted to servicing only specific floors, Floor List/s must be programmed to define the floors allowed for each Lift Car.

5.1 Determine the Floor/s that different Lift Cars will be restricted to.
From this information you can program the **Floor Lists** required **[MENU 2, 3, 4]**.

5.2 IF it is necessary to restrict the valid period of the Floor List, or provide an alternate List of Floors for different times of day and/or days of the week, assign an appropriate TimeZone to specify when the Floor List is Valid.

5.3 If a TimeZone is assigned, you may then specify an Alternate Floor List that will be used when the TimeZone specified in the previous step is Invalid.

5.4 Assign the Floor/s to each Floor List. A Floor List can support any number of Floors up to the maximum number of Floors allowed in the Memory configuration.

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6. Program the Lifts [MENU, 7, 9]

Each Lift Car to be controlled is individually programmed.

6.1 Select the Lift Car number to program.

6.2 Assign a suitable "Access Group". This will determine the way that the Lift is controlled.

6.3 IF the Lift Car is to be restricted to servicing only specific floors, assign a "Floor List".

6.4 Define the total "Number of Floors" to be controlled in this Lift Car.

6.5 Define the 1st Floor Auxiliary that will be used to control Floors for this Lift Car.
Floor button enable Auxiliaries start at this Auxiliary and run in sequence to the number of floors specified in the previous step.
If the required number of Auxiliaries overruns the first module, the sequence automatically rolls over to Auxiliary 1 of the next module of the same type. (Only recommended if control of more than 32 floors is required.)

6.6 Assign the "Valid Auxiliary" for the Lift if required.
This Auxiliary is turned On for the "button time" .
The Auxiliary specified may be a Reader LED control Auxiliary (e.g. Rxx:X02)

6.7 Ensure the "Button Area" is set to "None". This is mandatory when button feedback is not used.

6.8 Program the "Button Time". This is the maximum time the floor buttons will remain active for a normal User. Typically set to about 5 seconds.

6.9 Program the "Disabled Time". This is the maximum time the floor buttons will remain active for a "disabled" User. i.e. User Type with the "Disabled" option set to Yes.
Note: Disabled time does not operate with High Level Interface.

6.10 Program the number of "Unused Floors". If a Lift Car starts at any Floor other than the 1st Floor that is controlled by the system, program the number of floors to be skipped. e.g. If the Lift Car starts at Floor15, then this option should be set to 14.
This allows the unused Auxiliaries and Zones associated with this Lift Car to be used for other purposes.

6.11 Assign the "Floor Areas" if required. Normally left at "None" unless User access is to be restricted based on the Area status and the User Type's Area Off permissions.

7. Program the General System Options. [MENU, 7, 5, 1]

7.1 "Reader for User Programming". Reader Module #001 is normally used for Testing Cards, Enrolling User's Cards & programming Backup Cards.
IF another Reader Module is to be used for these purposes, program the Reader Module number in the "Reader for User Programming" option in the General System Options.

e.g. Reader Module #001 may be used in a Lift Car making it inconvenient to use for testing and enrolling Cards etc.
Note: If Door Access Control is already programmed in the system, this option may already be programmed.

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8. Program the Site Code/s. [MENU, 2, 5]

8.1 IF cards are to be entered into the system using the Site Code method, at least one Site Code will need to be programmed. The Site Code method simplifies card programming, allowing cards to be entered without the need to present the card at a Reader. Site Code method can be used with Inner Range Magnetic Swipe Cards, or Wiegand Cards/ID Tokens with a format in which the system supports Site Codes. e.g. 26 Bit Wiegand.

If Door Access Control is already programmed in the system, the Site Code/s may already be programmed.

8.2 Program the Site Code in Hex or Decimal format.

8.3 Program a Card Offset if required.

8.4 Set "Site Code Present" to Yes.

9. Program Access Alarm processing

When Lift Access Control is implemented in a system additional System Inputs are available to be processed and/or monitored as required. e.g.
Relevant Reader Module System Inputs:
Cabinet Tamper, Low Volts, Illegal Card and LAN Comms.
Relevant LCD Terminal System Inputs:
Cabinet Tamper, Panic, Operator Duress, Too many tries and LAN Comms.

9.1 Identify the Lift Access Control System Inputs that you wish to process and/or monitor in some way.

9.2 Return to "Alarm Processing"; Steps 1 (Program the Inputs), 2 (Check/Program Process Group Requirements), and 4 (Program the Areas) to add the System Inputs and any additional Zone Inputs on Reader Modules and LCD Terminals used for Access Control.

NOTE: You may choose to simply use the "Add System Inputs" default feature in Area Programming to add the Access Control System Inputs to an Area if this fulfils system monitoring requirements.

10. Securing the Floors

When Lift Access Control operation is being commissioned the required Floors must be placed on security by a Floor Control operation. This can be done via "Lift Control" in the Control Menu [MENU, 9, 4]

10.1 Select "Lift Control" in the Control Menu. [MENU, 9, 4]

10.2 Enter the Lift Car number to control. ("00" = All Lifts)

10.3 Enter the Floor number to control. ("00" = All Floors)

10.4 Press the "7" (S) key to Secure the Floor/s. (The "1" (A) key is used to Access Floor/s)

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11. Automated Free Access and Securing of Floor/s

It may be necessary to have a facility to provide automatic "Free Access" and/or "Securing" of Floors.

This can be a useful feature in sites where free access is required on specific floors during specified times and/or under certain circumstances.

IMPORTANT NOTE:
When powered up, the system will normally turn Off all Floor Auxiliaries, thereby setting all floors to free access. This means that in the rare event of the Control Module being Reset (e.g. Due to having power and battery removed then restored), all floors for all Lift Cars will be placed in free access.

To re-secure the required floors, the relevant Floor Auxiliaries must be turned On by a Floor Control operation.
This can be done:
-Manually via the Control Menu (MENU, 9, 4) as described in Step 13. (Requires a User operation)
-Automatically via a Calculated Auxiliary "Secure on +ON" or "Secure on -OFF" action triggered by an Auxiliary that is always turned On after a system Reset. To obtain an Auxiliary that turns On after a System Reset, assign a "Close Auxiliary" to an Area that is always On 24Hrs. This could be one of the Button Areas if Button feedback is used in the system, or a "System" Area. (Any Area that was On will automatically be turned On again after a Control Module is Reset)

11.1 At Specific Times and/or for Specified period/s of Time. Program TimeZone/s. [MENU, 5, 2]
Refer to the "TimeZone Function" options under TimeZone programming in the Programmer's Reference section:
Lift Car & Floor
Lift Car & Floor List
Lift Car List and Floor
Lift Car List & Floor List

11.2 As a result of any event in the system that can control an Auxiliary.
e.g. Keyswitch, Area On/Off, Alarm, etc.
Program Calculated Auxiliaries. [MENU, 7, 5, 4]
Refer to the "Calculated Auxiliary Action" options under Calculated Auxiliary programming in the Programmer's Reference section:
Secure on +ON
Free on +ON
Secure on -OFF
Free on -OFF

LIFTS

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Lift Programming Planning Sheet - Basic Lift Control.

LIFT NUMBER [Menu, 7, 9]	DESCRIPTION	ACCESS GROUP [Menu, 7, 1]	READER connected to Reader Module: [Menu, 7, 2, 4]	LCD Terminal for PINs [Menu, 7, 2, 1]	FLOOR LIST [Menu, 2, 3, 4]	NUMBER OF FLOORS (max 64)	1st FLOOR AUXILIARY
LC __ __ __		AG __ __ __ Name:	R __ __ __ Rdr 1 / Rdr 2	T __ __ __	FL __ __ __		__ __ : X __ __
LC __ __ __		AG __ __ __ Name:	R __ __ __ Rdr 1 / Rdr 2	T __ __ __	FL __ __ __		__ __ : X __ __
LC __ __ __		AG __ __ __ Name:	R __ __ __ Rdr 1 / Rdr 2	T __ __ __	FL __ __ __		__ __ : X __ __
LC __ __ __		AG __ __ __ Name:	R __ __ __ Rdr 1 / Rdr 2	T __ __ __	FL __ __ __		__ __ : X __ __
LC __ __ __		AG __ __ __ Name:	R __ __ __ Rdr 1 / Rdr 2	T __ __ __	FL __ __ __		__ __ : X __ __
LC __ __ __		AG __ __ __ Name:	R __ __ __ Rdr 1 / Rdr 2	T __ __ __	FL __ __ __		__ __ : X __ __
LC __ __ __		AG __ __ __ Name:	R __ __ __ Rdr 1 / Rdr 2	T __ __ __	FL __ __ __		__ __ : X __ __
LC __ __ __		AG __ __ __ Name:	R __ __ __ Rdr 1 / Rdr 2	T __ __ __	FL __ __ __		__ __ : X __ __
LC __ __ __		AG __ __ __ Name:	R __ __ __ Rdr 1 / Rdr 2	T __ __ __	FL __ __ __		__ __ : X __ __
LC __ __ __		AG __ __ __ Name:	R __ __ __ Rdr 1 / Rdr 2	T __ __ __	FL __ __ __		__ __ : X __ __

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User Programming

1. Menu Groups. [MENU 2, 4, 1]

1.1 IF your system has any special User Menu Access requirements or Operational requirements not covered by the default Menu Groups (MG001 to MG004), program the extra **Menu Groups** required, or modify the default Menu Groups to suit your system requirements. **[MENU 2, 4, 1]**

1.2 Program a name for any new Menu Groups that you create.

1.3 Program the appropriate functional options allowed for each Menu Group. [R I D C S A M T]

-**R**emote Access. Set to Yes IF User is allowed remote access via Upload/Download software.

-**I**solate on Exit. Set to Yes IF User is allowed to Isolate Zones on exit if they are un-sealed.

-Area **D**efer On. Set to Yes IF User will start Area Defer On Timer running on "Defer" Areas.

-**C**ancel Holdup. Set to Yes IF User is allowed to cancel a Holdup alarm before it reports.

-**S**irens Off. Set to Yes IF User can turn Off Sirens that are operating in any Area when they logon to a Terminal.

-**A**cknowledge Messages. Set to Yes IF User can acknowledge messages from any Area when they logon to a Terminal.

-**M**ultiple Areas. Set to Yes IF User can turn multiple Areas On/Off via an Area List.

-**T**amper On/Off. Set to Yes IF User can turn Off the 24Hour (or Tamper) part of any Area in their "Area Off" List.

1.4 Assign the Main Menu options that the Menu Group will allow access to. [R A I T t . S C]
Review & Information, **A**ccess, **I**solate, **T**est, **t**imes, **S**ecurity and **C**ontrol.

1.5 Assign the Sub Menu options that the Menu Group will allow access to. [U T L G Z R A]
User Codes, User **T**ypes, **L**ists, **G**roups, Time**Z**ones, **R**eview and **A**djust Counters.

2. Area Lists. [MENU 2, 3, 1]

2.1 Determine the Area/s that different types of Users will be allowed to turn ON and OFF.
From this information you can program the **Area Lists** required **[MENU 2, 3, 1]**, remembering that different Area ON and Area OFF Lists may be assigned to each "User Type" if required.

NOTES:

1) Area List/s may also be required to:
-Restrict the Areas reported in a particular Comms Task.
-Restrict the Areas controlled from an LCD Terminal.

2) Default settings. (V5 or later Firmware only).
Area List AL001 has the following Factory Default settings:
Area List Name: ALL AREAS
Areas assigned: All

2.2 Program a name for each Area List.

2.3 Assign the Area/s to each Area List. An Area List can support any number of Areas up to the maximum number of Areas allowed in the Memory configuration.

USERS

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3. Door Lists. [MENU 2, 3, 2]

3.1 IF the system incorporates Access controlled Doors, determine the Door/s that different types of Users will be allowed to access. From this information you can program the **Door Lists** required **[MENU 2, 3, 2]**.

NOTE: Default settings. (V5 or later Firmware only). Door List DL001 has the following Factory Default settings:
Door List Name: ALL DOORS
Doors assigned: All

3.2 Program a name for each Door List.

3.3 Assign the Door/s to each Door List. A Door List can support any number of Doors up to the maximum number of Doors allowed in the Memory configuration.

4. Floor Lists [MENU 2, 3, 4] and Lift Car Lists. [MENU 2, 3, 5]

4.1 IF the system incorporates Access controlled Lifts, determine the Floor/s that different types of Users will be allowed to access. From this information you can program the **Floor Lists** required **[MENU 2, 3, 4]**.

NOTE: Default settings. (V5 or later Firmware only).
Floor List FL001 has all Floors assigned.
Lift Car List LL001 has all Lift Cars assigned.

4.2 Assign the Floor/s to each Floor List. A Floor List can support any number of Floors up to the maximum number of Floors allowed in the Memory configuration.

4.3 Determine the Lift Car/s that different types of Users will be allowed to access.
From this information you can program the **Lift Car Lists** required **[MENU 2, 3, 5]**.

4.4 Assign the Lift/s to each Lift Car List. A Lift Car List can support any number of Lifts up to the maximum number of Lifts allowed in the Memory configuration.

5. User Types. [MENU 2, 2]

5.1 Categorize all the Users in the system into a number of logical (and practical) "Types" according to the operations that they may perform, and the Area/s they are allowed to control. E.g. System Admin, Supervisor, Factory Staff, Maintenance, Guard, etc.
From this information program each of the **User Types** required. **[MENU 2, 2]**

5.2 Program a name for each User Type.

5.3 IF it is necessary to restrict the valid period of the User Type, or provide an alternate set of User Type permissions for different times of day and/or days of the week, assign an appropriate TimeZone to specify when the User Type is Valid.

5.4 If a TimeZone is assigned, you may then specify an Alternate User Type that will be used when the TimeZone specified in the previous step is Invalid.

5.5 Assign appropriate Area Lists to the "Area On List" and "Area Off List" options.
This will determine which Area/s the User Type can control.

5.6 Assign a suitable Menu Group. This will determine the Menu options allowed and some of the Operations that the User Type is allowed to perform.

5.7 IF the system incorporates Access controlled Doors, assign an appropriate Door List to the User Type.
This will determine which Door/s the User Type can access.

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5.8 IF the system incorporates Access controlled Lifts, assign an appropriate Floor List and Lift Car List to the User Type. This will determine which Floor/s the User Type can access via which Lift Car/s.

5.9 Program any of the User Type Options required for each User Type in the system. [d D U A P C]
The User options are:
-**d**isabled User. Set to Yes IF the User Type requires longer Door Unlock and Lift Button selection times. (V3 or later)
-**D**ual Code Provider. Set to Yes IF this User Type is allowed to present the first PIN Code/Card at any Door/s where Dual User access is required.
-Dual **U**ser Override. Set to Yes IF the request for Dual User Codes will be overridden for this User Type.
-Override **A**nti-Passback. Set to Yes IF Anti-passback rules will be overridden for this User Type.
-Cancel on **P**IN. Set to Yes IF the User Type is to be assigned to single-use PIN code Users. When a User with this option set to Yes in their User Type is granted PIN code access through a Door, the User will be cancelled by setting their User Type back to "None".
-Cancel on **C**ard. Set to Yes IF the User Type is to be assigned to single-use Card Users. When a User with this option set to Yes in their User Type is granted Card access through a Door, the User will be cancelled by setting their User Type back to "None".

6. Users. [MENU 2, 1]

6.1 **User Codes** programming may now be done utilizing the User Types just programmed. This may only be necessary to provide the client with a Master User Code that will allow them to program in the rest of the Users themselves.

6.2 Program a name for each User.

6.3 Assign an appropriate User Type .

6.4 IF the User requires a PIN code to perform any operations, enter in a unique PIN code of 1 to 8 digits for the User. A PIN code length of at least 4 digits is recommended.

6.5 IF the User requires a Card (or other type of ID token) to perform any operations, program the Card Type (Credit Card, Site Code or Direct Entry) and the card ID (Account number, Card number, or Raw Card Data depending on Card Type chosen).

6.6 IF the User's PIN code / Card is only to be valid up to a specific time and/or date, program the Expiry time and/or date.

6.7 Program any of the User Options required for each User in the system. [N D L E G]
The User options are:
-**N**o message acknowledge. Set to Yes IF the User is not allowed to acknowledge any alarm messages.
-**D**uress Code. Set to Yes IF this User Code is to be used as a system Duress PIN code.
CAUTION. If this option is set to Yes, DO NOT use any words in the User name (e.g. Duress, Holdup, etc.) that indicate that a Duress code is being used, as the name will be displayed in the greeting when the User logs on to the Terminal!
-Area **L**ist default. Set to Yes IF the Area List selection screen (rather than the Area selection screen) is to be displayed when the User logs on to a Terminal.
-**E**xtra Area Off. Access Control option.
-No **G**reeting. Set to Yes IF the logon greeting (e.g. Good morning Jack Frost) is not to be displayed for this User.

6.8 An "Extra Area" may be assigned to the User:
-IF the User is required to have On/Off control of just one Area.
(No Area List would then be required in their User Type.
-IF the User is required to have On/Off control of one additional Area as well as the Area/s defined via their User Type Area List.

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Central Monitoring Station Communications

When the system is required to communicate to a Central Monitoring Station, a number of different Comms formats are available. The most suitable format will be determined by the level of security required and the format/s capable of being monitored by the Central Station.

1) Dailer formats.
   Uses standard PSTN Telephone Line via on-board Dialer modem. (No additional hardware required).
   Follow Steps 1, 2, 3, 6 (If Backup Comms Task is utilized), 7 (If Time report is required), and 8 (If Dialer Line testing is required)
2) Securitel. (Australia only)
   Uses standard PSTN Telephone Line where Securitel service is available. A 1, 2 or 4 Port UART board must be fitted to the Control Module and connected to a Securitel Interface Unit (3rd Party item) using the Securitel / SpreadNet® Interface Cable. (P/No: 993035)
   Follow Steps 4 & 5, and 1 & 6 (If Dialer Backup Comms Task is utilized).
3) Polled Network formats. *Refer to Programming Reference section for programming details.*
   e.g. -Direct Line. Uses a private leased line via on-board modem. (V1 ot V4.9x only)
   -Poll Data (V3 or later) / Inet (V3.5 or later). Uses RS232 based communications, which may in turn be converted to another format (e.g. Ethernet) for communicating with the Central Station.
4) 8-Pin STU formats. *Refer to Programming Reference section for details.*
   Uses 8 Auxiliary outputs for different alarm types and alarm confirmation to activate inputs on STU's that can support 8 or more Pin inputs. (V5.1 or later)

1. Program Telephone Numbers. [MENU 7, 3, 2]

IF the system is communicating to a Central Station via the Main Comms Task or Backup Comms Task in any of the Dialer formats, program the required "Telephone Number/s". You may need to program one or more Telephone numbers.

e.g. -A PABX Access code IF the system needs to access an external line via a PABX connection.
-The primary Central Station Telephone number.
-Secondary Central Station Telephone number/s if required. (Up to 3 alternate numbers per Comms Task)

1.1 Select a Telephone number (TNxxx) to program.

1.2 Program a name for each Telephone number that is entered.

1.3 Enter the actual Telephone number. (IF "*" &/or "#" characters need to be used in the phone number via the "0" key, press the ON key for alpha-numeric mode before entering the number)

2. Program the Main Dialer Comms Task options. [MENU 7, 3, 1]

IF the system is communicating to a Central Monitoring Station in any of the Dialer formats, program the required Dialer Comms Task.

2.1 Select a Comms Task (CTxxx) to program. Note that Comms Task CT001 is pre-programmed by the system defaults to PCDirect (V1 to V4.9x) or Insight (V5 or later). It is recommended that this Comms Task is not changed. Select Comms Task CT002 or higher for Central Station reporting.

2.2 Select the Dialer Comms format required. IRfast / Contact ID / 4+2 Pulse / SIA

2.3 Program the Dialer Comms Task Options. If programming from an LCD Terminal, with the Comms Task set to "Idle", press <HELP>, 9 to program the options.

2.4 Enter the 4 digit "Client Code" supplied by the Central Monitoring Station.
Note that the SIA format requires "Prefix" + "Client Code" to make up the 6 digit SIA Client Code.

2.5 IF the SIA format is selected, program the SIA options required. [D N A T O . . .]

2.5 IF the system needs to access an external line via a PABX connection, assign the "PABX Telephone Number".

2.6 Assign the "1st Telephone Number". This is the primary telephone number used to dial the Central Station.

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2.7 Assign any of the "2nd, 3rd and 4th Telephone Numbers" if required. These are alternate Telephone numbers that may be used to dial the same Central Monitoring Station if the 1st or subsequent number is busy or faulty.

2.8 Program any of the Dialing options required. [P p D F T M . 6]
The options are:
-**P**ulse Dial Main Telephone numbers. Set to Yes IF the system is required to use Pulse (Decadic) dialing for the main Telephone numbers. i.e. The 1st, 2nd, 3rd and 4th Telephone numbers.

-**p**ulse Dial PABX Telephone numbers. Set to Yes IF the system is required to use Pulse (Decadic) dialing for the PABX number.

-**D**umb Dial. Not normally required. *Refer to Programming Reference section for details.*

-**F**orce 300 Baud. IF IR fast format is used, and communication difficulties are experienced at the default 1200 Baud comms speed, this option may be set to Yes to force comms to 300 Baud. (ONLY relevant to IRfast)

-**T**est Mode. Special option. Not normally required. *Refer to Programming Reference section for details.*

-**M**aximum Count. IF set to Yes, allows the maximum call time in Contact ID to be based on valid acknowledgements received, rather than on time. Only used if problems are experienced with the Central Station Receiver's buffer overflowing when the system sends large amounts of data. e.g. During a site commissioning. Not normally required. *Refer to Programming Reference section for details.*

-**6**0 second Re-dail. Not normally required. *Refer to Programming Reference section for details.*

2.9 Program any of the Reporting options required. [M L G P N D . .]
The options are:
-**M**ultiple Area Client Codes. Set to Yes IF separate Client Codes are to be reported for some or all of the different Areas in the system. If utilized, the Client Code for each Area must be programmed in each Area database where the option is required. If set to No, only the Client Code programmed in step 2.4 will be used.

-**L**ook Ahead. Set to Yes if new Alarms are to be reported with priority over multi-breaks on a Zone that has already been reported. *Refer to Programming Reference section for details.*

-**G**eneral Open/Close Reporting. Set to Yes IF the system is only required to Report "First Area to Open" and "Last Area to Close". If unique Open/Close reporting is also required on some Areas, another Comms Task may be programmed to report those Areas. *Refer to Programming Reference section for details.*

-**P**revent Restores. Not normally required. *Refer to Programming Reference section for details.*

-**N**o "Area Still Open" or "Area 24Hr (Tamper) Off" reports. Set to Yes if Comms format or Central Station Automation system does not support these Area reports. *Refer to Programming Reference section for details.*

-**D**elayed Reporting. (V5 or later) Not normally required. *Refer to Programming Reference section for details.*

2.10 IF the Comms Task is to be restricted to reporting on a limited number of Areas, assign an Area List to the "Area List Filter" option. (IF utilized, you may have to program an Area List first)

2.11 IF only certain types of messages are to be reported by this Comms Task, program the "Extra Filter" options.
[E O A . . . . .] -**E**nable the Extra Filter options. Set to Yes IF filtering is required.
-**O**pen/Closes. Set to Yes IF Area Openings and Closing are to be sent.
-**A**larms/Tampers/Isolates. Set to Yes IF Alarms, Tampers and Isolates are to be sent.

2.12 Select the appropriate "Contact ID Map" to be used for this Comms Task.
This option applies IF Contact ID format is used, or IF Contact ID information is sent with IR fast format.
As there are a limited number of points that can be reported via the Contact ID format, a Map can be chosen in consultation with the Central Monitoring Station, that best suits the system configuration.
Refer to Programming Reference and Tables sections for details.

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3. Program the Main Dialer Comms Task Special options. [MENU 7, 3, 1]

3.1 Program the Dialer Comms Task Special Options. If programming from an LCD Terminal, from the main Comms Task options "Client Code" screen, press <HELP>, 9, to program the Comms Task Special Options.
This is only required IF:
-The default number of Dial attempts or Backup attempts needs to be changed.
-A "Backup Comms Task" needs to be specified. (Allows the system to report to an alternate Central Monitoring Station if all attempts to communiate to the main Central Monitoring Station are unsuccessful.)
-Auxiliaries are required to indicate "Seize" and "Pass" states.
-Any default timing parameters need to be changed.
-Any special options are required when IRfast Format is used.

3.2 Maximum Attempts. Default is 8 attempts. Program only if a different number of attempts is required.

3.3 Backup Attempts. Default is 4 attempts. Program only if a different number of attempts is required.

3.4 Backup Comms Task. IF a Backup Comms Task is required, specify the Comms Task that will be triggered if this Comms Task fails to communicate with the Central Station after the maximum number of attempts.

3.5 Seize Auxiliary and Pass Auxiliary. Assign an Auxiliary ID if required.

3.6 Timing Parameters.
PABX Dial Wait. Default is 3 seconds.
Main Dial Wait. Default is 3 seconds.
Handshake Wait. Default is 30 seconds.
Maximum Online Time. Default is 10 minutes.
Line Test Count. Should be left at "000" unless advised otherwise.
CAUTION: These parameters normally only changed if advised by Distributor Technical Support.
Refer to Programming Reference section for details before attempting to edit.

3.7 IF IRfast format is used, program any of the IRfast "Special Options" required. [R C T . . L I U]
These options should only be programmed if instructed to do so by the Central Monitoring Station.
-**R**eview Text. Set to Yes if Review text is to be sent with each event reported.

-**C**ontact ID string. Set to Yes if equivalent Contact ID String is to be sent with each event reported.

-Send **T**ime/Date. Set to Yes if a text string of the Time/date the event was recorded is to be sent with each event reported.

-**L**ink to PC. If set to Yes, causes an FE100 Receiver to hang on to the line for a short period to allow the Automation system PC to send commands back to the panel.

-Panel **I**nformation. Set to Yes if miscellaneous panel information such as serial number, firmware version and security option settings is to be sent at the end of each report.

-**U**pdate Panel. If set to Yes, causes an FE100 Receiver to update the panels Time and Date before hanging up.

3.8 IF IRfast format is used, program any of the IRfast "Remote Control Options" required. [I U . . . D X A]
These options should only be programmed if instructed to do so by the Central Monitoring Station.
-**I**nstaller Status. Set to Yes if Central Station is to have Installer Status for the purpose of Remote Control.

-**U**ser Status. Set to Yes if Central Station is to have normal User Status for the purpose of Remote Control.

-**D**oor Control. Set to Yes if remote control of Doors is allowed where the facility exists.

-Au**X**iliary Control. Set to Yes if remote control of Auxiliaries is allowed where the facility exists.

-**A**rea Control. Set to Yes if remote control of Areas is allowed where the facility exists.

MONITORING

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4. Program the Securitel Comms Task options. [MENU 7, 3, 1]

IF the system is communicating to a Central Monitoring Station in the Securitel format, program a Securitel Comms Task.

4.1 Select a Comms Task (CTxxx) to program.
Note that Comms Task CT001 is pre-programmed by the system defaults to PCDirect. It is recommended that this Comms Task is not changed. Select Comms Task CT002 or higher for Central Station reporting.

4.2 Select the "Securitel" Comms format.

4.3 Program the Securitel Comms Task Options. If programming from an LCD Terminal, with the Comms Task set to "Idle", press <HELP>, 9 to program the options.

4.4 Enter the 4 digit "Hard ID" supplied by the Central Monitoring Station.

4.5 Define the UART "Port to Use" that the Securitel Interface is connected to. Must be Port 1 to 4. Port 0 not allowed.

4.6 Program the Baud rate for communications between the UART Port and the Securitel Interface. Normally 9600.

4.7 Program any of the Reporting options required. [M L G P N . . .]
The options are:
-**M**ultiple Area Client Codes. Set to No. Not used is this format.

-**L**ook Ahead. Set to Yes if new Alarms are to be reported with priority over multi-breaks on a Zone that has already been reported. *Refer to Programming Reference section for details.*

-**G**eneral Open/Close Reporting. Set to Yes IF the system is only required to Report "First Area to Open" and "Last Area to Close". If unique Open/Close reporting is also required on some Areas, another Comms Task may be programmed to report those Areas. *Refer to Programming Reference section for details.*

-**P**revent Restores. Not normally required. *Refer to Programming Reference section for details.*

-**N**o "Area Still Open" or "Area 24Hr (Tamper) Off" reports. Set to No. Not used is this format.

4.8 IF the Comms Task is to be restricted to reporting on a limited number of Areas, assign an Area List to the "Area List Filter" option. (IF utilized, you may have to program an Area List first)

4.9 IF only certain types of messages are to be reported by this Comms Task, program the "Extra Filter" options.
-**E**nable the Extra Filter options. Set to Yes IF filtering is required.

-**O**pen/Closes. Set to Yes IF Area Openings and Closing are to be sent.

-**A**larms/Tampers/Isolates. Set to Yes IF Alarms, Tampers and Isolates are to be sent.

5. Program the Securitel Comms Task Special options. [MENU 7, 3, 1]

5.1 Program the Securitel Comms Task Special Options. If programming from an LCD Terminal, from the main Comms Task options "Hard ID" screen, press <HELP>, 9, to program the Comms Task Special Options.
This is only required IF:
-Any default timing parameters need to be changed.
-A "Command back" Auxiliary output needs to be specified.
-A "Backup Comms Task" needs to be specified. (Allows the system to report to an alternate Central Monitoring Station via a Dialer format if all attempts to communiate to the main Central Monitoring Station are unsuccessful.)

5.2 Timing Parameters.
Poll Wait. Default is 10 seconds.
CAUTION: This parameter normally only changed if advised by Distributor Technical Support.
Refer to Programming Reference section for details before attempting to edit.

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5.3 Command Back Auxiliary. Assign an Auxiliary ID if required.

5.4 Backup Comms Task. IF a Backup Comms Task is required, specify the Comms Task that will be triggered if this Comms Task fails to communicate with the Central Station.

6. Program the Backup Dialer Comms Task. [MENU 7, 3, 1]

IF a Backup Comms Task was specified in Dialer Special Options, program the Backup Comms Task.

6.1 Select a new Comms Task (CTxxx) to program.

6.2 Select the Backup Comms format required. IRfast Backup.
Contact ID (CID) Backup.

6.3 Program the Backup Dialer Comms Task Options as per Step 2.

7. Program Time Report/s to the Central Monitoring Station.

IF a periodic Test report is required to be sent to the Central Monitoring Station, program the "Time Report" facility.

7.1 Program a TimeZone. [MENU 5, 2]
Select the TimeZone and program an appropriate name. e.g. "Time Report"

7.2 Program the first TimeZone period to define when the Time Report will be sent.

7.3 Program the Valid Days of the week for the first Period.
i.e. Days when the function is required to operate.

7.4 IF the TimeZone requirements are more complex, program the second (and any subsequent) "TimeZone period" and "Valid Days" to define when the function will be triggered.
e.g. If the Time Report requirements differ from Day to Day.

7.5 Assign the Holiday Types to be obeyed. (If necessary)

e.g. Time Report to be sent at 3 AM every night.
1st Period: 03:00-to-03:02
Days: SMTWTFSH all set to Yes.

Note: If the Time Report is required to be sent twice a day, two TimeZone periods can be programmed, using the Start Times of the two periods to define the two report times.

7.6 Set TimeZone Function to "Trigger Time Report".

7.7 Set Control Options for Trigger Time Report. [O F o f]
This detemines how the Time Report System Input will be triggered. (C01:S18)
-**O**. Time Report System Input **O**n (Alarm edge) when TimeZone goes Valid.
-**F**. Not used for this function.
-**o**. Not used for this function.
-**f**. Not used for this function.

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7.8 Assign the Time Report System Input (C01:S18) to an Area. [MENU, 7, 1]
Assign the Input to a System Area that is always On with an appropriate Process Group. e.g. "System Silent".

NOTE: If the "Add System Inputs" Area default procedure is used, and the "S" (System **S**ilent) option set to Yes, this Input (C01:S18) is assigned to the Area with the "System Silent" Process Group.
See "Program the Areas" (Step 4) in "Alarm Processing" for details.

Note that the default "System Silent" Process Group will generate an LCD Terminal message. You may choose to program a similar Process Group for this Input, but with all "Terminal message Types" set to No.
[MENU, 2, 4, 3]
Alternatively you may choose to set "Terminal message Types" all to No in the "System Silent" Process Group, but this will effect other System Inputs and may not be appropriate in all applications.

8. Program Dialer Line Testing.

IF regular testing of the Dialer Line is required, program the Line Test Facility. This allows the Control Module to test the line frequently to detect a fault or tamper condition without having to dial.
It is recommended that this feature is utilized if the On-board modem is connected to a telephone line for any purpose. i.e. Alarm reporting, remote control and/or Upload/Download.

8.1 Select a new Comms Task (CTxxx) to program;
OR If a Comms Task is already programmed for "Insight Internal Modem" or "Answer Call", select this Comms Task. Note: "Insight Internal Modem" format in only available in V5 or later.

8.2 Select the "Insight Internal Modem" or "Answer Call" Comms format if a new Comms Task is being created.
Note: An "Internal Modem" and "Answer Call" Comms Task cannot be used in the same system. Select the required format based on which Upload/Download software or reporting format/s you will be using with this system. Insight &/or IPfast: Internal Modem.
WDirect or PC Direct: Answer Call.

8.3 Program the Comms Task Options. If programming from an LCD Terminal, with the Comms Task set to "Idle", press <HELP>, 9 to program the options.

8.4 Program the "Line Test Time". This option sets the time between automatic dialer line tests. The time can be programmed between 1 and 255 minutes.
When tested, if line voltage is not detected the "Phone" System Input (C01:S22) will be set to the alarm condition. If line voltage is detected, C01:S22 will be restored.
The default setting of "000" disables Line testing.

8.5 Assign the "Phone" System Input (C01:S22) to an Area. [MENU, 7, 1]
Assign the Input to a System Area that is always On with an appropriate Process Group. e.g. "System Local".

NOTE: If the "Add System Inputs" Area default procedure is used, and the "L" (System **L**ocal) option set to Yes, this Input (C01:S22) is assigned to the Area with the "System Local" Process Group.
See "Program the Areas" (Step 4) in "Alarm Processing" for details.

Note that the default "System Local" Process Group does not activate any Area Auxiliaries. If an Auxiliary output is required (e.g. to activate alternative reporting method such as cellular interface) you may choose to program a similar Process Group for this Input, but with one or more Area Alarm Auxiliaries set to Yes.
[MENU, 2, 4, 3]

A "Line Fault" System Input (C01:S12) is also provided. This System Input is set to the Alarm condition if line voltage is not detected when the system attempts to dial. You may choose to process this Input in the same manner as the "Phone" System Input.

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Remote Access and Remote Control

The system can be accessed by remote devices for the purposes of Upload/Download and Remote Control.

The following options are available:

Upload/Download and Remote Control.

1) Control Module answers (or Calls back) PC via On-board modem.
Uses standard PSTN Telephone Line via on-board Dialer modem. (No additional hardware required).
Allows system Programming, Review monitoring and Remote Control using Upload/Download software, such as Insight (V5 or later), WDirect (V3 or later) or PCDirect at up to 1200 Baud.
Follow Steps 1, 2, 3, 3a (If Insight software used) and 7.

2) Control Module answers PC via External modem.
Uses standard PSTN Telephone Line. A 1, 2 or 4 Port UART board must be fitted to the Control Module and connected to a Dial-up modem (3rd Party item) using the Modem Interface Cable. (P/No: 993027)
Allows system Programming, Review monitoring and Remote Control using Upload/Download software, such as WDirect (V3 or later) or PCDirect at up to 9600 Baud.
This option is useful if the On-board modem is used for Direct Line (e.g. EarthNet) reporting, or if the higher Baud rate is required.
Follow Steps 4, 5 and 7.

Remote Control Only.

3) Control Module answers Touch-tone (DTMF) telephone via On-board modem.
Uses standard PSTN Telephone Line via on-board Dialer modem. (No additional hardware required).
Allows Remote Control of Areas and Auxiliaries using any Touch-tone (DTMF) telephone.
Follow Steps 2, 3, and 6.

1. Program Telephone Numbers. [MENU 7, 3, 2]

IF the system is required to Call back the PC following a successful logon sequence for added security, program the required "Telephone Number/s".

NOTES: 1) Only available if using the On-board modem.
2) Not yet available for Insight.

You may need to program one or two Telephone numbers.
-A PABX Access code IF the system needs to access an external line via a PABX connection.
-The Telephone number of the PC's modem. (The "Call back" number)

1.1 Select a Telephone number (TNxxx) to program.

1.2 Program a name for each Telephone number programmed.
e.g. "Callback Number" and "C'back PABX Acc" (If required)

1.3 Enter the actual Telephone number/s.

2. Program the "Insight Internal Modem" or "Answer Call" Comms Task options. [MENU 7, 3, 1]

IF the system is required to answer a call from a PC or Touch-tone phone via the On-board modem, program an "Insight Internal Modem" Comms Task (If using Insight software with V5 or later) OR an "Answer Call" Comms Task (If using WDirect or PC Direct software). **IMPORTANT NOTE:** V5 or later. While WDirect/PC Direct can backup the entire panel database, some programming options are not available to view or edit.

2.1 Select a new Comms Task (CTxxx) to program.
OR If a Comms Task is already programmed for "Internal Modem" or "Answer Call", select this Comms Task.

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2.2 Select the “Internal Modem” or “Answer Call” Comms format.

2.3 Program the “Internal Modem” or “Answer Call” Comms Task Options. If programming from an LCD Terminal, with the Comms Task set to “Idle”, press <HELP>, 9 to program the options.

2.4 Enter the number of “Rings to Answer” between 001 and 019. This is the number of rings required to be sensed before the Control Module will answer the incoming call.

2.5 Program any of the Answer Call options required. [F 3 C T S D . .]
The options are:
-**F**ax Bypass. (“Answer Call” only) Set to Yes if the Line is shared with a Fax machine or similar device. When set to Yes this option enables Fax Bypass by sensing if the phone stops ringing before the required number of rings. If detected it will loop the line in parallel with the other device that answered the phone (e.g. fax machine) and wait a pre-determined time for DTMF tone to be sensed from the PC.

-**3**00 Baud only. (“Answer Call” only) Set to Yes to force comms speed to 300 Baud irrespective of the modem type. Only used if comms is found to be unreliable at higher baud rates due to a poor quality line.

-**C**all back only. (“Answer Call” only) Set to Yes IF the Control Module is always to Call back the PC after the PC has dialed in and logged on successfully.

-**T**imed Bypass.
V1 to V4.9x Must be set to No if DTMF Control mode is required.
Set to Yes to enable Timed Bypass. (**F**ax Bypass must also be set to Yes).
Allows the PC Operator to bypass the fax by dialing the system, aborting the call immediately after the fax has answered, and then dialing the system again 1 minute later. The system will recognise the sequence and answer on the 1st ring before any other device can answer.

V5.04 or later. This option enables Fax Bypass by sensing if the phone stops ringing within 5 rings. If detected, the Comms Task will start a timer running. If rings are sensed again after 60 seconds (but before 120 seconds) the panel will now answer on the first ring, thereby gaining the line before the fax/answering machine can answer.

-**S**ingle DTMF Tone. (“Answer Call” only) Set to Yes IF DTMF Remote Control mode is required, AND “Fax Bypass” is set to Yes.

-**D**TMF Control Mode. Set to Yes IF DTMF Control Mode is allowed when the Control Module answers a call and the correct DTMF tone is detected.

3. Program the “Internal Modem” or “Answer Call” Comms Task Special options. [MENU 7, 3, 1]

3.1 Program the Special Options. If programming from an LCD Terminal, from the main Comms Task options “Rings to Answer” screen, press <HELP>, 9, to program the Comms Task Special Options.
NOTE: Callback not yet implemented for Insight software.

3.2 Program any of the Dialing options required. [P p D F T M . 6]
The options utilized in the Internal Modem or Answer Call Comms Task are:

-**P**ulse Dial Main Telephone number. Set to Yes IF the system is required to use Pulse (Decadic) dialing for the Call back Telephone number.

-**p**ulse Dial PABX Telephone numbers. Set to Yes IF the system is required to use Pulse (Decadic) dialing for the PABX number.

-**D**umb Dial. Not normally required. *Refer to Programming Reference section for details.*

3.3 IF the system needs to access an external line via a PABX connection, assign the “PABX Telephone Number”.

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3.4 Assign the “Call back Telephone Number”. This is the telephone number used to dial the Computer.

3.5 Assign the “Customer Telephone Number”. This is the telephone number of the line connected to the Control Module. Allows the Installer to have a record of the number for reference purposes.

3.6 Seize Auxiliary. Assign an Auxiliary ID if required.

3.7 Single DTMF Tone. Must be programmed if DTMF Remote Control is required.
This option selects the DTMF tones that will be used to:
-Initiate the modem answer sequence in Fax Bypass mode. (“Answer Call” only)
The programmed DTMF tone is used.
-Initiate DTMF Remote Control mode.
V5.1 or later: The programmed DTMF tone is used.
V3 to V4.9x: The programmed DTMF tone **plus one** is used.
e.g. If DTMF digit “5” is programmed, this will be used as the Fax Bypass tone and digit “6” will be used to initiated DTMF Control mode.

3.8 Timing Parameters.
DTMF Tone Wait. Default is 5 seconds.
Line Test Count. Should be left at “000” unless advised otherwise.
Answer Wait. Default is 0 seconds.
CAUTION: These parameters normally only changed if advised by Distributor Technical Support.
Refer to Programming Reference section for details before attempting to edit.

3a. Program the “Insight” Comms Task options. [MENU 7, 3, 1]

IF the system is required to answer a call from a PC running Insight software, program an “Insight” Comms Task (V5 or later only).

3a.1 Select Comms Task #1 (CT001) to program. Comms Task CT001 must be used for the “Insight” Comms Task. Note that the format for CT001 is set to “Insight” by default at the factory, or whenever the panel is defaulted, and should not be changed. If the format has been changed, move the other format to another Comms Task, and elect the “Insight” Comms format for CT001.

3a.2 Program the Insight Comms Task Options. If programming from an LCD Terminal, with the Comms Task set to “Idle”, press <HELP>, 9 to program the options.

3a.3 Enter the 8 digit “Panel ID”. This must match the Panel ID programmed for this Panel in the Insight software.

3a.4 Program the Connection options for the “Internal Modem” (IntMod) communications path. [. . . . I A C E]
The relevant options are:
-**A**nswer Insight. Set to Yes.

-Path **E**xists. Set to Yes.

3a.5 IF an Encryption key is to be used, enter the 32 character Encryption key in the “Insight A” (1st 16 characters) and “Insight B” (Characters 17 to 32) screens. The Encryption key must match the Encryption key programmed for this Panel in the Insight software.

4. Program the External Modem Comms Task options. [MENU 7, 3, 1]

IF the system is required to answer a call from a PC via an External modem, program an “External Modem” Comms Task.
IMPORTANT NOTE: Not currently available for Insight connection. (V5 or later)

4.1 Select a new Comms Task (CTxxx) to program.

4.2 Select the “External Modem” Comms format.

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4.3 Program the External Modem Comms Task Options. If programming from an LCD Terminal, with the Comms Task set to "Idle", press <HELP>, 9 to program the options.

4.4 Enter the number of "Rings to Answer" between 001 and 019. This is the number of rings required to be sensed before the Control Module will answer the incoming call.

4.5 Define the UART "Port to Use" that the External Modem is connected to. Must be Port 1 to 4. Port 0 not allowed.

4.6 Program the Baud rate for communications between the UART Port and the External Modem. Normally 9600.

5. Program the External Modem Comms Task Special options. [MENU 7, 3, 1]

5.1 Program the External Modem Comms Task Special Options. If programming from an LCD Terminal, from the main Comms Task options "Rings to Answer" screen, press <HELP>, 9, to program the Comms Task Special Options.

5.2 Program any of the Dialing options required. [P p D F T M . 6]
The options utilized in the External Modem Comms Task are:

-**P**ulse Dial Main Telephone number. Set to Yes IF the system is required to use Pulse (Decadic) dialing for the Call back Telephone number.

-**p**ulse Dial PABX Telephone numbers. Set to Yes IF the system is required to use Pulse (Decadic) dialing for the PABX number.

-**D**umb Dial. Not normally required. *Refer to Programming Reference section for details.*

5.3 Assign the "Customer Telephone Number". This is the telephone number of the line connected to the External Modem. Allows the Installer to have a record of the number for reference purposes.

5.4 Timing Parameters.
DTMF Tone Wait. Default is 5 seconds.
Line Test Count. Should be left at "000" unless advised otherwise.
Answer Wait. Default is 0 seconds.
CAUTION: These parameters normally only changed if advised by Distributor Technical Support.
Refer to Programming Reference section for details before attempting to edit.

6. Program the DTMF Control. [MENU 7, 3, 3]

IF DTMF Remote control is required, the DTMF Control Code/s and Function/s must be programmed.

6.1 Select a new "DTMF Control" to program. (DCxxx)

6.2 Define the 4 digit "Control Code".
If a number of similar DTMF Remote Control functions are required, remembering the codes can be made easier by defining the function of some of the digits in a particular system.
e.g. If Remote On and Off Control of 4 Areas is required.
The first 2 digits can be common digits (the same for all codes). e.g. 85. The 3rd digit could be used to define the Area number and the 4th digit to select On (e.g. 6 - "N" key on phone) or Off (e.g. 3 - "F" key on phone).
So; 8526 = Area 2 On. 8533 = Area 3 Off. etc.

Remember that once you have dialed in to the system and sent the DTMF Remote Control mode tone, you must wait for the "Ready" tones before sending the Control Code.

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6.3 Select the DTMF Control "Function".
-Area On.
-Area Off.
-Auxiliary On (seconds). To turn an Auxiliary On without a timer, select this option and ensure that the "Auxiliary Time" is set to "000".
-Auxiliary On (minutes).
-Auxiliary Off.

6.4 IF an Auxiliary Control funtion is selected, define the "Output Auxiliary" to control.
Enter the Auxiliary ID.

6.5 IF an Area Control funtion is selected, define the "Area to Operate".
Enter the Area number.

6.6 IF an "Auxiliary On" Control function is selected, and an On time is required, program the "Auxiliary Time".
Enter the time period required. This will be in seconds OR minutes depending on the Auxiliary On function selected.

NOTE: The table on the following page can be copied to record the system Telephone number, Control mode tone, Control Codes and Functions. A similar table is also provided at the rear of the Revision 3 User Manual.

7. Check/Program Menu Groups. [MENU 2, 4, 1]

Any User that is allowed to access the system remotely from a PC with Upload/Download software must have permission to do so via the "Menu Group" assigned to their "User Type".
You will need to check that the appropriate Menu Group/s (if any) allow Remote Access.

Level of access once logged in will depend on User Number:
User 00001. All programming and all on/off control allowed. Must not be locked out by "Master User" (U00002)
User 00002. Some programming (no Installer Menu, etc.) and all on/off control allowed.
User 00003 and higher. No programming and some on/off control allowed.

1.1 Select a Menu Group to edit.

1.2 Program the appropriate functional options allowed for the Menu Group. [R I D C S A M T]

-**R**emote Access. Set to Yes IF User is allowed remote access via Upload/Download software.

1.4 Assign the Main Menu options that the Menu Group will allow access to. [R A I T t . S C]
Review & Information, **A**ccess, **I**solate, **T**est, **t**imes, **S**ecurity and **C**ontrol.

1.5 Assign the Sub Menu options that the Menu Group will allow access to. [U T L G Z R A]
User Codes, User **T**ypes, **L**ists, **G**roups, Time**Z**ones, **R**eview and **A**djust Counters.

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DTMF CONTROL DETAILS

System Telephone No: .....

"Control Mode" Tone: .....

Control Codes: Action.

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(Depending on Memory size fitted, either 8 or 16 Control Codes will be available)

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Miscellaneous Options

Control of "Common" Areas.

Program **Areas. [MENU 7, 1]**

An Area that is to be automatically controlled by a one or more other Areas can be assigned to the other Area/s as a "Sub Area".

e.g. The "Foyer" Area is:
-automatically turned Off if the "Admin" OR "Sales" OR "Showroom" Area is turned Off.
-automatically turned back On only when all of the other Areas are On.

In the Area programming for each of the three controlling Areas (Admin, Sales and Showroom), assign the "Foyer" Area as the "Sub Area". No programming is required for the Foyer Area.

See "Programming Areas" (MENU, 7, 1) in the "Programming Reference" section for details of Sub-Area Programming.

Area Control via Zone Inputs.

Program **Function Zones. [MENU 7, 5, 3]**

Function Zones provide for control of Areas or Area Lists by devices connected to Zone Inputs, such as:
-Keyswitches.
-Outputs from Remote Control Receivers.
-Outputs from other 3rd party equipment such as Building Management Systems.

See "Function Zones" (MENU, 7, 5, 3) in the "Programming Reference" section for details of Function Zone Programming.

Auxiliary Output Control via Zone Inputs.

Program **Function Zones. [MENU 7, 5, 3]**

Function Zones provide for control of Auxiliaries by devices connected to Zone Inputs, such as:
-Keyswitches.
-Outputs from Remote Control Receivers. (e.g. Open Garage Door)
-Outputs from other 3rd party equipment such as Building Management Systems.
-Push buttons. (e.g. Activate Doorbell)

See "Function Zones" (MENU, 7, 5, 3) in the "Programming Reference" section for details of Function Zone Programming.

Auxiliary Output Control from LCD Terminals.

Program **Home Auxiliaries. [MENU 7, 5, 5]**

Home Auxiliaries allow Auxiliary Outputs to be controlled by Users from LCD Terminals. Home Auxiliaries are named allowing easy selection, and can also be controlled by Zone Inputs if required. This provides for simple yet sophisticated control of lighting, airconditioning, irrigation, and many other applications.

See "Home Auxiliaries" in the "Applications Programming Guide" section and "Home Auxiliary Programming" (MENU, 7, 5, 5) in the Programming Reference section for details of Home Auxiliary Programming.

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Timed Auxiliary Output Control.

Program **Auxiliary Timers. [MENU 5, 5]**

With "Auxiliary Timer" programming, any Auxiliary Output in the system can be programmed to be activated for a specific period of time regardless of the mechanism used to trigger the Auxiliary.

The Timer can be specified in the range of 1 to 255 seconds OR 1 to 255 minutes.

See "Auxiliary Timers" (MENU, 5, 5) in the "Programming Reference" section for details of Auxiliary Timer Programming.

Auxiliary Logic and Control functions.

Program **Calculated Auxiliaries. [MENU 7, 5, 4]**

Calculated Auxiliaries allow:
-Auxiliaries to be used in simple Logic equations to achieve more complex Auxiliary Output Control and Timing functions.

-Auxiliary Actions to:
- -Turn Area/s On and/or Off.
- -Lock and/or Un-lock Door/s.
- -Secure and Free Floor/s.

-Auxiliary Actions to provide:
- -Anti-Passback Amnesty.
- -Clear User Count in an Area.
- -Clear an Event Counter.

See "Calculated Auxiliaries" (MENU, 7, 5, 4) in the "Programming Reference" section for details of Calculated Auxiliary Programming.

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Model 3000 / Access 4000

APPLICATIONS PROGRAMMING GUIDE

This Applications Programming Guide provides a step-by-step approach to programming many system applications in addition to the general features described in the Basic Programming Guide.

For detailed explanations of individual programming options refer to the "Programming Reference" section.

Check the Website regularly for:

-Additional Applications not included in this manual.
(Applications only available from the Website are noted in the Table of Contents on Page 3)

-Updates and/or changes to existing documents.

-New documents to be added to this section.

Advanced Tech Support:
http://support.innerrange.com/restricted/index.phtml (Logon required)
http://support.innerrange.com/registration.phtml (To register)

Home Page:
http://www.innerrange.com

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LIFT ACCESS CONTROL WITH FLOOR BUTTON FEEDBACK. (V3 OR LATER)
-Available from the Website only.

LIFT ACCESS CONTROL WITH HIGH LEVEL INTERFACE. (V3 OR LATER)
-Available from the Website only.

READER AREA CONTROL.

REVIEW MANAGEMENT.

SIREN CONTROL IN DETAIL.

TIME REPORTS (PERIODIC TEST REPORTS)

TIMED AUXILIARY CONTROL BY MOVEMENT DETECTOR/S. (V2 OR LATER)

USER COUNTING IN AREAS. (V2 OR LATER)

ZONE INPUT TESTING:
- ZONE SELF TEST.
- WALK TESTING. (V3 OR LATER)
- AREA PRE-ARM WALK TESTING. (V3 OR LATER)

ZONE MULTIPLICATION.

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ANTI-PASSBACK & "WRONG AREA" PROCESSING

These features are an enhancement to Access Control operation and are designed to monitor and/or prevent the abuse of access priveleges.

When Access Control is utilized, and "Inside" and "Outside" Areas are assigned to the Doors, the system maintains a record of the Area that every User is currently in. (Note that this requires every access controlled Door to have IN and OUT Readers installed.)

Anti-Passback is used to monitor/prevent a User from Entering an Area that the system record says that they are already in.
When a User presents their Card at a Door Reader, the system checks which Area:
a) Is on the opposite side of the Door. i.e. The Area that the User is attempting to Enter.
and b) Is recorded as being the Area that they are currently in.
As long as these two Areas are different, access will be granted. If the two Areas are the same, then an Anti-Passback violation will be recorded (Soft Anti-Passback), and the User may also be denied Access (Hard Anti-Passback)

In more complex systems where there are more than two Areas, Anti-Passback processing alone may not be adequate. In this situation, "Wrong Area" processing may be added to enhance the integrity of the system.
"Wrong Area" is used to prevent a User from Exiting an Area unless the system record says that they are currently in that Area.
When a User presents their Card at a Door Reader, the system checks which Area:
a) Is on the same side of the Door. i.e. The Area that the User is attempting to Exit.
and b) Is recorded as being the Area that the User is currently in.
As long as these two Areas are the same, access will be granted. If the two Areas are different, then a "Wrong Area" violation will be recorded, and the User will be denied Access.

1. Check/Program Access Group requirements. [MENU, 2, 4, 2]

1.1 Program a new Access Group (or select an existing Access Group if appropriate) and Check/Program the Access Group parameters as described in the Basic Programming Guide under "Access Groups".

1.2 Program the Entry Anti-passback Mode.
-None. No Anti-Passback processing will occur on Entry through the Door.
-Soft. A Review message will be logged for Anti-Passback violations on Entry through this Door.
-Hard. Access will be denied and a Review message logged for Anti-Passback violations on Entry attempts through this Door.

1.3 Program the Exit Anti-passback Mode.
-None. No Anti-Passback processing will occur on Exit through the Door.
-Soft. A Review message will be logged for Anti-Passback violations on Exit through the Door.
-Hard. Access will be denied and a Review message logged for Anti-Passback violations on Exit attempts through the Door.

1.4 Program the Access Group options. [I D E X T]
-Set the "E" (No **E**NTRY if Wrong Area) option to Yes IF Wrong Area processing is required on Entry.
-Set the "X" (No E**X**IT if Wrong Area) option to Yes IF Wrong Area processing is required on Exit.

2. Check/Program the Doors [MENU, 7, 6]

2.1 Select a Door and Check/Program the Door parameters as described in the Basic Programming Guide under "Doors".

2.2 Ensure that an "Inside" and/or "Outside" Area is assigned as required.

2.3 Ensure that an Access Group is assigned that provides the Anti-Passback and/or Wrong Area processing required.

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3. Program the Calculated Auxiliary "Amnesty" options [MENU, 7, 5, 4]

It may be necessary to provide an option to periodically reset all Users to "Area 0" (No Area). This will allow any Users who are denied access due to Anti-passback violations, to be granted normal access again.
This may be done: -automatically once a day via a TimeZone.
-as required via a PIN code or keyswitch etc.
-automatically when an Area is turned Off.
-etc.

This can be performed in a number of different ways. *(See table below)*
Depending on the method to be used, other functions will need to be programmed to produce the Auxiliary On/Off operation that will in turn be used in the Calculated Auxiliary to reset the User Area records.

3.1 Select a new Calculated Auxiliary to program.

3.2 Select the Calculated Auxiliary Action.
-Amnesty +ON. User Area records will be reset to "No Area" when the 1st Auxiliary turns On.
-Amnesty -OFF. User Area records will be reset to "No Area" when the 1st Auxiliary turns Off.

3.3 Define the "1st Auxiliary".

The table below defines the additional function that will need to be programmed to produce the Auxiliary operation required.
Note that more than one method of activating the Auxiliary may be used.
e.g. A TimeZone may be programmed to turn the Auxiliary On for several seconds at 1 AM every morning to provide Anti-passback Amnesty ready for the next day. The same Auxiliary may also be turned On for several seconds by a User with a Keyswitch or Home Auxiliary at any other time that they decide Amnesty is required.

Method of Control	**Programming Required**
User via PIN code.	Program a Home Auxiliary [MENU, 7, 5, 5] , plus Auxiliary Timer [MENU, 5, 5]
Automatic based on Time of Day / Day of Week.	Program a TimeZone [MENU, 5, 2] and select "Auxiliary On/Off Sec" Control function.
Automatic based on Day of Month / Day of Year.	Program a Diary [MENU, 5, 4] with the "Diary Auxiliary" assigned, plus Auxiliary Timer [MENU, 5, 5]
By a Keyswitch, Pushbutton, Input, etc.	Program a Function Zone [MENU, 7, 5, 3] utilizing the Auxiliary Control options, plus Auxiliary Timer [MENU, 5, 5].
Remotely via Touch tone telephone. (V3 or later)	Program Answer Call Comms Task [MENU, 7, 3, 1] and DTMF Control [MENU, 7, 3, 3] utilizing the Auxiliary Control options.
Remotely via P.C.	Program PCDirect or ACCEPT Comms Task [MENU, 7, 3, 1] , plus Auxiliary Timer [MENU, 5, 5].

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AUTO-ARM AN AREA WHEN NO ZONE ACTIVITY (MOVEMENT) DETECTED. (V2 OR LATER)

The following programming enables an Area to automatically Arm when no Zone activity (movement) is sensed on selected Detectors for a specified period of time.

This procedure involves setting up a special controlling Area that simply monitors the selected Zones and generates a timed output for use in a Calculated Auxiliary program. (This Area would not perform any alarm annunciation or reporting functions.)

The programming in this application is similar to the application "Timed Auxiliary Control by Movement Detectors". If required, these two applications could be combined, allowing control of Lighting, Heating & Aircon as well as the Auto-Arming operation from a single controlling Area.

1. Program the Input/s that the Detector/s are connected to. [MENU 7, 0]

It is most likely that the Inputs used for this purpose are already used as Burglary or Entry/Exit Zones, etc. and will already be programmed. If additional Detectors are installed for the sole purpose of monitoring movement in order to control this Auto-Arm function, then the Inputs that these Detectors are connected to must also be programmed.

1.1 Select the Input to be programmed/edited and program a name and other attributes as described in "Alarm Processing". (If not already programmed)

2. Program the Process Group. [MENU 2, 4, 3]

For this function, the Input/s to be monitored for activity must be assigned to a separate Area that is only used to facilitate this Auto-Arm function.
(This is in addition to any Area/s the Input/s will be assigned to for normal Intruder alarm functions, etc.)

A dedicated Process Group must be programmed for monitoring Zone activity for this function.

2.1 Select the Process Group to be programmed/edited and program a name. e.g. Zone Activity.

2.2 Ensure that the required "Input Type" options are programmed. [T A E X U P L S]
-Ensure the "A" (**A**larm) option is set to Yes. Leave all other options set to No.

2.3 Program the "Alarm Siren Tone selection" to any option other than "None". e.g. "Sweep"

2.4 Ensure that the "Siren Lockout" option is set to No.

2.5 Set the "Siren Re-trigger" option to Yes.

3. Program the Area. [MENU 7, 1]

For this function, a separate monitoring Area will need to be created for each Area that is to be controlled.
e.g. Program Area 21 to provide the Auto-Arm function on Area 1.
Program Area 22 to provide the Auto-Arm function on Area 2.
etc.
After programming, the Area must be turned On for the function to operate.
Typically, this Area would NOT be included in Area Lists assigned to normal Users.

3.1 Create a new Area and program a name.

3.2 Set the "External Siren Mode" to "Instant".

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3.3 Set the "N" option (No Siren Cancel) to Yes in the Area Options. [THD**N**PWF.] (V3 or later only)

3.4 Program a Siren Time. (1 to 255 minutes)
This is the time period for which no Zone activity must be detected before the Area will automatically Arm. (Each time movement is detected on any Input in the Area that uses the Process Group with the "Siren Re-trigger" option set to Yes, the Siren timer will be re-started)

3.5 Ensure that a Siren List IS NOT assigned to the Area. (Set to SL000)

3.6 Program the "Siren Auxiliary". This is the Auxiliary that will be used to trigger the Area Arm function. This Auxiliary can be a "phantom" Auxiliary as no physical output is required. e.g. C01:X32.

(Note that no Siren outputs will be activated because there is no Siren List assigned to this Area.)

3.7 Assign the Input/s to the Area using the Process Group programmed for this function in Step 2. The Inputs assigned are only the Detectors that are to be monitored for Zone activity (movement).

4. Program a Calculated Auxiliary. [MENU 7, 5, 4]

A Calculated Auxiliary must be programmed to turn the required Area ON when the Siren Auxiliary turns Off.

4.1 Select the Calculated Auxiliary to be programmed/edited.

4.2 Select the "Area Control" Calculated Auxiliary Action.

4.3 Set the "O" option (Area ON when 1st Aux Off) to Yes in the Area Control Options. [**O**Fof]
DO NOT select any other options.

4.4 Assign the Area (or Area List) to be turned On (Armed)

4.5 Program the "1st Auxiliary". Assign the Siren Auxiliary selected at Step 3.6 above.

5. Enable / Disable the feature.

Enabling and Disabling this feature is simply a matter of turning the Area On to Enable; and turning it Off to Disable.

The Area can be turned On and Off automatically if required, or manually by Users according to the User Programming, or with a Keyswitch or Pushbutton input, etc.

This table provides a summary of Area Control options.
Refer to Programmer's Reference section for programming details.

Method of Control	**Programming Required**
User via PIN code or Card	See *User Programming. (Area Lists, User Types & User Codes)*
Automatic based on Time of Day / Day of Week.	Program a TimeZone [MENU, 5, 2] and select Area Control function.
By a Keyswitch, Pushbutton, Input, etc.	Program a Function Zone [MENU, 7, 5, 3] utilizing the Area Control options.
By an Auxiliary.	Program a Calculated Auxiliary [MENU, 7, 5, 4] and select the Area Control Action.
Remotely via Touch tone telephone. (V3 or later)	Program Answer Call Comms Task [MENU, 7, 3, 1] and DTMF Control [MENU, 7, 3, 3]
Remotely via P.C.	Program PCDirect or ACCEPT Comms Task [MENU, 7, 3, 1]

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B

BATTERY TESTING (V3 OR LATER)

On any module with on-board Power Supply and Battery charger circuit, when an AC Fail condition occurs, the battery is constantly monitored so that a System Input alarm can be generated if the voltage drops below a pre-defined level. (Typically around 10.8V)

Low Battery System Inputs.

Control Module:	C01:S05	Expander Modules:	B/Exx:S05
Intelligent 4 Door Access Modules:	Ixx:S21	LAN Power Supply Modules:	Pxx:S03

These System Inputs should always be assigned to a “System Area” or “Power Problems Area”, with an appropriate Process Group, so that an alarm will be reported under Low Battery conditions. This feature has always been available in the product.

Version 3 firmware (or later) now provides dynamic battery testing that also allows periodic testing of batteries under full load conditions, so that battery operation is much more reliable when an AC fail condition occurs.

This feature enables dynamic Battery testing on:
-The Control Module.
-The Expander Modules. (“B” and “E” Type Expanders only).
-The Intelligent 4 Door Access Module. (Version 3.5 Control Module Firmware or later only)
-The LAN Power Supply Module. (Version 4.5 Control Module Firmware or later only)
Battery Testing is activated by a special Diary function and tests each module in sequence for the specified Battery Test Time beginning with the Control Module. i.e. At any one time there will only be one module under test. Battery Testing finishes once all modules set for testing have completed their test.

The battery test turns off the battery charge circuit on the Module, allowing the Module to run off the battery supply only. (The test does not turn off the AC Mains supply to the Module)

Battery testing on a particular Module will be aborted if:
-Siren output/s are activated on the Module.
-An AC Mains failure occurs on the Module.
-A LAN failure occurs on the Module.
-A Low Battery Alarm occurs on the Module.
-The Power Test Menu is entered by a User.

Review messages are generated for each Module tested indicating the Module number and whether the test on that Module was Skipped, Started, Passed, Failed or Aborted.

1. Program the Battery Test Diary Function. [MENU 5, 4]

1.1 Program the Date and Time for the Battery Test to commence.
Utilizing a Diary function for Battery Testing allows the installer to dictate the frequency of Battery Testing based on the system requirements.
For Battery Testing the Time fields should always be programmed to define the Start Time of the Test.
The Date can have certain fields left blank allowing for Battery Testing to occur on a regular basis without the need to re-program the Date and Time.

e.g. Battery Testing to start at 7 PM on the 1st day of every month of every year: 01 / __ / __ - 19 : 00
Battery Testing to start at 10:30 AM every day of every year: __ / __ / __ - 10 : 30
Battery Testing to start at 10:30 AM every Tuesday of every week: *(See below)* __ / __ / __ - 10 : 30

1.2 Program the Valid Days. Normally all days set to Yes unless you want the Battery Testing to occur weekly on the same day each week. (Or two to six times a week on the same days each week)
If this is the case, program the Date and Time leaving all the Date fields blank and program the Time for the Battery Test Start Time. e.g. __ / __ / __ - 09 : 00

Now program the Valid Days leaving all Days set to No, except for the Day on which testing is to occur.
e.g. If testing is to occur every Tuesday:

```
S M T W T F S
n n Y n n n n
```

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1.3 Program the 1st and 2nd lines of the Diary text message. The first character on the first line must be programmed or the Diary will never be Valid. Note that any LCD Terminals programmed to display Diary messages will display this message while the Diary Event is Valid. *(See Note 1 below)*
e.g. 1st line: Battery Testing
2nd line: Started

NOTES:
1. For Diary messages to be displayed on an LCD Terminal, the Diary messages option must be enabled in LCD Terminal programming. [MENU 7, 2, 1] In the "Messages" options (SMDLIA.O) the "D" option (Diary messages) must be set to Yes.
2. A Diary message can be overridden by Alarm messages, Level messages (AC Fail, Low Battery, etc) and higher priority Diary messages depending on the settings of the other "Messages" options in the LCD Terminal programming. (Higher numbered Diary messages have higher priority)

1.4 In the Diary Function options, select "Battery Test".

2. Program the Control Module Battery Test Time. [MENU 7, 5, 1]

2.1 Program a general Battery Test time. This is the time period that will be used to perform battery testing on the Control Module. A Battery Test time of "0" means that the module will not be included in Battery Testing.

3. Program the Battery Test Times for LAN Modules. [MENU 7, 2, x]

3.1 Program the "Battery Test time" required for each of the following Modules in the system that are to have Dynamic Battery Testing performed:
-Big Expanders [MENU, 7, 2, 3]
-16 Zone Expanders [MENU, 7, 2, 7]
-Intelligent 4 Door Access Modules [MENU, 7, 2, 8]
-LAN Power Supply Modules [MENU, 7, 2, 0, 1]

A Battery Test time of "0" means that the module will not be included in Battery Testing.

e.g. Assume a system is installed with one of each of the above Modules. (5 Modules including the Controller) The Battery Testing is programmed to Start at 11 AM every Wednesday, and the Battery Test Times for all Modules are programmed for 30 minutes.
Assuming that no tests fail, or are cancelled, Battery Testing on the last Module will commence at 1 PM, and will end at 1:30 PM.

Battery Test Times.

Battery Test Times can be programmed for each individual module from a period of 0 (No Test) to 255 minutes. Test Times should be set after consideration of the Module load. i.e. The total current supplied by the Module's power supply for PCB operation, Detector power, Auxiliary operation and LAN power, etc.

A battery test time of 1 to 10 minutes will effectively test for battery presence. A time of between 60 to 120 minutes (depending on load) would determine that a battery is in good working order. Periods greater than 120 minutes should only be set for deep discharge testing conditions where the reliability of the AC mains supply can be guaranteed.
e.g. If a battery was tested for 4 hours and then the AC supply to the building failed shortly after testing was complete, the charge of the battery would be severely affected, and when coupled with the age of the battery, could greatly reduce the integrity of the system.

When choosing a suitable Battery Test Time, the battery Discharge Characteristic should be taken into account. Note that the rated capacity is normally specified under relatively low load conditions. e.g. A 12V 7.0 AH battery is rated at 7 Amp Hours when the load is around 350mA. With a 1 Amp load, capacity reduces to approximatley 6 Amp Hours.

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Battery Test Times should be programmed so that the Battery will not approach the 11 Volt point.
This is important for two reasons:
1) This is approximately the voltage where the "Low Battery" System Input is activated.
2) The Battery voltage drops off quite rapidly after the 11 Volt point is reached.

If deep discharge testing is required, a general guideline would be to program a Battery Test time of no more than half the time taken for the Battery to drop to 11 Volts. This will ensure that the Battery Voltage during Testing does not drop below 12 Volts and that sufficient charge was still present for Backup operation in the event of AC fail occurring soon after Battery Test.

The following table provides the typical discharge characteristics for 12Volt 7.0 AH Sealed Lead-Acid Batteries @ 25ºC and shows the time taken for the terminal voltage to drop to approximately 12 Volts and 11 Volts.

Load Current	Discharge Time.		Effective capacity
	To ~12V	To ~11V	
350mA	12 Hours	20 Hours	7.0 AH
650mA	6 Hours	10 Hours	6.5 AH
1 Amp	3.5 Hours	6 Hours	6.0 AH
1.2 Amp	3 Hours	4.5 Hours	5.4 AH
1.75 Amp	1.5 Hours	2.5 Hours	4.4 AH
4.2 Amp	30 Minutes	50 Minutes	3.5 AH

4. Program the Area/s for Battery monitoring. [MENU 7, 1]

NOTE: The Battery monitoring system inputs may already be assigned to an Area:
a) If the "Add System Inputs" option has been used to automatically assign System Inputs to one or more Areas. *See the section on "Area Defaulting" in Area Programming (MENU, 7, 1) for details.*
b) If the Inputs have already been assigned manually by the installer.

If this has not been done, then follow the procedure below.

4.1 Create a new Area for Battery test monitoring or use an existing Area that is utilized for System alarms.

4.2 Program the required Area options. (Siren operation, Auxiliaries to activate, etc.)

4.3 Assign the "Battery Test Fail" and "Low Battery" System inputs to the Area with an appropriate Process Group. e.g. PG010 System Silent.

The Low Battery and Battery Test Fail System Inputs are as follows:

Low Battery - Control Module.	C01:S05
Battery Test Fail - Control Module .	C01:S09
Low Battery - 16-32 Zone Expander Modules (B & E Type Expanders).	Bxx:S05 / Exx:S05
Battery Test Fail - 16-32 Zone Expander Modules (B & E Type Expanders).	Bxx:S09 / Exx:S09
Battery Test Fail - Intelligent 4 Door Access Module.	Ixx:S19
Low Battery - Intelligent 4 Door Access Module.	Ixx:S21
Low Battery - LAN Power Supply Module.	P01:S03
Battery Fail - LAN Power Supply Module .	P01:S04
Battery Test Fail - LAN Power Supply Module .	P01:S15

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CAMERA CONTROL AND MONITORING (V3 OR LATER)

C

V3 firmware now provides special Input processing, Auxiliary processing and Event Counting options that are suitable for the control and monitoring of 35mm security cameras.

Cameras can be:
Triggered on "Suspicion" condition with a timeout period.
Triggered on an alarm to run until the alarm is acknowledged or reset. e.g. Holdup, Burglary, etc.
Tested manually or during Area Pre-Arm Testing.
Monitored for alarm on Tamper contacts and Film Out contacts.
Monitored for Film Count levels with two alarm trigger points. e.g. Film Low and Film Out.

Installation Notes:

1) Mini Expander Modules must be used if the Film Counting option is utilized.
The Frame Count output from each Camera must be wired to Mini Expander Module Zone Inputs 1 to 7.
i.e. Mxx : Z01 to Mxx : Z07. Film counting is not supported by Zone 8.

2) Frame Count Inputs do not utilize End-Of-Line Resistors. The Counter will increment by 1 whenever an Open to Short transition occurs on the Input.

2) If Camera Testing is required, the Auxiliary used to Trigger Cameras should be Auxiliary 8 on a Mini Expander Module. i.e. Mxx : X08. This Auxiliary has a special timing options to prevent film wastage during testing.

3) If special combination Holdup/Suspicion button assemblies are used, these must be connected to Mini Expander Modules, Zone Inputs 1 to 7. i.e. Mxx : Z01 to Mxx : Z07. These units are not supported by Zone 8.

Camera Film Count Monitoring.

1. Program the Input/s used for Camera Frame counting. [MENU 7, 0]

These Inputs must be connected to Mini Expander Module/s.

1.1 Program the Zone Input/s that the Frame count contact/s are connected to. i.e. Mxx : Z01 to Mxx : Z07
These will be used for "Film Low" monitoring. (When Count exceeds "Trigger Count 1" programmed in "Counters")
Select the Input to be programmed/edited and program a name and other options as described in "Alarm Processing". For Frame Counting Inputs, all Input Options normally left set to No.

1.2 Check the programming of the corresponding System Input/s.
i.e. Mxx : S02 (Zone 1 Extra) to Mxx : S08 (Zone 7 Extra)
These will be used for "Film Out" monitoring. (When Count exceeds "Trigger Count 2" programmed in "Counters")
Select the Input to be programmed/edited and check the Input options as described in "Alarm Processing".
System Input names are Pre-defined. For Frame Counting Inputs, all Input Options normally left set to No.

2. Program the Mini Expander/s (8 Zone) [MENU 7, 2, 6]

Mini Expander Modules provide several special features suitable for this application.
-Programmable Zone de-bounce for input devices that require faster processing. e.g. Film Count contacts.
-Special Input processing options for Counters.

2.1 Adjust the Mini Expander "Poll Time" and "LAN Priority" IF this is considered necessary. LAN Priority programming is accessed by pressing the <ON> key when the "Poll Time" is displayed.

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2.2 Check that the Zone Type is set to the appropriate option for each Zone used.
-Normal Zone.
-Counter. Select this option for Camera Frame Count Inputs. This modifies input operation for:
-Two state monitoring (Open to Short transition for counting)
-Zone / System Input Alarms when Trigger Counts exceeded.
-Holdup. *See "Holdup / Duress Alarm -Delayed Reporting" Application Note.*.
-Suspicion. *See "Holdup / Duress Alarm -Delayed Reporting" Application Note.*
-Holdup+Suspicion. *See "Holdup / Duress Alarm -Delayed Reporting" Application Note.*

2.3 Set the Zone De-bounce to an appropriate period for each Zone used.
-De-bounce for Film count contacts will vary depending on the frame speed.
e.g. If the frame speed is 4 frames per second, a Zone De-bounce of 100mS would provide reliable counting, while offering immunity to voltage spikes.

3. Program the Counters. [MENU 7, 5, 8]

A Counter will need to be programmed for each Zone Input used for Camera Frame Counting.

3.1 Select a new Counter and program a name. e.g. Camera 1 Film.

3.2 Define the Mini Expander Zone Input used for this Counter. e.g. Mxx : Zxx.

3.3 Select the "Counter Type".
-Select the "2 Trigger Points" type for this application.

3.4 Program "Trigger Count 1". i.e. The "Film Low" Count level.
(The Mini Expander Zone Input will go into alarm when this trigger point is exceeded)

3.5 Program "Trigger Count 2". i.e. The "Film Out" Count level.
(The Mini Expander System Input that corresponds with the Zone will go into alarm when this trigger point is exceeded)

3.6 Program the Counter Options. [. . 4 D]
-**4** Digit display. Set to Yes if you only require a 4 Digit Count display. (0000 to 9999)
-**D**isplay Counter. Set to Yes if the Counter is allowed to be displayed via "Read Count" in the Information Menu. [MENU, 1, 4]

4. Initialize the LAN

Following any programming changes to Mini Expanders or Counters, the LAN must be re-initialized.
If all modules are connected and operational, perform the **Secure LAN [MENU 7, 8, 1]** or **Initialize LAN [MENU 7, 8, 2]** functions. ("Secure LAN" Initializes the LAN and sets the Encryption)

5. Program the Process Group/s for Film monitoring. [MENU 2, 4, 3]

It is recommended that a new Process Group is programmed for Frame Count Input/s for "Film Low" and "Film Out" monitoring.

5.1 Select the Process Group to be programmed/edited and program a name. e.g. Film Monitor

5.2 Program the required "Input Type" options. [T A E X U P L S]
-Set the "A" (**A**larm) option to Yes.

5.3 Program the required "Communications Reporting" options. [I T A R E X U S]
Typically the **I**solate, **A**larm and **R**estore options are set to Yes.

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5.4 IF reporting via Contact ID, you may program the Contact ID Event Code to be sent for Inputs with this Process Group assigned. If left at "000" a default Contact ID message will be sent.
See the Tables section for Contact ID Event Code details.

5.5 Program the Area Auxiliaries to activate. [T 1 2 3 4 I]
This will be required IF a local indication of the "Film Low" / "Film Out" alarms is required.
-Set Alarm **2** Auxiliary to Yes IF you require the Auxiliary to be On while the Input is in Alarm and automatically turn Off when the Input Seals. e.g. To activate a Diary Message on the LCD Terminal/s.
-Set any other Alarm Auxiliary to Yes IF you require the Auxiliary to turn On when the Input goes into Alarm and turn Off by another mechanism. e.g. Area Off.

5.6 IF the "Film Low" / "Film Out" alarms are to generate an LCD message that must be acknowledged, program the LCD Terminal message Types to generate. Typically Type 1 set to Yes.
IF these alarms are to be annunciated via Diary messages, you may set all message types to No.

6. Program the Area/s for Camera Film monitoring. [MENU 7, 1]

It is recommended that separate dedicated Areas are used for Camera "Film Low" and "Film Out" alarms, particularly if these alarms are to be annunciated via Diary messages.

6.1 Create a new Area and program a name. e.g. Film Low.

6.2 Program the Area Auxiliaries to activate.
-Alarm 2 Auxiliary. IF a Diary message is to be used to annunciate the Alarm. If no physical Auxiliary activation is required, a "phantom" auxiliary may be assigned for this purpose. e.g. C01:X11 to C01:X32.
-Alarm 1, 3 or 4 Auxiliary. IF an Auxiliary is required to activate in the normal manner.

6.3 Assign the Input/s to the Area using the Process Group programmed for this function.
The relevant Mini Expander Zone Inputs (Film Low monitoring) should be assigned to a "Film Low" Area.
The relevant Mini Expander System Inputs (Film Out monitoring) should be assigned to a "Film Out" Area.

7. Program the Diary Messages. [MENU 5, 4]

A Diary message can be programmed so that it is only displayed when a specific Auxiliary is On.

This provides the facility to have a Diary message controlled by the Area Alarm 2 Auxiliary so that the message remains on the LCD display for as long as the alarm condition exists. By using the Alarm 2 Auxiliary, the message will be removed as soon as the alarm condition is rectified. (i.e. The Auxiliary does not need to be turned Off by another mechanism such as Area Off, etc.)

The Date, Time and Days fields are programmed to be always valid. The Diary function "Qualify Aux" causes the Diary Auxiliary to operate as a Qualify Auxiliary. i.e. Even though the Diary is always valid, the message will not be displayed unless qualified by the Diary Auxiliary.

IF Diary messages are to be used to annunciate Camera Film monitoring alarms, program Diary messages for "Film Low" and "Film Out".

7.1 Select a new Diary to program.
Note that Diary messages are prioritized with Diary 1 having the lowest priority.
Higher priority messages should therefore be programmed in higher Diary numbers.
e.g. Film Out is higher priority than Film Low. Therefore, if Film Low is programmed in Diary 2, Film Out should be Diary 3.

7.2 Ensure that the Date and Time fields are completely clear.
e.g. __ / __ / __ - __ : __

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7.3 Program the Valid Days. Set all days to Yes.
e.g. S M T W T F S
Y Y Y Y Y Y Y

7.4 Program the 1st line of the Diary message to Display.
e.g. “Film Low”.

7.5 Program the 2nd line of the Diary message to Display.
e.g. “Check Cameras”.

7.6 Assign the Diary Auxiliary. This will be the Area “Alarm 2 Auxiliary” assigned in the previous step.

7.7 In the Diary Function options, select “Qualify Aux”.

8. LCD Terminals [MENU 7, 2, 1]

Any LCD Terminals that are required to display Diary messages must have the “Diary Messages” option enabled.

8.1 Program the “Default Display message” options. [S M D L I A . O]
Ensure that the “D” (Diary messages) option is set to Yes for all LCD Terminals where the “Film Low” / “Film Out” Diary messages are to be displayed.

9. Check/Program Menu Groups. [MENU 2, 4, 1]

Before any User Types can View and/or adjust the Count value, access to the appropriate Menu Option/s must be enabled in their Menu Group.

9.1 Program/Edit the “Menu Options” in the relevant Menu Groups. [R A I T t . S C]
-Set the “R” option (**R**eview/Information Menu) to Yes if Viewing Counters is allowed.
-Set the “C” option (**C**ontrol Menu) to Yes if Adjusting Counters is allowed.

9.2 Program/Edit the “Sub Menu Options” in the relevant Menu Groups. [U T L G Z R A .]
-Set the “A” option (**A**djust Counters) to Yes if Adjusting Counters is allowed.

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Camera Control and Testing.

C

1. Program the Input/s used to Trigger Camera operation. [MENU 7, 0]

Holdup buttons, Suspicion buttons, PIRs, etc.

1.1 Select the Input to be programmed/edited and program a name and other attributes as described in "Alarm Processing".

2. Program the Mini Expander/s (8 Zone) [MENU 7, 2, 6]

Mini Expander Modules provide several special features suitable for this application.
-Programmable Zone de-bounce for input devices that require faster processing. e.g. Momentary pushbuttons.
-Special Auxiliary output timing options on Auxiliary 8.

2.1 Adjust the Mini Expander "Poll Time" and "LAN Priority" IF this is considered necessary. LAN Priority programming is accessed by pressing the <ON> key when the "Poll Time" is displayed.

2.2 Check that the Zone Type is set to the appropriate option for each Zone used.
-Normal Zone.
-Counter. Set to Yes for Camera Frame Count Inputs.
-Holdup. *See "Holdup / Duress Alarm -Delayed Reporting" Application Note.*
-Suspicion. *See "Holdup / Duress Alarm -Delayed Reporting" Application Note.*
-Holdup+Suspicion. *See "Holdup / Duress Alarm -Delayed Reporting" Application Note.*

2.3 Set the Zone De-bounce to an appropriate period for each Zone used.
-Fast de-bounce times may be required for fast acting momentary pushbutton switches, etc.
-200 to 400mS is typical for normal detectors (PIRs, Door Reeds, etc.)

3. Initialize the LAN

Following any programming changes to Mini Expanders, the LAN must be re-initialized.
If all modules are connected and operational, perform the **Secure LAN [MENU 7, 8, 1]** or **Initialize LAN [MENU 7, 8, 2]** functions. ("Secure LAN" Initializes the LAN and sets the Encryption)

4. Program/Edit the Process Group/s for Inputs to Trigger Cameras. [MENU 2, 4, 3]

It may also be necessary to program and/or edit Process Group/s for Zone Inputs that are used to Trigger the Camera/s on an alarm and/or Suspicion condition.
You will need to ensure that Process Group/s for these Inputs have the required "Area Auxiliaries to Activate" option/s set to Yes so that the Camera Auxiliary (Usually the Area Alarm 1, Alarm 3 or Alarm 4 Auxiliary programmed in the Area database) will be triggered.
See "Holdup / Duress Alarm -Delayed Reporting" Application Note.

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5. Program the Area to activate Cameras. [MENU 7, 1]

Although not mandatory, it is recommended that a separate Area is programmed for Camera Control.
This ensures that:

a) There will be no conflict of Area Auxiliary requirements with other types of alarm functions.
b) The Area can be turned On and Off according to when Camera operation is required without affecting other alarm monitoring requirements.

Remember that the same Input can be assigned to more than one Area and have different functionality in each Area that it is in. Therefore, an Input such as a Holdup button can be assigned to the "Camera" Area with a Process Group specifically programmed for Camera control, and in a Holdup Area with a different Process Group to provide other functions such as Screen activation and Alarm reporting.

5.1 Select the Area to program or edit.

5.2 Program the Area Auxiliaries to activate.
-Alarm 2 Auxiliary. IF an Auxiliary is required to activate only while the Input/s are in the alarm state, then automatically turn Off when the Input/s are sealed.
-Alarm 1, 3 or 4 Auxiliary. IF an Auxiliary is required to activate in the normal manner.

See Notes below.

5.3 Assign the Input/s to the Area using the Process Group/s programmed for this function.

NOTES:

Mini Expander Auxiliary 8.
If using one or more Mini Expanders and Camera Testing is required in addition to Camera control, it is recommended that Mini Expander Auxiliary 8 is used to trigger the Camera/s. i.e. Mxx : X08.
Auxiliary 8 has a special precise timing feature that allows Cameras to be triggered for a very short period of time so that excessive film is not wasted in testing procedures.
When a timer is programmed for Mini Expander Auxiliary 8 in Seconds, the timer operates normally.
When a timer is programmed in Minutes, the value programmed is interpreted by the Mini Expander as the number of 10 milliSecond periods to time for. e.g. If a value of 50 minutes is programmed, Auxiliary 8 will time for 50 X 10mS. i.e. 500milliSeconds (1/2 Second)
This allows precise Auxiliary Timing to be programmed so that only 2 or 3 frames of film are used during testing.

Implementation.
1) To implement the feature, assign Mini Expander Auxiliary 8 as the Alarm Auxiliary in the Camera Control Area that will be used to trigger the Camera/s. If timing is required on this Auxiliary to limit the time that the Camera will run, program an Auxiliary Timer (MENU, 5, 5) with a time period in Seconds.

2) Next, program a means of activating a Camera Test Auxiliary. e.g:
-Program an Area for Area Pre-arm testing, and assign a Test Auxiliary.
See "Zone Input Testing" in the Applications Programming Guide for details of Area Pre-arm Testing.
-Program a Home Auxiliary specially for Camera Test.
-Program a Function Zone for Camera Test via a keyswitch or pushbutton, etc.
-Program a "Camera Test" PIN code using a special User Type with a "Valid Auxiliary" assigned.
-etc.
The Auxiliary activated must not be the Auxiliary that Triggers the Camera/s. (i.e. Use a phantom Auxiliary)

3) Finally, program a Calculated Auxiliary using the "ON if 1st ON" action.
Assign the Auxiliary activated by the previous step as the "1st Auxiliary".
Assign the Auxiliary that triggers the Camera/s as the "Result Auxiliary". (i.e. Mxx : X08)
Program the Timer in the Calculated Auxiliary for a time period in Minutes to define how many 10 milliSecond periods the Camera is to be activated for to perform the testing.

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DEFER AREA ON PROCESSING (V2 OR LATER)

This feature enables Areas to be defined as "Defer" Areas.

When a User Type with the "Defer On" option set to Yes in their Menu Group, turns Off an Area that is designated as a "Defer Area", a timer is started that will automatically turn the Area back on when it expires.

The User can logon to an LCD Terminal at any time during the defer period and perform the Area Off operation to Defer the Area On function (re-start the timer) for another period.

When the timer expires, a 250 second warning period is provided on the LCD Terminal via the beeper and the "Area about to Turn On" message, and also via the Area "Alarm 4 Auxiliary" if the relevant options are programmed.
The User may still logon to the Terminal and Defer the Area On function (re-start the timer) during the warning period.

In Control Module Firmware V5.0 or later, an Access Card can also be used to start or re-start the Defer Timer.

If a Defer Timer is running, and the Area is turned Off by:
-A User Type with the "Defer On" option in their Menu Group set to No.
-Any mechanism other than a User Code/Card (Function Zone, Calculated Aux, TimeZone, etc.)
the Defer Timer will be cancelled and the Area will remain Off.

IMPORTANT NOTE: From V3 to V4, if any Area or Area List is turned off by any mechanism other than a User Code, then any Defer Timer that is running will be cancelled and the Area will remain Off.
In Version 2 and V4.5 or later, only the Area/s turned off by the mechanism will have the Defer Timer/s cancelled.

The Area states display on the LCD Terminals has been enhanced to include "Area is Timed Off" (represented by a "T" in the Area Array display), and "Area Turn On Warning" (represented by a "W" in the Area Array display). (V3 or later.)

1. Program the General Area Defer Time. [MENU 7, 5, 1]

1.1 Program a general Area Defer Time. This is the period that the Area Defer Timer will run for if the Defer time option in the Area Database is set to "000".
This option is useful to program if there are many "Defer" Areas, all using the same Defer time.

2. Program the Area Defer options. [MENU 7, 1]

2.1 Program the "Area Options". [T H D N P W . F]
-Set the "D" (**D**efer Area) option to Yes.

-IF you require the Area "Alarm 4 Auxiliary" to be used as an "Area about to turn on" warning output, set the "W" (**W**arn Auxiliary) option to Yes. (V4 or later)

2.2 IF you require the Area "Alarm 4 Auxiliary" to be used as an "Area about to turn on" warning output, assign the required Auxiliary to the "Alarm 4 Auxiliary". (V4 or later)

2.3 Program the Area Defer Time. (V3 or later)
This is the period that the Area Defer Timer will run for in this Area.
If set to "000" the general Area Defer time will be used.

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3. Check/Program Menu Groups. [MENU 2, 4, 1]

Before any User Types will have Area Defer operation on "Defer" Areas, the function must be enabled in their Menu Group.

3.1 Check the "Menu Group Options" programming in the relevant Menu Groups. [R I D C S A M T]
Ensure that the "D" option (**D**efer On) is set to Yes.

4. Check/Program User Types [MENU 2, 2] & Area Lists [MENU 2, 3, 1]

Before any User Types will have Area Defer operation on "Defer" Areas, the Area/s must be included in the Area List/s assigned to their User Type.

4.1 IF the User Type is able to turn the Defer Area/s Off, check that the required Defer Area/s are in the User Type's "Area OFF List".

4.2 IF the User Type is able to turn the Defer Area/s On before the Defer timer expires, check that the required Defer Area/s are in the User Type's "Area ON List".

5. LCD Terminals [MENU 7, 2, 1]

When the Area Defer Warning timer starts all Terminals with the "Level messages" or "Limited messages" options set to Yes, will show a warning message "<Area Name> About to Turn On" (Level message #6). This message will be refreshed every 2 seconds with a beep for the duration of the Warning.
If more than one area is in Warning time, the display will show each of the Areas in turn as the display is updated. This prompts the User/s to either exit prior to the Area turning on, or to enter their Code to re-start the Defer timer.

For all LCD Terminals where the Warning is to be displayed.

5.1 Program the "Default Display message" options. [S M D L I A . O]
Ensure that the "L" (Level messages) option is set to Yes.
or
5.2 Program the "Extra" options. [. L N Z]
Ensure that the "L" (Limited messages) option is set to Yes. (V3 or later)
Limited messages restricts the Terminal to display only Level message #6 and Diary 001.

6. Check/Program Access Group requirements. [MENU, 2, 4, 2]

IF the Area Defer operation is to be performed from one or more Door Access Readers, program the Access Group options.

6.1 Select a new Access Group to program.
It is recommended that the 3 default Access Groups are not used for the Area Defer function, as they may already be assigned to Doors that do not require the Area Defer feature.
One or more new Access Groups should be programmed to cater for Area Defer function requirements.

6.2 Program a suitable name for any new Access Groups that you create.

6.3 IF it is necessary to restrict the valid period of the Access Group, or provide an alternate set of Access Group permissions for different times of day and/or days of the week, assign an appropriate TimeZone to specify when the Access Group is Valid.
e.g. The Area Defer operation may only be required for particular periods of the day, such as after-hours.

6.4 If a TimeZone is assigned, you may then specify an Alternate Access Group that will be used when the TimeZone specified in the previous step is Invalid.

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6.5 Program the Entry Parameters required.

-Entry Mode. PIN only / Card only / PIN or Card / Card AND PIN

-Entry Anti-passback Mode. None / Soft / Hard

-Entry Options. [B L A D]
-REN **B**utton operation.
-Dead**L**ock function. Disables REN button if Outside Area is On.
-**A**uto Area Off. If the Inside Area is On, allows the Area to automatically be turned off when the User Enters. (Note: Area must be in the Area Off List, in the User's User Type)
Set to Yes if normal Area Off operation is required.
Set to No if Area Defer operation is required.
-**D**ual User. Set to Yes IF two User Codes / Cards are required to allow entry.

6.6 Program the Exit Parameters required.

-Exit Mode. PIN only / Card only / PIN or Card / Card AND PIN

-Exit Anti-passback Mode. None / Soft / Hard

-Exit Options. [B L A D]
-REX **B**utton operation.
-Dead**L**ock function. Disables REX button if Inside Area is On.
-**A**uto Area Off. If the Outside Area is On, allows the Area to automatically be turned off when the User Exits. (Note: Area must be in the Area Off List, in the User's User Type)
Set to Yes if normal Area Off operation is required.
Set to No if Area Defer operation is required.
-**D**ual User. Set to Yes IF two User Codes / Cards are required to allow exit.

6.7 Program the Special Access Group Options required. [I D E X T d . .]

-**d**efer Arming. If set to "Y" and "Auto Area Off" set to "n", the Area Defer Arm Timer will be started or refreshed for the Entry Area.
e.g. The "Inside" Area if the Reader is "Outside" the Door.

Operation according to the "Defer Arming" and "Auto Area Off" options is as follows:

OPTION		**RESULT.**	
Area Off	Defer Arm	If Area ON	If Area OFF
No	No	No Access.	Access.
No	Yes	Start Defer Timer and Access.	Refresh Defer Timer and Access.
Yes	Don't care	Turn Off Area and Access.	Cancel Defer Timer and Access.

7. Program TimeZone Area Defer options. [MENU 5, 2]

IF an Area Defer Timer on a "Defer" Area is to be started automatically at a specific Time, either every day or on specific Day/s of the week, program a TimeZone utilizing the "Area Defer On" function. (V3 or later)

The Area must be already Off for this function to operate. When the function is activated, the Defer timer for the specified Area will be started, and the Area will turn On when the Defer timer and the Warning period expire. (Unless Defer timer is re-started by a User operation.)

7.1 Select the TimeZone and program an appropriate name.

7.2 Program the first TimeZone period to define when the Area Defer timer will start.
The Start Time or Stop Time can be used to trigger the Area Defer function.

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7.3 Program the Valid Days of the week for the first Period.
i.e. Days when the function is required to operate.

7.4 Assign the Holiday Types to be obeyed. (If necessary)

7.5 Select the "Area Defer On" function.

7.6 Assign the "Area to Operate".

7.7 Select the required "Control Option". [O F o f]
-**O**n when TimeZone goes Valid. If the Area Defer timer is to start when the TimeZone goes Valid.
i.e. At the Start Time of the TimeZone Period programmed in step 5.2.
-on when TimeZone goes Invalid. If the Area Defer timer is to start when the TimeZone goes Invalid.
i.e. At the Stop Time of the TimeZone Period programmed in step 5.2.

The "F" and "f" options are not used.

e.g. Area Defer Timer to start at 7 PM weekdays.	1st Period:	09:00-to-19:00
	Days:	MTWTF set to Yes.
	O F o f	n n Y n
Area Defer Timer to start at 6 AM every day.	1st Period:	06:00-to-17:00
	Days:	SMTWTFSH set to Yes.
	O F o f	Y n n n

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DOOR INTERLOCKING (V2 OR LATER)

This feature is an enhancement to Access Control operation allowing a Door to be interlocked with other Doors. This prevents the Door from being unlocked if any of the other Doors are either Unlocked or Open.
Programming also allows for the Door unlock command to be qualified by Area Status, Auxiliary status and/or Zone Input status.
These features can provide options to prevent a Door from being un-locked:
-When specific Area/s are On.
-When certain types of alarms occur.
-During specified time periods.
-When a keyswitch is in the "alarm" state.
etc.

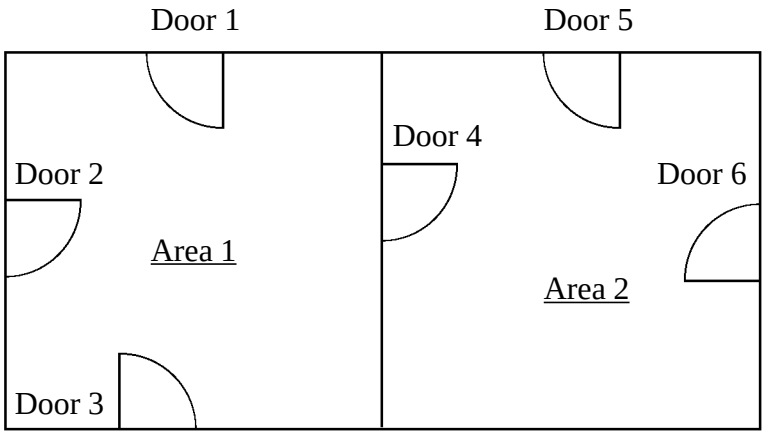
Programming has been made simple by allowing an Interlock Group to be programmed that can be assigned to a group of Doors that are to be interlocked together. Where complex interlocking is required, the flexibility still exists to allow different Interlock Groups to be assigned to each Door if required. An Interlock Group can also have a TimeZone assigned where Interlock logic is only required during specified Times of Day and/or Days of Week.

When a User attempts to Access a Door, before unlocking the Door, the system will check that:
-All Doors in the Door List (if assigned) are Locked.
-All Doors in theDoor List (if assigned) are Closed.
-All Areas in the Area List (if assigned) are Off.
-The Qualify Zone (if assigned) is Sealed.
-The Qualify Auxiliary (if assigned) is On.

When Interlocking Groups of Doors, an Interlock Group is assigned to each Door. A Door List is assigned to the Interlock Group to define the Doors included in the Interlock Group.
In the example illustrated below:
1) All Doors in Area 1 must be interlocked. (Doors 1, 2, 3 & 4)
2) All Doors in Area 2 must be interlocked. (Doors 4, 5 & 6)
3) As Door 4 provides access between the two Areas, it must be interlocked with all other Doors.

Doors are also to be prevented from being unlocked when any Area associated with the Door is On (armed).

To achieve this, three Interlock Groups must be programmed.
1) The first will be assigned to Doors 1, 2 & 3 and will have: A Door List containing Doors 1, 2, 3 & 4.
An Area List containing just Area 1.
2) The second will be assigned to Doors 5 & 6 and will have: A Door List containing Doors 4, 5 & 6.
An Area List containing just Area 2.
3) The third will be assigned to Door 4 and will have: A Door List containing Doors 1, 2, 3, 4, 5 & 6.
An Area List containing Area 1 and Area 2.



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1. Plan the Interlocking requirements.

1.1 For each group of Doors to be interlocked note:
-Any Door Lists required.
-Any Area Lists required.
-Any Zones or Auxiliaries that are to be used to Qualify the Interlock Logic.
-Any requirements for the Interlock logic to operate only during specific Times of Day and/or Days of Week.

2. Program Door List/s. [MENU 2, 3, 2]

2.1 IF one or more groups of Doors are to be interlocked together, determine the Doors to be included in each group. From this information you can program the **Door Lists** required **[MENU 2, 3, 2]**.

2.2 Select a Door List and program a name.

2.3 Assign the Door/s to each Door List. A Door List can support any number of Doors up to the maximum number of Doors allowed in the Memory configuration.

3. Program Area List/s. [MENU 2, 3, 1]

3.1 IF Area Stutus is to be used in Door Interlock logic, determine the Area/s that will be used.
From this information you can program the **Area Lists** required **[MENU 2, 3, 1]**.

3.2 Select a Area List and program a name.

3.3 Assign the Area/s to each Area List. An Area List can support any number of Areas up to the maximum number of Areas allowed in the Memory configuration.

4. Program TimeZone/s. [MENU 5, 2]

IF Interlock Logic is only required to operate during specific Times of Day and/or for specific Days of the Week, program the TimeZone/s required. [MENU 5, 2]

4.1 Select the TimeZone and program an appropriate name. e.g. Interlock Enable

4.2 Program the first TimeZone period to define when the Interlock Logic will be used.

4.3 Program the Valid Days of the week for the first Period.
i.e. Days when the function is required to operate.

4.4 IF the TimeZone requirements are more complex, program the second (and any subsequent) “TimeZone period” and “Valid Days” to define when the Interlock Logic will be used.
e.g. If the Time periods required differ from Day to Day.

4.5 Assign the Holiday Types to be obeyed. (If necessary)

e.g. Door Interlocking to operate from 5 PM every evening to 8 AM every morning.

1st Period:	17:00-to-__:__	2nd Period:	__:__-to-08:00
Days:	SMTWTFSH set to Yes.	Days:	SMTWTFSH set to Yes.

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5. Program the Interlock Group/s. [MENU, 7, 6]

Note: When programming via an LCD Terminal or via PC Direct Upload/Download, Interlock Group Programming can only be accessed via Door Programming. The W Direct Upload/Download software provides a separate Tab and sub-menu option for access to Interlock Group programming.

5.1 If programming via the LCD Terminal or PC Direct, select one of the Doors included in the Interlock Group and go to the screen/field where the Interlock Group is assigned.
For LCD Terminals, press <HELP>, 9 to access Interlock Group programming.
For PC Direct, press <INSERT>, use the <UP>/<DOWN> arrow keys to select the Interlock Group to program, then press <F9>.

5.2 Select an Interlock Group to program.

5.3 IF it is necessary to restrict the valid period of the Interlock Group, or provide an alternate set of Interlock Group Logic for different times of day and/or days of the week, assign the appropriate "TimeZone" to specify when the Interlock Group is Valid.

5.4 If a TimeZone is assigned, you may then specify an "Alternate Interlock Group" that will be used when the TimeZone specified in the previous step is Invalid.

5.5 Program the Interlock Group options. [Z T . . . . .]
-**Z**one Qualify. Set to Yes IF the Interlock logic is to be qualified by a Zone Input. e.g. Keyswitch, etc.
-**T**ongue Sense. Set to Yes IF Tongue Sense Inputs on the Reader Module/s are utilized and they are to be included in the Interlock logic.

5.6 IF two or more Doors are to be interlocked together, assign the appropriate "Door List".

5.7 IF Area Stutus is to be used in Door Interlock logic, assign the appropriate "Area List".

5.8 IF an Auxiliary is to be used to Qualify the Interlock logic, program the "Qualify Auxiliary".

5.9 IF a Zone Input is to be used to Qualify the Interlock logic, program the "Qualify Zone".

6. Program/Edit the Door/s [MENU, 7, 6]

6.1 Select a Door to program/edit.

6.2 Check/program the Door as per "Door Programming" in the Basic Programming Guide.

6.3 Assign the appropriate Interlock Group.

7. Ensure Door Reed Zone Inputs and Tongue Sense Zone Inputs (IF used) are enabled for monitoring.

Since Door Forced and Door Open Too Long alarms are System Inputs generated by the Reader Module or LCD Terminal that controls the Door, the actual physical Zone Inputs that the Door Reeds and Tongue Sense Inputs are connected to may not already be enabled for monitoring.

In order to enable these Inputs for monitoring of the Door state, all Door Reed (and Tongue Sense) Zones used in interlocking logic **must** be assigned to an Area that is ON 24hrs.

The Zones are: Rxx:Z01 for the Reed on the first Door on a Reader Module.
Rxx:Z05 for the Reed on the second Door on a Reader Module.
Rxx:Z06 for the Tongue Sense contact on the first Door on a Reader Module.
Rxx:Z07 for the Tongue Sense contact on the second Door on a Reader Module.

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7.1 Program the **Zone Inputs. [MENU, 7, 0]**
-Program the Input names. e.g. Front Door Reed.
-Program any of the Input Attributes required for these inputs. [s C X S R A N T]
Set the "R" (No **R**eview) option to Yes, so that changes of state on these Zones are not saved to Review.

7.2 Program a new **Process Group** that monitors for alarm state but does no other processing. **[MENU, 2, 4, 3]**
-Program a name. e.g. Door monitor.
-Input Type options. [T A E X U P L S] Set "A" (**A**larm) option to Yes. All other options to No.
-All Comms options to No.
-All Area Auxiliaries to No.
-All Siren options disabled.
-All Message Types to No.

7.3 Assign the Door Reed Zone Inputs (and Tongue Sense Inputs if used) to an **Area** that is permanently On. **[MENU, 7, 1]**
You may need to program an Area specifically for this purpose.
When assigning the Inputs use the Process Group programmed in the previous step.

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DURESS CODE AND PANIC ALARM PROCESSING

The 3000 / Access 4000 offers a number of options for processing User Duress and Panic conditions generated at LCD Terminals.
When a User logs on to an LCD Terminal using a special "Duress Code" an alarm state is generated on the "Terminal Duress" System input (Txx : S05) for that Terminal.
Similarly, when a User performs the Panic operation by pressing the <HELP> key 3 times in succession an alarm state is generated on the "Terminal Panic" System input (Txx : S02) for that Terminal.
These System Inputs can then be processed as required.

Duress Codes
Duress Codes allow a User to logon to an LCD Terminal and perform operations in the usual manner while a silent alarm (or whatever form of alarm processing is required) is discreetly reported.

Common Duress Code/s.
A User Programming option allows specific User Codes to be designated as "Duress" Codes. This allows for a common Duress Code, that is easily remembered, to be programmed for all staff. (e.g. 9999)
Multiple Duress Codes can be created for multi-tenancy applications or where Duress Codes are required on a "per department" basis.

Unique Duress Codes.
A General System option allows every User to have a unique Duress code by incrementing the last digit of the normal PIN code by 1. e.g. Normal PIN is 1234; Duress PIN is 1235. Normal PIN is 6789; Duress PIN is 6780.

Panic
The Panic feature allows a User to generate a local and/or remote Panic alarm simply by pressing the <HELP> key three times in succession at an LCD Terminal.

1. General System Options. [MENU, 7, 5, 1]

1.1 Select the option for Unique Duress codes IF required. [N D F R f + I .]

-+1 for Duress Codes. Set to Yes to enable unique Duress Codes for every User by adding 1 to the last digit of their PIN code.

2. Users. [MENU 2, 1]

2.1 IF Common Duress Code/s are required, select the User Code to program.

2.2 Program a name for the User.
CAUTION. For Duress Codes DO NOT use any words in the User name (e.g. Duress, Holdup, etc.) that indicate that a Duress code is being used, as the name will be displayed in the greeting when the User logs on to the Terminal!

2.3 Assign an appropriate User Type .

2.4 Enter in a unique PIN code of 1 to 8 digits for the User. A PIN code length of at least 4 digits is recommended.

2.5 Program any of the User Options required for the Duress Code User. [N D L E G]
The relevant options are:
-**D**uress Code. Set to Yes IF this User Code is to be used as a system Duress PIN code.
-No **G**reeting. Set to Yes IF the logon greeting (e.g. Good morning Jack Frost) is not to be displayed for this User.

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3. Check / Program the Process Group/s. [MENU 2, 4, 3]

One of the Default Process Groups may be suitable:
For Panic Alarms: PG009 - "System Tamper".
For Duress Alarms: PG006 - "Duress". If Terminal messages are not to be displayed. (Version 4.5 or later only)
PG010 - "System Silent". If Terminal messages are required. (*See comments at Step 3.7 below*)
If necessary, new Process Group/s can be programmed, or Default Process Groups can be modified, to cater for different processing requirements.
Note comments at Step 3.7 below.

3.1 IF a new Process Group is required, or an existing Process Group needs to be modified, select the Process Group to be programmed/edited and program a name if required. e.g. Duress.

3.2 Program the required "Input Type" options. [T A E X U P L S]
-Set the "T" (**T**amper) option to Yes IF the Alarm is to be processed/reported as a Tamper condition.
(If set to Yes the alarm will be processed when the Area is On or Off.)
-Set the "A" (**A**larm) option to Yes IF the Alarm is to be processed/reported as an Alarm condition.

3.3 Program the required "Communications Reporting" options. [I T A R E X U S]
Typically the **I**solate, **T**amper, **A**larm and **R**estore options are set to Yes.

3.4 IF reporting via Contact ID, you may program the Contact ID Event Code to be sent for Inputs with this Process Group assigned. If left at "000" a default message will be sent:
"120" for "Terminal Panic" System Inputs. "122" for "Terminal Duress" System Inputs.
See Tables section for Contact ID Event Code details if a different Event code is required..

3.5 Program the Area Auxiliaries to activate. [T 1 2 3 4 I]
This will be required IF devices such as Cameras, Alarm indicators, Strobe, etc. are to be triggered.
-Set Alarm **2** Auxiliary to Yes IF you require the Auxiliary to be On while the Input is in Alarm and automatically turn Off when the Input Seals. (V3 or later)
-Set any other Alarm Auxiliary to Yes IF you require the Auxiliary to turn On when the Input goes into Alarm and turn Off by another mechanism. e.g. Area Off, Auxiliary Timer, Calculated Auxiliary, etc.

Note that Duress alarms are usually a Silent alarm reported to the Central Station. However, Auxiliaries may be required to provide some form of discreet local alarm indication for other personnel or an on-site guard etc.

3.6 IF Sirens are required:
-Program the Siren Tone selection for the Alarm and Tamper states.
-Set Siren Lockout to Yes IF Zones that caused the Siren activation are to auto isolate when the Siren timer expires.

Note that Sirens and Strobes, etc. are not normally used for Duress alarms as they may cause the Bandit to panic, thereby putting the victims at risk.

3.7 Program the LCD Terminal message Types to be generated.
IMPORTANT NOTE: Normally all set to No in the Process Group used for Duress Code Alarms.
This prevents a message such as "Had Alarm on T02 Duress in SYSTEM AREA" from appearing on the LCD Terminal when a User Enters the Duress Code.
In some installations this message may be required to appear on specific LCD Terminals (e.g. Only on the Guard room Terminal and/or Terminal in back office). If so, then this option can have a unique Message type number assigned (e.g. Only type 8 set to Yes); then in LCD Terminal programming [MENU, 7, 2, 1], type 8 can be added to the Alarm Message Types for those Terminals only.
(This option typically has Type 1 set to Yes for other types of alarms that require a message to appear on all the LCD Terminals)

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4. Program the Terminal Panic and Terminal Duress Input/s. [MENU 7, 0]

4.1 IF any special Input options are required, select the Input to be programmed/edited and program the options as described in "Alarm Processing" in the Basic Programming Guide.

Note: Names do not need to be programmed for these Inputs. System Input names are pre-defined and cannot be edited.

5. Program the Area. [MENU 7, 1]

Terminal Duress and Panic alarms are normally monitored in a "System" Area that is On 24 Hours or a separate Area that is only used for Duress Code and/or Panic Alarm processing.
If these types of alarms are only monitored for part of the day, programming a separate Area allows the monitoring to be enabled and disabled by turning the Area On and Off as required.

IMPORTANT NOTE: If the "Add System Inputs" option has already been used in an Area with the System "T"amper and System "S"ilent options set to Yes [**T S** L I i a s], then the Terminal Panic and Terminal Duress System Inputs will already be assigned to that Area using the Default Process Groups as follows:
Terminal Panic: PG009 - "System Tamper"
Terminal Duress: PG006 - "Duress". (V4.5 or later)
PG010 - "System Silent". (V4 or earlier)

These System Inputs will have only been assigned for the Terminals that were present in the system at the time. If more LCD Terminals have been installed in the system, the "Add System Inputs" function should be performed again.

If this is suitable then no further programming is required. Note however, that if the default "System Silent" Process Group is used for Duress Code alarms (e.g. In systems prior to V4.5) a message will be sent to all LCD Terminals whenever a Duress Code is entered.
It is recommended that a new Process Group is used to assign the Terminal Duress Inputs to the Area.
See Step 3 (especially 3.7) for details.

If setting up a separate Area for Duress Code and/or Panic alarms, and "Add System Inputs" has already been used in another Area, you may need to remove theTerminal Panic and Terminal Duress System Inputs from that Area before assigning them to the new Area.

5.1 Select the Area to Edit or create a new Area and program a name.

5.2 Program the Area options as required.
See Step 4 in "Alarm Processing" in the Basic Programming Guide.

5.3 Assign the Input/s to the Area using the appropriate Process Group for this type of alarm.
See notes above.
The "Terminal Panic" System Inputs are S02 on each Terminal. i.e. T01:S02, T02:S02, T03:S02, etc.
The "Terminal Duress" System Inputs are S05 on each Terminal. i.e. T01:S05, T02:S05, T03:S05, etc.

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EVENT COUNTING (V3 OR LATER)

V3 firmware now provides special Event Counting options that provide the ability to:
-Display and/or edit Counter values.
-Generate Review Log and/or Report when count exceeds and/or drops below the Trigger value/s.
-Control Auxiliaries when count exceeds and/or drops below the Trigger value/s.

Installation Notes:

1) Mini Expander Modules must be used if Event Counting is utilized.
Mini Expander Module Zone Inputs 1 to 7 are the only Inputs that can be used for Event Counting.
i.e. Mxx : Z01 to Mxx : Z07. Note that Counting is not supported by Zone 8.

2) Count Inputs do not utilize End-Of-Line Resistors. The Counter will increment by 1 whenever an Open to Short transition occurs on the Input.

1. Program the Input/s used for Counting. [MENU 7, 0]

These Inputs must be connected to Mini Expander Module/s.

1.1 Program the Zone Input/s that the Count contact/s are connected to. i.e. Mxx : Z01 to Mxx : Z07
These will be used for monitoring "Trigger Count 1". (Will generate alarm state when count exceeds "Trigger Count 1" programmed in "Counters")
Select the Input to be programmed/edited and program a name and other options as described in "Alarm Processing". For Counting Inputs, all Input Options normally left set to No.

1.2 IF Two Trigger points need to be monitored, check the programming of the corresponding System Input/s.
i.e. Mxx : S02 (Zone 1 Extra) to Mxx : S08 (Zone 7 Extra)
These will be used for monitoring "Trigger Count 2". (Will generate alarm state when count exceeds "Trigger Count 2" programmed in "Counters")
Select the Input to be programmed/edited and check the Input options as described in "Alarm Processing".
System Input names are Pre-defined. For Counting Inputs, all Input Options normally left set to No.

2. Program the Mini Expander/s (8 Zone) [MENU 7, 2, 6]

The Mini Expander Modules provide the special features for Counters.
-Programmable Zone de-bounce for input devices that require faster processing. e.g. Count contacts.
-Special Input processing options.
-On-board non-volatile memory assigned to storing counter value/s.

2.1 Adjust the Mini Expander "Poll Time" and "LAN Priority" IF this is considered necessary. LAN Priority programming is accessed by pressing the <ON> key when the "Poll Time" is displayed.

2.2 Check that the Zone Type is set to the appropriate option for each Zone used for Counting.
-Select "Counter" for Count Inputs. This modifies input operation for:
-Two state monitoring (Open to Short transition for counting)
-Zone / System Input Alarms when Trigger Counts exceeded.

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2.3 Set the Zone De-bounce to an appropriate period for each Zone used.
A range of De-bounce settings from 5 milliSeconds to 1250 milliSeconds (1.25 Seconds) can be selected.
-De-bounce settings for Count contacts will vary. The de-bounce time must be:

a) Short enough to detect every valid contact closure.
(i.e. shorter than the minimum period the contact remains closed).

b) Short enough to detect every separate occurrence
(i.e. shorter than the minimum time expected between contact closures)

c) As long as possible (within the above limitations) to ignore contact bounce and voltage spikes, etc.

e.g. If contact closures are 250mS long and the minimum time between separate occurrences is 400mS, a Zone De-bounce of 200mS would provide reliable counting while still offering immunity to voltage spikes and contact bounce.
A setting of 300mS would cause count pulses to be missed, and a setting of 400mS or higher would sometimes cause two or more pulses to be counted as one.

3. Program the Counters. [MENU 7, 5, 8]

A Counter will need to be programmed for each Zone Input used for Counting.

3.1 Select a new Counter and program a name. e.g. Water Usage (kL).

3.2 Define the Mini Expander Zone Input used for this Counter. e.g. Mxx : Zxx.

3.3 Select the "Counter Type".
-Select the "2 Trigger Points" type.

3.4 Program "Trigger Count 1" IF a Zone Input is required to indicate the count has exceeded a specified value.
(The Mini Expander Zone Input will go into alarm when this trigger point is exceeded)
e.g. Average monthly Water Usage exceeded.

3.5 Program "Trigger Count 2". IF indication of the counter exceeding a second Trigger Point is required.
(The Mini Expander System Input that corresponds with the Zone will go into alarm when this trigger point is exceeded)
e.g. Peak monthly Water Usage exceeded.

3.6 Program the Counter Options. [. . 4 D]
-**4** Digit display. Set to Yes if you only require a 4 Digit Count display. (0000 to 9999) Normally 8 digits.
-**D**isplay Counter. Set to Yes if the Counter is allowed to be displayed via "Read Count" in the Information Menu. [MENU, 1, 4]

4. Initialize the LAN

Following any programming changes to Mini Expanders, the LAN must be re-initialized.
If all modules are connected and operational, perform the **Secure LAN [MENU 7, 8, 1]** or **Initialize LAN [MENU 7, 8, 2]** functions. ("Secure LAN" Initializes the LAN and sets the Encryption)

5. Program the Process Group/s. [MENU 2, 4, 3]

You may need to program new Process Groups or edit existing Process Groups to define how the Zone Inputs and/or System Inputs used to monitor the 1st and 2nd Counter Trigger points are to be processed.

5.1 Select the Process Group to be programmed/edited and program a name. e.g. Film Monitor

5.2 Program the required "Input Type" options. [T A E X U P L S]
-Set the "A" (**A**larm) option to Yes.

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5.3 Program the required "Communications Reporting" options. [I T A R E X U S]
Typically the **I**solate, **A**larm and **R**estore options are set to Yes for Counter Zones.

5.4 IF reporting via Contact ID, you may program the Contact ID Event Code to be sent for Inputs with this Process Group assigned. If left at "000" a default Contact ID message will be sent.
See the Tables section for Contact ID Event Code details.

5.5 Program the Area Auxiliaries to activate. [T 1 2 3 4 I]
This will be required IF any Auxiliaries are to be activated by Counter Inputs.
-Set Alarm **2** Auxiliary to Yes IF you require the Auxiliary to be On while the Input is in Alarm and automatically turn Off when the Input Seals. e.g. To activate a Diary Message on the LCD Terminal/s.
-Set any other Alarm Auxiliary to Yes IF you require the Auxiliary to turn On when the Input goes into Alarm and turn Off by another mechanism. e.g. Area Off, etc.

5.6 IF the Counter alarms are to generate an LCD message that must be acknowledged, program the LCD Terminal message Types to generate. Typically Type 1 set to Yes.
IF these alarms are to be annunciated via other means (e.g. Diary messages), you may set all message types to No.

6. Program the Area/s for Counter monitoring. [MENU 7, 1]

Although not mandatory, it is recommended that a separate Area is programmed for Counter monitoring.
This ensures that:
a) There will be no conflict of Area Auxiliary requirements with other types of alarm functions.
b) The Area can be turned On and Off according to when Counter monitoring is required without affecting other alarm monitoring requirements.

6.1 Select an Area to program/edit and program a name. e.g. Water Monitoring. (If Area is dedicated to this purpose)

6.2 Program the Area Auxiliaries to activate.
-Alarm 2 Auxiliary. IF an Auxiliary is required to activate only while the Input/s are in the alarm state, then automatically turn Off when the Input/s are sealed.
-Alarm 1, 3 or 4 Auxiliary. IF an Auxiliary is required to activate in the normal manner.

6.3 Assign the Input/s (Counter Zone Inputs and/or System Inputs) to the Area using the appropriate Process Group for each Input assigned.

7. Check/Program Menu Groups. [MENU 2, 4, 1]

Before any User Types can View and/or adjust the Count value, access to the appropriate Menu Option/s must be enabled in their Menu Group.

7.1 Program/Edit the "Menu Options" in the relevant Menu Groups. [R A I T t . S C]
-Set the "R" option (**R**eview/Information Menu) to Yes if Viewing Counters is allowed.
-Set the "C" option (**C**ontrol Menu) to Yes if Adjusting Counters is allowed.

7.2 Program/Edit the "Sub Menu Options" in the relevant Menu Groups. [U T L G Z R A .]
-Set the "A" option (**A**djust Counters) to Yes if Adjusting Counters is allowed.

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8. Program Counter Reset options [MENU, 7, 5, 4]

It may be necessary to provide a function for Automatic or Manual Reset of one or more Counters.
Calculated Auxiliary Functions can be programmed for this purpose.

This can be performed in a number of different ways. *(See table below)*
Depending on the method to be used, other functions will need to be programmed to produce the Auxiliary On/Off operation that will in turn be used in the Calculated Auxiliary to Reset the Counter.

4.1 Select a new Calculated Auxiliary to program.

4.2 Select the Calculated Auxiliary Action.
-Event Count=0 +ON. The Specified Counter will be reset to 0 when the 1st Auxiliary turns On.
-Event Count=0 -OFF. The Specified Counter will be reset to 0 when the 1st Auxiliary turns Off.

4.3 Define the "1st Auxiliary".

4.4 Define the "Counter" to Reset. Only a single Counter can be defined. A separate Calculated Auxiliary will need to be programmed for each Counter that requires a reset function.

The table below defines the additional function that will need to be programmed to produce the Auxiliary operation required.
Note that more than one method of activating the Auxiliary may be used.
e.g. A Diary may be programmed to turn the Auxiliary On for 1 minute at 00 : 01 AM on the 1st Day of every month to clear the Counter ready for the new month. The same Auxiliary may also be turned On for several seconds by a User with a Keyswitch or Home Auxiliary at any other time that they decide the Counter needs to be Reset.

Method of Control	**Programming Required**
User via PIN code.	Program a Home Auxiliary [MENU, 7, 5, 5] , plus Auxiliary Timer [MENU, 5, 5]
Automatic based on Time of Day / Day of Week.	Program a TimeZone [MENU, 5, 2] and select "Auxiliary On/Off Sec" Control function.
Automatic based on Day of Month / Day of Year.	Program a Diary [MENU, 5, 4] with the "Diary Auxiliary" assigned, plus Auxiliary Timer [MENU, 5, 5]
By a Keyswitch, Pushbutton, Input, etc.	Program a Function Zone [MENU, 7, 5, 3] utilizing the Auxiliary Control options, plus Auxiliary Timer [MENU, 5, 5].
Remotely via Touch tone telephone. (V3 or later)	Program Answer Call Comms Task [MENU, 7, 3, 1] and DTMF Control [MENU, 7, 3, 3] utilizing the Auxiliary Control options.
Remotely via P.C.	Program PCDirect or ACCEPT Comms Task [MENU, 7, 3, 1] , plus Auxiliary Timer [MENU, 5, 5].

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HOLDUP / DURESS ALARM - DELAYED REPORTING (V2 OR LATER)

This feature enables special Input processing in Area/s designated as a "Holdup" Area.

Holdup processing uses a form of Pulse count processing. When a Holdup button (or Kick bar, Note clip, etc.) goes into alarm it will only activate local alarm processing and start the Area Pulse timer running. The alarm will not report until the Pulse timer expires, or another Holdup input goes into Alarm.

If the first Holdup input activation is a false alarm (i.e. Was accidentally triggered), Specified User Types can cancel the alarm altogether by entering their PIN code at an LCD Terminal.

The local alarm activation allows devices such as Cameras, CCTV, Alarm indicators, Bandit screens, etc. to be activated locally without sending an instant alarm report to a Central Monitoring Station. This allows the staff a short period of time (e.g. 60 seconds) to cancel the alarm if it was triggered accidentally, ensuring that patrols and police are not sent to attend false alarms.

1. Program the Input/s that the Holdup button/s are connected to. [MENU 7, 0]

1.1 Select the Input to be programmed/edited and program a name and other attributes as described in "Alarm Processing" in the Basic Programming Guide.

2. Mini Expanders (8 Zone) [MENU 7, 2, 6]

Mini Expander Modules provide several special Holdup input processing features.
-Programmable Zone de-bounce for input devices that require faster processing. e.g. Momentary pushbuttons.
-Special fast Auxiliary output activation option.
-Input processing options for special combined Holdup/Suspicion buttons and Suspicion only buttons.

IF Mini Expanders are used for Holdup inputs, program the Mini Expander options.

2.1 Adjust the Mini Expander "Poll Time" and "LAN Priority" IF this is considered necessary. LAN Priority programming is accessed by pressing the <ON> key when the "Poll Time" is displayed.

2.2 Check that the Zone Type is set to the appropriate option for each Zone used.
Normal Zone / Counter / Holdup / Suspicion / Holdup+Suspicion

-Normal Zone. May be used for Holdup Inputs if no special Mini Expander Auxiliary output processing is required.

-Counter. Not relevant to Holdup processing.

-Holdup. Same as Normal Zone except that a Seal to Alarm transition on an enabled "Holdup" Zone will unconditionally turn on Auxiliary 1 on the same Module, and report "Mxx:X01 On" to the Control Module. This provides an Auxiliary output that is activated within several milliSeconds of the Alarm, meeting regulatory requirements for triggering devices such as Bandit screens.

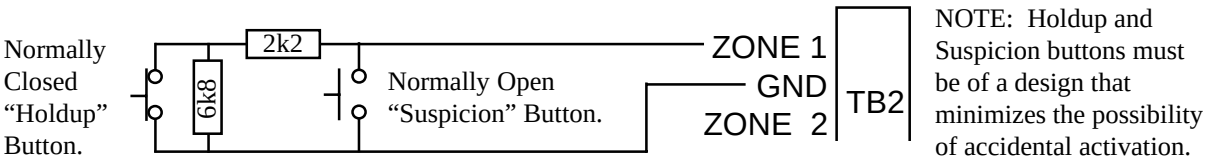
-Suspicion. Provides a corresponding System input for additional processing on each of Zones 1 to 7.
Zone Input state: Same as normal Zone except that Short circuit Tamper state is regarded as a Seal.
System Input state ("Zone ?? Extra"): Short circuit Tamper state is regarded as an Alarm state. All other states regarded as Sealed.
See Mini Expanders [MENU, 7, 2, 6] in the Programmer's Reference section for more details.

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-Holdup+Suspicion. Combines operation of "Holdup" and "Suspicion" Zone Types for special combination Holdup and Suspicion button assemblies where:

Seal (2k2)	= Seal.
Alarm (9k [2k2+6k8])	= Holdup.
Short Cct	= Suspicion.
Open Cct	= Tamper.

Holdup + Suspicion button circuit.



NOTE: Holdup and Suspicion buttons must be of a design that minimizes the possibility of accidental activation.

IMPORTANT NOTE: "Holdup + Suspicion" Zone Input states must operate as described above. The "Swap Seal & Alarm" option in Input Programming cannot be used.

2.3 Set the Zone De-bounce to an appropriate period for each Zone used. 300mS is typical for normal detectors (PIRs, Door Reeds, etc.) Faster de-bounce times may be required for fast acting momentary pushbutton switches, etc.

3. Initialize the LAN

Following any programming changes to Mini Expanders, the LAN must be re-initialized.
If all modules are connected and operational, perform the **Secure LAN [MENU 7, 8, 1]** or **Initialize LAN [MENU 7, 8, 2]** functions. ("Secure LAN" Initializes the LAN and sets the Encryption)

4. Program the Process Group. [MENU 2, 4, 3]

For this function, the Input/s should be assigned to a separate Area that is only used for Holdup processing. A dedicated Process Group can therefore be programmed.

4.1 Select the Process Group to be programmed/edited and program a name. e.g. Holdup buttons.

4.2 Program the required "Input Type" options. [T A E X U P L S]
-Set the "T" (**T**amper) option to Yes.
-Set the "A" (**A**larm) option to Yes.
-Set the "U" (P**U**LSE count) option to Yes.
-Set the "S" (**S**ingle Pulse) option to Yes IF only one Pulse per Zone input will be processed. This means that two "hits" on the same Holdup button will not cause alarm to be reported. i.e. Alarm will only be reported after Pulse timer expires, or when at least two different Inputs are triggered.

4.3 Program the required "Communications Reporting" options. [I T A R E X U S]
Typically the **I**solate, **T**amper, **A**larm and **R**estore options are set to Yes.

4.4 IF reporting via Contact ID, you may program the Contact ID Event Code to be sent for Inputs with this Process Group assigned. If left at "000" a default message will be sent (140 for Zone Input Alarms). *Consult with the Central Monitoring Station and See Tables section for Contact ID Event Type details.*

4.5 Program the Area Auxiliaries to activate. [T 1 2 3 4 I]
This will be required IF devices such as Cameras, Alarm indicators, Strobe, etc. are to be triggered.
-Set Alarm **2** Auxiliary to Yes IF you require the Auxiliary to be On while the Input is in Alarm and automatically turn Off when the Input Seals. (V3 or later)
-Set any other Alarm Auxiliary to Yes IF you require the Auxiliary to turn On when the Input goes into Alarm and turn Off by another mechanism. e.g. Area Off, Auxiliary Timer, Calculated Auxiliary, etc.

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4.6 IF Sirens are required:
-Program the Siren Tone selection for the Alarm and Tamper states.
-Set Siren Lockout to Yes IF Zones that caused the Siren activation are to auto isolate when the Siren timer expires.

Note that Sirens are often not used for Holdup alarms as they may cause the Bandit to panic, thereby putting the victims at risk.

4.7 Program the LCD Terminal message Types to generate. Typically Type 1 set to Yes.

5. Program the Holdup Area. [MENU 7, 1]

Owing to the special Area processing requirements, in most cases it is recommended that a separate dedicated Area is used for Holdup processing.

5.1 Create a new Area and program a name. It is recommended that a discreet Area name (e.g. Day Mode.) be used, as the Area name will be displayed on the LCD Terminal when the User is prompted to Enter their code to cancel an alarm.

5.2 IF Sirens are required:
-Select the required “Internal Siren Mode” and/or “External Siren Mode” option/s.
-Assign a Siren List to the Area.
-Program the Siren Time. (1 to 255 minutes)

Note that Sirens are often not used for Holdup alarms as they may cause the Bandit to panic, thereby putting the victims at risk.

5.3 Program the “Pulse Time”.
This will be the time period that reporting of the Holdup alarm will be delayed to allow Users the opportunity to cancel the alarm.
Typically set to 60 seconds for Holdup processing.

5.4 Program the “Maximum Pulse Count”.
This is the number of “hits” required on Pulse Count Zones to cancel the Pulse timer and report the alarm.
Typically set to 2 for Holdup processing.

5.5 Select the required “Open/Close Reporting” options and “Area Client Code” if required.

5.6 Program the “Area Options”. [T H D N P]
-Set the “H” (**H**oldup Area) option to Yes. This modifies the Pulse Count operation for Holdup processing.
-Set the “P” (**P**ulse Count processing) option to No.

5.7 Program the Area Auxiliaries to activate.
-Entry Auxiliary. (“Pre-alarm” Auxiliary) Will turn On whenever the Pulse timer is started. (V3 or later) Can be used to activate Cameras and other local alarm warning devices as required.
-Alarm 1 to Alarm 4 Auxiliaries. Will turn On when the Holdup Alarm reports (Pulse timer expires or second Holdup input activated) if selected in the Process Group assigned to the Input in this Area.
-Tamper Auxiliary. Will turn On when an Input is in Tamper if selected in the Process Group assigned to the Input in this Area.

5.8 Assign the Input/s to the Area using the Process Group programmed for this function.

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6. LCD Terminals [MENU 7, 2, 1]

At the start of the Pulse timer all Terminals with the "L" option (Level messages) set to Yes, will show a Holdup warning message "<Area Name> Enter Code". This message will be displayed with the backlight on (without a beep) for the duration of the Pulse timer. This prompts the Users to enter their code to cancel the Holdup alarm if it was triggered accidently.

6.1 Program the "Default Display message" options. [S M D L I A . O]
Ensure that the "L" (Level messages) option is set to Yes for all LCD Terminals where the "Enter Code" prompt is to be displayed.

7. Check/Program Menu Groups. [MENU 2, 4, 1]

Before any User Types can Cancel a Holdup Alarm, the function must be enabled in their Menu Group.

7.1 Check the "Menu Group Options" programming in the relevant Menu Groups. [R I D C S A M T]
Ensure that the "C" option (**C**ancel Holdup) is set to Yes.

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HOME AUXILIARIES

Basic Programming

1. Program an Auxiliary List if required. [MENU 2, 3, 6]

IF you require the Home Auxiliary to control more than one Auxiliary, program an Auxiliary List. [MENU 2, 3, 6] (V2 or later)

1.1 Select an Auxiliary List number to program.

1.2 Program an Auxiliary List name.

1.3 Assign up to 8 Auxiliaries to the List.

2. Define the Home Auxiliaries. [MENU 7, 5, 5]

2.1 Select the Home Auxiliary Number to program.

2.2 Program the Name of the Home Auxiliary.

2.3 Define the Auxiliary OR Auxiliary List (V2 or later) that the Home Auxiliary will control.
When programming from the LCD Terminal the <ON> key will toggle between Auxiliary and Auxiliary List selection.

2.4 IF an Auxiliary List is selected, program the Auxiliary List control options. [O F o f]
-**O**N when Home Aux On. Auxiliary List will be turned On when the Home Aux is turned On.
-O**F**F when Home Aux On. Auxiliary List will be turned Off when the Home Aux is turned On.
-**o**n when Home Aux Off. Auxiliary List will be turned On when the Home Aux is turned Off.
-o**f**f when Home Aux Off. Auxiliary List will be turned Off when the Home Aux is turned Off.

2.5 Define which Type/s the Home Auxiliary will belong to. Types are used to determine which Home Auxiliaries each User Type will be allowed to control via the Menu when they log on to an LCD Terminal and select Home Auxiliary Control. [MENU, 9, 1]
There are 8 Home Auxiliary Types. At least one type must be defined. (Typically Type 1 unless you need to define different Home Auxiliaries to control for different User Types)

2.6 Program the Home Auxiliary options required. [T S]
-**T**oggle from keypad. The Home Auxiliary can be controlled from specified LCD Terminals without the User logging on to the Terminal. (Using <RIGHT> arrow key)
-**S**MS Control. The Home Auxiliary can be controlled remotely using the Short Message Service via the GSM modem option. (Available future version)

3. Check/Program Menu Groups. [MENU 2, 4, 1]

Before any User Types can control Home Auxiliaries via the Menu (MENU, 9, 1), access to the Control Menu must be allowed in their Menu Group.

3.1 Check the "Menu Options" programming in the relevant Menu Groups. [R A I T t . S C]
Ensure that the "C" option (**C**ontrol Menu) is set to Yes.

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4. Check/Program User Types. [MENU 2, 2,]

Any User Types that are allowed to control Home Auxiliaries via the Menu must have the appropriate Home Auxiliary Types defined.

4.1 Check the "Home Auxiliary Types" programming in the relevant User Types.
Ensure that the required Home Auxiliary Types are set to Yes. (Typically Type 1; unless you need to define different Home Auxiliaries to control for different User Types)

5. Check/Program LCD Terminals. [MENU 7, 2, 1] (V3 or later)

LCD Terminals that are allowed to be used for Home Auxiliary Control without the User logging on to the Terminal ("Toggle from keypad" option) must have the Home Auxiliary Control option enabled.
Note: Prior to V3, any LCD Terminal can be used to control Home Auxiliaries that have the "Toggle from keypad" option enabled.

5.1 Check the "Logged Off" options for the relevant LCD Terminals. [A T L R H C]
Ensure that the "H" option (**H**ome Auxiliary Control) is set to Yes.

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Control of Home Auxiliaries by Inputs

IF you need an Input (Zone Input or System Input) to control a Home Auxiliary, the following additional programming is necessary. Input control of Home Auxiliaries can be in addition to, or in place of User Control.
e.g. External lighting may be controlled by a User at an LCD Terminal and also by a push button switch and/or automatically by a light detector.
If User Control of Home Auxiliaries in not required at all in the system, ignore steps 3, 4 and 5.

6. Program the Input/s that are required to control Home Auxiliaries. [MENU 7, 0]

6.1 Select the Input to be programmed/edited and program a name and other attributes as described in "Alarm Processing".

6.2 Program the Home Auxiliary number that you require the Input to control.

7. Check/Program the Process Group Home Auxiliary Control options. [MENU 2, 4, 3]

If the Inputs are only to be used for Home Auxiliary Control, or are assigned to a separate Area that is only used for this function, a dedicated Process Group can be programmed for each type of control required. e.g. One Process Group may be programmed to provide On/Off control on Alarm/Seal, while another may be required to Toggle the Home Aux. state on Alarm. (Recommended)
You may need to edit existing Process Groups if the Inputs are already used for other monitoring and/or control functions and you are not using a separate Area for this function.

7.1 Select the Process Group to be programmed/edited and program a name and other attributes as described in "Alarm Processing" if required.

7.2 Ensure that the required "Input Type" options are programmed. [T A E X U P L S]
-Ensure the "T" (Tamper) option is set to Yes if the Home Auxiliary is to activated on a Tamper state.
-Ensure the "A" (Alarm) option is set to Yes if the Home Auxiliary is to activated on an Alarm state.

7.3 Program the required Home Auxiliary Actions. Select one of the four Home Auxiliary Actions for each of the three possible Input states.
-Home Aux action on Seal.
-Home Aux action on Alarm.
-Home Aux action on Tamper.
The actions available are: None / Turn On / Turn Off / Toggle.
Toggle is used to change the state of the Home Auxiliary from it's current state to the opposite state.

e.g. For Momentary Pushbuttons wired with the normal End-Of-Line Resistor network for Seal & Alarm states:
-Set "Home Aux on Alarm" to "Toggle" for Push On/Push Off control.
For Two position Toggle switches wired with the normal End-of-Line Resistor network for Seal & Alarm states:
-Set "Home Aux on Alarm" to "Turn On".
-Set "Home Aux on Seal" to "Turn Off".

7.4 IF the Home Auxiliary action needs to be a timed action (e.g. Turn On for 20 minutes), program the appropriate Home Auxiliary Options. [O M]
-**O**verride Time. Set to Yes if the timer associated with this function will override any other timer currently running on the Auxiliary. Set to No if other timers take precedence and are allowed to time-out.
-**M**inute Timer. -Set to No if the time period is to be specified in Seconds.
-Set to Yes if the time period is to be specified in Minutes.

7.5 Program the Home Auxiliary Timer period in seconds or minutes as specified in the previous option.
To disable the timer option, ensure the time period is set to "000".

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8. Assign the Input/s to the Area/s. [MENU 7, 1]

Inputs that control Home Auxiliaries must be assigned to an Area, and the Area turned On for the function to operate.

8.1 Select the Area that the Input/s are to be assigned to.
You may choose an existing Area,
OR create a new Area just for Inputs that are used to control Home Auxiliaries. If you create a new Area, first program a name and any other attributes required as described in "Alarm Processing".

8.2 Assign the Input/s to the Area using the appropriate Process Group/s for each Input. For each Input choose the Process Group that provides the required Home Auxiliary control actions and options.

9. Program options for Auxiliary States on System Reset.

In the rare event of a system reset, all Auxiliaries will normally turn Off until turned On again by a new Event.
When Auxiliaries are used for Building Automation purposes it is often preferrable to maintain those Auxiliaries in the state they were in before the reset occurred.

9.1 Program the "Panel Options" in the General Systems Options Menu. **[MENU, 7, 5, 1]**
[N D F R f + I .]
IF you require the states of some Auxiliaries to be maintained after a system reset, Set the "N" option (No Aux Off on Reset), to Yes.

9.2 IF you set the above option to Yes, for each Auxiliary used in the system, define whether this rule will be followed.
e.g. Auxiliaries controlling lighting, etc. would normally be required to be maintained, while it may be more appropriate for Auxiliairies controlling locks on external doors to be turned Off on a system reset.

Select Auxiliary Timer Programming. **[MENU, 5, 5]**
Set the "Off on Reset" option to No for Auxiliaries that will be maintained on a system Reset.
Set the "Off on Reset" option to Yes (default setting) for Auxiliaries that will turn Off on a system Reset.

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LATCHED ALARMS (V3 OR LATER)

This feature enables special processing for Inputs designated as a "Latching" Input via their Process Group.

Normally, Alarm messages are generated as part of Area Process Group processing and broadcast to selected terminals. (Dependent on the "Alarm Message Types" options selected in Process Group programming and LCD Terminal programming.)
The message may then be read and acknowledged by an authorised User upon PIN code entry. Only one alarm is kept per area, with the last Input causing an alarm being displayed.

The Latched Input concept can be used in addition to, or as an alternative to, the above. A Process Group option, (L)atched Alarm, allows an Input alarm to be latched. Alarm processing is identical to normal operation, except that when an alarm occurs on an Input, a flag is set to indicate that the input has had a latched alarm. A level message is generated and displayed on relevant terminals.
All inputs that have had a latched alarm may be inspected on specified LCD Terminals by pressing the UP/DOWN arrow keys without PIN code entry, or via a PIN code entry and the panel status menu (MENU, 1, 5).

The input can only report a single alarm, tamper or isolate until the latch input has been reset via a PIN code entry.

Latched Input Alarms are cleared whenever a PIN code is entered by a User with a Menu Group that has the (R)eset latched alarms option set to Yes. The latched input can only be cleared if the input is sealed.

Additionally, Latched alarms do not report a Restore until the latch is cleared via a PIN code entry.

When an Area is turned off, all Latched Inputs are cleared unconditionally and a Restore will be generated if the following conditions are met:

1. The input is currently not isolated.
2. The last report was not a Restore.
3. The Input is currently sealed.
4. Restore reporting is enabled.

Rule 3 is removed if the (U)nsealed restore option is set to Yes in the Process Group.

1. Program the Input/s that are to be processed as Latched Alarms. [MENU 7, 0]

1.1 Select the Input to be programmed/edited and program a name and other attributes as described in "Alarm Processing" in the Basic Programming Guide.

2. Program the Process Group. [MENU 2, 4, 3]

For this function, one or more dedicated Process Groups should be programmed.

2.1 Select a new Process Group and program a name. e.g. Latching Alarms.

2.2 Program the required "Input Type" options. [T A E X U P L S]
-Set the "T" (**T**amper) option to Yes.
-Set the "A" (**A**larm) option to Yes.
-Set the "L" (**L**atch Input) option to Yes.

2.3 Program the required "Communications Reporting" options. [I T A R E X U S]
Typically the **I**solate, **T**amper, **A**larm and **R**estore options are set to Yes.

2.4 IF reporting via Contact ID, you may program the Contact ID Event Code to be sent for Inputs with this Process Group assigned. If left at "000" a default message will be sent (140 for Zone Input Alarms). *Consult with the Central Monitoring Station and See Tables section for Contact ID Event Type details.*

2.5 Program the Area Auxiliaries to activate. [T 1 2 3 4 I]
This will be required IF devices such as Cameras, Alarm indicators, Strobe, etc. are to be triggered.

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-Set Alarm **2** Auxiliary to Yes IF you require the Auxiliary to be On while the Input is in Alarm and automatically turn Off when the Input Seals. (V3 or later)
-Set any other Alarm Auxiliary to Yes IF you require the Auxiliary to turn On when the Input goes into Alarm and turn Off by another mechanism. e.g. Area Off, Auxiliary Timer, Calculated Auxiliary, etc.

2.6 IF Sirens are required:
-Program the Siren Tone selection for the Alarm and Tamper states.
-Set Siren Lockout to Yes IF Zones that caused the Siren activation are to auto isolate when the Siren timer expires.

2.7 Details of Latched alarms are normally viewed by pressing the <DOWN ARROW> key when the "Input Alarms are Latched" message is displayed. (While not logged on) The message is then cleared by logging on. Note that the message can only be cleared if the Latched Inputs are Sealed.
Latched alarms can also be viewed and acknowledged in the normal manner by setting at least one of the LCD Terminal Alarm Message Types to Yes. (Typically Type 1 is set to Yes) *See Step 4.1 below.*

3. Program the Area. [MENU 7, 1]

3.1 Select the Area to program/edit. If a new Area is selected, program a name.

3.2 IF Sirens are required:
-Select the required "Internal Siren Mode" and/or "External Siren Mode" option/s.
-Assign a Siren List to the Area.
-Program the Siren Time. (1 to 255 minutes)

3.3 Select the required "Open/Close Reporting" options and "Area Client Code" if required.

3.4 Program the Area Auxiliaries to activate as required.

3.5 Assign the Input/s to the Area using the Process Group programmed for this function.

4. LCD Terminals [MENU 7, 2, 1]

When a Latched Alarm is generated, all Terminals with the "L" option (Level messages) set to Yes, will show a message "Input Alarms are Latched". This prompts the Users to view the alarms by using the UP/DOWN arrow keys. Users can then enter their PIN code to acknowledge the Latched Alarms if their Menu Group allows this operation..

4.1 Program the "Alarm Message Type" options. [1 2 3 4 5 6 7 8]
Generally, it is not necessary for LCD Terminals to receive individual messages for Latched Alarms. Setting the Alarm Message Types to No for Message Types generated by Latched Alarms will not affect the operation described above that already allows each individual Latched Alarm to be viewed before acknowledging.

IF alarm messages for Latched Alarms are required to be sent to LCD Terminals, ensure that the same Alarm Message Type (or Types) assigned in the Process Group/s are set to Yes for all LCD Terminals where the Latched Alarm messages are to be displayed.

4.2 Program the "Default Display message" options. [S M D L I A . O]
Ensure that the "L" (Level messages) option is set to Yes for all LCD Terminals where the "Input Alarms are Latched" Level message is to be displayed.

4.3 Program the "Logged Off" options. [A T L R H C . .]
Ensure that the "L" (Latched Alarms) option is set to Yes for all LCD Terminals where Latched Alarms can be displayed via the Up and Down Arrow Keys without logging on to the Terminal.

5. Check/Program Menu Groups. [MENU 2, 4, 1]

Before any User Types can Acknowledge a Latched Alarm, the function must be enabled in their Menu Group.

5.1 Check the "Menu Group Other Options" programming in the relevant Menu Groups. [R H O . . . . .]
Ensure that the "R" option (**R**eset Latched Alarms) is set to Yes.

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LIFT CONTROL WITH FLOOR BUTTON FEEDBACK (V3 OR LATER)

Lift control logic can be used to control Floor security for a number of Lift Cars. The security of up to 64 floors can be controlled for a maximum of 32 Lift Cars depending on interface method used, memory size, memory configuration and system traffic.

There are three methods of Lift Control available. All methods use a standard Reader Module mounted in each Lift Car for interface to the Reader. An optional LCD Terminal may also be installed in each Lift Car if Card+PIN is required for high security applications:

1) Floor Button Enable via simple Relay interface.
-Expander Module/s are installed in the Lift motor room to provide Auxiliary Outputs to enable/disable each Floor selection button. (The Auxiliaries control Relays that provide the interface to the Lift Controller.)

See "Basic Lift Programming" in the Basic Programming Guide section.

2) Floor Selection via Button Feedback. (V3 or later)
-Universal Expander Module/s with Lift Interface board/s fitted are installed in the Lift motor room. These provide an Isolated Zone Input and Relay output that are effectively connected in series with each Floor selection button.

-When a User presents a valid card at the reader in the Lift Car, the system monitors the floor selection buttons for a fixed period of time. When a button is pressed, the system checks the floor against the User's permissions ("Lift Car List", "Floor List", etc.), and if allowed, pulses the Relay to select that Floor, and cancels the button time.

-Only one floor button will be accepted each time a valid card is presented. Since the floor selection buttons are monitored, details of the User, Lift Car and Floor selected are saved to Review.

3) High Level Interface via RS232 UART Port. (V3 or later)
-A single RS232 connection is established between a UART Port fitted to the Control Module, and a High Level Elevator Management System (EMS). This allows security mask information to be transferred to the EMS without the need for Expander modules to provide Auxiliaries and Zones for Button Inputs. At present the OTIS protocol is supported with logging of lift buttons.
The High Level interface drastically reduces the amount of cabling and labour associated with the installation which can also lead to a greater level of reliability.

See "Lift Control with High Level Interface" in the Applications Programming Guide section.

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Installation Notes:

1) UPGRADING FIRMWARE. CAUTION: If a Control Module is being upgraded from an earlier version firmware to Version 3 for Lift Control features, the Memory will beed to be re-configured as new Memory structures have been added.

2) INDUSTRY REGULATIONS. State and/or National Building regulations may govern the type of Lift control allowed on any particular site.

3) TYPE OF INTERFACE. The Lift Controller may already allow for security control of the floor selection buttons. Check if this is the case, and if so, ascertain the type of interface required.

4) INTERFACE ELECTRICAL SPECIFICATION. Check that the button voltage and switched current value are within the specifications of the interface that you propose to use. i.e. Relays, Lift Interface board, etc.

5) READER MODULE INSTALLATION.
A) IN LIFT CAR (RECOMMENDED). The Reader, along with a standard Reader Module and Power Supply, are normally installed in the Lift Car. i.e. Allow one Reader Module per Lift Car.
The Reader Module is connected to the LAN via twisted pair cable, preferably shielded, up the Lift shaft. It is recommended that a LAN Isolator is installed in the Lift motor room to isolate the LAN cable in the Lift shaft from the rest of the LAN. One LAN Isolator will provide isolated LAN branches for two Lifts.

B) DUAL READERS. In some circumstances, where two Floor Button panels are provided in the Lift Car (One each side of the Door), two Readers may also be required. (i.e. One Reader beside each Floor Button panel)
The following points must be noted:
-If a 2 Door Access Module is used, only one of the two Readers can be processed at a time. i.e. While the Lift buttons are enabled after a Valid Card read, the Readers will not accept cards.
-If 2 Single Door Access Modules are used, a Card presentation on either Reader will remain valid until;
i) A Floor selection button in the Users Floor List is pressed, or
ii) The button time expires, or
iii) A Card is presented at the other Reader.
i.e. If 2 Users both present their Card at a different Reader in close succession, only the 2nd Card read will be valid for Floor selection. The other User will have to present their Card again.

C) IN LIFT MOTOR ROOM. In some circumstances, the Reader Module can be installed in the Lift motor room, and provide the interface to Readers in two Lift Cars. The following points must be noted:
-The total length of trailing cable from the Reader to the Reader Module must be within the maximum cable length allowed as specified by the Reader manufacturer.
-The cable from the Reader to the Reader Module must be as specified by the Reader manufacturer. i.e. shielded data cable and not twisted pairs.
-Only one of the two Readers can be processed at a time. i.e. While Lift buttons are enabled in one Lift Car, the Reader in the other Lift Car will not accept cards.

6) When Floor button monitoring is required, Universal Expander Modules in conjunction with Lift interface boards must be used. The Zones used for button feedback will be the Zones that correspond to the Auxiliary numbers used for floor button enables. e.g. If Auxiliaries B05:X09 (1st Floor Auxiliary) to B05:X16 are used for a particular Lift Car, then Zone Inputs B05:Z09 to B05:Z16 must be used for button feedback.

7) Expander Type must be chosen to support the number of Floors required.
a) Mini Expander if up to 8 floors and no button feedback required.
b) Universal Expander configured as “E” Type if up to 16 floors.
c) Universal Expander configured as “B” Type if up to 32 floors.
-Where less than 32 Floors are controlled, the Floor Auxiliaries (and Button Sense Inputs if required) must all reside on the same Expander Module.
-Where more than 32 Floors are controlled, the Floor Auxiliaries (and Button Sense Inputs if required) must all reside on two sequentially numbered “B” Type Universal Expander Modules.
-Expander Modules will be installed with the Lift Control equipment in the Lift motor room.
-If Button feedback is used, set Universal Expanders to 40mS (fast) Zone De-bounce. (SW1 switch 2 to ON)

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8) When Lift Interface boards are used, a Button Sense/Relay circuit on the Interface is connected in series with each of the floor selection buttons and not via separate relays. The actual button voltage is used to sense what floor has been selected and then the Lift Interface board will allow this signal to connect through to the Lift Controller if a valid card has been presented.

Operation with Button feedback.

The sequence below shows the logic that the system applies in determining what floor buttons to enable for a particular lift car when a card is presented at a reader.

- Process card according to reader format & mode.
- Check card exists in system. (Check Issue # if required)
- Check if card has an expiry date that has expired.
- Check if card is cancelled (User type = 0).
- Adjust user type by time-zone if required.
- Check if time-zone has cancelled the user type.
- Turn on valid code Aux for this user type if programmed.
- Ensure that a lift car has been assigned to this reader.
- Check that lift car access group is not zero.
- Adjust access group by time-zone if required.
- Check that lift car access group not cancelled by a time-zone.
- Check that a lift car list exists for this user type.
- Adjust lift car list by time-zone if required.
- Check that lift car list not cancelled by a time-zone.
- If need dual user & no dual code over-ride & allowed to provide 1st user, then go get 2nd user.
- If need pin then wait for this users pin to be entered.
- Cancel user type if required (“Card Cancel” option)
- Check that user type floor list is not zero.
- Adjust user type floor list by time-zone if required
- Set up required floor button list based on what floors are in the user type floor list. If time-zone disabled then no buttons.
- If lift car floor list is defined then adjust for time-zone if required and remove any buttons from the button list for any floors not in the lift car floor list. If time-zone disabled then no buttons.
- If a user type area off list is defined (non zero) then adjust area list for time-zone if required and for every floor in this lift car that has an area assigned to it that is not in the area off list remove the button from the button list. If the floor has no assigned area then ignore.
- Turn on Reader Module “Valid” auxiliary for the button on time. (If user type has (d)isabled flag set then used disabled button time.

Every time a lift button is pushed (zone seals) then:

- If relevant floor is in free access then save a review message and ensure auxiliary is still off.
- If relevant floor is secure and the valid auxiliary is still on and the last user is allowed this floor, then save a review message, and turn off the relevant floor auxiliary and turn off the valid auxiliary early. If the user was not allowed access or the valid auxiliary wasn’t on, then save a review message and turn on the error auxiliary.

Every time a lift button is released (zone alarms) then set the relevant floor auxiliary back to its secure/free access state.

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Programming

1. Note Lift details.

1.1 Plan your Lift programming requirements. For each Lift Car note the:
-Lift Car number to be used. (LC002, LC002, etc.)
-Reader Module being used. (R001, R002, etc.)
-Reader Module Port that the Reader for each Lift Car is connected to. (Rdr 1 or Rdr 2)
-Any LCD Terminal/s used for Card + PIN access in Lift Cars.
-Any restrictions on floors accessed by particular Lift Cars.
-Any Areas to be assigned to floors. IF required for prevention of entry into Areas that are turned On.
-The Expander Module Auxiliaries to be used for floor enable for each Lift Car. This will also detemine the Zone Inputs used for button feedback as the Zone number corresponds with the Auxiliary used for the particular floor. e.g. If B05:X12 controls floor 5, then B05:Z12 is used for floor button 5.
Note: Where a smaller number of floors are used, the same Expander can be used for more than one Lift Car, although this will compromise redundancy.

The table at the end of this section may be copied and used to record this information before programming is commenced.

2. Program the Reader Module/s [MENU 7, 2, 4]

Program the attributes required for each Reader Module used for Lift Control.

2.1 Adjust the Reader Module "Poll Time" and "LAN Priority" IF this is considered necessary. LAN Priority programming is accessed by pressing the <ON> key when the "Poll Time" is displayed.

2.2 Check that the Reader Module Purpose is set to "Lift Control".

2.3 Assign the 1st Lift to be controlled by this Reader Module.

2.4 IF the Reader Module is to be used in "2 Door/Lift" Mode;
Assign the 2nd Lift to be controlled by this Reader Module. (NOT RECOMMENDED)

2.5 Program the Reader Module Options. [C E X F W N T 2]
Comms (LAN) Fail Options:
Not relevant to Lift Control.
Other Options:
-**N**o Valid/Invalid LED control. Set to Yes IF the LED Auxiliaries need to be used for other purposes.
-**2** Door/Lift Mode. Set to Yes IF Reader Module is to be used to control 2 Lift Cars.

2.6 Program the parameters for the first Reader (Rdr 1) connected to the Reader Module.

-Reader location. Set to Outside (the Reader is used to Enter).

-Reader Format. Choose the correct Card data format.

-Reader Mode. Credit Card/Direct Entry/Site Code/Any Card

-Keypad for PIN code Entry. IF Lift requires Card + PIN for floor access.

-Module for PINs. IF "LCD Terminal" is selected as the Keypad for PIN in the previous option, program the module number (Txxx) of the LCD Terminal to be used.

2.7 Program the parameters for second Reader (Rdr 2) connected to the Reader Module.
Note: In 2 Door/Lift Mode, Rdr 1 controls the 1st Lift and Rdr 2 controls the 2nd Lift.
Options are the same as those for the first Reader.

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3. Initialize the LAN

Whenever any programming is done that effects Module parameters, (especially Reader Modules, LCD Terminals and Mini Expanders) the LAN must be initialized to ensure that all changes take effect.

If all modules are connected and operational, and the system is complete, perform the **Secure LAN [MENU 7, 8, 1]** or **Initialize LAN [MENU 7, 8, 2]** functions. ("Secure LAN" Initializes the LAN and sets the Encryption)

4. Program Access Groups. [MENU, 2, 4, 2]

4.1 It is recommended that one or more new Access Groups are programmed to define Lift Control requirements.

4.2 Program a name for any new Access Groups that you create.

4.3 IF it is necessary to restrict the valid period of the Access Group, or provide an alternate set of Access Group permissions for different times of day and/or days of the week, assign an appropriate TimeZone to specify when the Access Group is Valid.
e.g. If "Card Only" operation is adequate during the day, but "Card+PIN" is required after hours.

4.4 If a TimeZone is assigned, you may then specify an Alternate Access Group that will be used when the TimeZone specified in the previous step is Invalid.

4.5 Program the Entry Parameters required.

-Entry Mode. Card only / Card AND PIN. ("PIN only" & "PIN or Card" are not relevant for Lift Control)

-Entry Options. [B L A D]
-**D**ual User. Set to Yes IF two User Codes / Cards are required to allow entry.

4.6 Program the Exit Parameters required.

-Exit Mode. Card only / Card AND PIN. ("PIN only" & "PIN or Card" are not relevant for Lift Control)

-Exit Options. [B L A D]
-**D**ual User. Set to Yes IF two User Codes / Cards are required to allow exit.

5. Program Floor Lists [MENU 2, 3, 4]

IF any Lift Cars are to be restricted to servicing only specific floors, Floor List/s must be programmed to define the floors allowed for each Lift Car.

5.1 Determine the Floor/s that different Lift Cars will be restricted to.
From this information you can program the **Floor Lists** required **[MENU 2, 3, 4]**.

5.2 IF it is necessary to restrict the valid period of the Floor List, or provide an alternate List of Floors for different times of day and/or days of the week, assign an appropriate TimeZone to specify when the Floor List is Valid.

5.3 If a TimeZone is assigned, you may then specify an Alternate Floor List that will be used when the TimeZone specified in the previous step is Invalid.

5.4 Assign the Floor/s to each Floor List. A Floor List can support any number of Floors up to the maximum number of Floors allowed in the Memory configuration.

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6. Define the Button Area/s. [MENU 7, 1]

IF button feedback is used, a separate Area must be programmed for every Lift Car to be controlled.

6.1 Select a new Area to program.

6.2 Program an Area Name. e.g. Lift 1 buttons, Lift 2 buttons, etc.

7. Program the Lifts [MENU, 7, 9]

Each Lift Car to be controlled is individually programmed.

7.1 Select the Lift Car number to program.

7.2 Assign a suitable "Access Group". This will determine the way that the Lift is controlled.

7.3 IF the Lift Car is to be restricted to servicing only specific floors, assign a "Floor List".

7.4 Define the total "Number of Floors" to be controlled in this Lift Car.

7.5 Define the 1st Floor Auxiliary that will be used to control Floors for this Lift Car.
Floor button enable Auxiliaries start at this Auxiliary and run in sequence to the number of floors specified in the previous step.
If the required number of Auxiliaries overruns the first module, the sequence automatically rolls over to Auxiliary 1 of the next module of the same type. (Only recommended if control of more than 32 floors is required.)

7.6 Assign the "Valid Auxiliary" for the Lift.
This Auxiliary is turned On for the "button time" and must be programmed if button feedback is used.
The Auxiliary specified may be a Reader LED control Auxiliary (e.g. Rxx:X02) or just a phantom Auxiliary. (e.g. C01:X11 to C01:X32)

7.7 Assign the "Error Auxiliary" for the Lift.
This Auxiliary is turned On if an illegal floor selection button is pushed. If turned On, the Error Auxiliary needs to be turned Off again by another mechanism. e.g. Auxiliary Timer.

7.8 Assign the "Button Area" for the Lift.
When button feedback is used, the "Button Area" must be defined for each Lift.

7.9 Program the "Button Time". This is the maximum time the floor buttons will remain active for a normal User. Typically set to about 5 seconds.

7.10 Program the "Disabled Time". This is the maximum time the floor buttons will remain active for a "disabled" User. i.e. User Type with the "Disabled" option set to Yes.
Note: Disabled time does not operate with High Level Interface.

7.11 Program the number of "Unused Floors". If a Lift Car starts at any Floor other than the 1st Floor that is controlled by the system, program the number of floors to be skipped. e.g. If the Lift Car starts at Floor15, then this option should be set to 14.
This allows the unused Auxiliaries and Zones associated with this Lift Car to be used for other purposes.

7.12 Assign the "Floor Areas" if required. Normally left at "None" unless User access is to be restricted based on the Area status and the User Type's Area Off permissions.

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8. Assign Floor button Zone Inputs to the "Button Area/s.

IF Button feedback is used, the Zone Inputs used for monitoring the Button state, **must** be assigned to their appropriate "Button Area" and the Area always turned ON 24hrs. A separate Area must be used for every Lift Car to be controlled.

The Zones to be assigned will be the Zones that correspond to the Auxiliary numbers used for floor button enables.
e.g. If Auxiliaries B05:X09 (1st Floor Auxiliary) to B05:X16 are used for a particular Lift Car, then Zone Inputs B05:Z09 to B05:Z16 must be used for button feedback and assigned to the Area designated as the "Button Area" for this Lift Car.

8.1 Program the **Zone Inputs. [MENU, 7, 0]**

-Program the Input names. e.g. Lift 1. Floor button 3.

-Program any of the Input Attributes required for these inputs. [s C X S R A N T]
Set the "R" (No **R**eview) option to Yes, so that changes of state on these Zones are not saved to Review.

8.2 A new **Process Group** must be programmed for monitoring Floor buttons. **[MENU, 2, 4, 3]**

-Program a name. e.g. Button monitor.

-Input Type options. [T A E X U P L S] Set "A" (**A**larm) option to Yes. All other options to No.

-All Comms options to No.

-All Area Auxiliaries to No.

-All Siren options disabled.

-All Message Types to No.

-Extra Options. [R N . . . . . L] Set "L" (**L**ift buttons) option to Yes. All other options to No.

8.3 Assign the Zone Inputs to the appropriate **Button Area** that will be permanently On. **[MENU, 7, 1]**
Use the Area/s defined in Step 6 specifically for this purpose.
When assigning the Inputs use the Process Group programmed in the previous step.

9. Program the General System Options. [MENU, 7, 5, 1]

9.1 Program the "Panel Options". [N D F R f + I .]

-Set the "F" option (Fast zone processing) to Yes when Button feedback is used.

9.2 "Reader for User Programming". Reader Module #001 is normally used for Testing Cards, Enrolling User's Cards & programming Backup Cards.
IF another Reader Module is to be used for these purposes, program the Reader Module number in the "Reader for User Programming" option in the General System Options.

e.g. Reader Module #001 may be used in a Lift Car making it inconvenient to use for testing and enrolling Cards etc.
Note: If Door Access Control is already programmed in the system, this option may already be programmed.

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10. Program the Site Code/s. [MENU, 2, 5]

10.1 IF cards are to be entered into the system using the Site Code method, at least one Site Code will need to be programmed. The Site Code method simplifies card programming, allowing cards to be entered without the need to present the card at a Reader. Site Code method can be used with Inner Range Magnetic Swipe Cards, or Wiegand Cards/ID Tokens with a format in which the system supports Site Codes. e.g. 26 Bit Wiegand.

If Door Access Control is already programmed in the system, the Site Code/s may already be programmed.

10.2 Program the Site Code in Hex or Decimal format.

10.3 Program a Card Offset if required.

10.4 Set "Site Code Present" to Yes.

11. Program Access Alarm processing

When Lift Access Control is implemented in a system additional System Inputs are available to be processed and/or monitored as required. e.g.
Relevant Reader Module System Inputs:
Cabinet Tamper, Low Volts, Illegal Card and LAN Comms.
Relevant LCD Terminal System Inputs:
Cabinet Tamper, Panic, Operator Duress, Too many tries and LAN Comms.

11.1 Identify the Lift Access Control System Inputs that you wish to process and/or monitor in some way.

11.2 Return to "Alarm Processing"; Steps 1 (Program the Inputs), 2 (Check/Program Process Group Requirements), and 4 (Program the Areas) to add the System Inputs and any additional Zone Inputs on Reader Modules and LCD Terminals used for Access Control.

NOTE: You may choose to simply use the "Add System Inputs" default feature in Area Programming to add the Access Control System Inputs to an Area if this fulfils system monitoring requirements.

12. Securing the Floors

When Lift Access Control operation is being commissioned the required Floors must be placed on security by a Floor Control operation. This can be done via "Lift Control" in the Control Menu [MENU, 9, 4]

12.1 Select "Lift Control" in the Control Menu. [MENU, 9, 4]

12.2 Enter the Lift Car number to control. ("00" = All Lifts)

12.3 Enter the Floor number to control. ("00" = All Floors)

12.4 Press the "7" (S) key to Secure the Floor/s. (The "1" (A) key is used to Access Floor/s)

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13. Automated Free Access and Securing of Floor/s

It may be necessary to have a facility to provide automatic "Free Access" and/or "Securing" of Floors.

This can be a useful feature in sites where free access is required on specific floors during specified times and/or under certain circumstances.

IMPORTANT NOTE:
When powered up, the system will normally turn Off all Floor Auxiliaries, thereby setting all floors to free access. This means that in the rare event of the Control Module being Reset (e.g. Due to having power and battery removed then restored), all floors for all Lift Cars will be placed in free access.

To re-secure the required floors, the relevant Floor Auxiliaries must be turned On by a Floor Control operation.
This can be done:
-Manually via the Control Menu (MENU, 9, 4) as described in Step 13. (Requires a User operation)
-Automatically via a Calculated Auxiliary "Secure on +ON" or "Secure on -OFF" action triggered by an Auxiliary that is always turned On after a system Reset. To obtain an Auxiliary that turns On after a System Reset, assign a "Close Auxiliary" to an Area that is always On 24Hrs. This could be one of the Button Areas if Button feedback is used in the system, or a "System" Area. (Any Area that was On will automatically be turned On again after a Control Module is Reset)

14.1 At Specific Times and/or for Specified period/s of Time. Program TimeZone/s. [MENU, 5, 2]
Refer to the "TimeZone Function" options under TimeZone programming in the Programmer's Reference section:
Lift Car & Floor
Lift Car & Floor List
Lift Car List and Floor
Lift Car List & Floor List

14.2 As a result of any event in the system that can control an Auxiliary.
e.g. Keyswitch, Area On/Off, Alarm, etc.
Program Calculated Auxiliaries. [MENU, 7, 5, 4]
Refer to the "Calculated Auxiliary Action" options under Calculated Auxiliary programming in the Programmer's Reference section:
Secure on +ON
Free on +ON
Secure on -OFF
Free on -OFF

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Lift Programming Planning Sheet - Floor Button Feedback.

LIFT NUMBER [Menu, 7, 9]	DESCRIPTION	ACCESS GROUP [Menu, 2, 4, 2]	READER connected to Reader Module: [Menu, 7, 2, 4]	LCD Terminal for PINs [Menu, 7, 2, 1]	FLOOR LIST [Menu, 2, 3, 4]	NUMBER OF FLOORS (max 64)	1st FLOOR AUXILIARY	BUTTON AREA [Menu, 7, 1]
LC __ __ __		AG __ __ __ Name:	R __ __ __ Rdr 1 / Rdr 2	T __ __ __	FL __ __ __		__ __ : X _ _ _ _ _ _	A __ __ __ Name:
LC __ __ __		AG __ __ __ Name:	R __ __ __ Rdr 1 / Rdr 2	T __ __ __	FL __ __ __		__ __ : X _ _ _ _ _ _	A __ __ __ Name:
LC __ __ __		AG __ __ __ Name:	R __ __ __ Rdr 1 / Rdr 2	T __ __ __	FL __ __ __		__ __ : X _ _ _ _ _ _	A __ __ __ Name:
LC __ __ __		AG __ __ __ Name:	R __ __ __ Rdr 1 / Rdr 2	T __ __ __	FL __ __ __		__ __ : X _ _ _ _ _ _	A __ __ __ Name:
LC __ __ __		AG __ __ __ Name:	R __ __ __ Rdr 1 / Rdr 2	T __ __ __	FL __ __ __		__ __ : X _ _ _ _ _ _	A __ __ __ Name:
LC __ __ __		AG __ __ __ Name:	R __ __ __ Rdr 1 / Rdr 2	T __ __ __	FL __ __ __		__ __ : X _ _ _ _ _ _	A __ __ __ Name:
LC __ __ __		AG __ __ __ Name:	R __ __ __ Rdr 1 / Rdr 2	T __ __ __	FL __ __ __		__ __ : X _ _ _ _ _ _	A __ __ __ Name:
LC __ __ __		AG __ __ __ Name:	R __ __ __ Rdr 1 / Rdr 2	T __ __ __	FL __ __ __		__ __ : X _ _ _ _ _ _	A __ __ __ Name:
LC __ __ __		AG __ __ __ Name:	R __ __ __ Rdr 1 / Rdr 2	T __ __ __	FL __ __ __		__ __ : X _ _ _ _ _ _	A __ __ __ Name:
LC __ __ __		AG __ __ __ Name:	R __ __ __ Rdr 1 / Rdr 2	T __ __ __	FL __ __ __		__ __ : X _ _ _ _ _ _	A __ __ __ Name:

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LIFT CONTROL WITH HIGH LEVEL INTERFACE (V3 OR LATER)

Lift control logic can be used to control Floor security for a number of Lift Cars. The security of up to 64 floors can be controlled for a maximum of 32 Lift Cars depending on interface method used, memory size, memory configuration and system traffic.

There are three methods of Lift Control available. All methods use a standard Reader Module mounted in each Lift Car for interface to the Reader. An optional LCD Terminal may also be installed in each Lift Car if Card+PIN is required for high security applications:

1) Floor Button Enable via simple Relay interface.
-Expander Module/s are installed in the Lift motor room to provide Auxiliary Outputs to enable/disable each Floor selection button. (The Auxiliaries control Relays that provide the interface to the Lift Controller.)

See "Basic Lift Programming" in the Basic Programming Guide section.

2) Floor Selection via Button Feedback. (V3 or later)
-Universal Expander Module/s with Lift Interface board/s fitted are installed in the Lift motor room. These provide an Isolated Zone Input and Relay output that are effectively connected in series with each Floor selection button.

See "Lift Control with Button Feedback" in the Applications Programming Guide section.

3) High Level Interface via RS232 UART Port. (V3 or later)
-A single RS232 connection is established between a UART Port fitted to the Control Module, and a High Level Elevator Management System (EMS). This allows security mask information to be transferred to the EMS without the need for Expander modules to provide Auxiliaries and Zones for Button Inputs. At present the OTIS protocol is supported with logging of lift buttons.
The High Level interface drastically reduces the amount of cabling and labour associated with the installation which can also lead to a greater level of reliability.

-When a User presents a valid card at the reader in the Lift Car, the system checks the User's "Lift Car List", "Floor List", etc. and sends data to the EMS to enable all the floor buttons for the floor/s allowed. The buttons are enabled for a fixed period of time after the valid card has been presented, and then the system sends data to the EMS to re-instate any floors in secure mode.

-During the button time, the system polls the EMS every half second for any buttons that have been pushed, and if found, logs them to Review.

-If a User is allowed access to more than one floor, it is possible for them to select multiple floors during the button enable time. The EMS sends back data to indicate which floor (or floors) were selected. This data from the EMS allows details the Floor/s selected to be saved to Review along with the "User access/denied at Lift Car ###" message.

-The system refreshes the security mask for each lift in turn every 15 seconds. This ensures that the secure state of floors will be re-instated in the event of the EMS system resetting. The security mask is also downloaded to the EMS every time the EMS Comms Task is started.

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Installation Notes:

1) CAUTION: If a Control Module is being upgraded from an earlier version firmware to Version 3 for Lift Control features, the Memory will beed to be re-configured as new Memory structures have been added.

2) State and/or National Building regulations may govern the type of Lift control allowed on any particular site.

3) The Reader, along with a standard Reader Module and Power Supply, are normally installed in the Lift Car.
i.e. Allow one Reader Module per Lift Car.
The Reader Module is connected to the LAN via twisted pair cable, preferably shielded, up the Lift shaft. It is recommended that a LAN Isolator is installed in the Lift motor room to isolate the LAN cable in the Lift shaft from the rest of the LAN. One LAN Isolator will provide isolated LAN branches for two Lifts.

4) In some circumstances, the Reader Module can be installed in the Lift motor room, and provide the interface to Readers in two Lift Cars. The following points must be noted:
-The total length of trailing cable from the Reader to the Reader Module must be within the maximum cable length allowed as specified by the Reader manufacturer.
-The cable from the Reader to the Reader Module must be as specified by the Reader manufacturer. i.e. shielded data cable and not twisted pairs.
-Only one of the two Readers can be processed at a time. i.e. While Lift buttons are enabled in one Lift Car, the Reader in the other Lift Car will not accept cards.

5) -When High Level interface is used, the Access 4000 Control Module, Special Control Module options chip, plus appropriate UART board (1, 2 or 4 Port) and Computer Interface Cable must be used. (No Expander Modules required) The Control Module should be installed within 15 metres of the EMS.

6) High Level EMS Protocols currently supported:
-OTIS EMS - Security/B.M.S. Protocol Ref: 51646B

7) In the High Level interface some transfer timing constraints do exist when the EMS reports back the floor/s selected. During periods of peak traffic the "floors selected" message may be delayed as the EMS considers this a lower priority message than the security mask data that it must receive each time a valid card is presented.

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Programming

1. Note Lift details.

1.1 Plan your Lift programming requirements. For each Lift Car note the:
-Lift Car number to be used. (LC002, LC002, etc.)
-Reader Module being used. (R001, R002, etc.)
-Reader Module Port that the Reader for each Lift Car is connected to. (Rdr 1 or Rdr 2)
-Any LCD Terminal/s used for Card + PIN access in Lift Cars.
-Any restrictions on floors accessed by particular Lift Cars.
-Any Areas to be assigned to floors. IF required for prevention of entry into Areas that are turned On.

The table at the end of this section may be copied and used to record this information before programming is commenced.

2. Program the Reader Module/s [MENU 7, 2, 4]

Program the attributes required for each Reader Module used for Lift Control.

2.1 Adjust the Reader Module "Poll Time" and "LAN Priority" IF this is considered necessary. LAN Priority programming is accessed by pressing the <ON> key when the "Poll Time" is displayed.

2.2 Check that the Reader Module Purpose is set to "Lift Control".

2.3 Assign the 1st Lift to be controlled by this Reader Module.

2.4 IF the Reader Module is to be used in "2 Door/Lift" Mode;
Assign the 2nd Lift to be controlled by this Reader Module. (NOT RECOMMENDED)

2.5 Program the Reader Module Options. [C E X F W N T 2]
Comms (LAN) Fail Options:
Not relevant to Lift Control.
Other Options:
-**N**o Valid/Invalid LED control. Set to Yes IF the LED Auxiliaries need to be used for other purposes.
-**2** Door/Lift Mode. Set to Yes IF Reader Module is to be used to control 2 Lift Cars.

2.6 Program the parameters for the first Reader (Rdr 1) connected to the Reader Module.

-Reader location. Set to Outside (the Reader is used to Enter).

-Reader Format. Choose the correct Card data format.

-Reader Mode. Credit Card/Direct Entry/Site Code/Any Card

-Keypad for PIN code Entry. IF Lift requires Card + PIN for floor access.

-Module for PINs. IF "LCD Terminal" is selected as the Keypad for PIN in the previous option, program the module number (Txxx) of the LCD Terminal to be used.

2.7 Program the parameters for second Reader (Rdr 2) connected to the Reader Module.
Note: In 2 Door/Lift Mode, Rdr 1 controls the 1st Lift and Rdr 2 controls the 2nd Lift.
Options are the same as those for the first Reader.

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3. Initialize the LAN

Whenever any programming is done that effects Module parameters, (especially Reader Modules, LCD Terminals and Mini Expanders) the LAN must be initialized to ensure that all changes take effect.

If all modules are connected and operational, and the system is complete, perform the **Secure LAN [MENU 7, 8, 1]** or **Initialize LAN [MENU 7, 8, 2]** functions. ("Secure LAN" Initializes the LAN and sets the Encryption)

4. Program Access Groups. [MENU, 2, 4, 2]

4.1 It is recommended that one or more new Access Groups are programmed to define Lift Control requirements.

4.2 Program a name for any new Access Groups that you create.

4.3 IF it is necessary to restrict the valid period of the Access Group, or provide an alternate set of Access Group permissions for different times of day and/or days of the week, assign an appropriate TimeZone to specify when the Access Group is Valid.
e.g. If "Card Only" operation is adequate during the day, but "Card+PIN" is required after hours.

4.4 If a TimeZone is assigned, you may then specify an Alternate Access Group that will be used when the TimeZone specified in the previous step is Invalid.

4.5 Program the Entry Parameters required.

-Entry Mode. Card only / Card AND PIN. ("PIN only" & "PIN or Card" are not relevant for Lift Control)

-Entry Options. [B L A D]
-**D**ual User. Set to Yes IF two User Codes / Cards are required to allow entry.

4.6 Program the Exit Parameters required.

-Exit Mode. Card only / Card AND PIN. ("PIN only" & "PIN or Card" are not relevant for Lift Control)

-Exit Options. [B L A D]
-**D**ual User. Set to Yes IF two User Codes / Cards are required to allow exit.

5. Program Floor Lists [MENU 2, 3, 4]

IF any Lift Cars are to be restricted to servicing only specific floors, Floor List/s must be programmed to define the floors allowed for each Lift Car.

5.1 Determine the Floor/s that different Lift Cars will be restricted to.
From this information you can program the **Floor Lists** required **[MENU 2, 3, 4]**.

5.2 IF it is necessary to restrict the valid period of the Floor List, or provide an alternate List of Floors for different times of day and/or days of the week, assign an appropriate TimeZone to specify when the Floor List is Valid.

5.3 If a TimeZone is assigned, you may then specify an Alternate Floor List that will be used when the TimeZone specified in the previous step is Invalid.

5.4 Assign the Floor/s to each Floor List. A Floor List can support any number of Floors up to the maximum number of Floors allowed in the Memory configuration.

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6. Program the Lifts [MENU, 7, 9]

Each Lift Car to be controlled is individually programmed.

6.1 Select the Lift Car number to program.

6.2 Assign a suitable "Access Group". This will determine the way that the Lift is controlled.

6.3 IF the Lift Car is to be restricted to servicing only specific floors, assign a "Floor List".

6.4 Define the total "Number of Floors" to be controlled in this Lift Car.

6.5 Do not define the "1st Floor Auxiliary". This option must be left blank if a High Level interface is used.

6.6 Assign the "Valid Auxiliary" for the Lift if required. This Auxiliary is turned On for the "button time".

6.7 Program the "Button Time". This is the maximum time the floor buttons will remain active.
Typically set to about 5 seconds.

6.8 Program the EMS ID. "00" disables High Level Interface.
-The first digit is the EMS Group and must be programmed with a value of 1 to 8 inclusive.
-The second digit is the EMS Lift Car and must be programmed with a value of 1 to 8 inclusive.

6.9 Assign the "Floor Areas" if required. Normally left at "None" unless User access is to be restricted based on the Area status and the User Type's Area Off permissions.

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7. Program the General System Options. [MENU, 7, 5, 1]

7.1 "Reader for User Programming". Reader Module #001 is normally used for Testing Cards, Enrolling User's Cards & programming Backup Cards.
IF another Reader Module is to be used for these purposes, program the Reader Module number in the "Reader for User Programming" option in the General System Options.

e.g. Reader Module #001 may be used in a Lift Car making it inconvenient to use for testing and enrolling Cards etc.
Note: If Door Access Control is already programmed in the system, this option may already be programmed.

8. Program the EMS Comms Task. [MENU, 7, 3, 1]

A Comms Task must be programmed to allow the panel to communicate with the EMS (Elevator Management System)

8.1 Select a new Comms Task to program.

8.2 Select the "EMS" Format.

8.3 Define the UART Port to use. Must be Port 1 to 4. Port 0 is illegal.

8.4 Select the Baud rate. This must be the same at the Baud rate set in the EMS.
Check the Baud rate of other Comms Tasks to ensure that the total Baud rate of all UART Ports combined does not exceed 19200.
A Baud rate of 9600 or lower should be used. Typically 2400 is preferred.

8.5 Define the "Number of EMS Floors". This is the maximum number of floors that this EMS handles.

8.6 Assign the EMS "Group x Floor List/s". This option is only required if any floors are not serviced by all the Lifts in the Group. The Floor List assigned will only include the floors serviced by Lifts in this Group.
A Floor List may be assigned for each of the 8 possible EMS Groups.
If the Floor List is left at "FL000", then all floors are serviced by at least one Lift in the Group.

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9. Program the Site Code/s. [MENU, 2, 5]

9.1 IF cards are to be entered into the system using the Site Code method, at least one Site Code will need to be programmed. The Site Code method simplifies card programming, allowing cards to be entered without the need to present the card at a Reader. Site Code method can be used with Inner Range Magnetic Swipe Cards, or Wiegand Cards/ID Tokens with a format in which the system supports Site Codes. e.g. 26 Bit Wiegand.

If Door Access Control is already programmed in the system, the Site Code/s may already be programmed.

9.2 Program the Site Code in Hex or Decimal format.

9.3 Program a Card Offset if required.

9.4 Set "Site Code Present" to Yes.

10. Program Access Alarm processing

When Lift Access Control is implemented in a system additional System Inputs are available to be processed and/or monitored as required. e.g.
Relevant Reader Module System Inputs:
Cabinet Tamper, Low Volts, Illegal Card and LAN Comms.
Relevant LCD Terminal System Inputs:
Cabinet Tamper, Panic, Operator Duress, Too many tries and LAN Comms.

10.1 Identify the Lift Access Control System Inputs that you wish to process and/or monitor in some way.

10.2 Return to "Alarm Processing"; Steps 1 (Program the Inputs), 2 (Check/Program Process Group Requirements), and 4 (Program the Areas) to add the System Inputs and any additional Zone Inputs on Reader Modules and LCD Terminals used for Access Control.

NOTE: You may choose to simply use the "Add System Inputs" default feature in Area Programming to add the Access Control System Inputs to an Area if this fulfils system monitoring requirements.

11. Securing the Floors

When Lift Access Control operation is being commissioned the required Floors must be placed on security by a Floor Control operation. This can be done via "Lift Control" in the Control Menu [MENU, 9, 4]

11.1 Select "Lift Control" in the Control Menu. [MENU, 9, 4]

11.2 Enter the Lift Car number to control. ("00" = All Lifts)

11.3 Enter the Floor number to control. ("00" = All Floors)

11.4 Press the "7" (S) key to Secure the Floor/s. (The "1" (A) key is used to Access Floor/s)

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12. Automated Free Access and Securing of Floor/s

It may be necessary to have a facility to provide automatic "Free Access" and/or "Securing" of Floors.

This can be a useful feature in sites where free access is required on specific floors during specified times and/or under certain circumstances.

12.1 At Specific Times and/or for Specified period/s of Time. Program TimeZone/s. [MENU, 5, 2]
Refer to the "TimeZone Function" options under TimeZone programming in the Programmer's Reference section:
Lift Car & Floor
Lift Car & Floor List
Lift Car List and Floor
Lift Car List & Floor List

12.2 As a result of any event in the system that can control an Auxiliary.
e.g. Keyswitch, Area On/Off, Alarm, etc.
Program Calculated Auxiliaries. [MENU, 7, 5, 4]
Refer to the "Calculated Auxiliary Action" options under Calculated Auxiliary programming in the Programmer's Reference section:
Secure on +ON
Free on +ON
Secure on -OFF
Free on -OFF

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Lift Programming Planning Sheet - High Level Interface.

LIFT NUMBER [Menu, 7, 9]	DESCRIPTION	ACCESS GROUP [Menu, 2, 4, 2]	READER connected to Reader Module: [Menu, 7, 2, 4]	LCD Terminal for PINs [Menu, 7, 2, 1]	FLOOR LIST [Menu, 2, 3, 4]	NUMBER OF FLOORS (max 64)	EMS ID
LC __ __ __		AG __ __ __ Name:	R __ __ __ Rdr 1 / Rdr 2	T __ __ __	FL __ __ __		_ _
LC __ __ __		AG __ __ __ Name:	R __ __ __ Rdr 1 / Rdr 2	T __ __ __	FL __ __ __		_ _
LC __ __ __		AG __ __ __ Name:	R __ __ __ Rdr 1 / Rdr 2	T __ __ __	FL __ __ __		_ _
LC __ __ __		AG __ __ __ Name:	R __ __ __ Rdr 1 / Rdr 2	T __ __ __	FL __ __ __		_ _
LC __ __ __		AG __ __ __ Name:	R __ __ __ Rdr 1 / Rdr 2	T __ __ __	FL __ __ __		_ _
LC __ __ __		AG __ __ __ Name:	R __ __ __ Rdr 1 / Rdr 2	T __ __ __	FL __ __ __		_ _
LC __ __ __		AG __ __ __ Name:	R __ __ __ Rdr 1 / Rdr 2	T __ __ __	FL __ __ __		_ _
LC __ __ __		AG __ __ __ Name:	R __ __ __ Rdr 1 / Rdr 2	T __ __ __	FL __ __ __		_ _
LC __ __ __		AG __ __ __ Name:	R __ __ __ Rdr 1 / Rdr 2	T __ __ __	FL __ __ __		_ _
LC __ __ __		AG __ __ __ Name:	R __ __ __ Rdr 1 / Rdr 2	T __ __ __	FL __ __ __		_ _

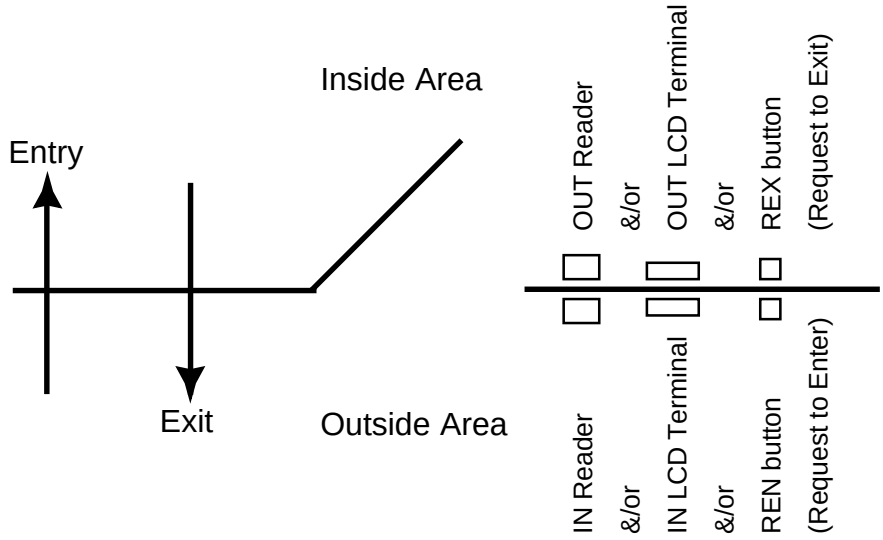
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READER AREA CONTROL

Reader Area on/off control operation provides sophisticated integration between the Access Control and Security monitoring facilities in the system. A number of options have been provided to make on/off operation as flexible as possible.

The programming sequence provided here assumes that basic Door Access Control has already been programmed. *See "Door Programming" in the Basic Programming Guide Section.*

The diagram below illustrates the relationship between the Door, the IN and OUT devices and the Inside and Outside Areas.



1. Check/Program the Reader Module/s [MENU 7, 2, 4]

Program the relevant Area Control attributes required for each Reader Module in the system.

1.1 IF the Reader is to be used to turn an Area ON, Choose the appropriate Reader "Arming Mode".

The available modes are:

1. "Extra Area if Zone 8". Arm extra area if zone 8 is unsealed, then allow egress.

This mode allows the user extra area to be turned on as you egress a particular door or doors. This is useful to automatically turn on an individual user based area when using a common door. It is normally associated with the (T)urn off extra area option above.

2. "Exit Area if Count = 0". Arm door area you are leaving if you are the last person to leave, then allow egress.

This mode can be very unreliable. It relies on every person swiping their card on both ingress and egress to work as desired. Note that REX and REN buttons cannot be used as pushing these buttons does not maintain user area counts. If the area is armed by another means, the numbers of persons in this area will be set to zero regardless. The number of users in an area can also be inspected/modified in area programming. The memory must be configured V2.00 or later to ensure that a area count structure exists. (An alternative to this mode worth considering is turning on areas when no zone activity has been detected for a period of time.)

3. "Exit Area if Zone 8". Arm door area you are leaving if zone 8 is unsealed, then allow egress.

This mode can replace the current V01.00 mode of operation in instances where a REX button is not being used. As the user leaves, pressing the zone 8 unseal button will automatically turn on the area they are leaving. (A short exit delay may be required to allow egress out of the protected area.)

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4. "Entry Area if Zone 8". Arm door area on other side of door if zone 8 is in alarm. No access granted

This mode is identical to V01.00 operation. It can be used once an area has been left (via say free access or a REX button) to arm the area on the other side of the door. Alternatively it can be associated a "dummy door" to provide a reader solely for turning on an area.

5. "Exit Area if 3 ". Arm door area you are leaving if card presented 3 times, then allow egress.

This mode can be used in instances where a REX button is not being used. As the user leaves, presenting/swiping the card 3 times at the Reader within 5 seconds will automatically turn on the area they are leaving. (A short exit delay may be required to allow egress out of the protected area.)

6. "Entry Area if 3 ". Arm door area on other side of door if card presented 3 times. No access granted.

This mode can be used once an area has been left (via say free access or a REX button) to arm the area on the other side of the door by presenting/swiping the card 3 times at the Reader within 5 seconds. Alternatively it can be associated a "dummy door" to provide a reader solely for turning on an area.

1.2 Set "Turn Off Extra Area" to Yes IF Auto Area Off is allowed at this Door (via Access Group programming) and the User's Extra Area is to be turned Off instead of the "Inside Area" assigned to the door.

If the (T)urn off extra area option is set for this reader then the user "Extra Area" may be turned off instead of the Door Area that you are about to enter (if assigned). The user extra area will be turned off before an attempt is made to turn off the door entry area if:

1. The "User Extra Area" option exists for this User and the Area is defined.
2. The "(T)urn off User Extra Area" option is set for this reader.
3. The "(E)xtra Area Off" option is set for this User.
4. The User Extra Area is currently on.
5. The User Extra Area appears in the "Area Off List" in the User's User Type at this time.
6. The Door Access Group allows "(A)uto Area Off" for this direction through the Door at this time.

Note that if any of the above conditions is false then operation will revert to testing for Area On on the Area assigned to the Door that you are about to enter.

1.3 Program the parameters for the first Reader (Rdr 1) connected to the Reader Module.

-Reader location. Outside (the Reader is used to Enter) or Inside (the Reader is used to Exit).

1.4 Program the parameters for second Reader (Rdr 2) connected to the Reader Module.
Note: In 2 Door Mode, Rdr 1 controls the 1st Door and Rdr 2 controls the 2nd Door.
Options are the same as those for the first Reader.

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2. Check/Program Access Group requirements. [MENU, 2, 4, 2]

2.1 IF your system has any Door Area Control requirements not provided in the current Access Groups, you may need to program additional **Access Groups**, and/or edit the default **Access Groups** as required. **[MENU 2, 4, 2]** NOTE: The 3 Default Access Groups cover some basic Door access control requirements.

2.2 IF it is necessary to restrict the valid period of the Access Group, or provide an alternate set of Access Group permissions for different times of day and/or days of the week, assign an appropriate TimeZone to specify when the Access Group is Valid. This may be necessary if "Auto Area Off" is only to be allowed at specific times/days.

2.3 If a TimeZone is assigned, you may then specify an Alternate Access Group that will be used when the TimeZone specified in the previous step is Invalid.

2.4 Program the Entry Parameters required. Set "Auto Area Off" to Yes IF specified Users are allowed to automatically turn Off the "Inside" Area or their "Extra" Area.

-Entry Options. [B L A D]
- -REN **B**utton operation.
- -Dead**L**ock function. Disables REN button if Outside Area is On.
- -**A**uto Area Off. If the Inside Area is On, allows the Area to automatically be turned off when the User Enters. (Note: Area must be in the Area Off List, in the User's User Type)
- -**D**ual User. Set to Yes IF two User Codes / Cards are required to allow entry.

2.5 Program the Exit Parameters required. Set "Auto Area Off" to Yes IF specified Users are allowed to automatically turn Off the "Outside" Area or their "Extra" Area.

-Exit Options. [B L A D]
- -REX **B**utton operation.
- -Dead**L**ock function. Disables REX button if Inside Area is On.
- -**A**uto Area Off. If the Outside Area is On, allows the Area to automatically be turned off when the User Exits. (Note: Area must be in the Area Off List, in the User's User Type)
- -**D**ual User. Set to Yes IF two User Codes / Cards are required to allow exit.

3. Check/Program the Doors [MENU, 7, 6]

3.1 Select the Door to edit.

3.2 Assign an "Inside" and/or "Outside" Area.
IF required for:
- -Prevention of entry/exit into Areas that are turned On.
- -**Area Off and/or On control by access Readers.**
- -"Anti-passback" and "Wrong Area" processing.
- -Tracking of User location.
- -User counting in Areas.

3.3 Assign a suitable Access Group. This will determine the way that the Door is controlled.

4. Initialize the LAN

Whenever any programming is done that effects Module parameters, (especially Reader Modules, LCD Terminals and Mini Expanders) the LAN must be initialized to ensure that all changes take effect.

If all modules are connected and operational, and the system is complete, perform the **Secure LAN [MENU 7, 8, 1]** or **Initialize LAN [MENU 7, 8, 2]** functions. ("Secure LAN" Initializes the LAN and sets the Encryption)

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5. Check/Program the User Types [MENU, 2, 2]

5.1 Select the User Type to edit.

5.2 For User Types that are allowed Reader Area Control, check that the appropriate "Area ON List" and/or "Area OFF List" is assigned that include the Area/s to be controlled.

6. Check/Program the Users [MENU, 2, 1]

6.1 Select the User to edit.

6.2 Check that an appropriate User Type is assigned.

6.3 IF User Extra Area Control is required, program the User Options. [N D L **E** G . . .]
Set "**E**xtra Area Off" to Yes.
This allows the User to control the "Extra Area" defined in the next option according to the Reader Module and Door Access Group options. The User's Extra Area will be turned Off as well as the Area on the opposite side of the Door (If defined).

6.4 IF User Extra Area Control is required, assigned the User's "Extra Area".

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REVIEW MANAGEMENT

The 3000 / Access 4000 has a very comprehensive Review log to enable both the User and Installer to view specific events within the history. The amount of review history and the type of events saved within this log can be determined by a number of factors.

1. Size of the Memory fitted on the Control Module.
2. Configuration of the Memory. (Only relevant in 32k Memory configurations)
2. Type of events saved to review.
3. Mode of review set within the General System Options programming.

The size and configuration of the Memory only effects the number of events that can be stored within the review log, it has no effect on the type of events stored.

The type of events saved to review has the biggest impact on how quickly the review log will fill up and therefore how quickly old events will be lost. If events such as Auxiliary on/off and Input change of state (alarm/tamper/seal) messages are all saved to Review, the Review log will fill up a lot faster. These types of events are often not necessarily required by either the end user or the installer on a general day to day basis.

Limiting the amount of Review events generated by the system may be necessary to ensure that important events are kept as long as possible and are easy to find. In smaller systems with minimal activity, simply ensure that "Detailed Review" in the General System Options is set to No. (see Step 4)
In systems that generate a lot of activity, more limitations on Review events will need to be considered.

Programming Options are provided to limit how much unnecessary information is actually stored in review.

1. Auxiliary Timer Options. [MENU, 5, 5]

The Installer can specify whether on/off events for each individual Auxiliary in the system are saved to Review.

1.1 Select the Auxiliary Timer to edit.

1.2 IF On/Off Events for a particular Auxiliary are not to be saved to Review, set the "Save to Review" option to No.

Saving all Auxiliary events to review can be useful when commissioning a system, debugging system programming, servicing or fault finding. However during normal system operation Auxiliary on/off events are of little use to the User or Installer unless required for a specific purpose.
e.g. System Management software such as Accept requires any auxiliary that it is to be monitored or controlled to be logged to review so that the correct state of that auxiliary is always known (eg door lock). These types of programs also have their own methods of filtering out unwanted events from the review.

Auxiliaries used for purposes such as calculations, lift control and automation, are generally not required to be viewed by Users and can therefore have the "Save to Review" option set to NO.

This also benefits the installer when fault finding as only the relevant auxiliaries will be saved to review giving a clearer picture of a sequence of events without having to filter through pages of unwanted events.
See the examples of Review data at the end of this chapter.

2. AirConditioning Options. [MENU, 7, 5, 6]

The Installer can specify whether events for AirConditioning control programs are saved to Review.

2.1 Select the AirConditioning program to edit.

2.2 Select the "No Review" option IF required. [D T F N]
-**N**o Review. Set to Yes IF No AirConditioning control events are to be saved to Review.

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3. Input Options. [MENU, 7, 0]

The Installer can specify whether Alarm/Tamper/Seal events for each individual Input in the system are saved to Review. *See notes below for important information on Input event messages and Alarm messages.*

3.1 Select the Input to edit.

3.2 Program any Review options required. [S C X S R A N T]

-C01:**X**01 On for Review. Set to Yes IF Input state events for this Input are only saved to Review when Control Module Auxiliary 01 (C01:X01) is On. Note. If set to Yes, "No **R**eview" must also be set to Yes.
This allows another event or condition in the system that can control an Auxiliary to enable/disable Review logging for this Input. e.g. Area On/Off, TimeZone, etc.
This option could also be set up by the Installer as a simple way of enabling all Input Review logging when required for fault finding or program de-bugging, etc. C01:X01 can simply be turned on via the Test Menu when required. (This would require that C01:X01 is not used for any other purpose) *See "Force Review" in Step 4 for an alternative.*

-No **R**eview. Set to Yes IF No Input state events are to be saved to Review for this Input.

Input State Messages. Setting these options in the Input database prevents Input state messages from being saved to Review. That is, the messages that indicate that a change of state has occured on the Input. Whether or not these messages are saved to Review depends entirely on these settings in the Input Programming.
e.g. Review messages such as "Alarm on C01:Z04", "Alarm on HALLWAY PIR", "Tamper on FIRE DOOR" or "Restore on OFFICE PIR" are Input state Review messages, and only indicate that the Input has changed to that state.
i.e. The Un-sealed state (Alarm), Open/Short state (Tamper) or Sealed state (Restore).

Alarm annunciation. The change of state may or may not generate an actual "Alarm" (Terminal message, Siren, Auxiliary for Strobe, Reporting, etc.) depending on other factors such as whether the Area is On or Off and how the Process Group assigned to the Input is programmed. The action/s that result from that change of state such as Siren events, Report to a Comms Task (e.g. Central Station or Computer, etc), etc. are recorded as separate Review Events.

Inputs processed as "Burglary" or "Fire" types, etc. will usually generate some sort of "Alarm" when they change to the Alarm state. (And the Area they are assigned to is On)
On the other hand Inputs processed as "Function Zones", "Lighting Control", "Lift Buttons" or "Aircon control" etc. would normally only perform the function required when they change state without any type of "Alarm" annunciation.

"XMIT" messages. When an Input is required to annunciate an "Alarm" in the system, the Process Group assigned to the Input will usually have some of the "Comms Options" enabled. [I T A R E X U S] The Comms Options allow the Installer to specify which Input conditions will generate an "Xmit" message for subsequent reporting to a Comms Task. Normally, the "A"larm and "R"estore options are always selected for this type of Input processing, while the "I"solate and "T"amper options are often selected as well. (Setting Comms Options is mandatory for Central Station reporting)
When these Comms Options are selected in the Process Group, Review events such as "Xmit Alarm on Office PIR in Office Area" will be generated when the Input changes state. This indicates that the Input is to report an "Alarm" condition, and the Area in which the Alarm has occured. When Inputs are processed in this way and generate "Xmit" messages, in most cases the "Input State messages" are no longer necessary and the "No Review" option can be set to Yes for these Inputs.

Comms Tasks. Remember that any Xmit entry will be sent by any Comms Task that is active. If you do not want all Xmit messages to be sent via a particular Comms Task you can filter the Xmit messages by assigning an "Area List filter" or selecting the required "Extra Filter" options.
See individual "Comms Task" programming options in the Programming Reference section.

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4. General System Options. [MENU, 7, 5, 1]

4.1 Select Review options IF required. [N D F R f + I .]

-**D**etailed Review. Set to Yes IF Detailed Review Mode is required.

-Force **R**eview. Set to Yes IF the "No Review" settings in Input options and AirCondtioning options, and the "Save to Review" settings in Auxiliary Timer options are to be ignored.
This option would normally be selected temporarily by the Installer to Force all activity to be recorded to Review for fault finding and program checking, etc.

Detailed Review. In V2.00 or later Control Module firmware, "Detail" and "Non detail" modes of review are available. The default condition is non-detailed mode that prevents specific types of events from being saved to review. The types of events filtered out are considered of a technical nature and of relevance to the installation technician only.

e.g. A selection of Comms Task messages such as handshake events, etc.
Area entry, exit, siren and pulse count events.
AC holdoff timer and Low battery timer events.
User Menu access tracing messages.

Detail mode may be switched on by the technician at any stage to give additional information to events such as communications, area arming and disarming, door interlocking etc.

Examples.

The following examples show how the amount of information saved to Review can be drastically reduced without effecting the context of the information. In the last example it is still easy to establish that Z01 alarmed and restored, the sirens were triggered, the alarm was communicated successfully and that the zone was then isolated at the end of the siren time. The number of entries has been reduced from 48 to 15 but still provides all the information required.

User Door Access with auxiliary filtering.
Jan01 02:11:39.5 INSTALLER Card Access in .Door 001

User Door Access with no auxiliary filtering.
Jan01 02:08:09.5 INSTALLER Card Access in .Door 001
Jan01 02:08:09.5 R01:X01 On by INSTALLER (Door Lock)
Jan01 02:08:14.5 R01:X01 Off by Aux Timer

Area zone alarm with no detail mode on and no zone or auxiliary being saved to review.
Jan01 02:27:04.6 INSTALLER Pin accepted at LCD Term. #001
Jan01 02:27:09.3 .Area 001 On by INSTALLER
Jan01 02:27:26.5 Xmit Alarm on C01:Z01 in .Area 001 saAo
Jan01 02:27:26.5 Cont. Int/Ext. Siren On by .Area 001 with Sweep tone
Jan01 02:27:26.5 CT02 - Triggered
Jan01 02:27:27.4 Xmit Restore on C01:Z01 in .Area 001 asRo
Jan01 02:27:30.2 CT02 - Dial .Phone 001 on attempt #01
Jan01 02:27:36.5 CT02 - Hangup
Jan01 02:27:47.3 INSTALLER Pin accepted at LCD Term. #001
Jan01 02:27:48.1 Cont. Int/Ext. Siren Off in .Area 001
Jan01 02:27:48.1 C01:Z01 Isolated by Siren Lockout in .Area 001
Jan01 02:27:48.1 Xmit Isolate on C01:Z01 in .Area 001 sio
Jan01 02:27:48.2 CT02 - Triggered
Jan01 02:27:51.5 .Area 001 Off by INSTALLER
Jan01 02:27:51.8 CT02 - Dial .Phone 001 on attempt #01
Jan01 02:27:57.5 CT02 - Hangup

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Area zone alarm with detail mode on and the raw zone being saved to review.

Jan01 02:21:19.3 INSTALLER Pin accepted at LCD Term. #001
Jan01 02:21:24.2 Exit timer started in .Area 001 for 010 secs
Jan01 02:21:24.2 .Area 001 On by INSTALLER
Jan01 02:21:35.1 Exit timer expired in .Area 001
Jan01 02:21:36.4 Prune Enables
Jan01 02:21:43.5 Alarm on C01:Z01
Jan01 02:21:43.5 Xmit Alarm on C01:Z01 in .Area 001 saAo
Jan01 02:21:43.5 C01:X02 On by .Area 001 Alarm Aux
Jan01 02:21:43.5 Siren timer started in .Area 001 for 010 mins
Jan01 02:21:43.5 C01:X01 On by .Area 001 Siren Aux
Jan01 02:21:43.5 Cont. Int/Ext. Siren On by .Area 001 with Sweep tone
Jan01 02:21:43.5 CT02 - Triggered
Jan01 02:21:46.4 Restore on C01:Z01
Jan01 02:21:46.4 Xmit Restore on C01:Z01 in .Area 001 asRo
Jan01 02:21:47.2 CT02 - Waiting to Dial: Sensed Dial
Jan01 02:21:47.2 CT02 - Dial .Phone 001 on attempt #01
Jan01 02:21:48.5 CT02 - Waiting for H/S: Sensed Dial
Jan01 02:21:50.5 CT02 - Waiting for H/S: Sensed Quiet
Jan01 02:21:52.2 CT02 - Waiting for H/S: Sensed AdFast
Jan01 02:21:52.6 CT02 - Modem Connect 1200 Baud
Jan01 02:21:52.6 CT02 - Tx Cmd $6815
Jan01 02:21:52.9 CT02 - Rx Cmd $6007
Jan01 02:21:52.9 CT02 - Tx Cmd $6015
Jan01 02:21:53.2 CT02 - Rx Cmd $6007
Jan01 02:21:53.3 CT02 - Tx Cmd $600A
Jan01 02:21:53.5 CT02 - Rx Cmd $0207
Jan01 02:21:53.5 CT02 - Hangup
Jan01 02:22:08.3 INSTALLER Pin accepted at LCD Term. #001
Jan01 02:22:09.1 Siren timer expired in .Area 001
Jan01 02:22:09.1 Cont. Int/Ext. Siren Off in .Area 001
Jan01 02:22:09.1 C01:X01 Off by .Area 001 Siren Aux
Jan01 02:22:09.1 C01:Z01 Isolated by Siren Lockout in .Area 001
Jan01 02:22:09.1 Isolate on C01:Z01
Jan01 02:22:09.1 Xmit Isolate on C01:Z01 in .Area 001 sio
Jan01 02:22:09.1 CT02 - Triggered
Jan01 02:22:12.8 CT02 - Waiting to Dial: Sensed Dial
Jan01 02:22:12.8 CT02 - Dial .Phone 001 on attempt #01
Jan01 02:22:14.1 CT02 - Waiting for H/S: Sensed Dial
Jan01 02:22:16.0 CT02 - Waiting for H/S: Sensed Quiet
Jan01 02:22:17.8 CT02 - Waiting for H/S: Sensed AdFast
Jan01 02:22:18.0 CT02 - Modem Connect 1200 Baud
Jan01 02:22:18.0 CT02 - Tx Cmd $6815
Jan01 02:22:18.3 CT02 - Rx Cmd $6007
Jan01 02:22:18.4 CT02 - Tx Cmd $600A
Jan01 02:22:18.6 CT02 - Rx Cmd $0207
Jan01 02:22:18.6 CT02 - Hangup
Jan01 02:22:21.2 C01:X02 Off by .Area 001 Alarm Aux
Jan01 02:22:21.2 .Area 001 Off by INSTALLER
Jan01 02:22:21.2 Prune Enables

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SIREN CONTROL IN DETAIL,

1. Program Process Group Siren options. [MENU, 2, 4, 3]

When an Input Alarm and/or Tamper condition occurs in an Area, Siren operation is determined by the Siren options programmed in the Process Group that is assigned to the Input in that Area.

1.1 a) Select the "Siren Tone" to be generated by the Siren outputs on an Input Alarm.
The Siren Tone options are: None, Bell, Sweep, Fire or Evacuation.

b) Select the "Siren Tone" to be generated by the Siren outputs on an Input Tamper.
The Siren Tone options are: None, Bell, Sweep, Fire or Evacuation.

Note: Siren Tone selection applies to both "External" and "Internal" Siren outputs.

1.2 Select the required "Siren Lockout" option.
-Yes. Zones/Inputs that have started a Siren will be automatically isolated at the end of the Siren time.
-No. Zones/Inputs can re-start the Siren if they alarm/tamper again after the Siren time has expired.

1.3 Select the required "Siren Re-trigger" option.
-Yes. Zones/Inputs will re-start the Siren timer if they alarm/tamper again after the Siren has started. This option intended for Building automation functions and not used for Alarms.
-No. Siren timer will always time-out. (Unless cancelled by User code or Area Off)

2. Program Siren Lists. [MENU 2, 3, 3]

2.1 Program the **Siren List/s** required. **[MENU 2, 3, 3]** A Siren List can be assigned to each Area to specify which Sirens will activate on relevant alarms in that Area. Use the details obtained in *Getting Started, Step 2*, to determine the Sirens available.

NOTES:
1) Alarms in different Areas can activate different Sirens (or combinations of Sirens) if required. Program a different Siren List for each combination of Sirens.
2) Keep a written record of Siren List programming details, as Siren Lists cannot be named in the on-board memory.

3. Program the Area Siren options. [MENU 7, 1]

S

3.1 a) Select the "Siren Mode" for the Internal Siren Outputs.
The Siren Mode options are: No Siren, Instant, 2nd Hit, or Backup.

b) Select the "Siren Mode" for the External Siren Outputs.
The Siren Mode options are: No Siren, Instant, 2nd Hit, or Backup.

3.2 Assign the Siren List to sound for this Area.

3.3 Program the Siren Time. (1 - 255 minutes)

3.4 IF a separate Auxiliary or Auxiliary List is required to follow the Siren output, assign the Auxiliary (or List) to the "Siren Auxiliary" (e.g. For 12V Piezo screamers, etc. that do not require the Siren tone signal generated by the Siren outputs)

3.5 When assigning the Inputs to the Area, ensure that the Process Group chosen for each Input provides the appropriate Siren options.

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TIME REPORT (PERIODIC TEST REPORT)

This feature enables a TimeZone to be used to automatically trigger a Test report to the Central Monitoring Station.

1. Program the TimeZone [MENU, 5, 2]

1.1 Select the TimeZone and program an appropriate name. e.g. "Time Report" or "Test Report".

1.2 Program the first TimeZone period to define when the Time Report will be sent.

1.3 Program the Valid Days of the week for the first Period.
i.e. Days when the function is required to operate.

1.4 IF the TimeZone requirements are more complex, program the second (and any subsequent) "TimeZone period" and "Valid Days" to define when the function will be triggered.
e.g. If the Time Report requirements differ from Day to Day.

1.5 Assign the Holiday Types to be obeyed. (If necessary)

e.g. Time Report to be sent at 3 AM every night.
1st Period: 03:00-to-03:02
Days: SMTWTFSH all set to Yes.

Note: If the Time Report is required to be sent twice a day, two TimeZone periods can be programmed, using the Start Times of the two periods to define the two report times.

1.6 Set TimeZone Function to "Trigger Time Report".
This causes the "Time Report" System Input (C01:S18) to be triggered when the TimeZone goes Valid and/or Invalid according to the following settings.

1.7 Set Control Options for Trigger Time Report. [O F o f]
This detemines how the Time Report System Input will be triggered. (C01:S18)
-**O**. Time Report System Input **O**n (Alarm edge) when TimeZone goes Valid.
-**F**. Not used for this function.
-**o**. Not used for this function.
-**f**. Not used for this function.

2. Program a new Process Group. [MENU, 2, 4, 3]

IMPORTANT NOTES: The default "System Silent" Process Group can be used for this application, but will also generate an LCD Terminal message which needs to be acknowledged by a User.

It is recommended to program a special Process Group for this function as shown below. (i.e. Same as "System Silent" but with all "Terminal message Types" set to No)

Alternatively you may choose to set "Terminal message Types" all to No in the "System Silent" Process Group, but note that this will effect other System Inputs and may not be appropriate in all applications.

2.1 If a new Process Group is going to be used, select a new Process Group to program and program a name.
e.g. Time Report.

2.2 Program the required "Input Type" options. [T A E X U P L S]
-Set the "A" (**A**larm) option to Yes. Set all other options to No.

2.3 Program the required "Communications Reporting" options. [I T A R E X U S]
For this application only set the **I**solate, **A**larm and **R**estore options to Yes.

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2.4 Contact ID Event Code. IF reporting via Contact ID, leave the setting at "000" and the default Event Code for Periodic Test Report (602) will be used when reporting on the "Time Report" System Input.

2.5 Ensure that all the Area Auxiliaries to activate are set to No. [T 1 2 3 4 I]

2.6 Siren Options.
-Set the Siren Tone selection to None for both the Alarm and Tamper states.
-Ensure that Siren Lockout and Siren Re-trigger are set to No.

2.7 Ensure that all LCD Terminal message Types are set to No.

2.8 All remaining options should be set to No/None/Disabled.

3. Assign the Time Report System Input (C01:S18) to an Area. [MENU, 7, 1]

3.1 Assign the Input to a System Area that is always On with an appropriate Process Group. e.g. The new Process Group programmed in Step 2 (recommended), or the "System Silent" Process Group.

IMPORTANT NOTE:
If the "Add System Inputs" Area default procedure has been used, and the "S" (System **S**ilent) option set to Yes, this Input (C01:S18) will have been assigned to the Area with the "System Silent" Process Group.

If you have programmed a new Process Group in Step 2, you will need to change the Process Group assigned to this Input from "System Silent" to the new Process Group.
See the Basic Programming Section, "Program the Areas" (Step 4) in "Alarm Processing" for details.

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TIMED AUXILIARY CONTROL BY MOVEMENT DETECTOR/S (V2 OR LATER)

This feature enables Auxiliary outputs to be used to turn on devices such as lighting, heating, airconditioning, etc. when movement is detected in the Area being controlled. A programmable time-out period (Area Siren time) ensures that the device being controlled will automatically be turned Off again when no movement is detected for a specified period.

The programming in this application is similar to the application "Auto-Arm an Area when No Zone activity".
If required, these two applications could be combined, allowing control of Lighting, Heating & Aircon as well as the Auto-Arming operation from a single controlling Area.

1. Program an Auxiliary List if required. [MENU 2, 3, 6]

IF you require the Detector/s to control more than one Auxiliary, program an Auxiliary List. [MENU 2, 3, 6] (V2 or later)

1.1 Select an Auxiliary List number to program.

1.2 Program an Auxiliary List name.

1.3 Assign up to 8 Auxiliaries to the List.

2. Program the Input/s that the Detector/s are connected to. [MENU 7, 0]

Inputs used for this purpose may also be used as Burglary or Entry/Exit Zones, etc. and may already be programmed.

2.1 Select the Input to be programmed/edited and program a name and other attributes as described in "Alarm Processing". (If not already programmed)

3. Program the Process Group. [MENU 2, 4, 3]

For this function, the Input/s should be assigned to a separate Area that is only used for Timed Auxiliary Control. A dedicated Process Group can therefore be programmed.

3.1 Select the Process Group to be programmed/edited and program a name. e.g. Auto Lighting.

3.2 Ensure that the required "Input Type" options are programmed. [T A E X U P L S]
-Ensure the "A" (**A**larm) option is set to Yes.

3.3 Program the "Alarm Siren Tone selection" to any option other than "None". e.g. "Sweep"

3.4 Ensure that the "Siren Lockout" option is set to No.

3.5 Set the "Siren Re-trigger" option to Yes.

4. Program the Area. [MENU 7, 1]

For this function, a separate Area will need to be created for each Auxiliary (or Auxiliary List) that is to be controlled.
e.g. Area 21 Hallway Lights
Area 22 Stairwell Lights
Area 23 Front Entry Lights.
The Area must be turned On for the function to operate.

4.1 Create a new Area and program a name.

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4.2 Set the “External Siren Mode” to “Instant”.

4.3 Set the “N” option (No Siren Cancel) to Yes in the Area Options. [THDNPWF.] (V3 or later only)

4.4 Ensure that a Siren List IS NOT assigned to the Area. (Set to SL000)

4.5 Program a Siren Time. (1 to 255 minutes)
This is the time period that the Auxiliary (or Aux List) will remain on, if no movement is detected. Each time movement is detected on any Input in the Area that uses a Process Group with the “Siren Re-trigger” option set to Yes, the Siren timer will be re-started.

4.6 Program the “Siren Auxiliary”. This is the Auxiliary OR Auxiliary List to be controlled.
Note that no Siren outputs will be activated because there is no Siren List assigned to this Area.

4.7 If an Auxiliary List is assigned, set the Auxiliary List control options [O F o f] to Y n n Y.

4.8 Assign the Input/s to the Area using the Process Group programmed for this function.

5. Enable / Disable the feature.

Enabling and Disabling this feature is simply a matter of turning the Area On to Enable; and turning it Off to Disable.

The Area can be turned On and Off automatically if required, or manually by Users according to the User Programming, or with a Keyswitch or Pushbutton input, etc.

This table provides a summary of Area Control options.
Refer to Programmer’s Reference section for programming details.

Method of Control	**Programming Required**
User via PIN code or Card	See *User Programming. (Area Lists, User Types & User Codes)*
Automatic based on Time of Day / Day of Week.	Program a TimeZone [MENU, 5, 2] and select Area Control function.
By a Keyswitch, Pushbutton, Input, etc.	Program a Function Zone [MENU, 7, 5, 3] utilizing the Area Control options.
By an Auxiliary.	Program a Calculated Auxiliary [MENU, 7, 5, 4] and select the Area Control Action.
Remotely via Touch tone telephone. (V3 or later)	Program Answer Call Comms Task [MENU, 7, 3, 1] and DTMF Control [MENU, 7, 3, 3]
Remotely via P.C.	Program PCDirect or ACCEPT Comms Task [MENU, 7, 3, 1]

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USER COUNTING IN AREAS (V2 OR LATER)

This feature is an enhancement to Access Control operation and provides two functions:
-Allows an Auxiliary to be controlled when the number of Users in an Area reaches and/or drops below a pre-defined number. The Count Auxiliary can then be used to disable/enable access to Areas such as Car Parks, adjust environmental conditions in an Area (e.g. Air volume through ventilation systems), etc.
-Allows automatic arming of an Area when the Area User count decrements to "0". (i.e. Area unoccupied)

As Users Enter through an Access Controlled Door, the number of Users in the Inside Area (if defined) is incremented by 1, while the number of Users in the Outside Area (if defined) is decremented by 1.
(Note: A Door option is available for the count to be allocated to the Users "Extra Area" instead of the Inside Area.)
Users exiting through the same door will decrement the count in the Inside Area and increment the count in the Outside Area. (In this case it is assumed that Readers are used on both sides of the door)

In Area programming, a trigger count can be set. The "Count Auxiliary" can then be assigned to the Area, programmed for the required action/s (On or Off) when the number of Users in the Area reaches the count value and/or exceeds the count value by 1. User counting in Areas is active regardless of the Area status (On or Off).

The current count value can be reset, corrected or adjusted by the Installer in the Area database, or by a User with the appropriate permissions via MENU, 9, 7; The "Control Menu". (NOTE: V5 firmware or later only)

1. Program the Reader Module Counting options [MENU 7, 2, 4]

IF User Counting is to be used to automatically turn On the Area that you are leaving when the Area Count decrements to 0, the appropriate Area Arming option must be selected.

IMPORTANT NOTES:
1) If using this option, please take into account that the User Count needs to be accurate or the Area may be left un-armed. Users "tailgating" (two or more Users entering on one card presentation) or "double badging" (card is used twice to access the door because user didn't proceed through door on first occasion) will produce an incorrect count.
2) Users need to be very diligent and/or User movement needs to be controlled with turnstiles, Hard Anti-passback processing etc. to ensure the count accuracy.
3) The User Count will automatically be reset to "0" whenever the Area is turned On by another mechanism.
4) If "Dual User" operation is used: Prior to V4.7: The User count is incremented/decremented by 1.
V4.7 or later: The User count is incremented/decremented by 2.

1.1 Check Reader Module programming as described in the Basic Programming Guide under "Doors".

1.2 Select the Reader Arming Mode, "Exit Area if Count = 0"

2. Program the Area Counting options. [MENU 7, 1]

2.1 Assign the "Count Auxiliary" to be activated.
This Auxiliary is the mechanism used to:
-Disable a Door's Access Group when Area (e.g. Car park) is full. (via Qualified TimeZone)
-Interface to electrical/electronic signage. (e.g. "Car Park Full")
-Interface to environmental control systems. (Ventilation, etc.)
-Cause a Zone Alarm to report when Trigger Count is exceeded and/or met. (via Calculated Auxiliary "Trigger Zone" option.)

2.2 A "Number of Users" field is available to allow the current User Count to be viewed and/or edited if required.

2.3 IF a "Count Auxiliary" is assigned, program the "Count Control" options. [O F o f]
-Count Auxiliary **O**N when Trigger Count is met.
-Count Auxiliary OF**F** when Trigger Count is met.
-Count Auxiliary **o**n when Trigger Count + 1 is met.
-Count Auxiliary of**f** when Trigger Count + 1 is met.

2.4 IF a "Count Auxiliary" is assigned, program the "Trigger Count".

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3. Program the Doors [MENU, 7, 6]

3.1 Check Door programming as described in the Basic Programming Guide under "Doors".

3.2 Assign an "Inside" and/or "Outside" Area as required for User counting in these Areas.

3.3 Program the "Door Options". [E . . . . .]
-Set the "E" (Extra Area Counting) option to Yes IF User Counting is to be performed in the User's "Extra Area" instead of the "Inside" and "Outside" Area/s.
If this option selected, the Outside Reader will increment the count in the User's Extra Area, and the Inside Reader will decrement the count in the User's Extra Area.

4. Program the Calculated Auxiliary Count options [MENU, 7, 5, 4]

It may be necessary to provide an option to Clear the Area Count to 0.
This can be performed in a number of different ways. *(See table below)*
Depending on the method to be used, other functions will need to be programmed to produce the Auxiliary On/Off operation that will in turn be used in the Calculated Auxiliary to Clear the Count.

4.1 Select a new Calculated Auxiliary to program.

4.2 Select the Calculated Auxiliary Action.
-Area Count=0 +ON. The Area Count will be reset to 0 when the 1st Auxiliary turns On.
-Area Count=0 -OFF. The Area Count will be reset to 0 when the 1st Auxiliary turns Off.

4.3 Define the "Area". Only a single Area can be defined. A separate Calculated Auxiliary will need to be programmed for each Area that requires the Count to be cleared.

4.4 Define the "1st Auxiliary".

The table below defines the additional function that will need to be programmed to produce the Auxiliary operation required. Note that more than one method of activating the Auxiliary may be used.
e.g. A TimeZone may be programmed to turn the Auxiliary On for several seconds at 1 AM every morning to clear the Area Count ready for the next day. The same Auxiliary may also be turned On for several seconds by a User with a Keyswitch or Home Auxiliary at any other time that they decide the count needs to be cleared.
(Note that the User Count will automatically be reset to "0" whenever the Area is turned On by another mechanism.)

Method of Control	**Programming Required**
User via PIN code.	Program a Home Auxiliary [MENU, 7, 5, 5] , plus Auxiliary Timer [MENU, 5, 5]
Automatic based on Time of Day / Day of Week.	Program a TimeZone [MENU, 5, 2] and select "Auxiliary On/Off Sec" Control function.
By a Keyswitch, Pushbutton, Input, etc.	Program a Function Zone [MENU, 7, 5, 3] utilizing the Auxiliary Control options, plus Auxiliary Timer [MENU, 5, 5].
Remotely via Touch tone telephone. (V3 or later)	Program Answer Call Comms Task [MENU, 7, 3, 1] and DTMF Control [MENU, 7, 3, 3] utilizing the Auxiliary Control options.
Remotely via P.C.	Program PCDirect or ACCEPT Comms Task [MENU, 7, 3, 1] , plus Auxiliary Timer [MENU, 5, 5].

5. Check/Program Menu Groups. [MENU 2, 4, 1] (V5 or later only)

Before any User Types can View and/or adjust the User Count value via MENU, 9, 7; access to the appropriate Menu Option/s must be enabled in their Menu Group.

5.1 Program/Edit the "Menu Options" in the relevant Menu Groups. [R A I T t . S C]
-Set the "C" option (**C**ontrol Menu) to Yes if Adjusting User Area Counters is allowed.

5.2 Program/Edit the "Sub Menu Options" in the relevant Menu Groups. [U T L G Z R A .]
-Set the "A" option (**A**djust Counters) to Yes if Adjusting Counters is allowed.

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ZONE INPUT TESTING:
- ZONE SELF TEST
- WALK TESTING (V3 OR LATER)
- AREA PRE-ARM WALK TESTING (V3 OR LATER)

These features enables automatic and/or manual Zone Testing to be performed on the system.

Zone Self Test.

Zone Self Test is designed to automatically check that movement detectors are operational. (Not just sealed)

When Zones are being tested prior to an Area (or Areas) being armed (turned ON) and a Zone belonging to that Area is un-sealed, a message is displayed indicating that the problem must be rectified or the Zone must be isolated. (Area Pre-Arm Testing)
Additionally if the Zone is sealed, then a Zone self test *may be* performed depending upon how many times the Area has been turned ON since the last Zone self test for that Area.
For each Area a "Self Test ON Count" can be programmed. If the count is set to a non-zero number then the Area must have been turned ON at least this many times before a Zone self test will be performed.

When a Zone self test is performed for Zones belonging to an Area, the system checks to see if all Zones have gone to the alarm condition (even if it did not create an alarm) at least once since the last Zone self test was performed. If a Zone did not, then a "Test Fail" review message is saved for that Zone, otherwise the test passes for that Zone. When the first Zone fails Zone test the Control Module System Input "Zone Self Test Fail" will be triggered (Alarm/Tamper on C01:S17).

Example 1: An office Area is turned ON 5 days a week. During the day whilst the office is OFF it is expected that all PIRs will at least have one activation. In this case the PIRs will be set to "Zone Self Test" and the office Area will be set with a "Self Test ON count" of 001. Every time the office is turned ON and a detector has not been alarmed during the day a "Test Fail" message will be generated.

Example 2: A warehouse Area may have some detectors that are only activated once every 3 days or so. If the warehouse is turned ON once per day then set the "Self Test ON count" to 004.

Note that Zone self test is not meant to be seen as an indication of a definite problem, but rather to indicate that there may be a problem which needs rectifying.

Walk Test.

Walk Testing allows users to test that all Zone Inputs in a specified area can cause a seal to alarm transition and that they are currently all sealed. The test can be initiated manually at any time or can be programmed to occur every time an area is turned On (armed).

Manual Walk-test

A manual walk-test is initiated by a User (apart from user 1) accessing the test menu (<MENU>, 4). The User is prompted for an Area to test (alphabetic search). If the Area selected is in that Users Area Off List, then the Walk test will be initiated. If a module is not present that contains a required zone to test, then the Walk-test is aborted with the message "Test Abort – Lan Fail" being logged to Review.

When the Walk Test starts, the screen will show the 1st Zone not tested or not in the sealed condition. The screen will refresh every 5 seconds accompanied by a beep. As the zone is tested (seal to alarm to seal transition) the screen will automatically advance to the next untested/unsealed zone.
The User can manually advance the display to the next untested Zone by pressing any <Digit> key and can also abort the test at any time with the <END> key. (Note that if the test is aborted, then next time the area is armed and zone self test is required, some zone self test fails may be generated.)
When all zones are tested/sealed the screen will show "Test Passed. Push OK key", repeated every 5 seconds. Push the END key or OK key to finish the test.

If the Walk Test is not completed within the Area Maximum test time (or within 10 minutes if no Test time programmed) the test is aborted.

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Area Pre-arm testing

With NO Walk-test options set.

When a User performs the Area On (or Area List On) operation, the system first checks that the Zones assigned to the Area are all sealed (Unless the Zone has the "No Test on Exit" option set to Yes). If a module is not present that contains a required zone to test then the turn on is aborted with the message "Test Abort – Lan Fail".

If any Zones to be checked are unsealed, the screen will show the 1st zone not in the seal condition. The screen will refresh every 5 seconds accompanied by a beep. As the zone is sealed, the screen will automatically advance to the next unsealed zone. If a Zone cannot be sealed and needs to be isolated, the User can press the <OK> key, and will then be prompted to press the <OK> key again to Isolate the Zone.
The User can manually advance the display to the next unsealed Zone by pressing any <Digit> key (except <1>) and can also abort the test (and "turn On" procedure) at any time with the <END> key.
(If User 1 is logged on, the <1> key will turn on area un-conditionally.)

When all zones are sealed the screen will show "Area is now on" and will turn on the area.
If the unsealed zone testing is not completed within approximately 4 minutes the test (and "turn On") is aborted.

With Walk-test options set.

When the Area Walk-test option is set, the tests prior to turning on are divided into 2 parts. The 1st part tests that all Zones are sealed as above. The Zone Self Test logic is performed if required, with the appropriate review entries. If this test is successful (i.e. all zones sealed) then the 2nd part of testing (the Walk Test) begins.

If any Zones have failed Zone Self Test above because the Area self test arm count had expired, than the User is given the opportunity to test the Zone by causing a seal to alarm transition. The Zone must also be returned to the sealed condition.

The Area Pre-Arm Walk Test operation is similar to the Manual Walk Test with the following additional functions.
The <OK> key will abort the test and allow the Area to turn On.
The <END> key will abort the test and the turn On procedure.

If the Walk Test is not completed within the Area Maximum test time, the test is aborted and the Area will turn on unconditionally. When only 1 minute of testing time remains, the screen will alternate with a screen that displays "Area about to turn on". Area Pre-Arm Walk Testing is not allowed when turning on Area Lists.

Area Pre-Arm Walk-test System Inputs.

Four Control Module System Inputs are available to monitor and/or report Pre-Arm Test Results.

C01:S24	Pre-Arm 1 Test.	In Alarm during Pre-Arm Walk Test on any Odd Area.
C01:S25	Pre-Arm 1 Test Fail.	Alarms if Pre-Arm Walk Test aborted with the OK key on any Odd Area.
C01:S26	Pre-Arm 2 Test.	In Alarm during Pre-Arm Walk Test on any Even Area.
C01:S27	Pre-Arm 2 Test Fail.	Alarms if Pre-Arm Walk Test aborted with the OK key on any Even Area.

Pre-Arm Walk Test and Manual Walk Test when using Sub-Areas.

If a Pre-Arm Walk Test or Manual Walk Test is initiated on an Area that has a Sub-Area assigned, and the operation will result in the Sub-Area being turned on, all "Zone Self Test" Zones in the Sub-Area will also be included in the Walk Testing.

Zones in the Sub-Area will not be included in the Walk Testing if the operation will not result in the Sub-Area being turned on. i.e. If the Sub-Area is also the Sub-Area of one or more other Areas that will remain Off.

Programming details commence on the following page.

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1. Program/Edit the Input/s that are to be tested. [MENU 7, 0]

1.1 Program the Input Options relevant to Testing. [S C X S R A N T]

-Set the "N" (**N**o Test on Exit) option to Yes IF the Input is not to be tested for Seal when the Area is turned On. This option is only used for Entry/Exit type Zones that are likely to be unsealed when the Area is turned On. e.g. A PIR that detects movement around the LCD Terminal or a Contact on an entry Door that remains open until after the Area is turned On. e.g. Entry to a retail store in a shopping centre.

-Set the "T" (Zone Self **T**est) option to Yes for any Input to be included in Zone Self Testing, Manual Walk Testing or Area Pre-Arm Walk Testing.

2. Program the Area Test Options. [MENU 7, 1]

2.1 Program the "Zone Self Test ON Count". This option sets the number of times this Area must be switched ON before a Zone Self Test is performed. The count value can be from 000 to 255.
If the count is programmed to 000 then no Zone self testing will be performed for the Area.

2.2 An Auxiliary output may be required to enable automatic testing of devices such as Smoke Detectors, Glass Break detectors and Seismic detectors, etc. during Area Pre-Arm Walk Testing. (If the devices have a Test input available)
IF required, program the Area "Test Auxiliary".

2.3 Program the "Test Options" for Walk Testing and Area Pre-arm Walk Testing. [. . F Q X A W E]

-**F**orce all Zones to be Tested. If set to Yes, all Zones with the "Zone Self Test" option set to Yes will be tested regardless of whether a Seal to Alarm transition has occurred since the Zone was last tested.

-**Q**ualify Test. If set to Yes, the Test cannot finish unless the Qualify Auxiliary (Area Test Auxiliary) is Off. Enables a guaranteed minimum Test time to be implemented by assigning an Area Test Auxiliary, then programming an Auxiliary Timer [MENU, 5, 5] for the Test Auxiliary.

-Test Au**X**iliary. If set to Yes, turns On the Area Test Auxiliary at the start of Walk Testing and Turns Off at end of Test. (Unless already Off by another mechanism. e.g. Auxiliary Timer)

-**A**rm all Zones for Walk Testing. Not normally Used. If set to Yes, Zones will be processed as per their Process Group parameters (except for reporting) during the Walk Test. Only used when the devices that are programmed to be activated by an alarm in the Area (via Area Auxiliaries) are also to be tested.
Note however, that any Auxiliaries activated will then have to be turned Off again by turning the Area Off or by some other mechanism.

-Enable **W**alk Testing. Set to Yes if Area Pre-Arm Walk Testing is required in the Area.

-**E**xit to Display Counters. If set to Yes, at the end of the Test, the LCD Terminal will exit the current Menu option and jump to the Read Counters screen. [MENU, 1, 4] This enables the User to view the results of any Testing that involves devices that are monitored with a Counter. e.g. Cameras, Plant equipment, etc.
See separate Application note, "Event Counting" for details of Counter programming.

2.4 Program the "Maximum Test Count". This detemines the maximum time allowed for Area Walk Testing.
The Count value is the number of 5 second display refresh periods.
(The LCD Terminal display is refreshed every 5 seconds during Walk Testing)
e.g. If a value of 60 is entered here, the maximum test time allowed will be 60 X 5 = 300 seconds (or 5 minutes)

This option must be programmed with a value other than "00" for Area Pre-Arm Walk Testing.
For Manual Walk Testing via <MENU>, 4, the maximum test time will be 10 minutes if the Max Test Count is set to "00".

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3. Check/Program Menu Groups. [MENU 2, 4, 1]

Before any User Types can perform Walk Testing via the Menu (<MENU>, 4) OR Isolate Zones when turning an Area On (Arming), access to the appropriate options must be allowed in their Menu Group.
IF any LCD Terminals have a Menu Group assigned, access to the Test Menu must also be allowed in this Menu Group if Walk Testing is to be performed at the Terminal.

3.1 Program/Edit the "Menu Group Options" in the relevant Menu Groups. [R I D C S A M T]
-Ensure that the "I" option (**I**solate on Exit) option is set to Yes IF this function is allowed.

3.2 Program/Edit the "Menu Options" in the relevant Menu Groups. [R A I T t . S C]
-Ensure that the "T" option (**T**est Menu) is set to Yes IF access to the Test Menu is allowed.

1. Program the Area Pre-Arm System Input/s. [MENU 7, 0]

1.1 IF monitoring and/or reporting of Area Pre-Arm Walk Test operation and/or Test Fail is required, program the relevant System Inputs (listed below) and assign them to an Area [MENU, 7, 1] with the appropriate "System" Process Group/s [MENU, 2, 4, 3].

C01:S24	Pre-Arm 1 Test.	In Alarm during Pre-Arm Walk Test on any Odd Area.
C01:S25	Pre-Arm 1 Test Fail.	Alarms if Pre-Arm Walk Test aborted with the OK key on any Odd Area.
C01:S26	Pre-Arm 2 Test.	In Alarm during Pre-Arm Walk Test on any Even Area.
C01:S27	Pre-Arm 2 Test Fail.	Alarms if Pre-Arm Walk Test aborted with the OK key on any Even Area.

NOTE: If the Pre-Arm Test Fail System Inputs are being monitored, it may not be necessary to monitor the "Zone Self-test Fail" System Input (C01:S17) as well.

The table below provides a summary of the Programming options required to achieve each of the Zone Input Testing options available. "Yes", "No", "Non Zero" or a value entry indicate that the option must be programmed in this way. "Option" indicates that the option is an enhancement available for different system requirements.

	Area Pre-Arm Testing			Manual Walk Test
Option	Test for Unsealed Inputs	Zone Self Test	Walk Test	
INPUT Options **N**o Test on Exit Zone Self **T**est	 no	 Yes	 Yes	 Yes
AREA Test Auxiliary			Option	
AREA Self Test ON Count		Non zero	001	
AREA Test Options **F**orce all Zones to Test **Q**ualify Test Test Au**X**iliary **A**rm all Zones for Test Enable **W**alk Testing **E**xit to Counters			 Option Option Option Option Yes Option	
AREA Maximum Test Count			Non zero	Option
MENU GROUP Opts. **T**est Menu allowed.				 Yes
PRE-ARM SYSTEM INPUT PROGRAMMING			Option	

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ZONE MULTIPLICATION

This feature enables multiple detection devices and/or contacts to be wired together into a single general purpose Zone Input on a Model 3000 or Access 4000.

IMPORTANT NOTE:
It is usually recommended that each detection device is wired to a separate Zone Input.
This allows:
- Programming options to be set for each individual device as required.
- The device to be individually identified in alarm messages and in the Review log, etc.
- The device to be individually identified when reporting to the Central Monitoring Station.

Zone multiplication allows for multiple devices to be wired to a single Zone Input and should only be used when the system specification allows, and only when absolutely necessary as all devices wired to the Zone Input will be processed and logged as a single alarm point in the system.

Installation Notes:

1) The maximum number of devices that can be wired to a single Zone Input is four.

2) The wiring technique described below can only be used on general purpose Zone Inputs requiring End-of-Line Resistors. Do not use this technique on LCD Terminal Zone Inputs or Inputs dedicated to specific functions such as Arming buttons, REN (Request to Enter) or REX (Request to Exit) Inputs.

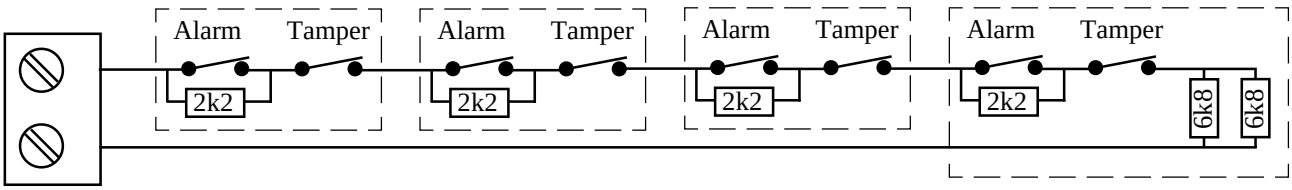
3) No special End-of-Line resistor values are required as the circuit uses the resistors already supplied in the installation kit.

Wiring Multiple Devices to a single Zone Input.

2 x 6k8 Resistors are connected in parallel at the last detector in the loop to provide an EOL value of 3k4 for the "Seal" condition. *(See diagram below)* A single 3k3 Resistor may be used if preferred.

One, two or three additional devices can be connected in series as shown.

This wiring method is suitable for devices where the Alarm and Tamper contacts are Normally Closed in the Seal (normal) state.



Wiring a Normal Zone Input.

(Shown for reference)



Z

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Information Menu

Users with the relevant options enabled in their Menu Group can use the Control Menu to control one or more of the following items:

- Review
- Read Analogue Values.
- Check/View Input States.
- Locate User
- Read Counters.
- Read Power Module Values.

REVIEW

MENU 1 ABC 1 ABC

Allows a User to view the list of review events stored in the memory. This may be necessary to find out details of user activity or past alarms, etc.

```
Dec06 17:30:26.7
Janet at Review
```

The Display will show the last review event, which will probably be a record of yourself accessing the Review Menu.

0 9 YZ

The <0> key is used to go to the start of review (earliest event still stored) and the <9> key is used to go to the end of review (last event saved).

^ v

<UP> (back) and <DOWN> (forward) Arrow keys are used to search review, one event at a time.

< >

<LEFT> Arrow forces display to the start of the text.
<RIGHT> Arrow scrolls text one character at a time.

REVIEW FILTER:

The DIGIT keys, 1 to 8 can be used to search back through review for specific types of events, beginning from the date/ time of the event currently displayed.
As there are more than 8 review filter categories that can be selected, the "Mode" can be changed by pressing the OFF key (OFF and ON keys if prior to V5 firmware), allowing selection of more categories.
You can use these filter keys to locate a specific event and then use the UP and DOWN Arrow keys to review all the other events around it in more detail.
In V5 or later, the ON key allows different display options to be be selected.

V5 or later:

9 YZ (Go to End of Review) then OFF (To Toggle betwen Mode 1 and Mode 2) then ? ??? to select filter.

ON key selects various display options:
Full Text
Abbreviated Text
Full text + Abbreviated text for "Xmit and Input change of state entries.
Raw Review Data

Prior to V5:

9 YZ (Go to End of Review) then OFF (For Mode 1) OR ON (For Mode 2) then ? ??? to select filter.

NOTE:
Use HELP to view the list of review filter categories available.

KEY	MODE 1.	MODE 2.
1	Alarms & Restorals.	System messages.
2	Reports.	Times.
3	Auxiliary On & Offs.	Detail.
4	Siren On & Offs.	Communications.
5	User operations.	Lifts.
6	Area On and Offs.	Cards. (V3 or later)
7	Isolates/De-isolates.	Spare.
8	Modules.	Errors

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LOCATE USER

MENU 1 ABC 2 DEF

In some systems INSIDE and/or OUTSIDE Areas will have been assigned to Access Controlled Doors. "LOCATE USER" can then be used to display the Area that the user is currently in.

```
Not Located -
Graham
```

The display will show the Area name on the top line and the User name on the bottom line.

6 PQR

```
R & D LABORATORY
Raymond
```

To search for a particular User alphabetically, press the <DIGIT> key that represents the first letter of the User's name. (You may have to press the key 2 or 3 times, depending on the letter required and the User names in the system.)

v

```
TEST DEPARTMENT
Rebecca
```

If the User name you want is not displayed because of other names beginning with the same letter, use the <DOWN> Arrow key to locate it.

In this mode the <UP> and <DOWN> Arrow keys can be used to scroll through the list of Users.

ON

To find a particular User by number, press the <ON> key to change the display mode.

> ? ???

```
U00019 is in
Not Located -
```

Use the <DIGIT> keys to enter the User number required. The <RIGHT> Arrow key may be used to advance the cursor. The <OFF> key may be used to clear the user number before you begin.

ON

```
INWARD GOODS
Lorie
```

Press the <ON> key again to view the Area and User's name.

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READ ANALOGUE VALUES

MENU 1 ABC 3 GHI

In some systems Analogue Input modules are installed to monitor variable parameters such as Temperature, humidity, fluid levels, etc.
"READ ANALOGUE" can then be used to display the current values of the analogue inputs. (V3 or later only)

```
Analog module
to view: Q01
```

The display will prompt for an Analogue Module number to view.

^ v

The <UP> and <DOWN> arrow keys can be used to search for a particular Analogue Module,
OR

? ???

Use the <DIGIT> keys to enter the Analogue Module number.

OK

Press the <OK> key to select the module number displayed.

```
COOLSTORE TEMP
+ 0004
```

The display will show the value of the first Analogue input on the selected module.

ON OK

The analogue value is updated every 2 seconds. Updates will timeout after 2 minutes. The <ON> key can be used to refresh the display.
Press <OK> to scroll through the Values for the other Zones/Inputs on the same Analogue Module.

```
WATER LEVEL (L)
+ 183
```

^ v

Use the <UP> and <DOWN> Arrow keys to scroll through the Analogue values for the same Zone input number on other Analogue Modules.

END

Press the <END> key to exit to the normal display.

```
Q01:Z03
+ 0255
```

NOTE: All Analogue Zone Inputs used in the system should always be named by the Installer. A screen similar to this showing the default Zone ID will be displayed for Zones that are not used.

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READ COUNTERS

MENU 1 ABC 4 JKL

In some systems Mini Expander modules are installed to perform Event Counting. Counters can be used to monitor film in security cameras, water or electricity usage, traffic through a designated point, etc.
"READ COUNTERS" can then be used to display the current value of the counters. (V3 or later only)

```
Camera 1 Film
Count: 0254
```

The display will show the result of the first Counter available to be viewed.

^ v

The <UP> and <DOWN> arrow keys can be used to scroll through the results of the other counters.

```
Water Used (kL)
Count: 00012759
```

The displayed count is refreshed every 2 seconds by reading the latest count from the relevant Mini Expander module.

END

Press the <END> key to exit to the normal display.

```
.Counter 003
Count: 00000000
```

NOTES:
1) All Counters used in the system should always be named by the Installer. A screen similar to this showing the default Counter ID will be displayed for Counters that are not used.
The installer can disable display of unused Counters.

2) In some applications it may be necessary for a User to adjust the current value of a particular counter, or reset the counter to zero.
This can be done via a separate Menu option that will probably be restricted to one or more User Types. Details are provided in "Adjust Counters", [MENU, 9, 6].

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VIEW INPUT STATES

MENU 1 ABC 5 MNO

The system can be programmed to allow Users to view a summary of specific Zones that are enabled and currently in an abnormal condition.
"INPUT STATES" can then be used to display the summary. (V3 or later only)

You may need to use this function when the LCD Terminal displays a message such as:
"Some Inputs are Tampered"
"Some Inputs are Isolated"
etc.

```
Isolated Input:
CustomerArea PIR
```

The display will show the first Zone that is in an abnormal state.
The summary is prioritised in the following order:
1) Isolated Inputs
2) Tampered Inputs
3) Unsealed Inputs

V

The <DOWN> arrow key can be used to scroll through the list of other abnormal Zone states.

```
Unsealed Input:
Teller Area PIR
```

```
Finished
Check
```

When the bottom of the list is reached, the display will show "Finished Check" to indicate that there are no more abnormal Zones to view.

END

Press the <END> key to exit to the normal display.

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READ POWER MODULE VALUES

MENU 1 ABC 6 PQR

In some systems LAN Power Supply Modules are installed to provide flexible, general purpose, battery-backed power supply solutions with the added advantage of immediate status reporting of Power Supply conditions and problems via the LAN network.

"READ POWER MODULE" can then be used to display the current values of Voltage and Current for both the Battery Charger and Detector Power outputs. (V4.5 or later only)
Four Power Module Parameters can be viewed:
-Battery Charger Output Voltage.
-Battery Charger Output Current.
-Detector Output Voltage.
-Detector Output Current.

```
Power module
to view: P01
```

The display will prompt for a Power Module number to view.

∧ ∨

The <UP> and <DOWN> arrow keys can be used to search for a particular Power Module,
OR

? ???

Use the <DIGIT> keys to enter the Power Module number.

OK

Press the <OK> key to select the module number displayed.

```
P01 Batt
Volts = 00.0
```

The display will show the value of the Battery Charger Output Voltage on the selected module.

ON

The displayed value is updated every 2 seconds. Updates will timeout after 2 minutes. The <ON> key can be used to refresh the display.

∧ ∨

OR

OK

Use the <UP> and <DOWN> Arrow keys to scroll through the results for the same parameter on other Power Modules.
OR
Press <OK> to advance, in turn, to each of the other Power Module Parameters to be viewed on the same Power Module.

```
P01 Batt
Amps = 00.0
```

The display will show the value of the selected parameter on the selected module.

```
P01 Det
Volts = 00.0
```

Use the <ON>, <UP> and <DOWN> Arrows, and <OK> keys to refresh the display or view other dislays as described above.

```
P01 Det
Amps = 00.0
```

END

Press the <END> key to exit to the normal display.

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User Programming

User Programming is the starting point for allowing a person to operate the system.
Depending on the system configuration, the following parameters may be defined for a User:

> Name
> User Type
> PIN Number
> Card Type
> Card ID Number or Card Data
> Card Issue Number
> Expiry Date/Time
> User Rank
> User Options
> Extra Area assigned.
> Extra Door &/or Extra Door List assigned
> Fob Button 1 to 4 Functions.

Three special Users are pre-defined within the system.

User 00001 is known as the "INSTALLER". The PIN code for this User is defaulted to 01 in the factory and should be changed by the Installer as soon as possible.
User 00001 has special privileges including:

- Exclusive Access to the Installer Menu.
- Access to higher level options in the Access, Times and Service Menus.
- Special options is the Test Menu.
- Remote access enabled regardless of the setting of the "Remote Access" option in the Menu Group assigned to this User's User Type.
  (Installer must not be locked out by "Master" User)

User 00002 is known as the "MASTER" and is usually assigned to the owner of the system or the person responsible for security. The PIN code for this User is dafaulted to 02 in the factory and should be changed by the installer or system owner/administrator as soon as possible.
Special privileges for User 00002 include:

- The ability to program/edit all other Users (except User 00001)
- Remote access enabled regardless of the setting of the "Remote Access" option in the Menu Group assigned to this User's User Type.
- The option to lockout / enable INSTALLER access (If feature is used)

User 00003 has no defaults pre-defined and is the same as a normal User except that Remote Access will always be enabled regardless of the setting of the "Remote Access" option in the Menu Group assigned to this User's User Type.

The procedure to reset this User Code section to the factory default is explained in more detail at the end of this chapter.

User numbering and permission to edit.

When a User's "User Type" allows permission to change User codes (specified in the User Type's Menu Group), the User is only allowed to change User numbers equal to, or higher than their own. (Unless User Ranks are utilised within the system).

For this reason it is recommended to plan the user numbering before programming the Users, so that the numbering will reflect the authority required. For example, a system administrator who has permission to change all User codes should be issued a very low user number (eg. 3). A Supervisor who only has permission to change the Users in their own department, should have a user number lower than all the staff in that department, but higher than any User with more authority.

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CARD ONLY USERS *ACCESS 4000 ONLY*

Introduction

All Normal Users in the Concept 3000/4000 have the following basic features:

- Card Details
- Pin Number
- User Type

Some or all normal Users have the following features:

- User Name
- Expiry Date
- Additional Area (V2 or later)
- Additional Door (Special Option in V4.5 or later)
- Additional Door List (Special Option in V4.5 or later)
- User Rank
- Extra Yes/No Options

Concept Access 4000 introduces the "Card Only User". Card only Users are only available in certain 512k Memory configurations and are identical to normal Users except that only the features below are available:

- Card Details
- User Type
- Additional Door (Special Option in V4.5 or later)
- Additional Door List (Special Option in V4.5 or later)

A card only user is a user who only uses that access control component of the system. No terminal operation is permitted. A card only user cannot be named and has no expiry date, additional area, user rank or extra Yes/No options.

All user numbers start at 00001. Normal users with pin numbers are numbered from 00001 to a maximum of 04096. Card only users are numbered from 04097 to a maximum of 53,249.

The number of normal users, names, expiry dates and card only users depends on the memory configuration. **Card Only Users are only available in Access 4000 512k Memory configurations**. Normal Users can be configured in one "bank" with up to 4096 users. Card only users can be configured in up to six "banks", with each bank containing up to 8192 card only users. Each bank starts and ends at a particular card number:

User	Starting User	Ending User
Normal Users	1	4096
Card Only User, Bank 1	4097	12288
Card Only User, Bank 2	12289	20480
Card Only User, Bank 3	20481	28672
Card Only User, Bank 4	28673	36864
Card Only User, Bank 5	36865	45056
Card Only User, Bank 6	45057	53249

Practical considerations will in most cases limit the maximum number of users to 10,000 to 20,000. The average search time for a 20,000 user system is approximately 300ms, depending on other tasks at the time.

Programming

Programming of card only users is identical to normal users except that certain programming screens will be unavailable such as user name.

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```
User to
alter:  U00001
```

```
Find User Name ^
J SMITH
```

This screen allows the Installer or administrator to select a specific User to alter, chosen from a possible maximum of 4096 users or, thousands more if "Card Only" Users are available and memory size and configuration allow. (Note that Card only users start at U04097). On pressing the ON key the operator is allowed to search alphabetically for the name of an existing User using the digit keys and up and down arrows.

```
User 00001 Name
J SMITH
```

This screen allows names to be defined for some or all Users, depending on memory size and configuration. Names may only be defined from User 00001 to a particular maximum. This question will not be asked if a name cannot be assigned to this User. Names are up to 16 characters long.

```
U00001 type  ->
MANAGER
```

This screen allows a User Type to be selected for this User. The User Type specifies all the Security and Access attributes for this User. Pressing the right arrow key will cycle through all defined User Types. Pressing the OFF key will set the User Type for this User back to "None". Setting a User Type to None is the same as cancelling a User - all their security and access permissions will be cancelled but can be reinstated again by simply setting the User Type back to the desired type.

```
U00001
type: UT001
```

If the On key is pressed, the User Type can be selected by its number.

```
User 00001
PIN No. ####
```

This screen allows an optional PIN code to be defined for some or all Users for use with LCD Terminals within the system. PIN Codes may only be defined from User 00001 up to User 04096 depending on memory size and configuration.
PIN codes can be between 1 and 8 digits. The User Type will determine how and when a PIN code is used and what it is allowed to do. Pressing the OFF key will clear the code. When entering a PIN number, the digits will be displayed as they are pressed but once the OK key is pressed a PIN number can only be viewed by the User who owns it.

If a duplicate PIN is entered, the PIN will not be allowed and the original owner of the PIN will be notified when they log in next that their "PIN Discovered".

CARD TYPE

```
U00001 Crd Typ->
Credit Card
```

This screen specifies the type of access Card that is going to be used by this User if an access Card is allocated. The OFF and right arrow keys are used to select the desired Card Type:

Credit Card — This Card Type is selected when Credit Cards are going to be used in swipe Readers. The Card can be entered by typing in the account number or by swiping the card.

Site Code — This Card Type selects the traditional access Card method where each Card is numbered according to the User. Cards may be swipe or Wiegand format Cards. A "Site Code" is often stored on the Card to determine if the Card will be accepted at this site.

Direct Entry — In Direct Entry mode the Card number is independent of the User and a Card offset does not need to be used. This Card Type selects a direct entry method where all Card information is saved for each User and can only be used for Wiegand and Swipe formats. The Card information can be entered at the keypad or a Card can be "scanned" at a Reader.

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NOTES:

1. The format option must be correctly set in Reader Module Programming for any of the above options to work correctly.
2. "Test Cards" [MENU 4,5] may assist in determining an unknown Card Type.

The screens that follow depend on the Card type selected.

Credit Card Type Only

```
U00001 Accnt No.
(No Card)
```

This screen allows the first 16 digits of the Credit Card account number to be directly typed in for this User. If the bottom line says "No Card" then no account number is stored for this User. If the bottom line says "**Card**" then an account number is already stored for this User. If an account number is already stored it cannot be viewed for security reasons. If a digit key or the OFF key is pushed, then any existing account number will be over-written. (Before entering your account number, press the OFF key to clear the screen).

```
U00001 Waiting
for Card at R01
```

If the ON key is pressed, then the credit Card can be entered by simply swiping the Card at any Reader connected to Reader Module #1 or another Reader Module, if specified in the General System options [MENU 7,5,1] "Reader for User Programming". The Card must then be swiped within the "Card Wait Time" (Default = 10 seconds). The "Card Wait Time" can be programmed to a different value in the General System Options, MENU 7, 5, 1. (V5.1 or later only)
The screen will then change to the next screen in the series.

```
U00001 Accnt No.
** Card **
```

This screen allows Credit Card account numbers greater than 16 digits to be entered.

```
U00001 Accnt No.
(cont.) No Card
```

The first 16 digits may be entered on the previous screen whilst this screen allows up to 8 additional digits to be entered. (Before entering the account number, press the OFF key to clear the screen. If the account number is less than 17 digits and this screen is not required, just press OK).

Site-Code Card Type Only

```
U00001  Card
Number: 00001
```

This screen allows any Card number to be assigned to any site-code User.
It is only necessary to alter the default Card Number displayed if the User's Card ID number is different from their User Number. It may be possible to use a Site Code Offset to align Card ID numbers with User Numbers.
It is recommended that Card ID and User Number be the same wherever possible. The default value is a Card number equal to the User Number. This number can be set to any value between 00001 and 65535. If the number is set to zero, then the default value of the User Number will be programmed. By allowing any Card number to be assigned to any User, Card numbers do not have to be in sequence. If a Card is lost, that User can be assigned another Card and still retain their User programming.

The actual Card number searched is altered if a Site-Code Offset is programmed. The Site-Code is subtracted from the Card number before the search of the Users commences.

The 3000/4000 system supports Card ID numbers up to 65,535 (16 Bits).
If the "General" Site Code method is used to process Cards with more than 16 Bits of Card ID data, the Most Significant Bits (MSBs) will be ignored.
e.g. Cards ID numbers 65537, 131073, 196609, etc. will all be read as Card ID 1.

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Operation:

The sequence below shows the logic that Concept applies in determining which User to assign which Card.

- Check Card Site Code for a matching value in the Site Code table. Only search for Site Codes that are enabled.
- Check if the Site Code has an offset programmed. If so, subtract the offset value from the Card number. If the offset value is equal to the Card number, no search will take place. If the offset is greater than the Card number, the resulting Card number is equal to - offset + 65535.
- Search all User codes starting at U00001 for a match between the User Card number and the Card number derived above. Only search Site Code Users.
- If a match is found, check that the issue number also matches. If it does, a User has been found.

Examples

Scenario	Card IDs	User IDs	Offset	Solution
Cards are in sequence	00001 to 00100	U00001 to U00100	Not Required	No problem as User ID = Card ID
Cards are mixed	28401, 15745, 164	U00010 to U00012	Not Required	Manually enter each Card ID for each User (U00010 = Card 28401, etc)
Cards are in sequence & Card ID must be stepped **down** to align with User ID	28411 to 28510	U00010 to U00110	If Card ID > User ID, Offset = Card ID - Desired Card number	Programme an Offset of 28401 U00010=Card00010 (28411-28401)
Cards are in sequence & Card ID must be stepped **up** to align with User ID	00001 to 00100	U04097 to U04197	If Card ID < User ID, Offset = **65535** - Desired Card number *** *65535 is the max. allowable Card number* ***	Programme an Offset of 61438 U04097=Card04097 (**65535**-61438) *** *65535 is the max. allowable Card number* ***

```
User 00001
Issue No: 000
```

This screen allows an optional Issue number to be assigned for this User if the Cards used support Issue numbers. Setting the Issue number to 000 will allow any Issue number to be accepted. (If the Card used does not support Issue numbers then set the Issue number to 000). Only the manufacturer's Magnetic Swipe Cards currently support issue numbers.

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Direct Entry Card Type only

```
U00001 Raw Card
Data: 0000000000
```

This screen allows Raw Card data to be entered for Wiegand format Cards that are going to be read directly with no site-codes. The data must be entered in the Hex format.

```
U00001 Waiting
for Card
```

ALTERNATIVELY: If the ON key is pressed, the Card can be entered by simply presenting the Card at any Reader connected to Reader Module #1 or another Reader Module, if specified in the General System options [MENU 7,5,1] "Reader for User Programming". The Card must then be swiped within the "Card Wait Time" (Default = 10 seconds). The "Card Wait Time" can be programmed to a different value in the General System Options, MENU 7, 5, 1. (V5.1 or later only)
The screen will then change to the next screen in the series.

```
U00001 Raw Card
Data: ddddddddddd
```

where *ddddddddddd* is the Card data as read.

Expiry Dates and User Ranks

User Expiry Dates allow an optional date and time to be chosen for each User after which Card or PIN access will be denied. User Ranks allow a method to control who can change which User codes.

Memory Configurations allow for Users with Names only, or a combination of Users with Names and Card Only Users.

IMPORTANT NOTES:

1) Only Users with Names can have expiry dates.
2) Do not set an expiry date for User01 or User02 unless it is specifically required.

Users with Names

Users with Names utilise more of the system's Memory and so allow for the inclusion of a smaller number of Users (Up to 4,096). A larger amount of detailed information may be recorded against each User and a greater degree of control is possible for Users with Names. This includes options to set Expiry Dates and User Ranks.

Card Only Users

Only a relatively small amount of information is recorded against Card Only Users. In addition, only limited programming options are available for these Users. The advantage of including such users is that the system can accommodate a large numbers of Card Only Users (Up to 65,000). Card Only Users will be discussed in more detail towards the end of this chapter but the point to note at this stage is that Expiry Dates and User Ranks are not available for these users.

Combination of Users with Names and Card Only Users

Configuration Options allow for the combination of Users with Names and Card Only Users. One such combination would be 500 Users with Names and up to 24,576 Card Only Users. In this case, only the Users with Names would be able to utilise Expiry Date and User Rank programming options.

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Expiry Dates

Expiry dates allow the system to be programmed to automatically render the User's PIN code &/or Card &/or RF Fob inoperative from a specific time and date.

```
U00005 Expires:
00/00/88  -00:00
```

This screen shows the expiry date in the format "day/month/year-hour:minute". If the year is set to 88 (1988), which is the default setting when the memory is cleared, the Expiry Date will be ignored for this user. Pressing the OFF key will clear all fields.
When all fields are cleared, the Expiry Date will also be ignored.

```
U00005 Expires:
  /  /  -  :
```

To set up an Expiry Date, begin by pressing the OFF button to clear all the fields. Then only fill in those sections of the date and time fields which you wish to use to validate the User's Card or PIN when it is presented.

If any field is left blank, that field will be ignored.

Examples

00/00/88-00:00	Ignore expiry date
/ / - :	Ignore expiry date
/ /99 :	User Card or PIN will not work if the year is 1999 or higher.
12/ / - :	User Card or PIN will not work in any month where the date is the 12th or higher
/ / -12:	User Card or PIN will not work past 12:00PM on any day.
03/09/99-12:00	User Card or PIN will not work past 12:00PM on 3rd September, 1999.

User Ranks

When Users are given permission to change User Codes via either their User Type or Menu Group, they are only allowed to change User number equal to, or higher than, their own. For example, if User 567 has permission to change codes he/she can change code 567, 568, 569 and so on. Furthermore, when a User has permission to change User codes he can select any User Type for that code, even one that gives that code more authority than their own User Type. For these reasons the number of people who are given authority to change codes is normally restricted.

The User Rank system is designed to provide better security when it is desirable to give groups of people the authority to change codes. Each User in the system can be assigned a rank. The rank is a list of 8 yes/no flags which determine the "rank" of the User.

```
U00005 12345678
Rank:  nnnnnnnn
```

This User has no ranks enabled.

```
U00005 12345678
Rank:  Ynnnnnnn
```

This User has rank 1 enabled.

```
U00005 12345678
Rank:  nnnnnnYn
```

This User has rank 7 enabled.

```
U00005 12345678
Rank:  YnYnnnnn
```

This User has rank 1 and rank 3 enabled.

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```
U00005 12345678
Rank:  YYYYYYYY
```

This User has all 8 ranks enabled.

NOTE:
It is very important that you understand how user ranks are programmed and how they operate before attempting to incorporate the facility into your system. It is advised to plan your user rank programming carefully before entering the data. Read the following information for more details of user rank operation.

User Rank Permissions
The 3000 system applies the following rules to validate the extent to which a User, who has general permission to alter Users, can actually make changes or additions to Users.

A Normal User is any User above User 00002. User 00001 (Installer) and User 00002 (Master) are special Users with special privileges.

User logged on with User alter permission.	**Users allowed to alter.**
User 00001 with "O" security option set to "n"	-All Users
User 00001 with "O" security option set to "Y"	-Only User 00001
User 00002	-All Users except User 00001
Normal User with no rank screen	-Any User above and including their own
Normal User with no ranks enabled	-Any User with no rank screen -Any User with no ranks enabled and above and including their own
Normal User with some ranks enabled	-Any User with no rank screen -Any user that has any matching rank set to yes except User 00001 or user 00002

When a normal User is altering a User Rank screen for another user, they cannot set any ranks to "Yes" unless the corresponding rank for themselves is also set to "Yes". A normal User can always set a User Rank to "no". User 00001 and User 00002 can set or clear ranks for any User.

Example using ranks
Starting with a defaulted system with no ranks enabled, only the master or installer can set any ranks to yes. The master code sets up the following Users to alter other Users as follows:

User	**User Rank**
U00069	Ynnnnnnn
U00516	nYnnnnnn
U01345	YYnnnnnn

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The master code also sets up the following User Types:

User Type	User Type Rank
User Type only to be used by U00069	Ynnnnnnn
User Type only to be used by U00516	nYnnnnnn
User Type to be used by any User	YYnnnnnn

In the above example U00069 or U00516 can define a code from a "pool" of available Users who have no ranks enabled. When they define a User code they set the rank to the same as their own rank so that User becomes "Their User". They can release a User back to the "pool" by disabling all ranks for that User. U00069 can only modify Users with rank 1 set. U00516 can only modify Users with rank 2 set. U01345 can define or modify Users of either rank.

When choosing User Types for a User, U00069 can choose User Types with rank 1 set, whilst U00516 can only choose User Types with rank 2 set. This way, Users cannot choose User Types that give them more options than their own.

U00001 NDLEG...
Options nnnnnnnn

This screen specifies various options for the User.
NOTE: These options are only available for Users with names.

N **N**o Message Ack.

When set to Yes, if an alarm message is being displayed at a Terminal that the User is logging into, they will not be allowed to acknowledge the alarm message with the "OK" key, even if they have OFF control of the Area in which the alarm occurred. This option can be used to keep the User interface simple for specified Users.

D **D**uress Code

When set to Yes, this PIN code will trigger a "Keypad Duress" System Input (Txx:S05) any time it is entered at a keypad. This allows the programmer total flexibility on how duress codes will work in the system.
NOTES: If set to Yes, It is recommended to set the "No **G**reeting" option below to Yes also. This prevents the User name from being displayed when logging on. Alternatively program a generic name such as "Staff" that will <u>not</u> identify the PIN code as a Duress Code.

L Area **L**ist Default

When set to Yes, this option will cause the Area List selection to automatically appear on the LCD Terminal on PIN code entry. This option would be provided for Users who were more likely to operate Area ON/OFF functions using Area Lists, rather than individual Area selection.

Note: When a User is selecting an Area List to Control, any Area List can be selected, however, only Areas that are common to the Area List selected <u>and</u> the User Type's On List (If turning the Area List On) or Off List (If turning the Area List Off) will be controlled.

E **E**xtra Area Off

When set to Yes, this option will cause the Area specified as the User's "Extra Area" to automatically turn off when the User accesses a Door via a Reader that has been programmed to "Turn Off Extra Area". Alternatively, if a Reader Arming mode is set to "Extra Area if Zone 8", the User's "Extra Area" will turn On if Zone 8 on the Reader Module is unsealed when the User accesses the Door. (See "Extra Areas" below)

G No **G**reeting

When set to "Y", this option disables the Greeting screen for this User. When the User logs on at the Terminal, the display will go straight to the Area status screen.

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Extra Areas

This option is very useful in systems with large numbers of Areas, where the majority of Users are only allowed to control a single Area. Instead of programming many Area Lists, each with only one Area assigned, it is easier to simply allocate an Area directly to the User, using the Extra Area option.

eg. In a shopping centre that contains 100 different shops, the shop owners and staff are only allowed control of Area protecting their own shop. Using the Extra Area option, simply assign the relevant shop Area to each User. If a common Mall Area and secured car-park was to be controlled by all shop owners, then these Areas could be placed in an Area List, and this List assigned to the "Shop Owners" User Type. In this example, only one Area List need be programmed (for the common Areas).

NOTE: If it is inappropriate for the "Extra Area" screen to be available, it can be disabled by setting the "E" option (**E**xtra Area Denied) to Yes in the "EUe....." screen in the General System Options, MENU, 7, 5, 1.

```
U00001  Ex.Area->
FOYER
```

This screen allows an optional "Extra Area" to be allocated to a User. (Only available on Users with names or expiry dates). When an Extra Area is allocated to the User, it appears as though the Area is in the Area ON and Area OFF Lists allocated to their User Type.

Extra Door & Extra Door List (V4.5 or later only)

These options are very useful in systems with very large numbers of Users and/ or Doors and could be used to simplify User programming in the following applications:
-When the majority of Users are only allowed to control a single Door.
-When Users have a combination of one or more common Doors plus Doors that are unique to their User Type or to themselves.
-When different types of Access Control Points (e.g. Doors and Car Park Entry/ Exit points) need to be managed separately for ease of system administration.
e.g. Door Access can be assigned in the usual manner via the User Type Door List, while Car Park access can be assigned via the User's Extra Door or Door List.

IMPORTANT NOTES:
1) These options are only available in selected 512K Memory Configurations. *See "Memory Configurations" for details.*
2) If it is inappropriate for these screens to be available, they can be disabled by setting the "e" option (**e**xtra Door/DList Denied) to Yes in the "EUe....." screen in the General System Options, MENU, 7, 5, 1.

```
U00001 Ex. Door->
None
```

This screen allows an optional "Extra Door" to be allocated to a User. (V4.5 or later)

When an Extra Door is allocated to the User, it appears as though the Door is in the Door List allocated to their User Type.

```
U00001 Ex.DList->
None
```

This screen allows an optional "Extra Door List" to be allocated to a User. (V4.5 or later)

When an Extra Door List is allocated to the User, it appears as though the Doors in the List are in the Door List allocated to their User Type.

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Wireless Fob operations. (V5.1 or later)

Button Numbers

 **1**

 **2**

 **3**

 **4**

The following programming screens define the actions for each of the 4 buttons available on a Wireless Fob registered to this User. Wireless Fobs require at least one RF Expander Module to be installed and programmed in the system. (MENU, 7, 2, 0, 2)
Once an RF Expander Module is available, individual Fobs can then be registered to Users in the "Registration Menu"; MENU, 2, 7 OR MENU, 7, 2, 0, 0, 2. *See "Memory Configurations" for information on which configurations support RF Expander Modules and the number of Fobs supported..*

When using RF Fobs, only 1 button may be pushed at a time and a pause of at least 2 seconds is required between subsequent button pushes. (This avoids repeated processing if the transmission is received by more than one RF Expander Module.)

NOTE: V5.2 or later. These programming screens are only available to the Installer (U00001) and Master (U00002) Users.

U00001 Fob Btn1>
None

This screen allows the action for Fob button 1 to be defined.
One of the following options can be selected.

None — This button will not perform any action.

Area On — The nominated Area will be turned On.

Area Off — The nominated Area will be turned Off.

IMPORTANT NOTES: AREA ON ACTION.
2) If the "Qualify Aux" action is selected for any button on this Fob, operation of the "Area On" action is altered. *See "Qualify Auxiliary" below.*
1) If any Inputs in the Area fail the Zone Sealed Test, the Siren and Siren Auxiliary of that Area will be triggered briefly to indicate that the Area has not been Armed.

Aux On — The nominated Auxiliary will be turned On.

Aux Off — The nominated Auxiliary will be turned Off.

Toggle Aux — The state of the nominated Auxiliary will be toggled.
(i.e. Turned On if currently Off; or turned Off if currently On)

Zone Alm — A Zone Alarm/Restore will be generated on the nominated Zone Input.

Zone Alm (Q) — A Zone Alarm/Restore will be generated on the nominated Zone Input, but only if the Qualify Auxiliary is currently On. If the Qualify Auxiliary is not On, the button press will be ignored. *See "Qualify Auxiliary" below.*

Area List On — The nominated Area List will be turned On as detailed below. NOTE: If the "Qualify Aux" action is selected for any button on this Fob, operation of the "Area List On" action is altered. *See "Qualify Auxiliary" below.*

Area List Off — The nominated Area List will be turned Off.

The "Area List On" Button action operates in the following manner:
1) The Areas in the nominated Area List will Arm one by one in sequence starting with the lowest Area number.
2) The sequence will continue until all Areas in the List are Armed, or until an Area fails the Zone Sealed Test. If this occurs the Arming sequence will stop, and the remaining Areas in the List will not be Armed. All Areas in

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the List that have already Armed will remain Armed.
3) If any Inputs in any Area fail the Zone Sealed Test, the Siren and Siren Auxiliary of the first Area in the List will be triggered briefly to indicate that the Area List Arming sequence has been stopped, and one or more Areas have not been Armed.

Qualify Aux

The nominated Auxiliary will be turned On for 10 seconds.
If the "Qualify Auxiliary"action is selected for a Fob Button:

-The "Area On" or "Area List On" actions will be forced to test for the Qualify Auxiliary to be On before allowing the Arming operation to proceed.
i.e. To perform an "Area On" or "Area List On" operation, the Fob User must first press the "Qualify Aux" Button, and then press the "Area On" or Area List On" Button within 10 Seconds.

-The "Zone Alarm (Q)" action will be forced to test for the Qualify Auxiliary to be On before allowing the operation to proceed.
i.e. To perform a "Zone Alarm (Q)" operation, the Fob User must first press the "Qualify Aux" Button, and then press the "Zone Alm (Q)" Button within 10 Seconds.

NOTES:
1) The "Qualify Aux" action should only be assigned to one button.
If this action is assigned to more than one button, the lowest button number will be used as the "Qualify Aux" action, and the others will be ignored.
2) If the "Qualify Aux" Button is pressed again while the Auxiliary is still On, the 10 second timer will be re-started (refreshed) to allow the Qualify time to be extended. (V5.2 or later only)

If an action is selected, then one of the following four screens will be displayed.

```
U00001 Bt1 Area>
None
```

If "Area On" or "Area Off" is selected, this screen will be displayed to allow selection of the Area to be controlled.
Notes:
1) The "F" option (Allow Fob) must also be set to Yes in the ".FdDUAPC" screen in the User's User Type for RF Fob Area operations to be allowed.
2) The Area "Alarm 3 Auxiliary" provides User feedback for Area On (2 Sec pulse) and Area Off (5 Sec pulse) when Armed/Disarmed via an RF Fob.
-If an "Area On" button is pressed when the Area is already On, the Alarm 3 Auxiliary will still provide the 2 Second "Area On" pulse.
-If an "Area Off" button is pressed when the Area is already Off, the Alarm 3 Auxiliary will still provide the 5 Second "Area Off" pulse.

```
U00001 Btn1 Aux.
_  :X
```

If "Aux On", "Aux Off", "Toggle Aux" or "Qualify Aux" is selected, this screen will be displayed to allow the installer to define the Auxiliary to be controlled.
Notes:
1) The "F" option (Allow Fob) must also be set to Yes in the ".FdDUAPC" screen in the User's User Type for RF Fob Auxiliary operations to be allowed.

```
U00001 Btn1 Zone
C01:Z01
```

If "Zone Alm" or "Zone Alm (Q)" is selected, this screen will be displayed to allow the installer to define the Zone to be controlled.

IMPORTANT NOTES:
1) If the "Zone Alm" action is selected, the system should be programmed to ignore the physical state of the Zone Input defined in this screen. This is done in

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"Input Programming" (MENU, 7, 0) by setting the "I" (**I**gnore) option to Yes in the SIXSRANT screen.

```
e.g. SIXSRANT
     nYnnnnnn
```

2) The User must have a Valid User Type and not be Expired for Zone control to operate.

```
U00001 Bt1 AList
AL_00
```

If "Area List On" or "Area List Off" is selected, this screen will be displayed to allow selection of the Area List to be controlled.

Notes:
1) The "F" option (Allow Fob) must also be set to Yes in the ".FdDUAPC" screen in the User's User Type for RF Fob Area operations to be allowed.
2) The Area "Alarm 3 Auxiliary" provides User feedback for Area On (2 Sec pulse) and Area Off (5 Sec pulse) when Armed/Disarmed via an RF Fob.
-If an "Area On" button is pressed when the Area is already On, the Alarm 3 Auxiliary will still provide the 2 Second "Area On" pulse.
-If an "Area Off" button is pressed when the Area is already Off, the Alarm 3 Auxiliary will still provide the 5 Second "Area Off" pulse.

```
U00001 Fob Btn2>
None
```

When the programming for Fob Button 1 is complete, the next screen will allow the action to be defined for Fob button 2.
Programming of the actions and entities for Fob Buttons 2, 3 and 4 follows the same sequence as described above.

```
U00001 Fob Btn3>
None
```

```
U00001 Fob Btn4>
None
```

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User Code Defaulting

Two options are available by which to default User Code Programming to factory settings. These are explained below:

User to alter: U00001	At the first User Code Programming screen press HELP, "9".
User Defaults -> Don't Default	This screen is then displayed. Available defaulting options are viewed by pressing the right Arrow Key. To make a selection, press the OK Key.
Don't Default	Selecting this option will abort the procedure.
Clear All	Selecting this option will reset the first two users as follows: U00001 INSTALLER PIN = 01 Type = UT001 U00002 MASTER PIN = 02 Type = UT001 **In addition, this option will delete all other User Codes, if present.** Selecting this option will reset the first two users as follows: U00001 INSTALLER PIN = 01 Type = UT001 U00002 MASTER PIN = 02 Type = UT001
Standard	**This option will make no alterations to any other User Codes, if present.**
Push '9' key to Confirm Default	The confirmation screen is displayed. Press the "9" Key to confirm your selection.
Default Done	The default procedure is confirmed.

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User Type Programming

User Types are used to categorise Users as to which functions they are allowed to perform and the level of access they are to be granted within the system. By pre-programming User Types, User code maintenance becomes very easy. **The procedure to reset this User Type section to the factory default is explained in more detail at the end of this chapter.**

```
User Type to
alter:  UT001
```

This screen allows a User Type to be selected for programming. There can be up to 250 User Types in a large system. By pressing the mode key (On key) the operator is allowed to search alphabetically for a User Type name using the digit keys and the up and down arrows.

```
Find User Type ^
FACTORY STAFF
```

NOTE: User Type 01 (UT001) should not be altered but left at the default setting.

```
U. Type 001 Name:
FACTORY STAFF
```

This screen allows a User Type to be entered if allowed. A User Type can be up to 16 Characters long.

```
UT001 T.Zone  ->
WEEKDAY
```

```
UT001 TimeZone
TZ001
```

This screen allows an optional TimeZone to be "attached" to this User Type. When a TimeZone is "attached", the User Type attributes are only valid when the TimeZone is valid. When the TimeZone is invalid then either no attributes are valid OR the User Type specified below will be used, if programmed. To select a TimeZone press the right arrow key to scroll through all the available TimeZones alphabetically. Press the OFF key if you wish no TimeZone control of this User Type. (The ON key may be used to change modes to allow a TimeZone to be selected by number if desired).

```
UT001 Alt.Type ->
MANAGER
```

```
UT001 Alt.Type
UT008
```

This screen specifies which User Type will be used instead of this User Type when an "attached" TimeZone is invalid. To select an alternative User Type press the right arrow to scroll through all the available User Types alphabetically. Press the OFF key if you wish no Alternative User Type. (The ON key may be used to change modes to allow a User Type to be selected by number if desired). If no Alternative User Type is specified then if the TimeZone is invalid, no security/ access permissions will be allowed.

Note that the User Type specified here may also have a TimeZone and an Alternative User Type assigned. This allows for more than 1 Alternative User Type to be checked by the system to detemine a User's permissions at any given time. The system will check up to 7 alternatives for a User Type with a Valid TimeZone.

```
UT001 ON List
AL001
```

This screen specifies which Areas this User Type will be allowed to turn ON via an Area List. Specifying an Area List of AL000 means no Area may be turned ON. Area Lists are programmed elsewhere and are simply a list of Areas.

Note: When a User is selecting an Area List to turn On, any Area List can be selected, however, only Areas that are common to the Area List selected and the User Type's "Area On List" will be controlled.

```
UT001 OFF List
AL001
```

This screen specifies which Areas this User Type will be allowed to turn OFF via an Area List. Specifying an Area List of AL000 means no Area may be turned OFF. Area Lists are programmed elsewhere and are simply a list of Areas.

Note: When a User is selecting an Area List to turn Off, any Area List can be selected, however, only Areas that are common to the Area List selected and the User Type's "Area Off List" will be controlled.

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```
UT001 Menu Grp ->
ALL MENUS
```

```
UT001 Menu Grp
MG001
```

This screen specifies which Menu Group will be "attached" to this User Type. Menu Group specifies (elsewhere) which operations will be allowed at LCD Terminals. To select a Menu Group press the right arrow key to scroll through all the available Menu Groups alphabetically. Press the OFF key if you wish no Menu options to be allowed for this User Type at any Terminal. (The ON key may be used to change modes to allow a Menu Group to be selected by number if desired).

NOTE: Area On / Off operations require access to at least MENU 0 (Area On/Off)

```
UT001 Door List
DL001
```

This screen specifies which Doors the User Type may be allowed to enter/exit via a Door List. Specifying a Door List of DL000 means no Doors may be entered/ exited. Door Lists are programmed elsewhere and are simply a list of Doors.

```
UT001 Lift Car
List: LL001
```

This screen specifies which Lift Cards the User Type may be allowed to access. Specifying a Lift Car List of LL000 means no Lift Car Readers may be used. Lift Car Lists are programmed elsewhere and are simply a list of Lift Cars.

```
UT001 Floor
List: FL001
```

This screen specifies which Floors this User Type may be allowed to select after using a Lift Car Reader. Specifying a Floor List of FL000 means no floors may be accessed. Floor Lists are programmed elsewhere and are simply a list of Floors.

```
UT001    .FdDUAPC
Options-> nnnnnnnn
```

This screen specifies various miscellaneous options for this User Type:

F	Allow **F**ob	When set to "Y", the User will be allowed to perform any Area or Auxiliary Wireless Fob Button actions defined in their User programming. Notes: 1) This option set to Yes by default in UT001. 2) This option does not need to be set to Yes for Fob Button Zone Alarm actions. These are allowed as long as the User has a Valid User Type and is not Expired.
d	**d**isabled Person	User Types with this flag set to "Y" will be given more time to access Lift Cars and Doors. Door Lock Auxiliary time is multiplied by a factor of 4 and Lift Car buttons remain active for the maximum time as set in the "Disabled Time" field in Lift Car Programming.
D	**D**ual Provider	When set to "Y", the User is able to provide the First PIN for Dual Code Access.
U	Override Dual **U**ser	Override Dual User Code Requirement. When set to "Y", the request for Dual User Codes or Card and PIN at particular door/s is over-ridden.
A	Override **A**nti-passback	Override Anti-passback. When set to "Y", anti-passback rules at any Doors are over-ridden for this User.
P	Cancel on **P**IN	Cancel on PIN. Whenever PIN access is granted through a Door, any User with this User Type will automatically be cancelled by setting the User Type for this User to zero.
C	Cancel on **C**ard	Cancel on Card. Whenever Card access is granted through a Door, any User with this User Type will automatically be cancelled by setting the User Type for this User to zero.

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```
UT001   12345678
Rank:-> nnnnnnnn
```

This screen specifies the user ranks allocated to this User Type.

User Types have a rank screen exactly the same as the rank screen for a User. When choosing the User Type to allocate to a User, special rules apply:

User logged on with User alter permissions	User Types allowed to select
User 00001	All User Types
User 00002	All User Types
Normal User with no rank screen	All User Types
Normal User with no ranks enabled	Any User Type with no ranks enabled
Normal User with some ranks enabled	Any User Type that has any matching rank set to yes.

Note that these rules mean that if all User and User Type rank screens are left with no ranks enabled, then operation will default to standard operation. That is, Users are only allowed to change Users equal to or higher than their own, and any User Type can be selected.

```
UT001 Valid Aux
C01:X04
```

This screen allows an optional auxiliary to be specified that will turn ON whenever a User with this User Type enters their PIN number at an LCD Terminal, OR presents their Card at a Reader.

```
UT001   12345678
Auxes-> Ynnnnnnn
```

This screen specifies which type of "Home Auxiliaries" are allowed to be controlled by this User Type. *See "Home Auxiliaries" for more details.*
(Only relevant to Home Auxiliaries that require the User to logon to an LCD Terminal and select via the Control Menu; <MENU>, 9, 1. Home Auxiliaries that can be controlled via the Right Arrow key without logging on are not affected.)

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User Type Defaulting

Two options are available by which to default User Type Programming to factory settings. These are explained below:

User Type to alter: UT001	At the first User Code Programming screen press HELP, "9".
U.Type Defaults-> Don't Default	This screen is then displayed. Available defaulting options are viewed by pressing the right Arrow Key. To make a selection, press the OK Key.
Don't Default	Selecting this option will abort the procedure.
Clear All	**This option will clear <u>all</u> User Types.** CAUTION: Selecting this option will also clear the first User Type, UT001. i.e. The User Type name will be reset to ".User Type 001" and all Lists, Groups and options are set to none.
Standard	Selecting this option will reset the first User Type to the factory default settings as follows: UT001 OWNER List / Groups are all set to 1 **This option will make no alterations to any other User Types, if present.**
Push '9' key to Confirm Default	The confirmation screen is displayed. Press the "9" Key to confirm your selection.
Default Done	The default procedure is confirmed.

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Area List Programming

An Area List is primarily used to define those Areas that a User may turn On and Off. An Area List is also used to define those Areas which may be automatically turned On and Off by Calculated Auxiliaries, TimeZones and Function Zones.

Area Lists are referred to by their identification letters "AL", for example, AL001 is Area List one. There may be up to 250 Area Lists in the largest 3000/Access 4000 system.

An example of their application would be in the case of a particular User Type who is only allowed to turn OFF Areas belonging to Area List five. AL005 may contain the Areas 4, 7 and 24, therefore that User Type is only allowed to turn OFF Areas 4, 7 and 24.

```
Area List to
Alter: AL001
```

This screen allows an Area List to be selected for programming, allowing the User to jump to the selected Area List. Pressing the ON key allows the Installer to search for a particular Area List by name. Pushing the up / down arrow selects the last / next list.

```
Find Area List ^
ALL AREAS
```

```
AL001 Name
ALL AREAS
```

This screen allows an optional Area List name to be entered up to 16 characters long. It is recommended that names be programmed to simplify programming of the other options where Area Lists are allocated.

```
AL001 T.Zone ->
WEEKDAY
```

```
AL001 TimeZone
TZ001
```

This screen allows an optional Time Zone to be "attached" to this Area List. When a TimeZone is "attached", the Area List is only allowed when the TimeZone is valid. When the TimeZone is invalid then the list is considered to contain no Areas OR the Alternate Area List specified below will be used instead, if programmed. To select a TimeZone press the right arrow key to scroll through all available TimeZones alphabetically. Press the OFF key if you wish no TimeZone control of this Area List. (The ON key may be used to change modes to allow a TimeZone to be selected by number if you wish)

```
AL001 Alt. List
AL008
```

This screen specifies which Area List will be used instead of this Area List when an "attached" TimeZone is invalid. Note that if no alternative Area List is specified, when the TimeZone is invalid, no Areas will belong to this list.

```
AL001 12345678
A001->YYYnnnnn
```

```
AL001 90123456
A009->nnnnYnnn
```

and so on .....

These screens allow the Installer to specify the actual Areas that are to belong to this list to be specified. A "Y" under the appropriate Area number indicates that the Area is included in the list. A "n" indicates that it is not. In these examples Areas 1,2,3 and 13 are included in Area List 1.

Note: The Area Number displayed at the start of the bottom line, represents the first Area in the sequence. eg. A0009 indicates that Area 9 is the first Area in the sequence "90123456".

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Removing All Areas from ALL Area Lists

There exists an easy and efficient method of removing ALL Areas from ALL Area Lists. This is explained below:

Area List to alter: AL001	At the first Area List Programming screen press HELP, "9".
A.List Default -> Don't Default	This screen is then displayed. Available defaulting options are viewed by pressing the right Arrow Key. To make a selection, press the OK Key.
Don't Default	Selecting this option will abort the procedure.
Clear All	Selecting this option will remove ALL Areas from ALL Area Lists.
Push '9' key to Confirm Default	The confirmation screen is displayed. Press the "9" Key to confirm your selection.
Default Done	The default procedure is confirmed.

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Door List Programming

Door Lists are referred to by their identification letters "DL", for example, DL018 is Door List 18. There may be up to 250 Door Lists in the largest Access 4000 system. Each Door List is essentially a list of allowable Doors allocated to this list. Door Lists can be used by other programming where a list of Doors needs to be selected. For example, a particular User Type may only be allowed to access via Doors belonging to Door List five. DL005 may contain the Doors1,2 and 7. Therefore that User Type is only allowed access via Doors 1,2 and 7. Similarly, A Door List may be used to lock or unlock a list of Doors.


```
Door List to
Alter: DL001
```

This screen allows a Door List to be selected for programming, allowing the User to jump to the selected Door List. Pressing the ON key allows the Installer to search for a particular Door List by name. Pushing the up / down arrow selects the last / next list.

```
Find Door List ^
ALL DOORS
```

```
DL001 Name
ALL DOORS
```

This screen allows an optional Door List name to be entered up to 16 characters long. It is recommended that names be programmed to simplify programming of the other options where Door Lists are allocated.

```
DL001 T.Zone ->
WEEKDAY
```

```
DL001 TimeZone
TZ001
```

This screen allows an optional Time Zone to be "attached" to this Door List. When a TimeZone is "attached", the Door List is only allowed when the TimeZone is valid. When the TimeZone is invalid then the list is considered to contain no Doors OR the Door List specified below will be used instead, if programmed. To select a TimeZone press the right arrow key to scroll through all available TimeZones alphabetically. Press the OFF key if you wish no TimeZone control of this Door List. (The ON key may be used to change modes to allow a TimeZone to be selected by number if you wish)

```
DL001 Alt. List
DL008
```

This screen specifies which Door List will be used instead of this Door List when an "attached" TimeZone is invalid. Note that if no alternative Door List is specified, when the TimeZone is invalid, no Doors will belong to this list.

```
DL001 12345678
D001->YYYnnnnn
```

```
DL001 90123456
D009->nnnnYnnn
```

and so on .....

These screens allow the Installer to specify the actual Doors that are to belong to this list to be specified. A "Y" under the appropriate Door number indicates that the Door is included in the list. A "n" indicates that it is not. In these examples Doors 1,2,3 and 13 are included in Door List 1.

Note: The Door Number displayed at the start of the bottom line, represents the first Door in the sequence. eg. D0009 indicates that Door 9 is the first Door in the sequence "90123456".

Removing All Doors from ALL Door Lists

There exists an easy and efficient method of removing ALL Doors from ALL Door Lists. This is explained below:

```
Door List to
alter: DL001
```

At the first Door List Programming screen press HELP, "9".

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D.List Default -> Don't Default	This screen is then displayed. Available defaulting options are viewed by pressing the right Arrow Key. To make a selection, press the OK Key.
Don't Default	Selecting this option will abort the procedure.
Clear All	Selecting this option will remove ALL Doors from ALL Door Lists.
Push '9' key to Confirm Default	The confirmation screen is displayed. Press the "9" Key to confirm your selection.
Default Done	The default procedure is confirmed.

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Siren List Programming

Siren Lists are referred to by their identification letters "SL", for example SL018 is Siren List 18. There may be up to 250 Siren Lists in the largest system. Each Siren List is essentially a list of allowable sirens allocated to this list. Siren Lists can be used by other programming where a list of sirens needs to be chosen. For example, a particular Area may be allowed to turn on sirens belonging to Siren List 3. Note that when a particular siren is included in the list both the Internal and External sirens are selected.

```
Siren List to
alter:  SL001
```

This screen allows a Siren List be selected for programming. Pushing the up/down arrow selects the last/next list.

```
SL001 01234567
S000->YYnnnnYn
```

```
SL001 89012345
S008->nnnnnnnn
```

These screens allow the Installer to specify the actual sirens to be included in the particular Siren List. A "Y" under the appropriate siren number indicates that both the Internal and External siren with that number are included in this list. A "n" indicates that they are not included. Siren 0 is defined as the siren on the Control Module, Siren 1 is defined as the siren on Expander 1, Siren 2 is defined as the siren on Expander 2 and so on. In the example on the left, sirens on the Control Module and Expanders 1 and 6 are included in Siren List 1.

```
SL001 67890123
S016->nnnnnnnn
```

Note: The Siren Number displayed at the start of the bottom line, represents the first siren in the sequence. Eg. SO16 indicates that Siren 16 is the first Siren in the sequence "67890123".

SIREN NUMBERING

Control Module	S000
Expander 1	S001
Expander 2	S002
Expander 3	S003
Expander 4	S004
Expander 5	S005
Expander 6	S006
Expander 7	S007
Expander 8	S008
Expander 9	S009
Expander 10	S010
Expander 11	S011
Expander 12	S012
Expander 13	S013
Expander 14	S014
Expander 15	S015
Expander 16	S016
...	...
...	...
Expander 98	S098
Expander 99	S099

NOTE: Expander Siren Numbers will control Sirens on both "B" and "E" Type Expanders.

ie. S001 = Sirens on B01 and E01
S002 = Sirens on B02 and E02, etc.

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Removing All Sirens from ALL Siren Lists

There exists an easy and efficient method of removing ALL Sirens from ALL Siren Lists. This is explained below:

Siren List to alter: SL001	At the first Area List Programming screen press HELP, "9".
S.List Default -> Don't Default	This screen is then displayed. Available defaulting options are viewed by pressing the right Arrow Key. To make a selection, press the OK Key.
Don't Default	Selecting this option will abort the procedure.
Clear All	Selecting this option will remove ALL Sirens from ALL Siren Lists.
Push '9' key to Confirm Default	The confirmation screen is displayed. Press the "9" Key to confirm your selection.
Default Done	The default procedure is confirmed.

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Floor List Programming *(Access 4000 Only)*

Floor Lists are referred to by their identification letters "FL", for example FL018 is Floor List 18. There may be up to 64 Floor Lists in the largest Access 4000 system. Each Floor List is essentially a list of allowable floors allocated to this list. Floor Lists can be used by programming where a list of floors needs to be chosen. For example, a particular User Type may only be allowed access to floors belonging to Floor List seven. FL007 may contain the floors 1,2,3,5,6,10 and 13. Therefore, that User Type is only allowed to select floors 1,2,3,5,6,10 and 13 after using the Lift Car Reader. Floor Lists may also be used for the purpose of securing and unsecuring Floors.

```
Floor List to
Alter: FL001
```

This screen allows a Floor List to be selected for programming. Pressing the up/down arrow selects the last/next list.

```
FL001 T.Zone ->
WEEKDAY
```

```
FL001  TimeZone
TZ001
```

This screen allows an optional TimeZone to be "attached" to this Floor List. When a TimeZone is "attached", the Floor List is only valid when the TimeZone is valid. When the TimeZone is invalid, the list is assumed to contain no floors OR the Floor List specified below will be used instead, if programmed. To select a TimeZone press the right arrow key to scroll through all available TimeZones alphabetically. Press the OFF key if you wish no TimeZone control of this Floor List (The ON key may be used to change modes to allow a TimeZone to be selected by number, if desired).

```
FL001  Alt. List
FL008
```

This screen specifies which Floor List will be used instead of this Floor List when an "attached" TimeZone is invalid. If no alternative Floor List is specified, when the TimeZone goes invalid, no floors will belong to this list.

```
FL001   12345678
F001->  YnYnYYnn
```

```
FL001  90123456
F001   nYnnYnnn
```

and so on .....

These screens allow the actual floors that are to belong to this list to be specified. A "Y" under the appropriate floor number indicates that the floor is included in this list. A "n" under a particular floor number indicates that the floor is not included in this list.

In this example, floors 1,3,5,6,10 and 13 are included in Floor List 1.
The Floor Number displayed at the start of the bottom line represents the first Floor in the sequence.
ie. F009 indicates that Floor 9 is the first Floor in the sequence "90123456".

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Lift Car List Programming *(Access 4000 Only)*

Lift Car Lists are referred to by their identification letters "LL", for example LL003 is Lift Car List 3. There may be up to 64 Lift Car Lists in the largest Access 4000 system. Each Lift Car List is essentially a list of allowable Lift Car Readers allocated to this list. Lift Car Lists are selected in other programming fields where a list of Lift Cars needs to be chosen. For example, a particular User Type may only be allowed access via Lifts belonging to Lift Car List 9. LL009 may contain the Lift Cars 3,4,8 and 9. Therefore, that User Type is only allowed access via lifts 3,4,8 and 9 once Lift Car List 9 (LL009) is allocated to it.

Lift Car Lists are also used in TimeZones to secure and unsecure Lifts.


```
Lift List to
alter: LL001
```

This screen allows a Lift Car List to be selected for programming. Pressing the up/down arrows selects the last/next list.

```
LL001 T.Zone  ->
WEEKDAY
```

```
LL001 TimeZone
TZ001
```

This screen allows an optional TimeZone to be "attached" to this Lift Car List. When a TimeZone is "attached", the Lift Car List is only valid when the TimeZone is valid. When the TimeZone is invalid, the list is assumed to contain no Lift Cars OR the Lift Car List specified below will be used instead, if programmed. To select a TimeZone press the right arrow key to scroll through all the available TimeZones alphabetically. Press the OFF key if you wish no TimeZone control of this Lift Car List. (The ON key may be used to change modes to allow a TimeZone to be selected by number, if desired.)

```
LL001 Alt. List
LL008
```

This screen specifies which Lift Car List will be used instead of this Lift Car List when the "attached" TimeZone is invalid. If no alternative Lift Car List is specified, when the TimeZone is invalid, no Lift Cars will belong to this list.

Use the Right Arrow Key to position the cursor before entering the desired Lift Car List number.

```
LL001   12345678
L001->  nnYYnnnY
```

```
LL001   90123456
L001->  Ynnnnnnn
```

These screens allow the actual Lift Car Readers that are to belong to this list to be specified. A "Y" under the appropriate Lift number indicates that the Lift is included in this list. A "n" under a particular Lift number indicates that it is not included in this list.

In this example, Lifts 3,4,8 and 9 are included in Lift List 1.
The Lift Car Number displayed at the start of the bottom line represents the first lift in the sequence.
ie. L009 indicates that Lift 9 is the first Lift in the sequence "90123456".

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Auxiliary List Programming

NOTE: Auxiliary Lists are only available in Control Module Firmware V3 or later.

Auxiliary Lists are referred to by their identification letters "XL", for example, XL001 is Auxiliary List 1. There may be up to 64 Auxiliary Lists in the largest 3000/4000 system. Each Auxiliary List is a list of up to 8 Auxiliaries allocated to this list.

Auxiliary Lists can be used by other programming where a list of Auxiliaries needs to be chosen. For example, an Auxiliary List (instead of an Auxiliary) may be assigned in the Area database as the "Alarm 1" Auxiliary so that a number of Auxiliaries can be used to control several separate Strobe lights on a building whenever an alarm is present in that Area.

NOTE: The Auxiliary List does not have an actual state but is used to define a group of independent Auxiliaries. All Auxiliaries in the list may change state independently of one another and any Auxiliary can be in any number of Auxiliary Lists.

Auxiliary Lists can be assigned to the following:

- Area Exit Auxiliary (Aux List assignment only available V4 or later)
- Area Entry Auxiliary (Aux List assignment only available V4 or later)
- Area Siren Auxiliary
- Area Alarm 1 Auxiliary
- Area Alarm 2 Auxiliary
- Area Alarm 3 Auxiliary
- Area Alarm 4 Auxiliary
- Area Close Auxiliary
- Calculated Auxiliary (Edge Trigger Type Only)
- TimeZone Auxiliary Control
- Home Auxiliaries

```
Aux List to
alter: XL001
```

```
Find Aux List ^
STROBE OUTPUTS
```

This screen allows an Auxiliary List to be selected for programming, allowing the User to jump to the selected Auxiliary List or, by pressing the ON Key, search for a particular Auxiliary List by name. Pressing the up/down arrows selects the last/next list.

```
XL001 Name:
EXTERNAL LIGHTING
```

This screen allows an optional Auxiliary List name to be entered up to 16 characters long. It is recommended that names be programmed to simplify programming of the other options where Auxiliary Lists are allocated.

```
XL001 Aux 01
E03:X04
```

```
XL001 Aux 02
E04:X03
```

and so on ....

These screens allow the actual Auxiliaries that are to belong to this list to be specified. There are 8 separate screens (Aux 01 to Aux 08) that each allow an Auxiliary to be specified.

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Using Auxiliary Lists

To assign an Auxiliary List instead of an individual Auxiliary, press the ON key when prompted for an Auxiliary number. A screen similar to this one will appear. (The Area "Siren Aux" is used here as an example).

```
A001 Siren  OFof
XList Opts: nnnn
```

This screen selects how the Auxiliary List is going to be controlled.
If all options are set to "n" and the OK key is pressed, the screen for selecting an individual Auxiliary to trigger will be displayed.
ie. At least one of these options must be set if you wish to assign an Auxiliary List.

O	List **O**n if Aux On	Set means turn Auxiliary List On when Auxiliary On.
F	List O**F**F if Aux On	Set means turn Auxiliary List Off when Auxiliary On.
o	List **o**n if Aux Off	Set means turn Auxiliary List on when Auxiliary Off.
f	List o**f**f if Aux Off	Set means turn Auxiliary List off when Auxiliary Off.

```
A001 Siren  Aux.
List: XL000
```

This screen allows an Auxiliary List to be chosen, to operate as per the previous options selected.

NOTES:

1. If an Auxiliary List is assigned and a timer option exists for the Auxiliary Control Action (eg. in TimeZone Actions, Process Groups, Home Auxiliary Time and Calculated Auxiliary Actions) the Timer **must not** be used.

2. Auxiliary List **must not** be assigned to "Level Triggered" Calculated Auxiliary Actions.
   ie. EQUAL to 1st
   OPPOSITE to 1st
   1st AND 2nd
   1st OR 2nd
   1st OPPOSITE 2nd

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Menu Group Programming

Menu Group contains a series of options which are used to decide what actions a particular User Type is allowed to perform at an LCD Terminal. Menu Groups may be allocated to User Types and/or LCD Terminals to restrict access to menu functions allowable for a particular User Type and/or Terminal. It also controls remote access via a PC.

Note: There are 4 default Menu Groups already programmed and available for use in the system. These Menu Groups will cover some common User Type and Terminal programming requirements. **The procedure to reset Menu Group Programming to the factory default is explained in more detail at the end of this chapter.**

Menu Group Defaults

	MG001	MG002	MG003	MG004
Name	**All Menus**	**Restricted Menus**	**Extra Menus**	**Admin. Menus**
TimeZone				
Alternate Group				
BASIC OPTIONS				
Remote Access				
Isolate on Exit	Yes		Yes	Yes
Defer On				
Cancel Holdup				
Disable Sirens			Yes	Yes
Ack. All Alarms	Yes			Yes
Multiple Area ON/OFF	Yes	Yes	Yes	Yes
Tamper OFF	Yes			Yes
MENU ACCESS				
Info. (review)	Yes			Yes
Access	Yes			Yes
Isolate	Yes			
Test	Yes		Yes	Yes
Time	Yes			Yes
Service	Yes		Yes	Yes
Control	Yes			Yes
OPTION ACCESS				
User Codes	Yes			Yes
User Types*	Yes			
Lists*	Yes			
Groups*	Yes			
TimeZones*	Yes			
Review*	Yes			
Adjust Counters*	Yes			
OTHER OPTIONS				
Reset Alarms				
Isolate HomeZones				
Only Own List				
Un-Lock On Key				

* If access to the Menu containing this option is already allowed.

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```
Menu Group to
alter: MG001
```

This screen allows the Installer to select the Menu Group to alter. Pressing the ON key displays the "Find Menu Grp" screen. By pressing one of the alphabetical keys the Installer is able to search the Menu Groups and go to the group with the name beginning with the letter of the key pressed.

```
Find Menu Grp ^
ALL MENUS
```

NOTE: **MG001 should not be altered.**

```
M. Grp. 001 Name
ALL MENUS
```

This screen allows an optional Menu Group name to be entered up to 16 characters in length. It is recommended that Menu Group names be programmed to simplify programming of the other options where Menu Groups are allocated.

```
MG001 T. Zone ->
WEEKDAY
```

```
MG001 TimeZone
TZ001
```

This screen allows an optional TimeZone to be "attached" to this Menu Group. When a TimeZone is "attached", the Menu Group is only valid when the TimeZone is valid. When the TimeZone is invalid, ALL Menu Group options are considered to be invalid OR the Menu Group specified below will be used instead, if programmed. To select a TimeZone press the right arrow key to scroll through all the available TimeZones alphabetically. Press the OFF key if you wish no TimeZone control of this Menu Group. (The ON key may be used to change modes to allow a TimeZone to be selected by number if desired.)

```
MG001 Alt.Grp.->
SOME MENUS
```

```
MG001 Alt. Group
MG008
```

This screen specified what Menu Group will be used instead of this Menu Group when an "attached" TimeZone is invalid. If no alternative Menu Group is specified and the TimeZone is invalid, all options for the Menu Group are considered invalid.

```
MG001  RIDCSAMT
Opt1-> nnnnnnnn
```

The screen sets the basic options concerning this Menu Group.

R **R**emote Access

Allows this User remote access via an upload/download package.

The system allows remote access to the system via the upload/download package or via direct line or dialer formats that support remote access. In all cases access is only granted via knowledge of a User code within the system. The table below lists the permission's granted to each User:

User 00001	All programming and all on/off control allowed via upload/ download package. Installer must not be locked out by Master User (U00002)
User 00002	Some programming and all on/off control allowed via upload/download package. Remote access is enabled regardless of the setting of the Remote option in Menu Group
User 00003	No programming and some or no on/off control allowed via upload/download package. Remote access is enabled regardless of the setting of the Remote option in Menu Group. Intended as a secondary Master or Central Station User.

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User > 00003 No programming and some or no on/off control allowed via upload/download package. Menu Group must have **R**emote option set to yes to enable Remote access.

I **I**solate on Exit — Allows this User to Isolate Zones on Exit if they are unsealed.

D **D**efer On — If set to "Y" this User will cause the Deferred Area processing timer to start when they turn off an Area which has its Defer Area flag set to yes and is on the User's Area Off list.

*See "**Defer Area On Processing**" in the Applications Programming section and "Area Programming" for detailed Instructions.*

C **C**ancel Holdup — Allows this User to cancel Holdup Alarms by stopping the Holdup timer.

S **S**iren Off — User Types with this Menu Group will automatically turn off any sirens sounding at the time of code entry, regardless of whether they are allowed control over the Areas in which the sirens are sounding. The relevant Areas are NOT automatically turned off.

A **A**cknowledge all alarms — User Types with this Menu Group will be allowed to acknowledge alarm messages from any Area, regardless of whether they are allowed control over Areas in which the alarm messages came from.
If set to "n", these Users will only be allowed to acknowledge alarm messages from the Areas within the "Area Off List" assigned to their Menu Group.

M **M**ultiple Areas — User Types with this Menu Group are allowed to turn on or off more than one Area at a time via an Area List. Although the User can pick any Area List to use, only Areas belonging to the User Type "ON" and "OFF" lists will be actioned.

T **T**amper On/Off — User Types with this Menu Group will be allowed to turn OFF the 24 Hour or Tamper part of any Area belonging to their Area OFF list.

```
MG001   RAITt.SC
MMenu ->nnnnnnnn
```

This screen allows the Installer to set permissions for access to specified menus on a Terminal.
NOTE: The Installer (U00001) and Master (U00002) codes are allowed access to all these menus regardless of the settings below.

R **R**ead Info — User Types with this Menu Group are allowed access to the Information Menu. (See qualifying options below)

A **A**ccess — User Types with this Menu Group are allowed access to the Access Programming Menu. (See qualifying options below)

I **I**solate — User Types with this Menu Group are allowed access to the Isolate Menu.

T **T**est — User Types with this Menu Group are allowed access to the Test Menu.

t **T**ime — User Types with this Menu Group are allowed access to the Time Programming Menu. (Set Time/Date and Holidays Only - See qualifying options below)

. Spare — Spare for future development. Set to "n".

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S	**S**ervice	User Types with this Menu Group are allowed access to the Service Menu. Only the Installer (U00001) and Master (U00002) codes are permitted access to the "Security" sub-menu which is found within the Service Menu.
C	**C**ontrol	User Types with this Menu Group are allowed access to the Control Menu. (See qualifying options below)

```
MG001   UTLGZRA.
Amenu-> nnnnnnnn
```

This screen sets permissions for access to specified sub-menus on a Terminal.

U	**U**ser Codes	If "Y" then User Types with this Menu Group are allowed access to User Code programming if they are allowed access to the Access Menu. In V5.1 Firmware or later, this option also allows access to User Fob registration; MENU, 2, 7. Note that a simple priority scheme means that only User Codes higher than the programmer's User Code may be programmed. For example, U00567 cannot programme U00001 to U00566. (See "User Ranks" in "User Code Programming" for details of a more complex priority scheme).
T	User **T**ypes	If "Y" then User Types with this Menu Group are allowed access to User Type programming if they are allowed access to the Access Menu. (See last screen)
L	**L**ists	If "Y" then User Types with this Menu Group are allowed access to List Programming (Areas, Doors, Sirens) if they are allowed access to the Access Menu (See last screen).
G	**G**roups	If "Y" then User Types with this Menu Group are allowed access to Group Programming (Menu Groups and Access Groups only) if they are allowed access to the Access Menu (See last screen).
Z	Time**Z**ones	If "Y" then User Types with this Menu Group are allowed access to TimeZone Programming in addition to Set Time/Date and Holiday Programming if they are allowed access to the Time Menu (See last screen).
R	**R**eview	If "Y" then User Types with this Menu Group are allowed to access Review provided they are allowed access to the Information Menu (See last screen).
A	**A**djust Counters	If "Y" then User Types with this Menu Group are allowed to adjust counter values under MENU 9 provided they are allowed access to the Control Menu. (See last screen). - MENU, 9, 6: Adjust Event Counters. (V3 or later only) - MENU, 9, 7: Adjust Area User Counters. (V5 or later only)

```
MG001   RHOL....
Other-> nnnnnnnn
```

This screen allows the Installer to set other special options.

R	**R**eset latched alarms	If "Y" then User Types with this Menu Group are allowed to reset latched alarms. *See Input Types in Process Group Programming [MENU 2,4,3].*
H	Isolate **H**omeZones	If "Y" then User Types with this Menu Group will be presented with alpha search HomeZones only when they access the Isolate Menu [MENU 3] if allowed. If set to "n", the normal Zone ID screens will be presented. *See "Isolate" [MENU 3] for further details.*

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O **O**nly Own List (V4 or later)

If "Y" then User Types with this Menu Group, when selecting an Area List to Control, will only be presented with their User Type's Area On List. This simplifies Area List selection.

L Un-**L**ock On Key (V5 or later)

This option is only relevant to the "ON key Lockout" feature provided in "UK" Firmware Only.
If set to "Y" then User Types with this Menu Group are able to Enable (Reset) the On key by logging on to the Terminal.
See General System Options Programming; MENU, 7, 5, 1 "On Key Lockout" for details.

Menu Group Defaulting

Two options are available by which to default Menu Group Programming to factory settings. These are explained below

```
Menu Group to
alter: MG001
```

At the first Menu Group Programming screen press HELP, "9".

```
M.Grp. Default->
Don't Default
```

This screen is then displayed. Available defaulting options are viewed by pressing the right Arrow Key. To make a selection, press the OK Key.

Don't Default — Selecting this option will abort the procedure.

Clear All — Selecting this option will reset the first four Menu Groups as follows:

MG001	ALL MENUS
MG002	RESTRICTED MENUS
MG003	EXTRA MENUS
MG004	ADMIN MENUS

In addition, this option will delete all other Menu Groups, if present.

Standard — Selecting this option will reset the first four Menu Groups as follows:

MG001	ALL MENUS
MG002	RESTRICTED MENUS
MG003	EXTRA MENUS
MG004	ADMIN MENUS

This option will make no alterations to any other Menu Groups, if present.

```
Push '9' key to
Confirm Default
```

The confirmation screen is displayed. Press the "9" Key to confirm your selection.

```
Default
Done
```

The default procedure is confirmed.

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Access Group Programming

Access Groups contain a series of options which are used to decide which access control actions are allowed at a particular Door. Access Groups are allocated to Doors to Control Door access.

There are 3 default Access Groups programmed as default and available for use in the system. These Access Groups will cover most common Door programming requirements. **The procedure to reset Access Group Programming to the factory default is explained in more detail at the end of this chapter.**

Access Group Defaults

	AG001	**AG002**	**AG003**
Name	ENTRY Door	EXIT Door	INTERNAL Door
TimeZone			
Alternate Group			
ENTRY OPTIONS			
Entry Mode	PIN or Card	Card & PIN	PIN or Card
Entry Passback Option	None	None	None
Entry Button		Yes	
Deadlock Entry Button			
Auto Area Off	Yes		Yes
Dual User Requirement			
EXIT OPTIONS			
Exit Mode	Card & PIN	PIN or Card	PIN or Card
Exit Passback Option	None	None	None
Exit Button	Yes		
Deadlock Exit Button			
Auto Area Off		Yes	Yes
Dual User Requirement			
GENERAL OPTIONS			
Isolate on Entry			
De-isolate on Exit			
No Entry if wrong Area			
No Exit if wrong Area			
Two Zones Mode			
Defer Arming			

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Access Group to alter: AG001

This screen allows the Installer to select an Access Group for programming. Pressing the ON Key allows the programmer to search for a specific Access Group by pressing the digit key which corresponds to the first letter in the name of the Access Group.

Find Acc. Grp ^ PIN Access

e.g Having pressed the ON Key, press the "6" Digit Key to display the name of an Access Group starting with P, Q or R.

A. Grp. 001 Name PIN Access

This screen allows an optional Access Group name to be entered up to 16 characters long. It is recommended that Access Group names be programmed to simplify programming of other options where Access Groups are allocated.

AG001 T.Zone -> WEEKDAY

AG001 TimeZone TZ001

This screen allows an optional TimeZone to be "attached" to this Access Group. When a TimeZone is "attached", the Access Group is only valid when the TimeZone is valid. When the TimeZone is invalid, the operation of this Access Group is also considered invalid and the Alternate Group, if programmed below, will be used instead, provided it too is in a valid TimeZone.

To select a TimeZone press the right arrow key to scroll through all the available TimeZones alphabetically. Press the OFF key if you wish no TimeZone control of this Access Group. (The ON key may be used to change modes to allow a TimeZone to be selected by number, if desired).

AG001 Alt. Grp-> CARD USER

This screen allows the Installer to specify the name of an Alternate Access Group to be used in place of the primary Access Group whenever the "attached" TimeZone is invalid. If no Access Group is specified and when the TimeZone is invalid, all options for the Access Group are considered invalid and Doors assigned this Access Group will cease to operate.

AG001 Entry -> mode Pin or Card

This screen determines the type of access mode to gain entry to the Door. The right arrow is used to cycle through all the choices:

Mode	Operation
PIN Only	Only a PIN code will allow entry through this Door.
Card Only	Only a Card will allow entry through this Door.
PIN or Card	A PIN code OR a Card will allow entry through this Door.
Card & PIN	A Card followed by a PIN code must be used to allow entry through this Door.

Anti Passback

AG001 Entry -> Passback: None

This screen determines whether Anti-passback is to be applied on entering.
See explanation at the end of this document and "Anti-Passback and Wrong Area Processing" in the "Applications Programming section of this manual for details.

Mode	Operation
None	No anti-passback
Soft	Anti-passback rules are applied but access is still granted if violated, with a message recorded to review.
Hard	Anti-passback rules are applied and access is denied if violated, with a message recorded to review.
Spare	Spare for future developments - do not use.

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AG001 Entry BLAD Options-> nnnn

This screen sets basic **entry access options** for this Access Group:

B **B**utton facility

If set to "Y", the entry Button, if present, is operational for Doors with this Access Group.

L Dead **L**ock

If set to "Y", the entry button, if present, will not operate on Doors with this Access Group if you are *leaving* an Area that is currently ON (Armed).

A **A**uto Area OFF

This option enables the operation of granting access through a Door assigned this Access Group to automatically turn Off the Inside Area of that Door first, provided that a valid Inside Area is defined within its Door programming options.

This prevents authorised users being granted access through a Door and walking into an armed Area, thus activating alarms. If an Entry Button has been installed, access through the Door will not be granted whilst the Inside Area is armed, the Area must be turned Off before access will be granted.

D **D**ual User

If set to "Y", a Dual card presentation and/or dual code entry is required to enter a Door with this Access Group. Whether Card and/or Code is required will depend on the Entry Mode/Exit Mode selected for this Access Group.
(Those Users with a User Type which has the Override Dual User flag set to "Y" will be exempt from this requirement).
NOTES: 1) If Entry/Exit Mode is Card & PIN, Dual User operates as follows:
-Prior to V4: First User only has to present their Card. Second User Card & PIN.
-V4 or later: Both Users must present Card and enter PIN code.
2) The "Dual Wait Time" setting that defines how long the system will wait for the 2nd Card/PIN can be programmed in the General System Options, MENU 7, 5, 1. The default setting is 10 seconds. (V5.1 or later only)

AG001 Exit Mode: PIN Only

This screen determines the operation of a Door when a User is **leaving** via the Door. These options apply to Doors with Card Readers positioned on the inside of the Door and for which "Inside" positioning of the Card Reader is properly reflected in their Reader Module programming. The right arrow key is used to cycle through all available options:

Mode	Operation
PIN Only	Only a PIN code will allow exit through this Door.
Card Only	Only a Card will allow exit through this Door.
PIN or Card	A PIN code OR a Card will allow exit through this Door.
Card & PIN	A Card followed by a PIN code must be used to allow exit through this Door.

AG001 Exit Passback: None

This screen determines whether anti-passback is to be applied on exit.
See explanation at the end of this document and "Anti-Passback and Wrong Area Processing" in the "Applications Programming section of this manual for details.

Mode	Operation
None	No anti-passback
Soft	Anti-passback rules are applied, but access is still granted if violated and a message recorded to review.

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Hard	Anti-passback rules are applied and access is denied if violated with a message recorded to review.
Spare	Spare for future development - do not use.

```
AG001 Exit BLAD
Options->  nnnn
```

This screen sets basic exit access options for this Access Group:

B	**B**utton facility	If set to "Y", the exit Button, if present, is operational for Doors with this Access Group.
L	Dead **L**ock	If set to "Y", the exit button, if present, will not operate on Doors with this Access Group if you are *leaving* an Area that is currently ON.
A	**A**uto Area OFF	This option enables the operation of exiting through a Door assigned this Access Group to automatically turn Off the Outside Area of that Door first, provided that a valid Outside Area is defined within its Door programming options. This prevents authorised users leaving via a Door which leads into an armed Area, thus activating alarms. If an Exit Button has been installed, departure through the Door will not be granted whilst the Outside Area is armed, the Area must be turned Off before departure will be granted.
D	**D**ual User	If set to "Y", a Dual code is required to exit via a Door with this Access Group. See important notes in Entry Options.

```
AG001   IDEXTd..
Opts->  nnnnnnnn
```

This screen sets special access options for this Access Group:

I	**I**solate on Entry	If set to "Y", the pre-defined Zone Input allocated to the User will be automatically Isolated when the User presents their Card at the "outside" Reader of a Door which has been allocated this Access Group. This is explained in more detail below.
D	**D**e-Isolate on Exit	If set to "Y", the pre-defined Zone Input allocated to the User will be automatically De-isolated when the User presents their Card at the "inside" Reader of a Door which has been allocated this Access Group. This is explained in more detail below.
E	No **E**ntry if Wrong	If set to "Y" and the "outside" Area for the associated Door is non-zero, entry will only be granted through a Door with this Access Group if the User's current location is equal to the defined outside Area. (This function operates independently of Anti-passback rules). *See explanation at the end of this document and "Anti-Passback and Wrong Area Processing" in the "Applications Programming section of this manual for details.*
X	No E**x**it if Wrong	If set to "Y" and the "inside" Area for the associated Door is non-zero, exit will only be granted through a Door with this Access Group if the User's current location is equal to the defined inside Area. (This function operates independently of Anti-passback rules). *See explanation at the end of this document and "Anti-Passback and Wrong Area Processing" in the "Applications Programming section of this manual for details.*

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T	**T**wo Zones Mode	If set to "Y", Reader Isolation options are enhanced allowing for two zones per User instead of one.
d	**d**efer Arming (V5 or later only)	If set to "Y" and "Auto Area Off" set to "n", the Area Defer Arm Timer will be started or refreshed for the Entry Area. e.g. The "Inside" Area if the Reader is "Outside" the Door. For the Defer Arm function to operate, the following programming is also required: - The Area must be defined as a "Defer Area" and a "Defer Time" programmed. - The User's Menu Group must have the "Defer On" option enabled. - The Area must be in the User's Area List.

Operation according to the "Defer Arming" and "Auto Area Off" options is as follows:

OPTION		RESULT.	
Area Off	Defer Arm	If Area ON	If Area OFF
No	No	No Access.	Access.
No	Yes	Start Defer Timer and Access.	Refresh Defer Timer and Access.
Yes	Don't care	Turn Off Area and Access.	Cancel Defer Timer and Access.

Reader Isolate Options

The Reader Isolate and De-isolate options allow one or two specific zones to be isolated when a Card is presented at a Reader on the "outside" of a Door and to automatically de-isolate the zone(s) when a Card is presented at a Reader on the "inside" of a Door.

This option allows a system to simulate a very large number of Areas which only contain one or two zones. This is a useful feature in applications requiring hundreds or thousands of simple Areas such as storage locker applications.

For this feature to function correctly, the Menu Group assigned to the User Type, which in turn is assigned to the User, must have the "I" Isolate on Exit flag set to "Y".

Operation

When a Card is presented at a Reader on the outside of a Door and the Card is allowed to un-lock the Door, the Control Module checks the Isolate option (see above) for the Access Group currently valid for that Door. If the Isolate option is set to "Y", a specific zone will be isolated automatically depending on the User who presented the Card. If the "T" option is set, two Zones will be isolated. See the following table for Zone allocations.

When a Card is presented at a Reader on the inside of a Door and the Card is allowed to unlock the Door, the Control Module checks the De-isolate option (see above) for the Access Group currently valid for that Door. If the De-isolate option is set to "Y", a specific zone will be de-isolated automatically depending on the User who presented the Card. If the "T" option is set, two Zones will be de-isolated. See the following table for Zone allocations.

If this "T" option is set to "n", the Reader isolate option will provide one Zone per User. Whether one Zone or two Zones are isolated depends on the setting of this "Two Zones Mode" option.

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The Zone(s) that are actually isolated is not programmable but follows the table below:

User Presenting Card	Zone Isolated ("T" option not set)	Zone Isolated ("T" option set)
U00001 to U00032	None	None
U00033 to U00048	B01:Z01 to B01:Z16	B01:Z01 to B01:Z32
U00049 to U00064	B01:Z17 to B01:Z32	B02:Z01 to B02:Z32
U00065 to U00080	B02:Z01 to B02:Z16	B03:Z01 to B03:Z32
U00081 to U00096	B02:Z17 to B02:Z32	B04:Z01 to B04:Z32
etc	etc	etc

32 Zone "B" Type Expanders must be used and the Zones run in sequence up to the maximum number of Users or Expanders. Furthermore, this function can only be performed via a Card Reader.

The Reader to be used for isolating Zones may or may not be associated with a real Door. The Reader can be set up outside an imaginary Door, for the sake of example, D001 and an Access Group with the "I" option set allocated to the Door. The lock Auxiliary can control a lamp or buzzer so that when a Card is swiped, indication is given to the User that the Card was accepted and their storage locker can now be accessed. Similarly the Reader to be used for de-isolating zones may be associated with D001 or another Door. The Reader can be set up inside the Door and an Access Group with the "D" option set allocated to the Door. The lock Auxiliary can control a lamp or buzzer so that when a Card is swiped, indication is given to the User that the Card was accepted and their storage locker is now secure.

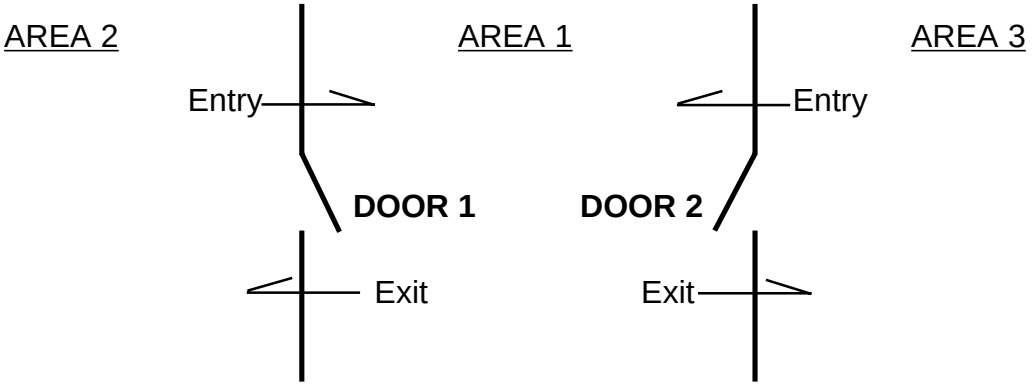
All the usual TimeZone options apply allowing certain Users access at certain times. All isolate/de-isolate operations are saved to review. If the Process Group allows, the actual isolate/de-isolate can be reported for some/all Users.

Wrong Area and Anti-Passback options in Access Groups

"Wrong Area" options operate independently of Anti-passback rules, however Hard anti-passback must be set when Wrong Area options are enabled. If the no (E)ntry on wrong area option is set to yes and the "outside" area for the associated door is non-zero, then entry will only be granted if the User's current location is equal to the defined "outside" area.
Conversely, if the no E(X)it on wrong area option is set to yes and the "inside" area for the associated door is non-zero, then exit will only be granted if the User's current location is equal to the defined "inside" area.

The Wrong area option may be considered as the HARDEST form of Anti-passback available. The comparison between Wrong aArea and Hard Anti-Passback may be made as follows.

Wrong Area will only allow access through a door if you are located within the associated area of that side of the door you are trying to gain access through. This means that if you present your card at an Entry Reader, your location must be in the OUTSIDE area associated to that specific Door. If you present your card at an Exit Reader, your location must be in the INSIDE area associated to that specific Door.



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Hard Anti-Passback processing. *Refer to the diagram above.*

Hard Anti-Passback will only allow access through a specific door if you are considered on the correct side of it. If you are outside the door, you may go in, and if you are inside the door, you may go out. This still requires allocation of Inside and Outside areas to the door, but the Anti-Passback rules are on a per door basis.

What this means is if I go through Door #1 into Area 1 from Area #2, I am now inside Area #1. If there is another door that allows access into Area #1, Door #2, I may exit Area #1 via Door #2 which has an outside area of Area #3. Because I am now outside Area #1 (the inside area of both doors) I can now access either Door #1 or Door #2 to gain access legally to Area #1. Once inside Area #1 if I try to gain access into Area #1 while I am inside (because I passed back my card to someone else), access will be denied ANTI-PASSBACK. The same will occur if I am outside either door (in Area #2 or Area #3) and I try to exit. To summarize Anti-Passback; It only ensures I am on the correct side of the door, and that I have not exited illegally or given my card to another person.

Wrong Area processing. *Refer to the diagram above.*

Wrong area however will only let me through the specific door I entered or exited. If we take the above example again but now also have the "No Entry if Wrong Area" & "No Exit if Wrong Area" flags set in conjunction with Hard Anti-Passback, we get the following result. If I go through Door #1 into Area #1 from Area #2, I am now inside Area #1. If there is another door that allows access into Area #1, Door #2, I may exit Area #1 via Door #2 which has an outside area of Area #3. Because I am now outside Area #1 (the inside area of both doors) but inside Area #3, I cannot go back into Area #1 via Door #1. This is because I am in Area #3 and the access group options state "DO NOT ALLOW ENTRY if the area I am currently in, is NOT the AREA associated to that side of the door I am try to gain entry from". In this case Area #2. To summarize Wrong Area, it controls specifically the direction and which door I may go through at all times.

Programming Notes.

Both "Anti-Passback" and "Wrong Area" require that the inside and/or the outside area of the door be set to a non zero value. The area selected will depend on the direction and level of restriction required.

It is suggested that when Anti-Passback is used, all doors that exit the premises entirely should have their outside area all programmed the same, or all set to None. In addition, it is suggested that a Calculated Auxiliary is programmed to perform an Amnesty function to operate on a daily basis once the premises is empty (automatically when the security area is turned on). This is to prevent Users locking themselves out or, or in, specific areas if they enter or exit illegally.

In the case of Wrong Area, it is suggested that all doors that exit the premises should have their outside area programmed the same. However, the Amnesty function should not be used, as this will render the location of every user as None, causing them to be locked out of all doors (because they are no longer in any area).

The User Types "Override Anti-Passback" flag can be set to allow particular User Types to enter or exit a door regardless of Anti-Passback or Wrong Area settings.

The easiest way to map out and implement both Anti-Passback or Wrong Area is to get a floor plan of the premises and mark out each door to be controlled and then assign areas to both sides of the doors. This will then produce common areas between doors, and the specific details required to complete the programming.

Refer to "Anti-Passback and Wrong Area Processing" in the Applications Programming section of the manual for more details and step-by-step programming procedures.

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Access Group Defaulting

Two options are available to default Access Group Programming to factory settings. These are explained below:

Access Group to alter: AG001	At the first Access Group Programming screen press HELP, "9".
A.Grp. Default -> Don't Default	This screen is then displayed. Available defaulting options are viewed by pressing the right Arrow Key. To make a selection, press the OK Key.
Don't Default	Selecting this option will abort the procedure.
Clear All	Selecting this option will reset the first three Access Groups as follows: AG001 ENTRY DOOR AG002 EXIT DOOR AG003 INTERNAL DOOR **In addition, this option will delete all other Access Groups, if present.**
Standard	Selecting this option will reset the first three Access Groups as follows: AG001 ENTRY DOOR AG002 EXIT DOOR AG003 INTERNAL DOOR **This option will make no alterations to any other Access Groups, if present.**
Push '9' key to Confirm Default	The confirmation screen is displayed. Press the "9" Key to confirm your selection.
Default Done	The default procedure is confirmed.

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Process Group Programming

Each individual Zone or System Input programmed into an Area, must be assigned a Process Group which will determine the manner in which that Input will be processed in that particular Area.

Process Group options will determine:

- Which Input states/conditions are to be monitored for processing.
- Which Input states/conditions are to be reported.
- The Event Code/Message Type to be used for reporting. (Contact ID / 4+2 / 8-Pin / SIA)
- The Area Auxiliaries that will be triggered.
- The Siren Trigger options and Siren Tones that will be generated.
- The LCD Terminal messages that will be generated.
- Home Auxiliary control options.
- Special application options for Auxiliary Timers, Delay Timers, Lift Button processing and Intruder Alarm Confirmation (Alarm Verification).
- The GSM SMS Text Alarm operation.

If an Input is programmed into more than one Area, a Process Group is assigned to the Input separately for each Area.

Assigning Process Groups to Inputs in this way allows for an Input to be processed differently in each Area that it is assigned to. An Input can be programmed into a maximum of 8 Areas if required. By assigning a different Process Group to the Input in each Area, this can allow up to 8 different processes to be applied to a single Input.
e.g.
A Movement Detector in a Foyer could be assigned to 3 different Areas:
- An Intruder Alarm Area where it will be processed as a "Burglary" Zone.
- A second Area where it will be programmed to turn the lights on for a programmable period.
- A third Area where it will be programmed to activate a Door Bell during business hours.

There are now 15 default Process Groups already programmed within the system. (12 in Firmware prior to V4.5)
These Process Groups will accommodate most common Zone Input programming requirements.
Customised Process Groups may however be programmed by the installer if required.

Details of the Default Process Groups are provided on pages 2 and 3.

The procedure to reset Process Group Programming to the factory default is explained in more detail at the end of this chapter.

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Process Group Defaults

Number	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Name	Burglary	Burglary Delay	Burglary Primary	Local Silent	Fire Zone	Duress (V4.5 or later)	Automation (V4.5 or later)	Emergency (V5.2 or later)
TimeZone								
Alternate Group								
Input Type: Tamper	Y	Y	Y	Y	Y			
Alarm	Y	Y	Y	Y	Y	Y	Y	Y
Entry		Y	Y					
Exit		Y	Y					
Pulse Count								
Primary Entry			Y					
Latch Input								
Single Pulse								
Comms: Isolate	Y	Y	Y		Y	Y		Y
Tamper	Y	Y	Y		Y			
Alarm	Y	Y	Y		Y	Y		Y
Restore	Y	Y	Y		Y	Y		Y
Entry								
Exit								
Unseal Restore								
Single Hit								
CID Message	0	0	0	0	110 †	120 †	0	100 †
4+2 Pulse Mess.	0	0	0	0	0	0	0	0
Area Auxiliaries: Tamper	Y	Y	Y	Y	Y			
Alarm 1	Y	Y	Y	Y	Y			
Alarm 2								
Alarm 3								
Alarm 4								
Isolate								
Siren Tones: Alarm	Sweep	Sweep	Sweep		Evac.			Evac.
Tamper	Sweep	Sweep	Sweep		Sweep			
Siren Lockout	Y	Y	Y					
Siren Re-Trigger								
LCD Terminal Message Types	1	1	1	1	1	none	none	1
H aux Seal opt								
H aux Alm opt								
H aux Tamp opt								
Home Aux Opts: Override Time								
Minute timer								
Extra Options: Refresh Only								
No Refresh								
Cancel Exit Delay								
Delay Report								
Lift Buttons								
Home Aux Time								
Pin Type	3	3	3	8 *	1	2	0 *	2
Verify Group	1	1	1	1	1	1	1	1
SMS Tx Mode ^	1 #, NoAck	1 #, NoAck	1 #, NoAck	1 #, NoAck	1 #, NoAck	1 #, NoAck	1 #, NoAck	1 #, NoAck
SMS 1st Phone No.								
SIA Type	Burg	Burg	Burg	None	Fire	Panic	None	Medical

NOTES:

* The Default Pin Type for the Process Groups indicated has changed. If Firmware is prior to V5.1 check settings.

^ Prior to V5.11, SMS Tx Mode default was "None" in all Process Groups.

† CID Event Codes are defaulted to these values in V5.2 or later only.

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Number	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Name	System Tamper	System Silent	System LAN	System Local	Access Local	Access Alarm	Access Silent	Spare
TimeZone								
Alternate Group								
Input Type: Tamper	Y							
Alarm		Y	Y	Y	Y	Y	Y	
Entry								
Exit								
Pulse Count								
Primary Entry								
Latch Input								
Single Pulse								
Comms: Isolate	Y	Y	Y				Y	
Tamper	Y							
Alarm		Y	Y				Y	
Restore	Y	Y	Y				Y	
Entry								
Exit								
Unseal Restore								
Single Hit								
CID Message	0	0	0	0	0	0	0	0
4+2 Pulse Mess.	0	0	0	0	0	0	0	0
Area Auxiliaries: Tamper	Y							
Alarm 1			Y			Y	Y	
Alarm 2								
Alarm 3								
Alarm 4								
Isolate								
Siren Tones: Alarm			Sweep			Sweep		
Tamper	Sweep							
Siren Lockout	Y		Y			Y		
Siren Re-Trigger								
LCD Terminal Message Types	1	1	1	1	1	1	1	
H aux Seal opt								
H aux Alm opt								
H aux Tamp opt								
Home Aux Opts: Override Time								
Minute timer								
Extra Options: Refresh Only								
No Refresh								
Cancel Exit Delay								
Delay Report								
Lift Buttons								
Home Aux Time								
Pin Type	3 *	8 *	3 *	0 *	0 *	0 *	0 *	0 *
Verify Group	1	1	1	1	1	1	1	1
SMS Tx Mode ^	1 #, NoAck	1 #, NoAck	1 #, NoAck	1 #, NoAck	1 #, NoAck	1 #, NoAck	1 #, NoAck	None
SMS First Phone No.								
SIA Type	None	None	None	None	None	None	None	None

NOTES:

* The Default Pin Type for the Process Groups indicated has changed. If Firmware is prior to V5.1 check settings.

^ Prior to V5.11, SMS Tx Mode default was "None" in all Process Groups.

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```
Process Group
to alter: 001
```

This screen allows the Installer to jump to a particular Process Group to alter, or search for a particular Process Group by name.

```
Find Pro. Grp ^
BURGLARY
```

```
PG001 name
BURGLARY
```

This screen allows an optional name to be assigned to this Process Group, up to 16 characters long. It is recommended that Process Groups names be programmed for easy identification. This will simplify Area programming, where Process Groups are allocated to every Zone that is included in an Area.

```
PG001 T.Zone ->
WEEKDAY
```

```
PG001 TimeZone
TZ001
```

This screen allows an optional TimeZone to be "attached" to this Process Group. When a TimeZone is "attached", the Process Group is only valid when the Time Zone is valid. When the TimeZone is invalid the Process Group options are considered to be invalid OR the Process Group specified below will be used instead, if programmed. To select a TimeZone press the > key to scroll through all the available TimeZones alphabetically. Press the OFF key if you wish no TimeZone control of this Process Group. (The ON key may be used to change modes to allow a TimeZone to be selected by number if desired).

```
PG001 Alt. Grp->
SILENT
```

```
PG001 Alt. Group
PG002
```

This screen specifies what Process Group will be used instead of this Process Group when an "attached" TimeZone is invalid. Note that if no alternative Process Group is specified and if the TimeZone is invalid, all options for the Process Group are also considered invalid.

```
PG001   TAEXUPLS
Type -> YYnnnnnn
```

This screen determines the general type of the input / Zone when it is assigned to this Process Group.

T	**T**ampers recognised	If "Y" then Tampers will be recognised for Zones/Inputs assigned this Process Group in an Area. Note that the 24 Hour processing needs to be turned ON for an Area that you wish to process tamper alarms.
A	**A**larms Recognised	If "Y" then Alarms will be recognised for the Zones/Inputs assigned this Process Group in an Area if the Area is currently ON.
E	**E**ntry Zone	If "Y" then this Zone/Input is an Entry Zone/Input. This means that the alarm processing (not tamper) will be deferred by the entry timer as long as the entry timer is currently running. If the Area is turned OFF prior to the expiration of the entry timer, the alarm processing will be cancelled.
X	E**x**it Zone	If "Y" then this Zone/Input is an Exit Zone/Input. This means that alarms (not tampers) will be ignored during the exit delay, although alarm activity will be logged in review. Note that an alarm on a Zone/Input during exit delay that has not been flagged as an exit Zone will be processed immediately.
U	P**u**lse Count Zone	If "Y" then this Zone/Input is a Pulse count Zone/Input. This means that alarms will only be processed on this Zone/Input if a number of alarms have occurred within a particular time window. The number of alarms and the time window are individually programmable on a per Area basis.
P	**P**rimary Entry Zone	If "Y" then this Zone/Input is a Primary entry Zone/Input. This means that if this is also an entry Zone/Input ("E" option set to "Y" above) then this Zone/Input is capable of starting the entry timer.

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L	**L**atch Input	If this option is set, the input can only report a single alarm, tamper or isolate until the latch input has been reset via a code entry. The latched input can only be cleared if the input is sealed. When the latched input is cleared, a restore will be generated.
S	**S**ingle Pulse Input	If "Y" then this Zone/Input is a Single Pulse Input. If a zone is processed with the "Pulse Count" option above set to Yes AND this option is set to Yes, then only 1 pulse will be accepted from this zone during any pulse period. Eg. With a pulse count of 3 and all zones processed with the "S" option, then 3 different zones need to be "pulsed" to create an alarm. Ie. The alarm will only be reported when the Area registers an alarm from 3 different zones within a pulse period. This feature is good for false alarm rejection where necessary.

PG001 ITAREXUS
Comms-> nnnnnnnn

This screen determines what type of events will be reported for Zones/Inputs when they are assigned this Process Group.

I	**I**solations	If "Y" then Isolations for Zones/Inputs assigned this Process Group will trigger a report to a Comms Task for subsequent reporting to a Central Station.
T	**T**ampers	If "Y" then Tampers for Zones/Inputs assigned this Process Group will trigger a report to a Comms Task for subsequent reporting to a Central Station.
A	**A**larms	If "Y" then Alarms for Zones/Inputs assigned this Process Group will trigger a report to a Comms Task for subsequent reporting to a Central Station.
R	**R**estores	If "Y" then Restores for Zones/Inputs assigned this Process Group will trigger a report to a Comms Task for subsequent reporting to a Central Station.
E	**E**ntry alarms	If "Y" then alarms occurring during entry delay for Zones/Inputs assigned this Process Group will trigger a report to a Comms Task for reporting to a Central Station. Other alarm processing such as turning on sirens will remain deferred. Event Code/Block Code/etc. will be the same as a normal alarm.
X	E**x**it alarms	If "Y" then alarms occurring during exit delay for Zones/Inputs assigned this Process Group will trigger a report to a Comms Task for reporting to a Central Station. Event Code/Block Code/etc. will be the same as a normal alarm.
U	**U**nseal restores	If "Y" then Restores will be sent for all Unsealed Zones/Inputs assigned this Process Group on an Area opening. (Restores would normally only be sent if the zone is sealed).
S	**S**ingle Hit	If "Y" then only up to 3 transmit entries will be saved for the Input during each period that the Area is armed. Entries are saved in the order alarm, tamper and isolate. This prevents multiple breaks being reported to the Central Monitoring Station. (Previously, in V1 and V2, this was an option under CommsTasks).

PG001 Contact
ID Msg: 000

This screen determines what Contact ID message (Event Code) will be used whenever Zones/Inputs with this Process Group are reported via the Ademco Contact ID format, or other formats that utilize Contact ID Event Codes.
If left at 000, a default Contact ID message will be sent.
For details of Contact ID messages and Defaults, refer to "System Inputs" and "Contact ID messages" in the Tables section.

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PG001 4+2 Pulse Msg: 00

This screen allows the Installer to enter the 4+2 Pulse format code for this process group. Decimal or Hex digits may be used but Installers should first check the compatibility of such codes with the specific Central Station.
For more information, refer to "Comms Task Formats. 19 - 4+2 Pulse Dialer."

PG001 T1234I.. Auxes-> nnnnnnnn

This screen determines what Area Auxiliaries will be triggered for Zone/Inputs that are assigned this Process Group.
See Area Programming, MENU, 7, 1 for full details of Area Auxiliary actions.

T	**T**amper	If "Y" then the Area Tamper Auxiliary (see Area programming) will be turned on if a tamper occurs on Zones/Inputs assigned this Process Group in an Area.
1	Alarm **1** Auxiliary	If "Y" then the Area Alarm 1 Auxiliary (see Area Programming) will be turned on if an alarm occurs on Zones/Inputs assigned this Process Group in an Area.
2	Alarm **2** Auxiliary	If "Y" then the Area Alarm 2 Auxiliary (see Area Programming) will be turned on if an alarm occurs on Zones/Inputs assigned this Process Group in an Area. IMPORTANT NOTE: This Auxiliary will turn off when those inputs are sealed, (V3 or later) or when the Area is turned Off.
3	Alarm **3** Auxiliary	If "Y" then the Area Alarm 3 Auxiliary (see Area Programming) will be turned on if an alarm occurs on Zones/Inputs assigned this Process Group in an Area.
4	Alarm **4** Auxiliary	If "Y" then the Area Alarm 4 Auxiliary (see Area Programming) will be turned on if an alarm occurs on Zones/Inputs assigned this Process Group in an Area.
I	**I**solate Auxiliary	If "Y" then the Area Isolate Auxiliary (see Area Programming) will be turned on if an isolate occurs on Zones/Inputs assigned this Process Group in an Area and will turn off when all inputs are de-isolated.
.	**S**pare	This option is not used at this time.

PG001 Alm. Sir-> tone: Bell

This screen determines what type of siren tone to use when an alarm occurs on a Zone/Input assigned this Process Group in an Area.

Tone	**Description**
None	Zones/Inputs allocated this Process Group will not activate Sirens when an alarm occurs.
Bell	Sound a "school bell" type sound
Sweep	Sound a burglary "sweeping frequency" type sound
Fire	Sound a 2 tone type sound
Evac	Sound an "evacuation" type sound

Note: If the Siren is already sounding and another tone is requested then an implied priority scheme exists. The tone will only change if the new tone is a higher priority than the current tone. Evacuation is the highest priority and bell is the lowest priority.

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PG001 Tam. Sir-> tone: Bell

This screen determines what type of siren tone to use when a tamper occurs on a Zone/Input assigned this Process Group in an Area.

Tone	Description
None	Zones/Inputs allocated this Process Group will not activate Sirens when a tamper occurs.
Bell	Sound a "school bell" type sound
Sweep	Sound a burglary "sweeping frequency" type sound
Fire	Sound a 2 tone type sound
Evac	Sound an "evacuation" type sound

Note: If the Siren is already sounding and another tone is requested then an implied priority scheme exists. The tone will only change if the new tone is a higher priority than the current tone. Evacuation is the highest priority and bell is the lowest priority.

PG001 Siren Lockout ? n

This screen determines whether Zones/Inputs that are assigned this Process Group and have started a siren, will be automatically isolated at the end of the siren time. Any Zones/Inputs isolated by this Siren Lockout function will be de-isolated when the Area is turned off, or can be de-isolated manually if desired.

PG001 Siren Retrigger ? n

This option allows siren zones to **re-start** the siren timer, even when the siren timer is already running. This option allows a dummy Area to be easily adapted to monitor movement activity. Whenever movement is detected in the Area, the zones re-trigger the siren timer and turn on the siren auxiliary.

This feature may be utilised in a similar fashion with NO sirens connected. When movement ceases for a time exceeding the pre-programmed siren time, the siren auxiliary turns off. The siren auxiliary can be used to arm Areas, control air-conditioned Areas, turn lights on/off, etc.

PG001 12345678 Msgs-> Ynnnnnnn

LCD Terminal Message Types. This option determines if LCD Terminal messages will be generated by alarms/tampers on Zones/Inputs assigned this Process Group in an Area.
LCD Terminals can be individually programmed as to what Message Type number (or numbers) to display.

PG001 12345678 Msgs-> YnYnnnnn

In the example on the left, messages generated by this Process Group will be Type 1 and Type 3. Only LCD Terminals which have their Alarm Message Type 1 AND/OR Type 3 message screen options set to Yes will accept messages from this Process Group.

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Home Auxiliaries for Zones

A new option in Input Programming allows a nominated home auxiliary to be assigned to a particular zone. The following Process Group screens define how the state of the zone will control the home auxiliary.

PG001 Haux on -> Seal: None

This option determines how the home auxiliary will be controlled when the zone seals.

None	This input state will have no effect on the home auxiliary.
Turn On	When the zone changes to this state, the home auxiliary will turn On
Turn Off	When the zone changes to this state, the home auxiliary will turn Off
Toggle	When the zone changes to this state, the home auxiliary will toggle

PG001 Haux on -> Alarm: None

This option determines how the home auxiliary will be controlled when the zone goes into alarm.

None	This input state will have no effect on the home auxiliary.
Turn On	When the zone changes to this state, the home auxiliary will turn On
Turn Off	When the zone changes to this state, the home auxiliary will turn Off
Toggle	When the zone changes to this state, the home auxiliary will toggle

PG001 Haux on -> Tamper: None

This option determines how the home auxiliary will be controlled when the zone goes into tamper condition.

None	This input state will have no effect on the home auxiliary.
Turn On	When the zone changes to this state, the home auxiliary will turn On
Turn Off	When the zone changes to this state, the home auxiliary will turn Off
Toggle	When the zone changes to this state, the home auxiliary will toggle

PG001 Haux OM Options -> nn

This screen allows the installer to programme the timer option for home auxiliary control.

Do not use the timer options if the Home Auxiliary controls an Auxiliary List. If timing is required in such cases, use Auxiliary Timers [MENU 5,5].

O	**O**verride Time	If set to "Y", the timing parameters associated with this function will override any existing timing condition that is currently running on the auxiliary.
M	**M**inute Timer	If set to "Y", the time period specified in the following screen will be in minutes. If left as "n", the time will be in seconds.

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```
PG001   RNED...L
XOpts-> nnnnnnnn
```

This screen allows the Installer to set some extra Process Group Options.

R **R**efresh — If set to "Y", Zones assigned this Process Group are unable to turn Auxiliaries On, but they are able to refresh the Auxiliary's current state by restarting a Auxiliary Timer.

N **N**o Refresh — If set to "Y", Zones assigned this Process Group are unable to restart Auxiliary Timers.

E Cancel **E**xit Delay (V5 or later) — If set to "Y" a Zone assigned this Process Group can be used to cancel the Exit delay timer in that Area. If this option is set to "Y", the "X" (Exit Zone) option in the TAEXUPLS screen must be set to "n". i.e. The Zone must not be an Exit Zone.

If the Exit delay timer is running, and the Zone state changes from Seal to Alarm, the Exit delay will be cancelled, and the Area turned On.
e.g. A Pushbutton may be installed at the Entrance Door. When the User has turned the Area On and is exiting the premises, the Pushbutton can be used to cancel the remaining Exit delay time.

IMPORTANT NOTES:
1) The Pushbutton must be installed in a location where the User will be outside the range of any other detection devices in that Area.
2) Any other options programmed in the Process Group will still be processed when the Zone goes to the Alarm state, so it is recommended that all Siren, Auxiliary, Comms and Message Type options are not programmed.

D **D**elay Report (V5 or later) — If set to "Y", and the Dialer Comms Task is programmed for Delayed Reporting (Dial Holdoff), an Alarm on Zones assigned this Process Group will not trigger the Dialer Comms Task immediately.
The Zone Alarm will be reported when any of the following occur:
- The Report Delay Timer expires.
  (Programmed in General System Options; MENU, 7, 5, 1)
- A Zone Input with this option set to "n" triggers a report. ("Xmit" Review entry)
- A Tamper alarm occurs on a Delayed Zone Input.

If the Area is turned Off and triggers an "Opening" report before any of these conditions occur, any Delayed Zone Alarms will not be reported.

L **L**ift Processing — This option must be set to "Y" if this Zone is used for Lift button feedback.

. **S**pare — This option is not used at this time.

```
PG001  Haux Aux
Time 000 sec/min
```

This screen allows the home auxiliary action to be timed. To enable the timer option, programme the time period in seconds or minutes. To disable the timer option, ensure the time period is set to 000.

IMPORTANT NOTE:
Do not use the timer options if the Home Auxiliary controls an Auxiliary List. If timing is required in such cases, use Auxiliary Timers [MENU 5,5].

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PG001 Pin Type-> 3 Intruder

Pin Type. "8 Pin" Comms Task format. (V4.5 or later) This screen determines what Pin number will be triggered whenever Zones/Inputs with this Process Group are reported via the "8 Pin" format.
For more information, refer to "Comms Task Formats. 22 - 8 Pin."

All of the default Process Groups already have an appropriate Pin Type programmed which may be changed by the Installer if required.
For details of the default Pin Type settings refer to the "Process Group Defaults" tables at the start of this chapter.

Pin definitions.
0 None (V5.1 or later only)
1 Fire
2 PA
3 Intruder (Unconfirmed Intruder)
4 Open / Close *
5 Isolate * ("Medical" prior to V5.1)
6 System
7 Verify (Confirmed Intruder) *
8 Power ("Plant" prior to V5.1)

* Cannot be assigned in this option.

PG001 Verify -> Group 1

Verify Group. "8 Pin" Comms Task format. (V4.5 or later) This screen selects which Verify Group the Inputs assigned with this Process Group will belong to. One of 16 Verify Groups can be selected.
A Verify (Confirmed Intruder) can only be generated when different Intruder Pin (Pin 3) Inputs within the same Verify Group are triggered within the Verify Time. *For more information, refer to "Comms Task Formats. 22 - 8 Pin."*

SMS Alarm Messaging Options (V4.5 or later)

These Process Group options allow the installer to select the type of SMS Alarm messaging required and the Telephone number to be used, for reporting SMS alarm messages on Inputs that have this Process Group assigned.

These options are defined in Process Group programming to:
-Allow the Installer to define which type of alarms are reported via SMS messages.
-Allow different types of Alarms to be sent to different Telephones with different acknowledgement requirements if required.

Programming these SMS Alarm messaging functions also provides the options of:
-Sending the messages to multiple Phones.
-Implementing the SMS Alarm Acknowledgement feature.

These options are programmed in conjunction with the GSM Comms Task which enables an FE3000 GSM Modem to be connected to the Control Module for Primary or Backup reporting and remote control.
See "GSM Comms Task" (Comms-17) in the Comms Task Formats section for details.

PG001 Tx SMS -> No SMS

V4.5 or later. This screen allows the type of GSM Modem SMS Alarm Messaging to be chosen for Alarms generated by this Process Group. If an FE3000 GSM Modem is used, one of these options MUST be selected if SMS Alarm Messages are required.
(This option not relevant if an FE2000 is used.)

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NOTES:
1) Area Open/Close messages can only be sent to the "SMS 1" Telephone number programmed in the GSM Comms Task and are not effected by the setting in this screen.
2) The "S"ingle Hit in the Comms options screen (ITAREXUS) must be set to No if any of the "Tx SMS" options are selected.

No SMS SMS alarm messages will not be generated by this Process Group.

One #, No Ack SMS alarm messages generated by this Process Group will be sent to the "SMS No." defined in the next screen.
No acknowledgement is required.

One #, with Ack SMS alarm messages generated by this Process Group will be sent to the "SMS No." defined in the next screen.
Each Alarm message needs to be acknowledgd by the Phone that the message is sent to, within the "SMS Acknowledge Time" defined in GSM Comms Task programming.

List with Ack SMS alarm messages generated by this Process Group will be sent to a series (List) of Telephone numbers, beginning with the "SMS No." defined in the next screen, until the message is acknowledged or until a gap (null entry) is detected in the Telphone number programming.
Each Alarm message needs to be acknowledgd by the Phone that the message is sent to, within the "SMS Acknowledge Time" defined in GSM Comms Task programming.
When an Alarm message is acknowledged, that message will not be sent to any more Telephone numbers in the series.

List no Ack SMS alarm messages generated by this Process Group will be sent to a series (List) of Telephone numbers, as quickly as possible, beginning with the "SMS No." defined in the next screen.
No acknowledgement is required.
Each message will be sent to the defined "SMS No." then will be sent to all subsequent Telephone numbers programmed in the system until a gap (null entry) is detected in the Telphone number programming.

PG001 SMS No. -> None

V4.5 or later. This screen allows the SMS Telephone number to be defined.
If an FE3000 GSM Modem is used, this option MUST be programmed if SMS Alarm Messages are required. (This option not relevant if an FE2000 is used.)

The Telephone number is chosen from a pre-programmed list of Telephone Numbers, selected alphabetically by name or by number.
See Telephone Number programming. MENU, 7, 3, 2.

If "One #, No Ack" or "One # with Ack" selected.
SMS Alarm messages will be sent to this Telephone number.
NOTES:
If this number is defined, alarm messages will not be sent to the "SMS 1" Telephone number defined in the GSM Comms Task.
Note that the same telephone number can be assigned to the "SMS No." here, and to the "SMS 1" number if required.
If this number is not defined, the alarm messages will be sent to the "SMS 1" Telephone number. (If it has been programmed)

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If "List with Ack" or "List no Ack" selected.
This is the first Telephone number in the series (or "List") that SMS Alarm messages will be sent to.

The number of Telephone numbers in the List is detemined by how the entries are programmed in Telephone Number programming. (MENU, 7, 3, 2)
The "List" will consist of the Telephone number defined, plus all subsequent Telephone numbers programmed until there is a "null"entry. i.e. A Telephone Number record that is left blank.

This allows the "List" to contain any number of Telephone numbers up to the maximum allowed in the Memory size and configuration selected.
If a Telephone number with a TimeZone assigned is Invalid, then that Telephone number will be skipped, or the alternate Telephone number will be used if defined.

SMS Alarm Messages example.
A system is programmed as follows:
-The "SMS No." is Telephone number TN003.
-Telephone numbers TN003, TN004 TN005 and TN006 are programmed.
-Telephone number TN007 is NOT programmed.
-The "SMS Ack Time" is set to 8. (8 x 15 Secs = 2 minutes)

Operation when "List with Ack" is selected.
1) When an alarm occurs, the system will send the SMS alarm text to TN003.

2) a) If an acknowledge is received from TN003, no further messages are sent.
   b) If an acknowledge is not received from TN003 within the Ack time, the message is then sent to TN004.
   This sequence continues until an acknowledge is received, or until the message has been sent to all the Telephone numbers in the series. (TN003 to TN006)

3) If an acknowledge is not received from any of the Telephone Numbers, a "No Ack" Review message will be generated and the "GSM Problem" System Input (C01:S30) is set to the Alarm state.

Operation when "List no Ack" is selected.
1) When an alarm occurs, the system will send the SMS alarm text to all Telephone Numbers in the series (TN003 to TN006) as quickly as possible.

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PG001 SIA Type->
None

SIA Type. "SIA" Comms Task format. (V5.0 or later)
This screen determines what SIA Type will be used whenever Zone Inputs with this Process Group are reported via the "SIA" format.
For more information, refer to "Comms Task Formats. 31 - SIA"

The SIA Type selected will detemine the Block Code that will be transmitted when the event is reported via the SIA Comms Task.
S*ee the "Block Codes" table below.*

For system inputs, the SIA Type is not used. An appropriate block code is automatically assigned.
See "SIA System Input Block Codes" in the Tables Section for details.

Several of the default Process Groups already have an appropriate SIA Type programmed which may be changed by the Installer if required.
For details of the default Pin Type settings refer to the "Process Group Defaults" tables at the start of this chapter.

SIA Types:
Burglary
Fire
Gas
Holdup
Heat
Medical
Panic
Emergency
Sprinkler
Water
Freezer

The following table shows the Block Code used for each Zone Input Event.

SIA Type	Description	Block Codes					
		Alarm	Alarm Restore	Tamper	Tamper Restore	Isolate	Isolate Restore
0	Untyped	UA	UR	TA	TR	UB	UU
1	Burglary	BA	BR	TA	TR	BB	BU
2	Fire	FA	FR	TA	TR	FB	FU
3	Gas	GA	GR	TA	TR	GB	GU
4	Holdup	HA	HR	TA	TR	HB	HU
5	Heat	KA	KR	TA	TR	KB	KU
6	Medical	MA	MR	TA	TR	MB	MU
7	Panic	PA	PR	TA	TR	PB	PU
8	Emergency	QA	QR	TA	TR	QB	QU
9	Sprinkler	SA	SR	TA	TR	SB	SU
10	Water	WA	WR	TA	TR	WB	WU
11	Freezer	ZA	ZR	TA	TR	ZB	ZU

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Process Group Defaulting

Two options are available by which to default Process Group Programming to factory settings. These are explained below:

Process Group to alter: PG001

At the first Process Group Programming screen press HELP, "9".

P.Grp. Default -> Don't Default

This screen is then displayed. Available defaulting options are viewed by pressing the right Arrow Key. To make a selection, press the OK Key.

Don't Default

Selecting this option will abort the procedure.

Clear All

Selecting this option will reset the following Process Groups:

PG001	BURGLARY
PG002	BURGLARY DELAYED
PG003	BURGLARY PRIMARY
PG004	LOCAL SILENT
PG005	FIRE ZONE
PG006	DURESS (Version 4.5 or later only)
PG007	AUTOMATION (Version 4.5 or later only)
PG008	EMERGENCY (Version 5.2 or later only)
PG009	SYSTEM TAMPER
PG010	SYSTEM SILENT
PG011	SYSTEM LAN
PG012	SYSTEM LOCAL
PG013	ACCESS LOCAL
PG014	ACCESS ALARM
PG015	ACCESS SILENT

In addition, this option will <u>delete all other Process Groups</u>, if present.

Standard

Selecting this option will reset the following Process Groups:

PG001	BURGLARY
PG002	BURGLARY DELAYED
PG003	BURGLARY PRIMARY
PG004	LOCAL SILENT
PG005	FIRE ZONE
PG006	DURESS (Version 4.5 or later only)
PG007	AUTOMATION (Version 4.5 or later only)
PG008	EMERGENCY (Version 5.2 or later only)
PG009	SYSTEM TAMPER
PG010	SYSTEM SILENT
PG011	SYSTEM LAN
PG012	SYSTEM LOCAL
PG013	ACCESS LOCAL
PG014	ACCESS ALARM
PG015	ACCESS SILENT

This option will make no alterations to any other Process Groups, if present.

Push '9' key to Confirm Default

The confirmation screen is displayed. Press the "9" Key to confirm your selection.

Default Done

The default procedure is confirmed.

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Site Code Programming

Site Codes are used in conjunction with access control Cards that use a Site Code method. The system allows a number of Site Codes to be stored. This is useful when Cards from one site need to be used on another site with a different Site Code, or when different batches of Cards are used on a multi-tenant site.

IMPORTANT NOTES:
1) A special PIC Micro Chip Option must be fitted to the Control Module to enable "General" Site Code processing. *See "3000 & Access 4000 Model Options" in the Overview and Introduction section of the Manual for details.*

2) Intelligent 4 Door Access Modules must be fitted with V2.00 firmware or later if "General" Site Code processing is used.

There are now two different Site Code processing methods available. The method of Site Code processing used in a particular system is selected in the General System Options programming, MENU, 7, 5, 1.

Standard.	Provides for common card data formats where the length and location of data is pre-defined in the system. (26 Bit/Indala 27Bit/HID 34Bit/HID 36Bit/IR MagSwipe)
General. (V4.5 or later)	Provides programming options to define the length and location of Site Code and User ID data for proprietary and less common formats.

```
Site Code to
alter: SC001
```

This screen allows a Site Code to be selected for programming. There can be many Site Codes in a larger system, if desired.

These next screens allow the actual Site Code to be stored. Site Codes may be entered in any one of 3 different formats; 10 digit Hex, 5 digit Decimal or 3 digit Decimal.

The ON key is used to select the appropriate format screen for programming the Site Code. *See the table on the following page for the recommended screen to use.*

```
SC001 Code:
0000000000
```

The first screen allows Site Codes of up to 10 characters/digits to be programmed.

Up to V4:
The Site Code characters are entered on the Left-hand side of the screen and trailing zeros are ignored. e.g.
For 8 Bit Site Code. (26 Bit Wiegand). Site Code = "D2" Hex. (210 Decimal)
The Site Code data will be entered as "D200000000".
For 16 Bit Site Code. (34 Bit Wiegand). Site Code = "2710" Hex. (10,000 Decimal)
The Site Code data will be entered as "2710000000".
For IR Mag Swipe Format. The 10 digit Site Code supplied is entered.

V4.5 or later:
WIEGAND FORMATS; "Standard" and "General" Site Code Types.
The Hex characters are entered at the Right-hand side of the screen. e.g.
For 8 Bit Site Code. (26 Bit Wiegand or General Site Code: Site size=08)
If the Site Code in Hex format is "D2" (210 Decimal), the Site Code data will be entered as "00000000D2".
For 12 Bit Site Code. (General Site Code: Site size=12)
If the Site Code in Hex format is "3E8" (1,000 Decimal), the Site Code data will be entered as "00000003E8".
For 13 Bit Site Code. (Indala 27 Bit Wiegand or General Site Code: Site size=13)
If the Site Code in Hex format is "1388" (5,000 Decimal), the Site Code data will be entered as "0000001388".
For 16 Bit Site Code. (34 Bit Wiegand or General Site Code: Site size=16)
If the Site Code in Hex format is "2710" (10,000 Decimal), the Site Code data will be entered as "0000002710".

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MAG SWIPE FORMATS; "Standard" Site Code Type. (IR Mag Swipe Format)
The 10 digit Site Code supplied is entered.

MAG SWIPE FORMATS; "General" Site Code Type.
The Site Code characters are entered on the Left-hand side of the screen and trailing zeros are ignored.
e.g.
Site Code = 987654. The Site Code data is entered as "9876540000"
Site Code = 7654. The Site Code data is entered as "7654000000".

```
SC001 Code:
00000
```

This second screen allows up to 5 digit Site Codes to be programmed in the Decimal format. This screen should be used whenever the Site Code in a Wiegand format is greater than 8 Bits in length, and less than 17 Bits in length.
i.e. Site Codes up to a value of 65535 (Decimal) can be entered.

```
SC001 Code:
000
```

This third screen allows up to 3 digit Site Codes to be programmed in the Decimal format.
NOTE: This screen should only be used for Site Codes up to 8 Bits in length.
i.e. Site Codes up to a value of 255 (Decimal) can be entered.
If the Site Code is greater than 8 Bits in length, one of the previous two screens must be used.

IMPORTANT NOTE:
Refer to "Test Cards" (MENU, 4, 5) in the Testing Menu section for information on reading and interpreting Card Data.

Card Format Site Code Programming. STANDARD Site Code Type.

Format	Site Code provided	Screen to use
IR Mag. Swipe (Site Code Type)	10 Hex digits	First screen
26 Bit	000 to 255 (SC=8 Bits)	Third screen
27 Bit (Indala)	00000 to 08191 (SC=13 Bits)	Second screen
34 Bit (HID)	00000 to 65535 (SC=16 Bits)	Second screen
36 Bit (18 Bit Site Code)	00000 to 3FFFF (Hex)	First screen

Card Format Site Code Programming. GENERAL Site Code Type.
(V4.5 or later)

Format	Site Code provided	Screen to use
Site Code = 1 to 8 Bits	000 to 255	Third screen
Site Code = 9 to 16 Bits	00000 to 65535	Second screen
Site Code = 17 to 19 Bits	00000 to 7FFFF (Hex)	First screen

NOTE: If the Site Code Data is only provided in Hex format, the First screen (10 Hex digits) can be used with any Card Format. ***See details on the previous page.***

IMPORTANT NOTES:

1) "Standard" Site Code method also supports the 27 Bit (Indala -13 Bit Site Code) and 36 Bit (18 Bit Site Code) formats. Site Codes are not supported in other formats.

2) "General" Site Code method. Refer to "Site Code Type" and "General Site Code Parameters" in General System Options (MENU, 7, 5, 1) for more details.

3) The 3000/4000 system supports Card ID numbers up to 65,535 (16 Bits).
If the "General" Site Code method is used to process Cards with more than 16 Bits of Card ID data, the Most Significant Bits (MSBs) will be ignored.
e.g. Cards ID numbers 65537, 131073, 196609, etc. will all be read as Card ID 1.

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Site Code Offset

```
SC001 Card #
Offset:  00000
```

This screen allows an optional offset to be **subtracted** from the Card number in order to get the Card to match up with a particular User number in the system. Whenever a Card with this Site Code is detected, the number above will be subtracted from the Card ID number (Card#).

If you wish to **add** an offset to the Card number, set the above offset to:
65536 - "n"
Where "n" is the number you wish to add to the Card.

```
SC001
present ? Y
```

This screen is to enable or disable the particular Site Code for use in the system.

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Backup Card Programming

When a Card is swiped at a Reader unit or a REN/REX button is pushed, all access related decisions are usually made by the Control Module. In the event of loss of communications with the Control Module, each Reader Module can be programmed to make limited access decisions, if desired. In Reader Module Programming, the Programmer can select if the REN and/or REX button will operate when communication is lost and can also select if Backup Cards will operate.

Up to 127 Backup Cards, referred to as BC001 to BC127, can be stored in a Reader Module. Note however, that different types and/or versions of Reader Modules and Control Modules are capable of supporting different numbers of Backup Cards. The same Backup Cards are contained in all Reader Modules up to the maximum supported by the Reader Module type.

The table below provides a cross reference of the number of Backup Cards available with the different combinations of Reader Module versions and Control Module Firmware versions.

		Control Module Firmware Version	
Reader Module Type / Version	**Part Number**	**V3.55 or earlier**	**V3.56 or later**
2 Door Reader Module. (Through-hole PCB assembly)	993012 (Obsolete)	15	15
2 Door Reader Module.	995012	15	31
Single Door Reader Module.	995011	15	31
Enhanced 2 Door Reader Module. V1.10 or later.	995012ENH	15	127
Enhanced Single Door Reader Module. V1.07 or later.	995011ENH	15	127

Backup Cards must be enrolled into the system by swiping the Cards at Reader #01 or another Reader Module, if specified in the General System Options [MENU 7,5,1] "Reader for User Programming". When a Backup Card is swiped for enrollment, the Card data is transmitted to all Reader Modules for non-volatile storage.
Once stored in the Reader Modules, the Backup Card data will continue to be stored even if the Reader is un-powered. (Non-volatile storage)
In the event of lengthy communication failure, all Backup Cards stored (or only the first two Cards if selected as an option in Reader Module Programming) will operate the Door Lock for 5 seconds. (As long as the Module has power.)

A Backup Card does not need to relate to a User Card. Backup Cards can be a Card of any format that the Reader will accept and will operate regardless of TimeZones or other access related reasons. If communications are operative, Backup Cards are not accepted, although the same Card may be accepted as a valid User, if programmed.

Backup Cards used at a standard Reader whilst the Reader is in LAN Fail will not generate a Review entry. This is also the case for REN and REX buttons.

See "Backup Options" in "Reader Programming" for more details.

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Backup Card to Swipe: BC001

This screen allows a Backup Card to be selected for programming. There are a maximum of 127 possible Backup Cards for Reader Modules, BC001 to BC127. (Only 15 Backup Cards can be selected in Control Module firmware V3.55 or earlier)

Note that the number of Backup Cards supported varies with Reader Module versions and the Control Module Firmware version.
See the table on the previous page.

BC001 and BC002 can be treated as high security Cards at some Readers, if desired. See "Reader Programming".

Waiting for BC012 at R01

When this screen is displayed you have 10 seconds to present a Card that will be stored as a Backup Card in all Readers. In this example, any Card swiped will be stored as Backup Card 12. If the 10 second time-out expires or any key except the END key is pressed, the Backup Card will be erased from all Readers. If the END key is pressed before the 10 second time-out, no change will be made.

Present the Cards at a Reader connected to the Reader Module specified under General System Options [MENU 7,5,1] "Reader for User Programming". The factory default for this option is Reader Module #1 (R01).

Important:
A LAN Secure [MENU 7,8,1] or LAN Init [MENU 7,8,2] must be performed once all Cards are programmed.

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Isolate

The Isolate option allows the Installer or User to Isolate or De-isolate Zone Inputs, System Inputs or Home Zones.

There are two methods of selecting a Zone for Isolation or De-isolation; "Zone ID" method or "Home Zones" method.

The method to be used by the User will be determined by the Menu Group assigned to their User Type.

If the "H" flag is set under the Other options screen in Menu Group Programming, any User Types with this Menu Group will only see those Zones programmed as Home Zones.

This enables the Installer to programme those non-critical Zones as Home Zones and provides for three levels of isolation rights; no isolations, isolations of Home Zones only and isolations of any Zone.

Zone ID Selection

```
Zone to Isolate
C01:Z01
```

Zone ID allows selection of any Zone or System Input in the system by Zone ID number or by searching through the Zone list in numerical order for the Zone name.

The display will prompt the User to enter the Module/Zone (Input) ID of the Zone they wish to isolate.

If the Zone ID is known, press the OFF key to clear the screen, enter the letters/ numbers of the Zone ID via the DIGIT keys and then press the OK key.

If the ID is not known, press the ON key, scroll through the Zone names in numerical order using the UP and DOWN Arrow Keys and then press the OK Key. (Alpha-search using the digit keys is NOT available in the method).

HomeZone Selection

```
Office Door Reed
Enabled
```

Those User Types programmed to use Home Zones will see the status of the first Home Zone when they initially enter the Isolate Menu.

The UP and DOWN Arrow Keys are used to move through the named Home Zones in alphabetical order.

Alternatively, the User may press the DIGIT Key that represents the first letter of the name. If the name of the desired Zone is not displayed because of other names starting with the same letter, the DOWN Arrow Key may be used to locate the name. When the correct name is displayed, press the OK Key to proceed.

See "HomeZone Programming" [MENU 7,5,7] for further details on HomeZones.

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Isolating / De-isolating the Zone

```
RECEPTION PIR
Enabled
```

This screen displays the name and current status of the selected Zone/Input.

The OFF Key is used to isolate the Zone displayed. Any Zones isolated in this manner are automatically de-isolated when the Area is next turned OFF.

The ON Key is used to de-isolate or enable the Zone.

The RIGHT Arrow Key is used to "Sticky Isolate" the Zone. Any Zone isolated in this manner will remain isolated unless de-isolated from the LCD Terminal via this Menu option. (V3 or later only)

```
Zone is
now isolated
```

A brief message will appear on the display to confirm that the operation was successful.

When complete, press the OK Key to return to the "Zone to Isolate" display.

Reporting "Sticky" Isolate / De-isolate

Any Input assigned to an Area with a Process Group that has the "I"solates option set to Yes in the Comms options will report Isolate/De-isolate.

When a Zone Input is "Sticky" Isolated, the Isolate/De-isolate reporting will be slightly different depending on the Control Module firmware Version.

V3.00 to V3.5x:
An Isolate report will only be sent once for each time the Zone is "Sticky" Isolated, regardless of how often the Area is turned off and back on again while the Zone is still isolated.

V4.00 or later:
An Isolate report will be sent for the Zone every time the Area is turned on as long as the Zone remains Isolated. This helps to ensure that Zones that are "Sticky" isolated are not neglected by the monitoring station.

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Test Inputs [MENU, 4, 1]

```
Input to test:
C01:Z01
```

This screen allows the Testing of individual Inputs (Zones).
The display will prompt you to enter the Module/Zone (Input) ID of the Zone you wish to test. If the Zone ID is known, use the OFF key to clear the screen, then enter the letters/numbers of the Zone ID with the digit keys, then press OK. If the ID is not known, press the ON key, then search through the Zones by name using the UP and DOWN Arrow keys, then OK.

Both methods may be used as the ON key can change the mode at any time.

```
VAULT DOOR
(E01:Z03) Sealed
```

The display will now show the Zone/Input name, ID and its test status:

Sealed	Device is not activated	(eg. Door Shut)
Alarm	Device is activated	(eg. Door Open)
Tamper	Device/cabling is faulty or doesn't exist.	

The status message will update instantly, allowing you to test the Zone by activating the Input device. A short beep is emitted by the Terminal any time the Zone under test changes state. When complete press the OK key to return to the "Input to test" display.

Zone Array Testing (Testing multiple Inputs)

```
PANIC BUTTON
(E01:Z01) Sealed
```

Zone Array Testing allows the User to test Zones in groups of eight. Follow the procedure for selecting an individual Zone to test, selecting the Zone that will be the first zone in the Array, then press OK.

```
E01:Z01  12345678
Array
```

When the Test status display, similar to the one above, is shown press the ON key. The display will change to show the ID of the first Zone and a number representing each of the eight Zones in the Array. Zone Array testing in this mode is dynamic, allowing the display to continuously update to show the actual state of the zone.

```
E01:Z01  12345678
Results
```

Latching Zone Array testing may also be selected by pressing the ON key a second time. The "Results" screen will be displayed and the zone status will latch, allowing walk testing to be performed by one person. The latched status messages will be cleared when the operator exits the screen.

```
E01:Z01  12345678
Array     A A  T
```

```
E01:Z01  12345678
Results  ABAAAATB
```

A letter under the number representing each Zone will indicate that Zone's test status:

Blank	Device is not activated	(eg. Door Shut)
"A"larm	Device is activated	(eg. Door Open)
"T"amper	Device/cabling is faulty or doesn't exist	
"B"oth	"Results" screen only.	
	Device has been activated and tampered.	

The status messages will update instantly, allowing you to test the Zones by activating their Input devices. A short beep is emitted by the Terminal any time one of the Zones under test changes state.

The UP and DOWN arrow keys can be used to move the Zone Array across or back, one Input at a time.
The UP and DOWN arrows will also reset the "Results" screen.
ie. When you have tested all the Zones in one Zone Array display, press the DOWN arrow eight times to display the next eight Zones.

When complete, press the OK key to return to the "Input to Test" display.

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Testing Zone Inputs on "B" Type (32 Zone) Universal Expanders

When a 16 Zone Expander board 993006 is NOT fitted to the Universal Expander in the "B" type configuration, Zones 17 to 32 may appear as being in the Alarm or Tamper state when viewed via the Test Menu.

THIS WILL NOT AFFECT SYSTEM OPERATION. These Zones will not physically exist on the module and would therefore not be assigned to any Areas or programmed to perform any function.

The previous version of the Expander Module automatically treated these Zones as sealed when the 16 Zone Expander board was removed. In the Universal Expander, this has been changed to provide protection against unauthorised removal of a 16 Zone Expander. This enhances the protection already provided by the cabinet tamper switch.

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Test Auxiliaries [MENU, 4, 2]

```
Aux to Operate:
C01:X01
```

This screen allows an individual Auxiliary to be selected for testing. The display will prompt you to enter the Module/Auxiliary ID of the Auxiliary to be tested.

```
C01:X01
is Off. Press On.
```

When you have selected the Auxiliary to be tested, this screen will allow you to use the ON and OFF keys to toggle the Auxiliary On and/or Off.
If the Auxiliary changes state due to some other function or operation in the system, the screen will be automatically updated within 1 second.

```
Calculated Auxes
are Off
```

```
Calculated Auxes
are On
```

All Calculated Auxiliaries may be disabled **whilst this screen is displayed** by pressing the "1" key. This allows for easier testing of individual Auxiliaries where complex Calculated Auxiliaries may interact with the Auxiliary being tested. The screen will briefly display a message to indicate the status of the Calculated Auxiliaries after you have pressed the "1" key. Pressing the "1" key again will re-enable the Calculated Auxiliaries.
(The Calculated Auxiliaries will be automatically re-enabled if the "END" or "MENU" key is pressed.)

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Test Sirens [MENU, 4, 3]

Siren outputs can be tested to ensure that they are fully operational.
The "Test Sirens" option provides a simple and convenient procedure for doing this.

```
Siren to
Operate:  C01
```

This display will prompt the Installer to enter the Module ID of the Siren/s that are to be tested.

The display shows the Control Module Sirens by default. Expander Module Sirens may be tested by first pressing OFF to clear the screen and then entering the letter/ number of the Expander Module followed by the OK key.

C01 = Control Module (Main Panel)
E01 = Expander Module 1
E02 = Expander Module 2
B01 = Big Expander Module 1
B02 = Big Expander Module 2

NOTE:
When mapping Sirens, both "E" Type Expanders and "B" Type Expanders are considered to be one and the same. When testing or activating the Siren attached to E01, Sirens attached to both E01 and B01 will sound.

Conversely, when testing or activating the Siren attached to B01, Sirens attached to both B01 and E01 will sound.

```
E01 Sirens are
Off.  Press On.
```

The display will now show the Module ID and Siren test status.
Press the On key or Off key to turn Siren testing On and Off as required.

While Siren Test is ON, the DIGIT keys may be used to:
-Alter the Siren Tone.
-Select which Siren Outputs to activate.

Key No.	**Tone**
1	Bell
2	Sweep
3	Fire
4	Evacuation
	Output
8	Internal Siren Only
9	External Siren Only
<ON>	Both Sirens

<OFF> Turn All Sirens Off

Another Module may be selected for Siren Testing by using the UP and DOWN arrow keys.

When complete, press the OK key to return to the "Siren to Operate" display.

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Test Telecom Line [MENU, 4, 4]

The telephone line can be manually tested using the "Test Telecom" option.

```
Unlooped  Rng:000
Unseized  No  Line
```

The first display will indicate the status of the line.

```
Looped:    Quiet
Seized  No  Line
```

Key Functions in Test Telecom

OK Key	Toggles seize relay On and Off.
ON Key	Loops the Line and switches On the seize relay.
OFF Key	Unloops the Line and switches Off the seize relay.
LEFT or RIGHT Arrow	Selects DTMF or Decadic Dialling.
HELP Key	Toggles impedance switch On and Off. (If present)
DIGIT Keys (0 to 9)	Dials the digit when the Line is Looped.
UP or DOWN Arrow	Selects special test for factory service. Not used by Installer.

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Test Cards [MENU, 4, 5]

Cards can be tested by selecting the "Test Card" option and then presenting the Card at any Reader connected to Reader Module number 1.
(Or another Reader Module if it is programmed as the "Reader for User Programming" in the System General Options. (MENU, 7, 5, 1)

Site Code and Card ID information required for programming should be supplied when purchasing cards.
This "Test Card" option will only need to be used for analyzing cards where the Site Code and/or Card ID data is unknown, or for diagnostic purposes if instructed by the manufacturer or distributor.

The Reader Module must be programmed with an appropriate Card format and Type (MENU 7, 2, 4) and a LAN Initialise or LAN Secure performed (MENU 7, 8, 2, or MENU, 7, 8, 1) before "Test Cards" can be utilised.
(See additional information below)

```
Waiting for
Card at R01
```

When the test option is selected, the screen will prompt the Installer to present the Card at the nominated Reader.
The Installer must then present/swipe the Card within the "Card Wait Time" (Default = 10 seconds).
The "Card Wait Time" can be programmed to a different value in the General System Options, MENU 7, 5, 1. (V5.1 or later only)

When the Card is presented, the display will change to show the Card details. The manner in which the Card details are interpreted will vary depending upon the format of the Reader and Card.

NOTE: Prior to V4, the screen will always display "R01", even if a different Reader Module has been specified under MENU 7-5-1 as the Reader at which card data is entered into the system.

Reading Cards via the Test Cards Menu.

Introduction

The Model 3000 / Access 4000 provides a convenient method of determining a proximity card's Format, Site code and Card number via the card test menu. All non-proprietary cards utilising the industry standard 26 Bit Wiegand format can easily be read to determine the information needed to enter User cards in the Site code method.
HID Standard 34 Bit & 36 Bit Wiegand, and Indala Standard 27 Bit Wiegand formats are also supported using the "Standard" Site Code Type.

The "General" Site Code Type provided in V4.5 or later also allows other formats to be utilized, providing that the following requirements are met:

1) The total card data to be processed is no more than 40 bits (Wiegand) or 15 characters (Magnetic Swipe). (Cards with more data can be used, but the additional data will be ignored)
2) The Site Code data is in a continuous sequence from Most significant bit (MSB) to Least significant bit (LSB) and is no more than 19 bits or 10 characters.
3) The Card ID data is in a continuous sequence from Most significant bit (MSB) to Least significant bit (LSB) and is no more than 16 bits or 5 characters. (Supports up to 65535 Cards)
4) The data is not scrambled or encrypted.

NOTE: Site Code Type (Standard or General) is selected in the General System Options, MENU, 7, 5, 1.

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Site coding of cards provides an easy method of adding additional users and replacing existing user's cards on the system. Once a Site Code has been registered on the system, only the individual card number needs to be entered for that particular User. Unlike direct entry and credit card formats, no "enrolling" of each card is required, providing a very simple method to add large numbers of users to a system.

Reading the Card.

WIEGAND FORMATS

The information displayed in the Test Card Menu is in HEXADECIMAL format, and will require conversion to BINARY and subsequently to DECIMAL for comparison to the Site Code data (provided by the Card Supplier) and the Card number printed on the card.

To read a card from the card test menu, the reader being used must be programmed for the particular card format. When the number of bits is unknown, the format should be set to "Nbit Wiegand". This will cause all card data to be read allowing the correct bit format to be ascertained.

Once the reader is programmed correctly and "LAN Initialize" (MENU, 7, 8, 2) or "LAN Secure" (MENU, 7, 8, 1) is performed, a card can be read. Enter the Test Card Menu (MENU 4, 5) and present the card to be read at the nominated Reader. If read correctly the screen will display 2 lines of hexadecimal characters.

e.g. `039A3701C3000000`
`0000000000000000`

The number of characters relevant to the data being read will vary according to the table below.

When the number of bits is unknown, a number of cards should be read, and then all the characters that are non-zero should be used to analyze the card data.

Number of displayed characters relevant to each bit format:

Bits	Characters	Bits	Characters	Bits	Characters
26	11	32	12	37	13
27	11	34	13	38	14
30	12	36	13	40	14

This HEX data is then divided as follows: FFBBCCCCCCCCCC...

Where:

FF Card Format programmed for the Reader. (In Reader Module Programming; MENU, 7, 2, 4)

BB 1st Bit: 1st Bit of the Card data (Commonly a Parity Bit)
Bits 2 to 7: Data format of the Card. (The total number of Bits read from the Card by the Reader)

CC... The remainder of the Card data.

e.g.

In the case of a 26 bit Wiegand card number 451 with a site code of 55.

Remembering the data is displayed in Hex, the terminal will show: 039A3701C30

Every 2 Hex digits represent 1 byte of information from the card with the exception of most of the first 2 bytes, which are generated by the Reader module. From this data the following information may be determined.

03 Represents the card format programmed for the Reader. In this case format 03 which is "Nbit Wiegand".
(See "Reader Formats" Table in this document)

9A Represents the bit format of the card and an even parity bit for the first half of the card data.
9A Hex = 1001 1010 Binary. 1st Bit of Card Data = "1". (The Parity Bit.)
Bits 2 to 7 = 0011010 = 26 Decimal = 26 Bits.
(See "Common Card Bit formats" Table in this document)

37 Represents Bits 2 to 9 of the Card Data. In 26 Bit Wiegand format, this is the "Site code" or "Facility code" data.
37 Hex = 55 Decimal.

01C3 Represents Bits 10 to 25 of the Card Data. In 26 Bit Wiegand format, this is the Card ID or Card number.
01C3 Hex = 451 Decimal.

0 Represents Bit 26 of the Card Data. In 26 Bit Wiegand format, this is an odd parity for the last half of the card data.

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When converted to Decimal the site code is 55 (37 Hex) and the card number is 00451 (01C3 Hex). By comparing this information with the site code provided by the manufacturer, and the number printed on the card, you can determine that the reader format and card type programmed are correct.

Note, the number printed on the card may not always match the number read via the test menu. This is usually an indication of a proprietary card format, produced specifically for use on a particular system or a particular facility. The only proprietary format utilized by Inner Range is the Inner Range magnetic swipe card format which cannot be deciphered via the Test Card Menu.

Hex to Binary conversion.

To be able to determine the actual card bit format (eg 26 bit- 32 bit etc.) you must first convert the information into binary format. Using the same sample card information above and converting it to binary format, we can determine the following.

Sample Card data in Hex format:	039A3701C30.
Converted to binary:	0=0000
	3=0011
	9=1001
	A=1010
	3=0011
	7=0111
	0=0000
	1=0001
	C=1100
	3=0011
	0=0000
	0=0000
Together:	000000111001101000110111000000011100001100000000

This represents 48 bits of binary data. However, it is known that the card is 26 bit and that most of the first 2 bytes is generated from the Reader Module and not the card.
Removing 03 (The 1st byte) leaves 40 bits: 1001101000110111000000011100001100000000.
The last byte (8 bits) represents the odd parity of the last half of the card data. As the parity only consists of 1 bit, the last 7 bits may be removed: 1001101000110111000000011100001 10.
What was the 2nd byte (9A) contains both the parity bit for the first half of the card data (the 1st bit) and the card format (the other 7 bits).
Therefore, by removing the 2nd to 7th bits, and leaving the parity bit, 26 bits remain.
The remaining 26 bits are: Even parity: 1 bit; Site code 8 bits; Card number 16 bits: Odd parity 1 bit.

An alternate and easier way of determining the bit format is to simply convert the 2nd byte (9A in our example) to binary, giving 10011010. The first bit of this byte represents the even parity bit. And as the first 12 bits of the card data above contains only 5 bits set to 1, the parity is odd. The even parity bit, therefore, needs to be set to 1 to generate an EVEN number of 1's. So, by removing the even parity bit we are left with 0011010 which is 26 decimal.

See the following Table for Common Card Bit formats.

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Common Card Bit formats.

Bit Format	Format byte read. First (Parity) bit = 1	Format byte read. First (Parity) bit = 0	Binary. (Parity Bit removed)
26 bit Weigand	9A	1A	001 1010 = 26 Decimal
27 bit Weigand	9B	1B	001 1011 = 27 Decimal
30 bit Weigand	9E	1E	001 1110 = 30 Decimal
32 bit Weigand	A0	20	010 0000 = 32 Decimal
34 bit Weigand	A2	22	010 0010 = 34 Decimal
36 bit Weigand	A4	24	010 0100 = 36 Decimal
37 bit Weigand	A5	25	010 0101 = 37 Decimal
40 bit Weigand	A8	28	010 1000 = 40 Decimal

Reader Formats

Format Number	Format	Format Number	Format
01	SWIPE	08	36 bit Wiegand
02	INSERTION	09	37 bit Wiegand
03	Nbit Wiegand	0A	40 bit Wiegand
04	26 bit Wiegand	0B	Swipe Last
05	30 bit Wiegand	0C	27 bit Wiegand
06	32 bit Wiegand	0D	Nbit Fast
07	34 bit Wiegand	0E	Prox Pin

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Test Memory [MENU, 4, 6]

Memory check is performed to see if any changes have been made to the system programming since the last Memory check was performed. When the Memory Check is complete, a message will be saved to review for any part of the memory (database structure) that has been changed. This enables the service technician to determine in which part of the database the changes were made, eg. User, Area List, Process Group etc.

It is recommended that a Memory check is performed by the Installer once all initial programming of the system is complete. (Ignore the review results at this time). This then provides a point of reference for future Memory checks when required.

```
Confirm Memory
Check ?
```

When the "Test Memory" option is selected, the display will prompt the Installer to confirm the selection. Press the "9" key to proceed with the test.

```
Checking
Memory ...
```

This screen is then displayed whilst the test is in progress. Upon completion of the test, the display will return to the "Main Menu".

```
Jan05 12:19:37.1
Chg in #228 - $0
```

Review Memory can then be accessed and will show messages similar to this one which indicates that a change has occurred in Database structure number 228 (Area Lists) at the specified time and date.

Structure 193 (Comms Tasks) and 249 (Review) will always indicate changes, but these are due to the normal operation of the system and not necessarily programming changes.

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Test Ports [MENU, 4, 7]

The status of connections on any Ports on a UART Expander board fitted to the Control Module can be checked with the "Test Ports" option.

The following functions can be tested:
-Communication between the Control Module and the UART Expander board.
-All RS232 Input Control Lines.
-All RS232 Output Control Lines.

Note that TxD (Transmit Data) and RxD (Receive Data) are not tested with this facility.

```
Port 1 IN: Cd=L
Cts=L Dsr=L Ri=L
```

When the option is first selected, the status of the RS232 **Input** signals on **Port 1** are displayed.
Use the UP and DOWN Arrow keys to scroll through the Input status screens for the other Ports.

INPUT	DESCRIPTION
Cd	Carrier Detect
Cts	Clear To Send
Dsr	Data Set Ready
Ri	Ring Input

```
Port 1 OUT:
Dtr=L Rts=L
```

Use the LEFT and RIGHT Arrow keys to switch between the "INput Status" screen and the "OUTput status" screen for the Port being tested.

OUTPUT	DESCRIPTION
Dtr	Data Terminal Ready
Rts	Request To Send

While the Port n **"OUTput status"** screen is displayed:

"1" key. Toggles the "Dtr" output line.

"2" key. Toggles the "Rts" output line.

```
Port 1 IN: Not
Responding
```

If the Port is not working, the message "Not Responding" will be displayed.
This indicates that the particular UART Port is not responding to instructions from the Control Module.
Disconnect the Power and the Battery, and carefully check that the UART Port exists, and the UART Expander board is fitted onto the Control Module correctly.

Note that a Port can be tested while the Port is in use by a Comms Task without affecting the operation of the Port unless the Dtr or Rts outputs are toggled.

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Test Power [MENU, 4, 8]

The Test Power routine is used to help the Installer check that LAN Power distribution is correct. It also checks that all batteries are connected and charged. It is desirable to perform a LAN Secure prior to the Test Power routine. It is also useful to have the upload/download logging review so that review can be used to aid in testing.

When first entered, the system will enable certain specific system inputs on all modules that are connected and present so that their current state can be interrogated:

Terminals	LAN Fail Input
Zone Expanders	AC Fail Input Low Battery Input Detector Fuse Input LAN Fuse Input LAN Fail Input
Readers	Low Volts Input LAN Fail Input

```
Waiting to
Enable Inputs
```

Whilst the inputs are being enabled, these screens are displayed.

```
Waiting for
Status Replies
```

```
No reply from
LAN Module
```

If LAN Communication with a module is lost, an error screen similar to this one will be displayed.

```
Problem on
M01 LAN Comms
```

The system will now continuously check all the above inputs for an unsealed condition and, if found, the problem will be displayed. For example, this screen has identified the missing module as M01 (Mini Expander number 1).

```
No Problems
Detected
```

If all inputs are sealed, this display will show.

When a problem is detected and displayed, press the Up Arrow or Down Arrow to re-test.

The following keys are used to aid in testing:

Key	Function
Off Key	Turns off all Zone Expander Battery chargers so that they are running on battery power only. This will cause a lower than usual LAN voltage to aid in testing.
ON Key	Turns all Zone Expander battery chargers back on. This key should always be pressed before exiting "Test Power" if the Off Key has been pressed.
"7" Key	Turns off the Control Module battery charger. This will cause a lower than usual LAN voltage to aid in testing.
"9" Key	Turns the Control Module battery charger back on. This key should always be pressed before exiting "Test Power" if the "7" Key has been pressed.

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"1" Key	Unlocks all doors by turning on all door lock Auxiliaries. This is useful in testing LAN voltages under worst case conditions.
"3" Key	Re-locks all doors by turning off all door lock Auxiliaries. This key should always be pressed before exiting "Test Power" if the "1" Key has been pressed.
"LEFT" or "RIGHT" Arrow	Re-Test LAN communications with all modules by re-sending input enable commands to all LAN modules.
"UP" or "DOWN" Arrow	Checks for other unsealed inputs.

An example testing procedure is shown here:

1. Enter Power Test and check that there are no problems.

2. Turn Off Zone Expander Chargers and check there are no problems.

3. Turn Off Control Module Charger and check there are no problems.

4. Unlock all doors and check there are no problems.

5. Press the RIGHT Arrow key to re-check communications with all LAN modules under worst case LAN voltages.

In the above condition, a thorough test would involve measuring the following voltages with a voltmeter at all LAN modules:

Measure	**Desired Range under worst case conditions**
LAN + to LAN -	11.0 to 13.80 volts
"A" to LAN -	-5.0 to +5.0 volts
"B" to LAN -	-5.0 to +5.0 volts

A variation of the above test would be to turn on specific sirens on desired modules before starting the power test. This will further load down the LAN power supplies to give a true worst case condition.

NOTE:
When a charger is turned off, the battery charge voltage drops from 13.75 to 10.0 volts nominally. The Control Module will register low battery at LAN voltages of less than 10.5 to 11.0 volts. The Reader Module will register low volts at LAN voltages of less than 10.5 to 11.0 volts.

Earlier zone expanders register low battery at voltages of less than about 8.7 volts. This means they will not register low battery with the charger off and no battery connected. A volt meter should be used. Later Zone Expanders will register low battery at voltages of less than 10.5 to 11.0 volts.

If a Zone Expander charger is left off, the charger will not turn on again unless the ON key is pressed or the Zone Expander is powered down. **Always push On before leaving Power Test.**

If the Control Module charger is left off, it will automatically turn on again approximately 2 minutes after the low battery condition has been reached. Low battery is only recorded in review after 2 minutes.

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Test Volts (Control Module Voltage & Current) [MENU, 4, 9]

Note: The "Test Volts" Menu is only relevant for Type 2 (CE) Control Module Hardware and Version 4.00 Firmware or later.

This Test Menu option allows the Control Module DC Supply (or Battery Charger) Voltage, DC Current drain, AC Supply status and Battery Voltage to be viewed in real time with the dislay updated twice every second.

```
Charger  AC On
13.7 V    0.42 A
```

The information available on the main "Test Volts" screen is as follows:

Charger
13.7V

Current DC Power Supply Voltage and Battery Charger voltage.
This value also represents the DC Voltage at the "DET+" and "LAN+" terminals.

AC On / AC Off

AC On indicates that the AC supply is present. AC Off indicates that the AC supply is not present.

0.42 A

Indicates the total current being drawn from the DC Power Supply. This includes all on-board circuits, the Battery charge current, Detector +ve and LAN +ve.

```
Battery
13.2 V
```

Control Module Battery Voltage.

ON Key

Pressing the ON key when the main screen is being displayed will cause the Battery charger (DC Supply) to be turned off, allowing the Battery Voltage to be viewed.

Any other Key

Pressing any other key will exit this screen and the Battery charger will be turned on again.

CAUTION: Note that if the Battery Voltage screen is entered and there is no Battery connected (or the Battery is in very poor condition), the Control Module will have no DC supply and will therefore be reset.

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Time / Date Programming

The following screens allow the system Time and Date to be altered. On some systems the Time and Date may be updated automatically during communications with a Central Station if communicating via IRfast or by a Management PC. Another option is that the panel automatically rings a service provider for the specific purpose of obtaining the accurate Time and Date.

Set Date-Time:
01/12/99-15:19

This screen allows the current Date and Time to be selected in 24 hour format. On pushing the OK Key the seconds will be set to zero.

Set Weekday -> Wednesday

This screen allows the current day to be selected. Pressing the Right Arrow Key will cycle through all days of the week. The OFF Key will set the day back to "Sunday".

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TimeZone Programming

TimeZones are used to qualify other programmed items with time and date. (Such as Groups, Lists, User Types and Telephone Numbers)
E.g. When a Group or List specifies a TimeZone, all the options in that item are only valid if the associated TimeZone is valid. If the associated TimeZone is invalid then you can optionally select alternative Group/List to use.
In addition TimeZones can be used to turn ON and/or OFF an Area (or Areas) and/or an Auxiliary. They may also be used to Unlock and/or lock a Door (or Doors) and secure and/or unsecure Floors.

There are 4 default TimeZones already programmed and available for use in the system.
These TimeZones may cover some of the required programming and also serve as a guide for Installers to study and follow. A table showing the details of the default TimeZones is provided at the end of this section. Take particular notice of the manner in which programming must be conducted to achieve the "NIGHTTIME" TimeZone which crosses midnight.

The procedure to reset TimeZone Programming to the factory default is explained in more detail at the end of this chapter.

```
TZ001 name:     (V)
WEEKDAYS
```

This screen allows a TimeZone name to be entered. A TimeZone name can be up to 16 characters long.

It is recommended that TimeZone names be programmed to simplify programming of the many other programming options where TimeZones may be allocated.

The 1st screen that is displayed in TimeZone Programming has been enhanced to show the current status of a time-zone for debugging purposes.
- A (V) suffix indicates the time-zone is currently valid.
- An (I) suffix indicates the time-zone is currently invalid.

Each TimeZone may be divided into up to four (4) segments or periods. The TimeZone will be considered valid at the times and on the dates which fall between the start and finish of each period of the TimeZone. Times and Dates falling between periods within the same TimeZone are considered invalid for that TimeZone..

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```
TZ001 1st period
00:00- to- 00:00
```

```
TZ001 SMTWTFSH
1st ->nnnnnnnn
```

These screens are repeated 4 times, allowing 1st, 2nd, 3rd and 4th periods to be defined. These screens define the hours and days of the week that a TimeZone will be valid. At all other times and days outside these times the TimeZone will be invalid.

There are 4 separate periods that can be defined with a starting hour and minute in HH:MM format and a finish hour and minute in HH:MM format. A Setting of 00:00-to-00:00 means ignore that period. Spaces instead of digits mean ignore that starting time or ending time in that particular period. (Spaces can only be entered by pressing the OFF Key to enter spaces and then filling in required digits using the arrow and digit keys).

Putting a "Y" under the appropriate day of the week means that the TimeZone will be valid on that day between the specified times.

TimeZone operation can be qualified with holidays. If a "n" appears under the "H" for a period screen, that period will be made invalid if the selected day happens to be a holiday. A "Y" under the "H" letter means the TimeZone is valid on selected days for that time period, even if the day is defined as a holiday. The actual Holiday Date/s and Holiday Type are defined under Holiday Programming [MENU 5,3,1].

```
TZ001    123456
Holidays YnYnnn
```

This screen determines what Type of Holidays this TimeZone will recognise.
In Holiday programming, each Holiday must be assigned to one or more of the 6 Holiday Types.

In this example, if Holiday Type 1 and Holiday Type 3 is true (set to "Y"), this TimeZone will be considered invalid for the whole of any Type 1 and Type 3 Holiday dates unless specific TimeZone periods have a "Y" under the "H" flag. *See previous paragraph for details.*

See "Holiday Programming" for further explanation of Holiday Types.

```
TZ001 Function ->
None
```

This screen selects which control function (if any) is going to be used.

None	No special control function.
Aux On/Off	Allows control of Auxiliaries OR Auxiliary Lists
Area On/Off	Allows control of an individual Area.
Area List On/Off	Allows control of an Area List
Door Unlock/Lock	Allows control of an individual Door.
Door List Unlock/Lock	Allows control of a Door List.
Lift Car & Floor Unsecure/Secure	Allows an individual Floor to be Unsecured and/or Secured.
Lift Car & Floor List Unsecure/Secure	Allows a Floor List to be Unsecured and/or Secured.

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Trigger Time Report	Triggers the Control Module Time Report System Input, which can be used to send a Test Report to a Central Station.
Aux On/Off (seconds)	Allows control of an Auxiliary with a timer function from 1 to 255 seconds. Note: An Auxiliary List cannot be assigned to this function.
Aux On/Off (minutes)	Allows control of an Auxiliary with a timer function from 1 to 255 minutes. Note: An Auxiliary List cannot be assigned to this function.
Lift Car List & Floor List Secure/Unsecure	Allows a Lift Car List and a Floor List to be Unsecured and/or Secured. **If LC=00 and FL=00 then all Lift Cars and all Floor Lists are selected.**
Lift Car List & Floor Secure/Unsecure	Allows a Lift Car List and a Floor to be Unsecured and/or Secured.
Area Defer On	Starts the Deferred Area Timer running for the specified Area. The nominated Area will beep and display a warning at the Terminal when the timer expires and the Area is about to turn on. This gives Users in that Area the opportunity to enter their User Code which, provided they have the appropriate Menu Group permissions, will restart the timer without turning the Area on. If the Area is already on, the Area will be turned off and the Deferred Area timer started. (See "Applications Programming" for further details) **The next screen displayed will depend upon the control option selected.**

If one of the Auxiliary control options have been selected, the following screen will be displayed.

```
TZ001 Output
Aux:   C01:X03
```

This screen allows an output Auxiliary to be chosen. The Auxiliary is selected by entering its ID number. To select an Auxiliary List to control (Aux on/off function only), press the ON Key to programme the Auxiliary List control options, and then specify the Auxiliary List to control.
(See "Using Auxiliary Lists" in Auxiliary List Programming [MENU 2,3,6])

If "Auxiliary On/Off (seconds)" or "Auxiliary On/Off (minutes)" has been selected, the following screen will be displayed next.

```
TZ001 Output Aux
Time 000 sec/min
```

This screen specifies the time period for the timed Auxiliary function in seconds or minutes as specified by the control function selected. A time of 255 sec = random time.

Do not use the timed Auxiliary function if an Auxiliary List is to be controlled. If timing is required, programme one or more Auxiliary Timers. [MENU 5,5]

If "Area On/Off" has been selected, the following screen will be displayed.

```
TZ001 Arm Area ->
HOUSE
```

```
TZ001 Area to
Operate:  A001
```

This screen specifies which Area will be controlled by this TimeZone. To select an Area, press the Right Arrow Key to scroll through all the available Areas alphabetically. Press the OFF Key to select no Area control. (The ON Key may be used to change modes to allow an Area to be selected by number, if desired).

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If "Area List On/Off" has been selected, the following screen will be displayed next.

```
TZ001 AList   ->
OFFICE AREAS
```

This screen specifies the Area List that will be used to determine the Area/s controlled by this TimeZone. To select an Area List press the Right Arrow Key to scroll through all the available Area Lists alphabetically. Press the OFF Key to select no Area List control.

```
TZ001 AList
AL001
```

The ON Key may be used to change modes to allow an Area List to be selected by number, if desired. To select an Area List by number, enter the Area List number via the DIGIT Keys and the Right and Left Arrow Keys. Press the OFF Key to select no Area List.

If "Door Unlock/Lock" has been selected, the following screen will be displayed next.

```
TZ001 Door    ->
FRONT DOOR
```

This screen specifies which Door will be controlled by this TimeZone. To select a Door press the Right Arrow Key to scroll through all the available Doors alphabetically. Press the OFF Key to select no Door control. (The ON Key may be used to change modes to allow a door to be selected by number, if desired).

```
TZ001 Door to
Control: D001
```

If "Door List Unlock/Lock" has been selected, the following screen will be displayed next.

```
TZ001 DList   ->
HOUSE
```

This screen specifies the Door List that will be used to determine the Door/s controlled by this TimeZone. To select a Door List press the Right Arrow Key to scroll through all the available Door Lists alphabetically. Press the OFF Key to select no Door List control.

```
TZ001 DList
DL001
```

The ON Key may be used to change modes to allow a Door List to be selected by number, if desired. To select a Door List by number, enter the Door List number via the DIGIT Keys and the Right and Left Arrow Keys. Press the OFF Key to select no Door List.

If "Floor Unsecure/Secure" or "Floor List Unsecure/Secure" has been selected, the following screen will be displayed.

```
TZ001  Lift Car
to use:  LC000
```

This screen is used to specify which Lift Car will be controlled. The Lift Car is selected by entering it's ID number.

```
TZ001  Floor to
control:  F000
```

To select the Floor or Floor List to control, screens similar to the Door and Door List selection screens will be displayed next. A Floor or Floor List is selected in the same manner as would a Door or Door List.

```
TZ001  FList to
FL000
```

Setting "Lift Car to Use" to "000" will include **all** Lift Cars
Setting "Floor to Use" to "000" will include **all** Floors.

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If "Lift Car List & Floor Secured/Unsecured" or "Lift Car List & Floor List Secured/Unsecured" has been selected, the following screen will be displayed.

```
TZ001  Lift Car
List:  LL000
```

This screen is used to specify which Lift Car List will be controlled. The Lift Car List is selected by entering it's ID number.

```
TZ001  Floor to
control:  F000
```

To select the Floor or Floor List to control, screens similar to the Door and Door List selection screens will be displayed next. A Floor or Floor List is selected in the same manner as would a Door or Door List.

```
TZ001  FList to
FL000
```

If "Area Defer On" has been selected, the following screen will be displayed.

```
TZ001  Area to
Operate: A001
```

This screen is used to specify which Area is to be controlled. The Area is selected by entering it's ID number.

```
TZ001      OFof
Control->  YnnY
```

This screen selects how the TimeZone is going to control the selected entity or entities.

NOTES:

1. If "Trigger Time Report" function is selected only the "(O)N when TimeZone Valid" option is used.
2. If "Area Defer On" function is selected only the "O" and "o" options are used.

O Set means turn ON when TimeZone valid.

F Set means turn OFF when TimeZone valid.

o Set means turn on when TimeZone invalid.

f Set means turn off when TimeZone invalid.

To apply the above logic to Doors and Lifts etc;
ON or on = Secure, Lock or Close
OFF or off = Unsecure, Unlock, Open

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```
TZ001 Qualify QI
Options ->    nn
```

This screen selects whether the TimeZone will be qualified with an Auxiliary. A Qualify Auxiliary operates in a similar fashion to a holiday in that it over-rides the time settings depending on the state of an Auxiliary.

Q **Q**ualify TimeZone

If set, this TimeZone is Qualified with an Auxiliary. When the Auxiliary is Off, the TimeZone will be forced to invalid, even if the times are valid.

I **I**nvert

This option reverses the above option. The TimeZone will be forced to invalid if the Auxiliary is On.

NOTE:
The **Q**ualify option must be set to "Y" if the **I**nvert option is to be set to "Y"

```
TZ001 Qualify
Aux:    :X
```

This screen allows the Installer to specify which Auxiliary is to be used to qualify the TimeZone as per the previous screen.

NOTE:
TimeZones utilized in Intelligent 4 Door Controller operations.

IFDAM Firmware V1.00 to V1.08:
The Qualify Auxiliary is not used in IFDAM operations.

IFDAM Firmware V1.09 or later:
A Qualify Auxiliary can be used on TimeZones utilized in IFDAM operations. The Auxiliary must be one of the Auxiliaries X09 to X16 on the same IFDAM Module.
e.g. If you need to use a Qualify Auxiliary on a TimeZone that will be utilized in operations on IFDAM Module number 4, then the Qualify Auxiliary must be an Auxiliary from I04:X09 to I04:X16.
If the Module is Off-line, the IFDAM will assume that the specified Auxiliary is Off.

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TimeZone Defaulting

Two options are available by which to default TimeZone Programming to factory settings. These are explained below:

```
TimeZone to    (V)
alter: TZ001
```

At the first TimeZone Programming screen press HELP, "9".

```
T.Zone Default ->
Don't Default
```

This screen is then displayed. Available defaulting options are viewed by pressing the right Arrow Key. To make a selection, press the OK Key.

Don't Default — Selecting this option will abort the procedure.

Clear All — Selecting this option will reset the first four TimeZones as follows:

TZ001	WORKING HOURS
TZ002	WEEKEND HOURS
TZ003	DAYLIGHT
TZ004	NIGHTTIME

In addition, this option <u>will delete</u> all other TimeZones, if present.

Standard — Selecting this option will reset the first four TimeZones as follows:

TZ001	WORKING HOURS
TZ002	WEEKEND HOURS
TZ003	DAYLIGHT
TZ004	NIGHTTIME

This option will make <u>no alterations</u> to any other TimeZones, if present.

```
Push '9' key to
Confirm Default
```

The confirmation screen is displayed. Press the "9" Key to confirm your selection.

```
Default
Done
```

The default procedure is confirmed.

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TimeZone Defaults

NAME	TZ001 WORKING HRS	TZ002 WEEKEND HRS	TZ003 DAYLIGHT	TZ004 NIGHTTIME
1st Period	09:00 to 17:00	09:00 to 13:00	07:00 to 20:00	09:00 to -:-
Days of the week: S			Y	Y
M	Y		Y	Y
T	Y		Y	Y
W	Y		Y	Y
T	Y		Y	Y
F	Y			
S			Y	Y
H	Y	Y	Y	Y
		Y		
2nd period				-:- to 07:00
Daysof the week: S				Y
M				Y
T				Y
W				Y
T				Y
F				Y
S				Y
H				
Holiday Types 1	Y	Y	Y	Y
2				
3				
4				
5				
6				
Control Function				
Entity to Contol				
Entity List to Control				
On when TZ goes valid				
Off when TZ goes valid				
on when TZ goes invalid				
off when TZ goes invalid				
Qualify Options				
Qualify with Auxiliary				
Invert qualify with Aux.				
Qualify Auxiliary				

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Holiday Programming

Holidays are used in conjunction with TimeZones to specify whether a TimeZone will be valid OR invalid on days designated as holidays. There can be 6 Types of holiday allowing certain TimeZones to only recognise certain types of holiday. Three Holidays are pre-defined within the system by default, although these can be altered or removed. **The procedure to reset Holiday Programming to the factory default is explained in more detail at the end of this chapter.**

```
Holiday to
alter: H001
```

```
Find Holiday  ^
CHRISTMAS DAY
```

This screen allows a Holiday to be selected for programming. There can be up to 250 Holidays or Holiday periods in a large system. By pressing the ON key the operator is allowed to search alphabetically for a Holiday name using the digit keys and the up and down arrows.

```
H001 Name:
CHRISTMAS DAY
```

An optional name can be assigned to each Holiday up to 16 characters long. It is recommended that Holiday names be programmed to simplify the searching procedure.

```
H001 Dates:
25/12-to-25/12
```

This screen allows the starting and finishing day and month to be defined for this holiday period. The year is not recognised. If a Holiday is for one day only, the same day and month must be entered for both start and finish. The screen also allows a span of dates to be specified for this Holiday in order to define a holiday period. Dates may span a new year if desired, for example: 25/12 to 04/01.

```
H001    123456
Type -> YnYnnn
```

A Holiday period must be designed to be at least 1 type. In this example the Holiday period is a type 1 and a type 3. Any TimeZone specifying a Holiday of type 1 or type 3 will not be considered valid on any day falling within the period defined on the screen. (Unless "H"oliday is specified as one of the "Days" in a TimeZone Period).

Holiday types may be utilised to define different types of Holidays that will affect different TimeZones. For example, all public holidays may be made Type 1, school holidays made Type 2 and annual Christmas holiday shutdown made Type 3.

If this were the case, Christmas Day might be designated as Type 1,2 and 3, as it fits all three types. Easter holiday dates would probably be Type 1 and 2.

Holiday Defaulting

Two options are available by which to default Holiday Programming to factory settings. These are explained below:

```
Holiday to
alter: H001
```

At the first Holiday Programming screen press HELP, "9".

```
Hol. Default ->
Don't Default
```

This screen is then displayed. Available defaulting options are viewed by pressing the right Arrow Key. To make a selection, press the OK Key.

Don't Default	Selecting this option will abort the procedure.

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Clear All

Selecting this option will reset the first three Holidays as follows:

H001	CHRISTMAS DAY
H002	BOXING DAY
H003	NEW YEARS DAY

In addition, this option will delete all other Holidays, if present.

Standard

Selecting this option will reset the first three Holidays as follows:

H001	CHRISTMAS DAY
H002	BOXING DAY
H003	NEW YEARS DAY

This option will make no alterations to any other Holidays, if present.

```
Push '9' key to
Confirm Default
```

The confirmation screen is displayed. Press the "9" Key to confirm your selection.

```
Default
Done
```

The default procedure is confirmed.

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Diary Programming

Diaries are used to display customised default displays on Terminals at various selectable times. They can also be used to control Auxiliaries, Area and Battery Testing.

```
DA001 Date-Time
26/07/_ - 09:30
```

This screen allows a date and time to be specified as to when the Diary will be valid. A blank field means ignore that item. The date and time is specified in DD/MM/YY, HH:MM format. In this example, Diary 001 will become valid for 1 minute between 09:30 and 09:31 on the 26th of July every year. If the HH:MM field is left blank, the Diary message will be displayed for the whole of the day/ period specified.

NOTE:
To remove a Diary do not press OFF. This will make the Diary continuously valid. Instead, set the Date and Time to 00/00/88 - 00:00

```
DA001  SMTWTFS
Days-> YYYYYYY
```

This screen selects what days of the week the Diary event will be valid. In this example, the Diary event will be valid on any day of the week.

```
DA001  1st line
Happy Birthday
```

This screen determines the top line that will be displayed on LCD Terminals programmed to accept Diary messages when this Diary event becomes valid.

IMPORTANT NOTE: The first character must not be left blank. If you don't want the required text to start at the first character, program a symbol such as a full stop or a dash for the first character. (If programming via the LCD Terminal, symbols are selected using the "0" key.)

```
DA001  2nd line
General Manager
```

This screen determines the bottom line that will be displayed on LCD Terminals programmed to accept Diary messages when this Diary event becomes valid. If a full stop is placed in the last character position of the 2nd line, the LCD Terminal will emit a short beep at the start of displaying the message.

```
DA001  Output
Aux:   _ :X
```

Output Auxiliary. This screen allows an output Auxiliary to be chosen which will turn on when the Diary event becomes valid and turn off when the Diary event becomes invalid.
From V3 to V3.5x, this screen (the "Diary Auxiliary") was utilized as an Output Auxiliary OR a Qualify Auxiliary depending on whether or not the "Qualify Aux" Diary Function was selected. (No Qualify function available V2 or earlier)

```
DA001  Qualify
Aux:   _ :X
```

V4 or later only. When the Time and Date indicate that the Diary should be valid, the Diary will first check that the "Qualify Auxiliary", if programmed in this screen, is On.
-If Time & Date are valid and the Qualify Auxiliary is On, the Diary will be valid.
-If Time & Date are invalid or the Qualify Auxiliary is Off, the Diary will be invalid.

(To provide the Qualify function in V3 to V3.5, select the "Qualify Aux" option in the Diary Functions and program a "Diary Auxiliary" to qualify against. No Qualify function was available V2 or earlier)

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DA001 Function-> None

This screen allows the User to select the function of the Diary Message:

Add 1 Hr	When the Diary goes valid, the real Time clock is adjusted by adding 1 Hour. i.e. Start of Daylight Saving. (V2 or later)
Subtract 1 Hr	When the Diary goes valid, the Real Time clock is adjusted by subtracting 1 Hour and the function is changes to "Skip Subtract 1 Hour". i.e. End of Daylight Saving. (V2 or later)
Battery Test	When Diary goes valid, automatic Battery Test cycle begins. *See details below.* (V3 or later only.)
Skip Subtract 1 Hr	When Diary goes valid, function changes to "Subtract 1 Hour". This option is selected automatically when necessary. (V3 or later only)
Qualify Aux	V4 or later - Not available. Independent "Output" and "Qualify" Auxiliaries were made available in V4 firmware, making this option unnecessary. V3.0 to V3.5x - If set to Yes, then when the Time and Date indicate that the Diary should be valid, the Diary will first check that the Diary Auxiliary programmed earlier is On. If the Time and Date are valid and the Diary Auxiliary is On, the Diary will be valid. If the Time and Date are invalid or the Diary Auxiliary is Off, the Diary will be invalid. (Note: No Output Auxiliary is available when this option is selected) V2 or earlier - No Qualify function was available.

Diary Priorities

Diary Messages have a priority system based upon the Diary number, where Diary number DA001 is the lowest priority and the highest available Diary Message is the highest priority. (The highest available number may be 5, 10 or 32, depending on memory size and configuration).
e.g. **If Diaries 1 and 4 are both valid, Diary 4 will be displayed.**

Dynamic Battery Testing. *See "Battery Testing" in the Applications Programming section for full details.*

Battery testing is initiated by a Diary event which allows the installer to dictate the frequency dependent on their requirements. The period can also be set from 0 (no test) to 255 minutes for each module to be tested.

Only the Control Module, B Type Expanders, E Type Expanders, Intelligent 4 Door Access Modules and LAN Power Supply Modules are capable of Dynamic Battery testing.
The Battery Test when activated starts with the controller when a Diary with a function of "Battery Test" goes valid. Once completed successfully or due to failure the next module programmed will then start battery testing. Battery testing finishes once all modules set for testing have completed their test.

Battery test times should be set with module load in mind. It should be realised that if a battery test for 4 hours is performed and the AC supply to the building failed shortly after the test was complete, the charge of the battery would be severely effected. This coupled with the age of the battery would greatly reduce the integrity of the system. The battery test does NOT turn off the AC Mains supply to the module being tested, it turns off the Battery charge circuit allowing the module to run off the battery supply only.

As a general rule a battery test time of between 1-10 minutes would be used to determine only that a battery is connected. A time of between 60-120 minutes would deduce that a battery should be in good working order. Periods greater than 120 minutes should only be set for deep discharge testing conditions where the reliability of the AC mains supply can be guaranteed.

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Auxiliary Timer Programming

This programming option allows an optional timer to be associated with any/all Auxiliaries in the Concept 3000 system. Whenever the Auxiliary is turned on by any mechanism, the timer will be started. Every time the Auxiliary is turned on again by any mechanism the timer will be restarted. When the timer expires, the Auxiliary will be turned off.

```
Aux:     Time:
E01:X04   000 sec
```

This screen allows the Installer to select an Auxiliary to programme. Pressing the up/down arrow will go to the last/first Auxiliary.

```
Aux:     Time:
E01:X04   000 sec
```

This screen is identical to the first except the cursor is positioned to allow the time value to be entered. The time can be any number between 000 and 255 seconds or minutes.

NOTES:

1. Timer Disable.
A time of 000 disables the Auxiliary Timer.
2. Random Timer.
A time value of 255 will cause the timer to generate a random time between 1 and 255 seconds or minutes depending on the sec/min setting. All other times (2-254) will operate normally.
3. Timer Accuracy.
The Timer will time to the nearest second if programmed in seconds or to the nearest minute if programmed in minutes. For accurate timing up to 4 minutes & 15 seconds, programme the Timer in seconds.


```
Aux:     Time:
E01:X04   000 sec
```

This screen is identical to the first except the cursor is positioned to allow the time increment to be chosen. Push the "M" digit key (No. 5) followed by OK to select an increment of minutes and any other digit key followed by OK to select an increment of seconds.

When set to seconds, the actual time may be up to a second less. When set to minutes, the actual time may be up to a minute less. For example, setting a time of 106 minutes will mean the timer will expire between 105 and 106 minutes after starting.

```
Save to review
for  E01:X04  Y
```

This screen allows the programmer to specify that activity on this Auxiliary will not be saved to review. This may be done if the Auxiliary is going to turn on and off frequently or is used for automation functions that do not need to be logged.

NOTE: Insight Software. (Control Module Firmware V5 or later)
A setting of "n" on this option will be overridden if an operation in the Insight management software requires status information for this Auxiliary.

```
Off on Reset
for E01:X04   Y
```

This screen allows the programmer to specify that this Auxiliary will be returned to the Off state in the event of a system reset. If set to "n", the state of the Auxiliary will be retained in the event of a system reset.

This option can be used to determine Auxiliary states on a reset, when the General System Option "**N**o Auxiliary Off on Reset" is set to No.

If the General System Option "No Auxiliary Off on Reset" is set to Yes, the setting of this option will be ignored and **all** Auxiliaries will be restored to their current state in the event of a system reset.

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SPARE

(Previously reserved for Deadman Menu)

Menu 6 is not currently used.
Provision for future enhancement.

This Menu option was previously reserved for Deadman functions.
These functions can now be implemented via the "Area Defer On" features available in V3 or later.
See the Applications Programming Section for details.

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Input Programming

Input programming enables Zones to be named and Zone options to be selected. Note that System Input names are pre-defined and cannot be renamed.

```
Input to alter:
C01:Z01
```

This screen allows the installer to jump to a particular Input to be programmed. Alternatively, the up/down arrow keys may be used to select the last/next Input

```
C01:Z01 name:
HALLWAY PIR
```

This screen allows an optional Zone name to be programmed, allowing the first 16 characters of a possible 24 character name to be entered. It is recommended that all Zone Inputs be named for ease of identification, both for the installer and the end user.

```
C01:Z01 name:
 (cont.)
```

This screen allows the last 8 letters of the Zone name to be entered if required.

```
C01:Z01   SIXSRANT
Options-> nnnnnnnn
```

This screen allows certain miscellaneous Zone options to be set.

S **S**ummary

If set to "Y" this zone will be treated as a Summary input and, provided this input is in an Area which is turned on, any non-sealed state will be displayed as a level message.

A Summary Input is the same in all respects to normal inputs, except that the state of the input is constantly monitored whilst it is enabled (in an Area and Area is on) and any non-sealed state will result in a level message being generated indicating a problem. Problems indicated are prioritised in the order; Isolated Inputs, Tampered Inputs and Unsealed Inputs.

NOTE: Any latched alarms will override an Input problem screen

The problems level message will only restore when the offending inputs have been re-sealed.

The actual zone/input problem can be displayed using the panel status information screen, [MENU, 1,5]. This screen shows all summary inputs in a non-sealed condition. Pressing the up/down arrow displays the next problem Zone. When all Zones have been checked, the display will show "Finished check".

I **I**gnore Physical Zone

If set to "Y" this zone will be processed as a "Calculated Zone" only and the state of the actual physical Zone Input will be ignored. *See Calculated Auxiliaries "Trigger Zone" for more details.*

Note: V1 to V3.5. This option was labelled "**C**" (Calculated Zone).

Note: Certain Comms Tasks allow un-used Zone Inputs to be assigned to indicate communications or interface problems.
(Currently: GSM Data, C-Bus, Inovonics and Dynalite)
Any Zone Input assigned to a Comms Task for this purpose must also have this option set to "Y".

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X	Au**x** on for Review	If set to "Y" this zone will only be saved to review when Auxiliary C01:X01 is On. If set to "Y", "No (**R**)eview" must also be set to "Yes". NOTE: Insight Software. (Control Module Firmware V5 or later) A setting of "Y" on this option will be overridden if an operation in the Insight management software requires status information for this Input. i.e. Events for this Input will be saved to Review unconditionally.
S	**S**wap Seal and Alarm	If set to "Y" the Seal and Alarm conditions will be reversed. This allows the convenient use of normally open devices.
R	No **R**eview	If set to "Y" activity on this input will <u>not</u> be saved to review. NOTE: Insight Software. (Control Module Firmware V5 or later) A setting of "Y" on this option will be overridden if an operation in the Insight management software requires status information for this Input. i.e. Events for this Input will be saved to Review unconditionally.
A	**A**uto-isolate	If set to "Y" Auto-isolate will be allowed on the input if the input is unsealed when an Area to which it is assigned is being turned On. NOTE: If this option is set to Yes, the "N" option (No Test on Exit) must also be set to Yes.
N	**N**o Test on Exit	If set to "Y" this zone will not be tested on Exit.
T	Zone Self **T**est	If set to "Y" Zone Self Testing will be performed on this zone. This option must also be set to "Y" if this Zone is to be included in any Walk Testing. *See "Zone Input Testing" in the Applications Programming section for details.*

C01:Z01 HOME
Aux: HA000

This screen allows a Home Auxiliary to be assigned to an input. The Home Auxiliary will be controlled by the Input in accordance with the Home Auxiliary control options selected in the Process Group assigned to the input. See Process Group programming [MENU, 2,4,3] for details. Any Home Auxiliary can be allocated to any zone or input. The same Home Auxiliary can be allocated to more than one zone.

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Area Programming

```
Area to
program:  A001
```

This screen allows an Area to be selected for programming.
There can be up to 250 Areas in a large system.

```
Find Area    ^
HOUSE
```

By pressing the mode key (ON-key) the operator is allowed to search alphabetically for Area names using the digit keys and the up and down arrows.

```
Area 001  Name:
HOUSE
```

This screen allows an optional Area name to be entered up to 16 characters long. It is recommended that all Areas be named for ease of identification for both the installer and the end user.

```
A001 IntSir(S1)>
Mode: No Siren
```

This screen determines how Internal Sirens (S1) will work if required. Pressing the right arrow key cycles through all the choices. Pressing the OFF key selects no Internal Sirens. Note that "S1" in this screen only refers to the Siren output number on the Module, not the Siren numbers used in creating Siren Lists.

Mode:	**Description**
No Siren	No Siren will sound.
Instant	Siren will sound immediately a siren Input is triggered.
2nd Hit	Siren will sound after the 2nd hit of a siren Input.
Backup	Siren will only sound if a Backup Comms Task is triggered. (V4.5 or later only)

Siren Backup Mode. (V4.5 or later only)
If the "Backup" option is selected, the Sirens for this Area will be triggered on the next Input alarm that is programmed to trigger the Siren, if:
-The Area has already triggered at least one Comms (Xmit) Event.
-The Comms backup level screen has been triggered ("Had Comms Fail")
To cause the Siren to trigger as soon as the Comms Failure occurs, assign the "Comms Fail" System Input (C01:S21) to the Area using a suitable Process Group. e.g. PG014 "Access Alarm". (This Process Group triggers Siren but not Comms)

See Comms Task Programming [MENU 7,3,1] for details of how to program a Backup Comms Task.

```
A001 ExtSir(S2)>
Mode: No Siren
```

This screen determines how External Sirens (S2) will work if required, and is programmed exactly the same as the Internal Sirens above. Note that "S2" in this screen only refers to the Siren output number on the Module, not the Siren numbers used in creating Siren Lists.

```
A001 Siren List
SL001
```

This screen determines what sirens will sound when a siren Input is triggered. A Siren List of 000 specifies no sirens to sound. Siren Lists allow a number of sirens to be included in the list so that a single trigger from an Area can operate a number of sirens. (Refer to "Siren List Programming" for details)

```
A001 Siren
Time:   000 min
```

This screen determines the Siren activation time for Sirens allocated to this Area via the Siren List above.
V5 or later: A value of 1 to 200 provides a Siren time of 1 to 200 minutes.
A value of 201 to 255 provides a Siren time of 1 to 55 seconds.
Prior to V5: The Siren time can be programmed from 1 to 255 minutes.
The Siren timer has been designed to be accurate to the nearest second. This is important particularly when times of only a few minutes are chosen. E.g. When a Siren time of 2 minutes is programmed, the Sirens will activate for 2 minutes +/- 1 second. Note that the time is the same for both Internal and External Sirens. See relevant Authorities for maximum Siren Time allowed.
CAUTION: If set to 0, the Siren time will be 255 minutes.

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```
A001 Exit
Delay:  060 sec
```

This screen determines the exit delay to apply to Inputs which have been flagged as exit Inputs via their Process Groups in this Area. The exit delay is programmable up to 255 seconds, accurate to the nearest second.
Note that if a Zone or System Input is not flagged as an exit Input, then that Input is enabled immediately the Area is turned ON.

```
A001 Entry
Delay:  030 sec
```

This screen determines the entry delay to apply to Inputs which have been flagged as entry Inputs via their Process Groups in this Area. The entry delay is programmable up to 255 seconds, accurate to the nearest second.

```
A001 Pulse
Time:   000 sec
```

This screen determines the pulse count time to apply to Inputs which have been flagged as pulse Inputs via their Process Groups in this Area. The pulse count time is programmable up to 255 seconds, accurate to the nearest second. To cause an alarm, a pulse count Input must have the required number of pulse counts within the time specified above or still be in alarm at the end of the set pulse time, regardless of the number of hits.

```
A001 Max. Pulse
Count:    00
```

This screen determines the number of pulse counts required within the pulse count time above to cause an alarm. This applies to Inputs which have been flagged as pulse Inputs via their Process Groups in this Area, and is programmable from 1 to 15 counts.

Reporting Options.

```
A001    OCAN2S
Comms:  nnnnnn
```

This screen allows open/close reporting options to be programmed:

O	Report **O**penings	Causes Area Openings to be reported even if no alarms have been received. (This reporting option is dependent upon CommsTask filters [MENU 7,3,1])
C	Report **C**losings	Causes Area Closing's to be reported even if no alarms have been received. (This reporting option is dependent upon CommsTask filters [MENU 7,3,1])
A	Open after **A**larm	Selecting this option will cause opening reports for this Area only if an Alarm has been reported in this Area since the Area was last turned on. The "O" flag must also be set.
N	**N**ot General Area	Selecting this option will cause this Area to be ignored as part of a general Area calculation for any Comms Task that is reporting General Open/Closes. (i.e. Open/ Close will not be reported on this Area in a Comms Task programmed for "General Open/Close reporting") Open/Close can still be reported on this Area by programming another Comms Task with General Open/Close reporting set to NO. Assign an Area List Filter to this Comms Task, to specify which Area/s are to trigger individual Area Open and Close reports. (This is only possible in Dialer formats, or with two communications formats that can be active at the same time. e.g. Direct Line & Securitel, Dialer & Securitel)
2	**2**4 Hour Off report.*	Selecting this option will cause a report to be sent to the Central Station whenever the 24 Hour part of the Area is turned OFF. This is useful to inform the Central Station that no more 24 Hour (Tampers) processing will take place in the specified Area. Note that if the 24 hour part of the Area is turned back on then no report is sent. (The Central Station can interpret the next Area closing as the 24 hour part being re-enabled as 24 hour is automatically re-enabled when an Area is turned on.

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S Area **S**till Open *

Selecting this option will cause a report to be sent to the Central Station if this Area is OFF and any other Area (Programmed to report Openings) is turned ON. The "Area Still Open" report is used to warn Central Stations that an Area that should normally be on all the time such as a system Area is turned off.
The CID Event Code for this event is: - 454, "Failed to Close". (V4.87 or later)
- 440. (V1 to V4.86)
* Not all reporting formats can handle "Area Still Open" and Area "24 hour off" reports. For this reason an option has been added in Comms Task Report Options to disable these types of reports for any Comms Task if required.
(Refer to "Comms Task Programming" for details)

```
A001 Client
Code:    0000
```

This option selects the client code that will be used for reporting all alarms, opens and closes from this Area.

This option will only need to be used if it is necessary to report separate client codes for different Areas. e.g. A single system installed in a shopping centre or an office block, may be programmed to report different tenancies on separate client codes. (If this client code is set to 0000 then the CommsTask client code will be used for whatever Comms Task is being used)

Miscellaneous Options.

```
A001     THDNPW.F
Opts ->  nnnnnnnn
```

This option selects miscellaneous options for this Area:

Test for Users.

Selecting this option will cause the Area to be tested for the presence of any Users when the Area is armed from an LCD Terminal. Only select this option in an access control situation where entry and exit from the Area is via PIN code or Card so that the tracking of Users is possible.
If there are Users recorded as being in the Area, the Area will not Arm and the LCD Terminal screen will display "<User name> in Area". The Down Arrow key can be used to scroll through the list of all Users currently in the Area.

Holdup Area.

Selecting this option will cause the Pulse count processing to be altered for this Area. When the Pulse time expires, or the Pulse count is met, all zones that have had a pulse, will be processed. This option allows any zone to be allocated for use as a hold-up button with special area processing. (V2 or later only)
See the Applications Programming section for more details.

Defer Area.

If set to Yes, then this Area can be turned off for a specific time period and also be deferred from turning on again by an appropriate User logging on during the off time period (Defer Time) for this Area. (V2 or later only)
See the Applications Programming section for more details.

No Siren cancel.

This option, if set to Yes, will not allow sirens to be reset on a valid PIN entry. This is useful when lighting is run off the Siren output in Home Automation applications. (V3 or later only)

Pulse Timer processing.

If set to YES, then when the Pulse timer expires and the Pulse count equals 1, the Zone Input will be alarmed. If the Pulse count is less than or greater than 1, the Pulse timer will be re-started and the pulse count set to 1.
Primarily Implemented for simple DOTL alarms on normal Zone Inputs using one Zone per Area. (V3 or later only)

Important Note: If (P)ulse Timer processing set to YES, (H)oldup flag must be set to NO.

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Warn Auxiliary (Alm4)

If set to Yes, and the Area is defined as a "(D)efer Area, the "Alarm 4 Auxiliary" will turn On when the "Area about to turn on" message is displayed on LCD Terminals, 250 seconds before the Area Defer Timer expires. (The Defer timer Warning period)
The Auxiliary will turn Off when: -The Area re-arms. (Turns On)
-The Area is turned Off again.
(Deferred Off by a "Defer" User, or fully Off by a normal User.)
This provides for an Auxiliary output to activate a warning device to indicate that the Area is about to turn on, in addition to the LCD Terminal beeper/s. (V4 or later only)

Function Zone Area.

V4 or later only. Selecting this option defines this Area as a Function Zone Area. If set to Yes, when a Zone Input assigned to the Area changes state, the Area will check whether the Zone is used in a Function Zone and then process the Zone accordingly. *See Function Zone Programming. MENU, 7, 5, 3.*

```
A001  Self Test
"ON" count 000
```

This option selects the number of times this Area must be switched ON before a Zone self test is performed. (See section on Zone Self Test for more details)

This Zone Self Testing feature operates independently of Pre-arm Walk Testing. In some cases settings of one test feature will conflict with the settings of the other test feature. Therefore, if zone testing is to be implemented in a particular Area, it is recommended that the Area be programmed to use either one test method or the other, not both. **NOTE: If Pre-arm Walk Testing is to be implemented in this Area, "Self Test ON Count" must be set to "001".**

Area Auxiliaries.

```
A001 Exit Aux.
   :X
```

```
A001 Entry Aux.
   :X
```

```
A001 Siren Aux.
   :X
```

```
A001 Close Aux.
   :X
```

```
A001 24Hr. Aux.
   :X
```

```
A001 Alarm1 Aux
   :X
```

```
A001 Isolate Aux
   :X
```

```
A001 Count Aux
   :X
```

```
A001 Test Aux.
   :X
```

Area Auxiliaries can be programmed so that various types of events that occur in this Area will activate specified Auxiliaries. The Auxiliary may be used to provide an output to activate a warning sounder, lamp or other device; or it may be utilised as a "phantom" Auxiliary in programming to provide other functions in the system.

Programming these auxiliaries on a "per Area" basis, allows for Auxiliaries to be unique to an individual Area whenever necessary. To provide Auxiliaries that will indicate a certain condition (or conditions) for multiple Areas, the same Auxiliary number is simply allocated to the condition/s required in each of the Areas.

The Pulsing Beeper in an Elite LCD Terminal can be switched on by activating Auxiliary 4 on that Terminal. e.g. T01:X04 on Terminal 1, T02:X04 on Terminal 2, etc. (Pulse Beeper Configuration must be enabled - Refer to LCD Terminal Programming or Elite Terminal Installation Guide).

If the Auxiliary is not being controlled by a function which has an inherent timer such as Entry delay or Exit delay, an Auxiliary Timer should be programmed for that Auxiliary, with a time period in seconds, to ensure that the Beeper turns off again. *(See "Auxiliary Timers" MENU, 5, 5 for details)*

Programming Area Auxiliaries.

These screens allow optional Auxiliaries to be programmed for this Area if desired. The "Exit Auxiliary" is the first screen displayed. Following screens allow other Auxiliaries to be programmed in the same manner and are summarised in the following table:

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Area Auxiliary Actions.

Auxiliary	Turns On when	Turns Off when
Exit Aux ^	Area Exit delay begins	Timer expires/Area turned off
Entry Aux ^	Area Entry delay begins OR When Area is designated a "Hold-up" Area, turns on when the first pulse on any pulse count zone is detected (Pre-alarm Auxiliary Action)	Timer expires/Area turned off OR When Area is designated a "Hold-up" Area, turns off when pulse count conditions are met or Pulse Timer expires or Hold-up is cancelled by a User Code.
Siren Aux * ^	Area Siren turns on. V1 Firmware: The Siren Aux will not operate unless a Siren List is assigned to the Area. V2 or later: Siren list is not necessary.	Siren timer expires/Area off
Close Aux ^	Area turned on	Area turns off
24 Hr Aux *	Tamper occurs in Area with "T" flag set	Area turns off
Alarm1 Aux * ^	Alarm occurs in Area with "A1" flag set	Area turns off
Alarm2 Aux * ^	Alarm occurs in Area with "A2" flag set	Area turns off OR All Inputs in the Area that are assigned a Process Group that triggers the Auxiliary are in the sealed state. (Non-latching Auxiliary Action -V3 or later only)
Alarm3 Aux * ^	Alarm occurs in Area with "A3" flag set OR Pulses On when Area On/Off operation performed by RF Fob. (V5.1 or later) (LCD Terminal Auxiliaries not recommended)	Area turns off Area On = 2 Second Pulse Area Off = 5 Second Pulse
Alarm4 Aux * ^	Alarm occurs in Area with "A4" flag set OR The "Area about to turn on" message is displayed on LCD Terminals, 250 seconds before the Area Defer Timer expires. (If the "(D)efer Area" and "(W)arn Aux" options are both set to Yes)	Area turns off OR Area Defer timer is re-started
Isolate Aux *	Input isolated in this Area with "I" flag set	Area turns off OR All Inputs in the Area that are assigned a Process Group that triggers the Auxiliary are in the De-isolated state. (Non-latching Auxiliary Action)
Count Aux	Turns On and/or Off as per the following Count Control screen	Turns On and/or Off as per the following Count Control screen
Test Aux	Area Pre-arm Test begins	Test ends or Aux Timer expires (if programmed)

* The Siren, 24Hr (Tamper), Alarm 1, 2, 3 & 4 , and Isolate Auxiliaries, will only be activated when an Input/Zone in this Area is in the condition specified AND the Process Group allocated to that Input/Zone in this Area enables the particular Auxiliary.

^ The following Auxiliaries allow an option to assign an Auxiliary List if required.
V3 or later: Siren, Close, Alarm 1, Alarm 2, Alarm 3 and Alarm 4.
V4 or later: Exit and Entry added.

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Auxiliary Timers.
Note that any Auxiliary may be turned off by an Auxiliary timer if programmed, no matter how that Auxiliary was turned on. i.e. An Auxiliary turned On by an alarm in Area 1, that is also effected by an Auxiliary timer, will turn Off when the Auxiliary timer expires, even if the alarm remains unacknowledged (Area still ON).

Auxiliary List Assignment. (V3 or later only)
The following Area Auxiliaries can optionally have an Auxiliary List assigned. See "Using Auxiliary Lists" in Auxiliary List Programming. [MENU 2,3,6].
-Exit Auxiliary. (V4 or later only)
-Entry Auxiliary. (V4 or later only)
-Siren Auxiliary.
-Alarm1-4 Auxiliaries.
-Close Auxiliary.

A001 Sub Area -> None

This option allows a sub-Area to be defined.
A sub-Area will turn ON when all Areas specifying that sub-Area are turned on.
A sub-Area will turn OFF when any Area specifying that sub-Area is turned off.
Press the OFF key if you wish to specify no sub-Areas.

A001 Sub Area -> A008

NOTE: The ON key may be used to change modes to allow an Area to be selected by number if you wish.

Note that any Area defined as a Sub-Area can still be turned On and Off independently of the status of the other Areas linked to it via Sub-Area programming. i.e. By Users with the Sub-Area in their Area List, or by automated operations such as TimeZones, Function Zones and Calculated Auxiliaries, etc.

e.g. A common Reception Area is the Sub-Area of the Admin and Laboratory Areas. This causes the Reception Area to automatically turn Off whenever Admin and/or Laboratory are turned Off and turn back On again when both are turned On.

However, a trusted Courier may be assigned a PIN Code with only the Reception Area in the Area List. This allows the Courier to turn the Reception Area Off and back On again for after hours pick-ups without the Admin or Lab Areas needing to be turned Off.

A001 Number of Users: 00000

This option allows the Installer to view the number of Users currently in the specified Area. The number may also be edited or reset manually in order to accommodate any changes that have been made to Area Programming or User errors.
This feature requires Card or PIN access IN and OUT through an Access Controlled Door. See "User Counting in Areas" in the Applications Programming section for further details.

IMPORTANT NOTES:
1) User access.
-V1 to V4.99: As the Installer Code is the only code with access to the Area database, only the Installer Code has access to this screen.
-V5 or later: Users with permission to Adjust Counters set to "Y" in their Menu Group have access to this screen via the Control Menu; MENU, 9, 7.
2) Dual User operation.
-V1 to V4.76: The User Count only increments/decrements by a value of 1 for each "Dual User" Door Access operation.
-V4.77 or later: The count will increment/decrement by a value of 2.

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A001 Count OFof Control: -> nnnn

This option allows the Installer to control the operation of the "Count Aux". See "User Counting in Areas" in the Applications Programming section for further details.

ON when Trigger Count met
OF**F** when Trigger Count met
on when Trigger Count +1 met
of**f** when Trigger Count +1 met

Set the required option flags to "Y" in order to control the Count Auxiliary.

A001 Trigger Count: 00000

This number may be set by the Installer to determine the number of users required to start the User Count Control feature. See "User Counting in Areas" in the Applications Programming section for further details.

Test Options

A001 ..FQXAWE TOpts-> nnnnnnnn

This screen allows the Installer to set a number of Area Test Options.
See "Zone Input Testing" in Applications Programming for more details.

.	Spare	Not Used
F	**F**orce test	Forces all zones to be tested, even if a seal to alarm transition has occurred since last tested. (e.g. Via Zone Self Testing)
Q	**Q**ualify for Exit.	Test is not allowed to finish unless the Qualify Auxiliary (defined as the Area Test Auxiliary earlier in Area Programming) is Off.
X	Test Au**x**	Turns On the Area Test Auxiliary at the start of the second phase of testing, and turns off at end of test. (Unless turned Off by another mechanism such as an Auxiliary timer beforehand) **NOTE:** The "Q" and "X" flags should never be set to Yes at the same time or the test can never finish, unless the Test Auxiliary is turned off by another mechanism, such as an Auxiliary Timer, etc.
A	**A**rm for Test.	Arm all zones at start of second phase of test.
W	**W**alktest on Arm.	Enable Walktest option. If this option is set to No, then only unsealed zone testing is performed. If set to Yes full Walktesting is performed. NOTE: If set to "Y", the "Zone Self Test ON Count" must be set to 001.
E	**E**xit to Counters	At end of test, automatically exits to the "Display Counters" screen.

A001 Max Test Count 000

This option sets the Maximum time for the test. The value entered is the number of 5 second periods that the test will run for. e.g. A setting of 60 will therefore result in a maximum test time of approximately 5 minutes. (60 X 5 = 300 seconds)
A valid test time must be entered if Area Testing is to be used. Area Testing will not function if Max. Test Count is set to "0".

Area Defer Arming Timer.

A001 Defer Time: 000 min

Set this time to determine when the Area is automatically turned back On after having been previously "Timed Off". For this feature to become active, both Area Option "D" and Option "D" in the User's Menu Group must be set.

If the Area has been defined as a Defer Area and no value is entered here, the value entered for "Area Defer time" in the General System options (MENU 7, 5, 1) will be used. Note that the total "Defer Arming" time will be the programmed time plus the 250 second "Defer Warning" time.

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Assigning an Input to an Area

NOTE: Programming Shortcut.
After selecting the Area you wish to program at the | Area to Program: A001 | screen, you can shortcut to the Input Assignment screens by simply pressing the LEFT ARROW key.

To assign an Input to an Area, it must be given a Process Group. The Process Group determines how the Input will be processed in this particular Area. If no Process Group is allocated to an Input, that Input is not regarded as being in the Area at all.
The system now has 15 pre-programmed Process Groups already available that are designed to cover many of your applications. Many more Process Groups may be created by the installer to cater for individual system requirements when necessary. *See "Process Group Programming" for more information and details of the pre-programmed groups.*

Note that the same Input may be assigned to up to eight (8) Areas, and may be allocated a different Process Group in each of the Areas to which it is assigned.
For example, a Fire Door Zone is allocated the "Access Local" Process Group in an Area that is always turned ON so that a local alarm is raised whenever the Door is opened. The same Zone is allocated the "Burglary" Process Group in another Area that is only turned ON when the premises are unoccupied. If the Door is opened when this Area is ON it will generate an alarm that will be reported to the Central Station.

The Programming Screens.

The following **three screens work interactively** to provide a combination of different methods for selecting specific Inputs and assigning or altering their Process Group. (i.e. The way they are processed in that Area)

ON key: Pressing the ON key repeatedly at any time will cycle through these three screens as they pertain to the particular Input you are working with.

OK key: Pressing the OK key in any of the three screens will scroll the display numerically through all of the Inputs available in the Memory Configuration you are working with.
(This is most effective when working with consecutive Inputs.)

^ v keys: Pressing the UP and DOWN Arrow keys in any of the three screens will hold the displayed Input, but scroll the display numerically through all of the Areas available in the Memory Configuration you are working with.
NOTE: V5.2 or later. Up and Down Arrows do not operate in Screen 3.
See "Screen 3" following.

IMPORTANT NOTES:
1) Remember that selecting a Process Group for any Input in Area programming is the way you place that Input in that Area.

2) Any Input can only be assigned to a maximum of 8 Areas.

3) In all screens, pressing the OK key will advance the screen to the next Input, and pressing the LEFT ARROW key will go back to the previous Input.

4) When selecting or altering a Process Group to place an Input into an Area, it is not necessary to press any confirmation key after you have changed the display. The Process Group that is displayed when you move on to the next Input is the saved Process Group.

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Screen 1

```
C01:Z01, A001 ->
BURGLARY
```

The first screen displayed shows the Input you are working with and the Area that you are programming.
The bottom line displays the Process Group currently assigned for that Input.

OFF The OFF key is used to remove the Input from the Area.
i.e. Removes the Process Group and displays "Not in Area".

RIGHT ARROW > The RIGHT ARROW key is used to scroll through all the available Process Groups in alphabetical order.

OK As explained above, the OK key is used to scroll to the next Input in numerical order. However, as it is likely that there are many unused Inputs in the system memory, using the OK key in this screen to move to the next relevant Input may be impractical.

ON To jump to a new location in the available Inputs, press the ON key to cycle to the next screen. (Screen 2)
(e.g. To select an Input on a different Module number and/or Module Type)

Screen 2

```
C01:Z01 in A001
BURGLARY
```

Screen 2 is an Input selection screen only. You cannot change the Process Group in this screen.
This screen is primarily used to jump straight to any particular Input ID number available in the Memory Configuration. The cursor flashes beneath the first letter of the Input display to prompt for an Input ID number to be entered.

0-9, RIGHT ARROW > Using the DIGIT keys and RIGHT ARROW key, enter the Input ID number you wish to assign to the Area. e.g. B05:Z27, M12:Z06, etc.

Note that you have not moved on to your selected Input until you have completed the entry and pressed the ON key.

ON **When you do press the ON key the display will cycle through to the selected Input, but in the next screen (Screen 3), where you will be able to alter the Process Group.**
(Pressing the ON key twice will cycle the display back to Screen 1)

Screen 3

```
HALLWAY PIR   ->
BURGLARY
```

Screen 3 is similar in functionality to Screen 1. However, this screen differs from Screen 1 in that it displays the first 14 characters of the Input name (if it is programmed) instead of the Input ID number.
This screen can be a useful aid in identifying Inputs, particularly System Inputs which have default names.
Because of the space required to display the Input name, this screen cannot display the Area you are programming. So, to avoid the possibility of error, the UP and DOWN Arrows are disabled for this screen in V5.2 or later.

OFF The OFF key is used to remove the Input from the Area.
i.e. Removes the Process Group and displays "Not in Area".

RIGHT ARROW > The RIGHT ARROW key is used to scroll through all the available Process Groups in alphabetical order.

OK The OK key is used to scroll to the next Input in numerical order.

ON The ON key is used to cycle the display back to Screen 1 if you wish to work across different Areas or with Input ID Numbers.

System Inputs.
System Input may be individually assigned to an Area by using the above functionality. To clear all Inputs from an Area and start again from scratch, or to automatically set up a System Area, see the Area Defaulting procedure described on the following pages.

Please read the additional "Important Notes" on System Inputs.

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Assigning System Inputs to an Area

System Inputs may be allocated to an Area by either using one of the above methods or an option under the Area defaulting procedure described below.
Please read the additional "Important Notes" on System Inputs at the end of this chapter.

Area Defaulting

Area defaulting allows the programmer to quickly and easily perform a number of the more repetitive and predictable tasks normally associated with Area programming. They include:

- Removing all Zones and Auxiliaries from an Area and resetting programmable times to factory defaults.
- Removing all Zones and System Inputs from an Area.
- Automatically adding all System Inputs on all modules present to an Area and assigning standard Process Groups to those inputs.

Access to Area defaulting is available from the first Area Programming screen.

```
Area to
alter: A001
```

This first Area Programming screen determines the Area upon which the defaulting action is to be performed. Use the UP and DOWN Arrow Keys to select the desired Area then press HELP, "9".

```
Area Default ->
Don't Default
```

This screen is then displayed. Available defaulting options are viewed by pressing the right Arrow Key. To make a selection, press the OK Key.

Don't Default	Selecting this option will abort the procedure.
Standard	Selecting this option will programme all standard times as well as remove all Auxiliaries and Zones from the selected Area.
Remove all Zones	Selecting this option will Remove all Zones from the selected Area.
Add System Inputs	Selecting this option will allow System Inputs to be added to the Area automatically and be assigned certain standard Process Groups. Refer to the table below for further details on Standard System Inputs and their Process Groups.

```
Select   TSLIias
Inputs-> nnnnnnn
```

If the "Add System Inputs" option is selected, this additional screen appears. This screen allows the programmer to select the types of System Inputs to be added to the Area with specific pre-defined Process Groups. The upper case letters represent different types of System Alarms, whilst the lower case letters represent different types of Access Control Alarms.

Default System Inputs These option flags relate directly to Process Group numbers and are explained in more detail in the table below.

Option	Type of Input Added to Area	Process Group Assigned	Example of Input
T	SYSTEM TAMPER	PG009	Cabinet Tamper
S	SYSTEM SILENT	PG010	AC Fail, Low Battery
L	SYSTEM LAN	PG011	LAN Fails
I	SYSTEM LOCAL	PG012	UART Problems
i	ACCESS LOCAL	PG013	Too many tries (Card or PIN)
a	ACCESS ALARM	PG014	Door Forced
s	ACCESS SILENT	PG015	Door Held Open

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Push '9' key to Confirm Default	When the confirmation screen is displayed, press the "9" Key to confirm your selection.
Default Done	The default procedure is confirmed.

Important Notes - System Inputs:

1. Only System Inputs that are present at the time of default will be included.
   ie. System inputs from modules currently enrolled on the LAN.

2. If Process Groups are defaulted to standard then the names of the Process Groups will be relevant to the above operation.

3. Any changes made to a Process Group will affect all inputs within the system that have that Process Group assigned to them. It is recommended that Default Process Groups (especially groups PG090 to PG015) NOT be changed until the implications on all relevant inputs are examined.

4. See "System Inputs" in the "Tables" section for details of:
   -The Process Groups assigned for each System Input via the "Add System Inputs" default function.
   -The default Contact ID Event Codes assigned for each System Input.

5. All System Inputs, when activated, generate an Alarm state and a Tamper state allowing them to be processed as either an Alarm and/or Tamper condition depending on the Input Type options selected in the Process Group. For this reason, changes in state on System Inputs will continue to be saved to Review, (and in some cases processed as Tamper alarms) even if all the Areas relevant to those Inputs are turned Off, because the 24 Hr (Tamper) part of the Area is still On.

   To disable the Review logging (and processing if relevant) of System Inputs, the 24Hr (Tamper) part of the Area must also be turned Off.
   To turn the 24Hr part of an Area Off, Logon to the LCD Terminal, select the Area to control then Press the <LEFT Arrow> key. The current status of the 24Hr part of the Area will be displayed. Press <OFF>.
   The 24Hr (Tamper) part of the Area can be turned On again in the same manner by using the <ON> key.
   Alternatively, the 24Hr monitoring will automatically be turned back on when the Area is turned On.

Force Arming an Area:

Normally, when a User attempts to turn an Area On from an LCD Terminal and there are one or more Zone Inputs in that Area that are not in the Sealed state, a "Zone Problem ..." message will be displayed on the Terminal. The User is then required to try and rectify the problem or Isolate the Zone Input/s before the Area can be turned On.

When commissioning and/or testing a system it is often useful for the Installer to be able to turn On an Area regardless of Zone Input states in order to enable the Zone Inputs and monitor activity in Review.
A special feature only available to the Installer Code allows the <1> key to be used, when the "Zone Problem ..." message is displayed, to un-conditionally skip the rest of the Zone Test and turn On the Area regardless of any un-sealed Zone Inputs.

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LCD Terminal Programming

Commissioning an LCD Terminal.

1. When installation is complete & checked, power-up the module.

2. The display may show a normal Diary, Area status, or Alarm message,etc. e.g. **Happy New Year**
   This means that the default Terminal number *(Set to 99 at the factory*) has been accepted. To change the Terminal no. &/or configure the "LED 4" and "Pulse Beeper" options, **go to step 3**.

   Alternatively, one of the messages opposite may be displayed if:
   -There is already an LCD Terminal with the same address number.
   -The module number is too high for the memory size / configuration.
   If this is the case, go straight to step 4.

Module Exists.
Module Too Big.

3. Enable Terminal configuration mode. Hold down the <HELP> key; Short LK2 (RESET); Wait 2 seconds; then release the <HELP> key.
   OR
   Remove power from the Terminal and hold down the <HELP> key while power is re-applied.

```
Module Number
Change No: 99
```

4. **Terminal Number.** Select an LCD Terminal number that isn't already used in the system, then set the module number by entering the required number on the keypad, followed by <OK> to save.

```
LED 4          >
Off
```

5. **LED 4 Control.** To control LED 4 via an auxiliary (T??:X02), Use Right Arrow key to select **"Aux**2", then press <OK>. Auxiliary control of LEDs 1 to 3 is already available. *See table under "LED Mode" options.*

```
Pulse Beep     >
Off
```

6. **Pulse Beep Option.** To enable pulsing beeper whenever Auxiliary 4 (T??:X04) is ON, use Right Arrow key to select "**Aux4**", then press <OK>. DO NOT connect any Input or Output device to Zone 2/Aux 4 if this option is selected. *See "LCD Terminal Beeper activation" at the end of this chapter for more information.*

7. Use the Left Arrow key at any time to scroll back through the questions. Press the <END> key when finished. Other LCD Terminal options are set in "LCD Terminal Programming", <MENU>, 7, 2, 1.

Programming an LCD Terminal.

```
LCD Terminal to
Alter: T01
```

This screen allows an LCD Terminal to be selected for programming. Pressing the "ON" key to change modes tells the Installer whether this module is currently in the network. If the module is not in the network it will display the word "Absent" following the Terminal number. If the module is present, the Terminal number is followed by the words "Present-nnn but not secure", or "Present-nnn and secure", depending on LAN security status. The number (nnn) in the message indicates the number of times the module has failed to acknowledge a poll from the Control Module since the last LAN Initialisation or LAN Secure operation.

```
T01 Present-002
but not secure
```

See "The LAN system" in the Overview and Introduction section and "Secure LAN" (MENU, 7, 8, 1) for details of LAN Security.

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```
T01 Poll
Time:   060 sec
```

This screen allows the Installer to specify the maximum time a module can remain out of communication with the Control Module. Only modules in unprotected Areas should be selected with short times. Modules in protected Areas can have times set up to 255 seconds maximum. If too many modules are programmed for short times then this may slow down LAN communications.

Note: Poll Time should not be set to 000.

```
T01 LAN
Priority: 0
```

Pressing the ON key allows the LAN Priority to be programmed between 0 and 3 for this module. LAN Priority can be used to give certain modules priority over other modules when sending information to the Control Module. Priority 0 is the highest priority and priority 3 is the lowest. For example, if a module was programmed for priority 0 and another module was programmed for priority 1 and both modules were sending information at *exactly the same time*, then the module with priority 0 would be sent first.

When programming small systems the priority of all modules are most commonly set to 0. In larger systems with many Terminals and Zone Expanders, Zone Expanders may be set to Priority 1 and Terminals may be set to priority 0, giving Terminals a faster response than Expanders during heavy LAN traffic.

```
T01     12345678
Alarms: Ynnnnnnn
```

Alarm Message Types. This option sets which alarm message types will be displayed on this Terminal. Every Input alarm can create an alarm message. The alarm message type is determined by the Process Group assigned to the Input. This allows certain alarm message types to only be displayed on certain Terminals.

eg. Only alarms on Inputs that specify Message type 1 in their Process Group will be displayed on this Terminal.

See "Process Group Programming" for more details on the use of Message Types.

```
T01   SMDLIATO
Msgs: nYYnnYnn
```

This option sets the default message display on this Terminal when the Terminal is "logged off". Listed below are the various options.

S **S**ingle Area — Only display the status of a Single Area defined below as the Associated Area.

M **M**ultiple Area — Display a Multiple Area status screen, starting at the Associated Area, defined below.
e.g.

```
Areas:  12345678
001 ->  YYnnnnnY
```

n = Area Off Y = Area On
T = Area Timed On W = Area Defer On Warning

D **D**iary Messages — Display Diary messages if defined. Note that if Diary messages are defined with no date and time specified (always valid), the Multiple Area status screen (Area Array), if selected, will not be displayed as the Diary message takes priority.
See "Logoff Terminal Messages" at the end of this chapter for further details.

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L	**L**evel Messages	Show system status Level messages at this Terminal. *See "Level Messages" and "Logoff Terminal Messages" at the end of this chapter for further details.*
I	S**i**ngle Area Alarms	Show only alarm messages from the associated Area defined below.
A	**A**ll Area Alarms	Show alarms from ALL Areas. If set to "n", only alarm from the Associated Area below will be displayed at this Terminal.
T	Display **T**ime/Date (V5 or later only)	Show current Control Module Time and Date. This option is particularly useful if the system is used for "Time In Attendance" monitoring to provide Users with a display of the actual system time being logged. IMPORTANT NOTE: If this option selected, LCD Terminal must be: - Fitted with CE PCB 934000 Revision "J" or later. - Programmed with Firmware Revision TUE V7.0 or later.
N	**N**o Code Status (V2 or earlier only)	A new "Logged Off Options" screen was added in V3 making this option redundant. See the "A" & "T" options in the "Log Opts" screen. V2 or earlier: Allows any User to use the Up/Down Arrow keys to display all possible Area Arrays so that the status of all Areas in the system can be inspected easily. The User does not have to logon to the Terminal first.
O	**O**ne Diary Message	Only show One Custom Diary message that matches the associated Area number. Eg. If the associated Area is A003, then the Diary message displayed will be Diary number DA003. NOTES: 1. The "(D)iary Messages" option in this screen must also be Enabled. 2. The Custom Diary message will only be displayed if it is Valid. 3. If a higher priority (i.e. higher number) Diary message is Valid, the Custom Diary message will not be displayed. (The Terminal will revert to the Area status or "System Ready" display.) *See "Logoff Terminal Messages" at the end of this chapter for further details.*

T01 LED Mode
None

This screen allows the Installer to determine the functionality of the LEDs on the Elite LCD Terminal. (V2 or later)
(Note: Display reads "T01 Lamp Mode" in Firmware Versions prior to V4)

None	LEDs will only be controlled via the Terminal Auxiliary assigned to them. LED 1: Txx:X06 LED 2: Txx:X07 LED 3: Txx:X08 LED 4: Txx:X02 (If enabled in LCD Terminal commissioning. *See page 1*)
Area Array	LEDs will display the status of four sequential Areas beginning with the Associated Area.

T01 Assoc. Area->
House

This screen allows an Associated Area to be selected for this LCD Terminal for use with the other options above. Pressing the right arrow key will cycle through all Areas alphabetically. Pressing a letter jumps to that Area (if defined) and pushing the OFF key sets the Associated Area to None.

T01 Keypad
Time: 030 sec

This screen allows the Installer to programme the keypad "Dual Code" time. Set the maximum time between dual entry codes at this Terminal. When a dual PIN provider code is entered, a subsequent PIN code must be entered within this time for it to be recognised.

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The Default "Keypad Time" is 30 Seconds.

The "Dual User" function is enabled for specific types of Doors in the Entry Options and/or Exit Options in Access Group programming.

User Type programming allows different types of Users to be assigned the "Dual Provider" and/or "Dual User Over-ride" options.

T01 Door
D000

This screen allows an associated Door to be selected for this LCD Terminal. Setting D000 means there is no Door associated with this Terminal. When a Door is associated with the Terminal then access options at this Terminal will control and monitor the nominated Door.

When a Door is associated with an LCD Terminal, the System Inputs; "Door Forced" (T??:S03) and "Door Open Too Long" (T??:S04) may be used.

Door Forced will occur if Zone 1 on the Terminal is unsealed and Auxiliary 1 on the Terminal is off, providing the Door is not still open after a valid unlock.

Door Open Too Long (Door Held) will occur if Zone 1 remains unsealed longer than the Maximum Open Time following a valid unlock.

NOTE: In either case, the Door contact must be wired to Zone 1 (Txx:Z01) on the Terminal (no End-Of-Line resistors necessary) and Auxiliary 1 on the Terminal must be programmed as the Lock Auxiliary (Txx:X01).

T01 Access IOA.ZS
options-> nnnnnn

This screen allows the Installer to programme a number of access options applicable to the use of this LCD Terminal.

I	Terminal **I**nside	Set this option to "Y" if the Terminal is located on the Inside of the Door or to "n" if the Terminal is located on the outside of the Door.
O	**O**K key REX/REN	Set this option to "Y" if you wish the OK key to be used as a REX or REN button when the Terminal is logged off.
A	**A**ccess Control Only	Set this option to "Y" if the Terminal is to be used for Access Control functions ONLY. When this option is enabled, the Terminal can be used to unlock doors but cannot be used for Area ON/OFF control or Menu Access. **Caution:** Do not set this option to "Y" on any Terminal that you intend to use for programming.
.	Spare	This option has been left spare for future development. Set to "n".
Z	**Z**one 2 REX on inside	Set this option to "Y" if you wish Zone 2 on the Terminal to be used as a REX button on the inside (opposite side) of the door. (**Z**one 2 REX on inside must also be set to Yes in Extra Options to enable Zone 2). **Available on Elite LCD Terminals only.** (V2 or later)
S	**S**ingle Area	Set this option to "Y" for Single Area operation. When set to YES this Terminal will only allow operations to be performed on the Associated Area. Status of other Areas can still be viewed. (V2 or later) Also disables access to Area List selection. (V4 or later)

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T01 Extra .LNZ options nnnn

This screen allows the Installer to programme a number of extra options.

L **L**imited Messages — This option forces the terminal to only accept broadcasts of level message 6 ("Area about to Turn On") and diary broadcasts for diary number 1. This option should be used with all other logoff display options set to No. (V3 or later)

N **N**o Key Beep — Set this option to "Y" if you wish to disable the beeper from sounding whenever a key is pressed. Beeper will still operate normally for other functions. (V2 or later)

Z **Z**one 2 is REX — Set this option to "Y" if you wish Zone 2 on the Terminal to be used as a REX button (If Terminal on "Inside" of Door) or REN button (If Terminal on "Outside" of Door). (V2 or later)
The relevant Entry or Exit "Button" option must also be enabled in the Access Group assigned to the Door
The button is wired in Normally Closed configuration with no End-of-line resistors required.

This feature is available on Elite LCD Terminal only.

T01 Log ATLRHC.. Opts -> nnnnnnnn

This screen allows the Installer to programme operations that are allowed whilst the Terminal is logged off. (V3 or later only)

A **A**rea Array — This option allows the up/down arrow to display the status of all Areas as Area array screens. (This is over-ridden if latched alarms are present and allowed).

T **T**ext — This option allows the up/down arrow keys to display the status of 8 Areas as text, beginning at the associated Area for this Terminal.
The "A" option above must be set to No.

L **L**atch Alarms — This option allows the up/down arrow keys to display all alarms currently latched. *See Input Types in Process Group Programming [MENU 2,4,3]*

R Quick Alarm **R**eview — This option allows access to quick review via the MENU, 1 keys whilst logged off. This allows any User to view the latest alarm and search Review for past alarms using the Up and Down Arrow Keys. Only alarms are displayed.

H **H**ome Auxiliary — This option allows access to home auxiliary control via the right arrow key.

C Air **C**onditioning — This option allows access to air conditioning control via the left arrow key.

T01 M.Group -> None

This option allows a Menu Group to be associated with this Terminal. If the Menu Group is left at None (MG000), then Menu options will be controlled entirely by the Menu Group allocated to the User Type using the Terminal. If the Menu Group allocated to the Terminal is non-zero, then Menu Group options will only be allowed if options are set to "Y" in both the Menu Group allocated to the User Type AND the Menu Group allocated to the Terminal.

T01 Menu Group: MG002

For example, if the MG001 was allocated to User Type "FACTORY WORKER" and was allowed review access and MG002 was allocated to LCD Terminal 6 which denied review access, then any User assigned as a "FACTORY WORKER" could not use review at Terminal 6.

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T01 Area Filter > None

This screen allows the Installer to specify an Area List Filter. If an Area List is assigned, any Area to be viewed or controlled from this Terminal must also be in this Area List. (V3 or later)

Press the Right Arrow Key to scroll through the available options alphabetically or press the ON Key to select the Area List by number.

Terminal Lockout.

Normal operation. The Terminal Lockout function will be activated if 5 sequential illegal PIN code entries are attempted at the same LCD Terminal over any period of time. Five attempts is the factory default setting which can be altered by the installer to any number of attempts between 00 (no lockout) and 15.
(Note that prior to V4 this was 6 attempts and could not be edited)

Too Many Tries Wait 60 seconds

When Terminal Lockout is activated, the Terminal keypad will be locked out for 60 seconds and the LCD will display the message shown opposite.
In addition to the LCD Terminal message:
-A "Module Lockout" entry will be logged into Review.
e.g. Jun07 07:23:42.7 Module Lockout: LCD Term. #003
-System Input Txx:S07 "Too many tries" will go into alarm.
The System Input, S07, will reset when the next valid PIN code is entered.

T01 Enhanced Lockout? n

This screen, when set to Yes, enables Enhanced Terminal Lockout. (V4 or later)
Enhanced Lockout provides two additional lockout features using the status of the LCD Terminal Auxiliaries X07 and X08:
1) An Auxiliary Timer can be programmed for Txx:X07 to define the period in which the number of sequential illegal PINs must be reached.
Any valid PIN code will reset the timer and the illegal PIN count.
2) An Auxiliary Timer can be programmed for Txx:X08 to define the period in which the Terminal will remain locked out.

This feature provides enormous flexibility for Terminal lockout operation allowing:
-The time periods for these functions to be defined independently for each Terminal in the system.
-Auxiliary Timer programming (<MENU>, 5, 5) to define the time period to be programmed from 1 to 255 seconds, OR from 1 to 255 minutes.

Too Many Tries Wait

When Enhanced Terminal Lockout is activated, the actions are the same as for normal Terminal Lockout except that the Terminal keypad will be locked out for the programmed time period and the LCD message will not display the period. (As shown opposite.)

T01 Maximum Attempts: 005

This screen allows the Maximum number of illegal PIN code attempts to be defined between values of 000 (no lockout) and 015. The number of Maximum Attempts programmed applies to both standard and enhanced lockout modes and has a factory default value of 5 attempts. (V4 or later)

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Level Messages

System operation is continuously monitored for problems and special conditions. A "Level Message" is displayed on one or more of the LCD Terminals if such a condition exists and will remain on the LCD display until the condition is rectified.

Message	Description
Had Power Problem	One or more modules do not have AC power connected. If accessible, check AC power is connected and switched on.
Had Battery Problem	One or more modules have low battery voltage.
Had Network Problem	One or more modules have stopped communicating with the Control Module. There may be cable damage or a module problem.
Had Comms Problem	There is a problem with one or more Comms Tasks. eg. Central Station, PC, Printer etc. **Alarm reporting may be compromised.**
Some Inputs latched/isolated/tampered/unsealed.	See "View Input States". [MENU 1,5] in the User Manual.
Area about to turn On.	See "Turning Area/s Off". Deferred Area Option in the User Manual.
Area Name, Enter Code	See "Menu Group Options". (C)ancel Holdup [MENU 2,3,1]

Logoff Terminal Messages

Terminals which are logged off still display messages. Latest release Terminals have been designed so that they display the latest level message without the need to cancel previously displayed messages or refresh the screen. The trade-off is more LAN traffic as terminals are individually updated as required.

Messages displayed on a terminal whilst logged off come from 2 sources:

1. **By a terminal accepting a broadcast from the Control Module.**
2. By the terminal requesting an individual message for that terminal.

Terminal accepting broadcast

Terminals are programmed to accept certain broadcasts from the control module. These broadcasts are:

- A new area alarm message. eg. "Had alarm in .area 001"
- Change of state of a Level Message, eg "Had Power Problem"
- Change of state of Area, eg "Area is off"
- Change of state of a Diary eg "Happy New Year"

The terminal may or may not display certain broadcasts based on programming. Basically, the message shown at any time is the last message that has been accepted by that terminal. Latest elite terminal software (V1.6) divides level messages into 8 levels and applies additional logic in whether a level message will be accepted. If the level message received is a lower priority than the level message currently being displayed then it is discarded.
(See section below on level message priorities.)

Level Message Priorities

Whenever a terminal logs off, or the END key is pushed, an individual message is constructed for that terminal by the control module, determined by terminal programming. The actual message displayed is determined by a simple priority scheme:

- Display any area alarm messages if present and allowed OR
- Display the highest priority Level message if present and allowed OR
- Display the highest valid Diary message if present and allowed OR
- Display an area status screen if allowed OR
- Display System Ready.

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LCD Terminal Beeper Activation

The Beeper in an LCD Terminal automatically provides an audible warning or indication for many normal operations and alarms etc. The Beeper can also be switched on to provide an audible indication of additional functions by activating:

- Auxiliary 5 on that Terminal. Eg. T01:X05 on Terminal 1,
  T02:X05 on Terminal 2 etc.

- Auxiliary 4 on that Terminal. Eg. T01:X04 on Terminal 1 etc. for a pulsing beep.

NOTE:
"Pulse Beep" option is available on Elite Terminals only and needs to be enabled in the Terminal configuration options.

To Enter Terminal configuration mode, hold down the HELP Key, short LK2 (Reset), wait 2 seconds and then release the HELP Key.

For example, to programme the Beeper on Terminal 2 to sound during the Entry Delay period, simply assign Auxiliary T02:X05 as the "Entry Auxiliary" when programming the Area.

Auxiliary 4 on the Terminal provides a pulsing Beeper sound and may be utilised in exactly the same manner if desired.

(See "Area Programming" **MENU 7, 1** for details)

Note: An Auxiliary Timer should also be programmed for that Auxiliary with a time period in seconds to guarantee that the Beeper will turn off again.

(See "Auxiliary Timers" **MENU 5, 5** for details)

If the Entry Timer in the above example is 30 seconds, programme an Auxiliary Timer for 32 seconds.

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"B" Type Expander Module [MENU 7-2-3] and "E" Type Expander Module [MENU 7-2-7] Programming

IMPORTANT INFORMATION

A newly purchased Expander Module may be configured in one of two ways; As a "B" Type or as an "E" Type Expander.
Note: Must be a Zone Expander (993005) fitted with firmware V12 or later, or a Universal Expander (993004 or 995004).

A "B" Type Expander Module can have up to 32 Zone Inputs and up to 32 Auxiliaries with the use of Zone and Auxiliary Expander boards. An "E" Type Expander has 16 Zone Inputs and up to 16 Auxiliaries with the use of Auxiliary Expander Boards.

Expansion Options.

The number of Zones or Auxiliaries may be expanded with one of the following options:

- The 16 Zone expansion board increases the number of available Zones to 32. (Current P/No: 995006)
OR
- The 24 Auxiliary expansion board increases the number of Auxiliaries to 32. (Current P/No: 995007)
OR
- Up to three 8 Relay expansion boards can be connected to add 8, 16 or 24 Relays to the Expander. (Current P/No: 995082E)
OR
- Up to 4 Lift Interface boards can be connected to provide low-level interface to Lift control systems including Lift button feedback for 8, 16, 24 or 32 floors per Lift Car. (Current P/No: 994020 [16-48V] or 994020HV [60-120V]) (Up to 64 floors may be controlled by using two consecutively numbered Universal Expander Modules per Lift Car)

See the Installation manual for further details of the expansion options.

NOTE: Only one of these expansion options can be fitted at a time.

Firmware Compatibility

Compatibility issues exist between earlier versions of Control Module firmware and earlier versions of Expander Module firmware **sold in Australia and New Zealand only**. This is best explained by use of the following table:

Zone Expander (993005) Firmware	Universal Expander (993004 995004) Firmware	DIPswitch Setting	Operation under Control Module Firmware Version 1 (V1)	Operation under Control Module Firmware Version 2 (V2) or later
V11 or earlier		Not selectable	Up to 32 Zones Up to 32 Auxiliaries Type "3" Module - "E" Type	Up to 32 Zones Up to 32 Auxiliaries Type "3" Module - "B" Type
V12 or later	V1 or later	"B" Type (Off)	Up to 32 Zones Up to 32 Auxiliaries Type "3" Module - "E" Type	Up to 32 Zones Up to 32 Auxiliaries Type "3" Module - "B" Type
V12 or later	V1 or later	"E" Type (On)	Not Recognised (Unknown Module)	Up to 16 Zones Up to 16 Auxiliaries Type "7" Module - "E" Type

NOTE:
The move to V2 Control Module firmware resulted in the Type "3" Module designator being changed from "E" to "B". An additional Type "7" Module was created for the "E" Type designator.

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Module Type Selection

On Expander Modules fitted with V12 firmware or later, a DIPswitch setting on the Expander Module determines whether the module will be a "B" or an "E" Type.

On DIPswitch 1: Sw1 Off = "B" Type (32 Zones)
Sw1 ON = "E" Type (16 Zones)

Where there is a possibility that an Expander installation, initially requiring no more than 16 Zones, may be expanded to more than 16 Zones at a later date, it is recommended that the Module be made a "B" Type Expander to allow for future expansion.

Siren Operation

Expander Siren numbers control the sirens on both the "B" and "E" type Expanders.

i.e. S0 = Control Module Sirens
S1 = Sirens on E01 and B01
S2 = Sirens on E02 and B02 etc.

Reporting

Reporting with most Contact ID maps will treat the Mini Expander, Exp32 and Exp16 as the same. (With the exception of the SIMS II map which identifies all Module Types). This means that care must be taken in a reporting system that the same module number is not used if you want unique reporting.

E.g. B01, B02, E03, B04, M05, E06 etc. will ensure that all zones are reported individually. Installing modules B01, E01 and M01 will mean that only Zones 17 to 32 on Expander B01 will be reported uniquely. Expander 1, Zones 1 to 8 will represent Zones 1 to 8 on all three of the modules and Zones 9 to 16 will represent those Zones on both B01 and E01.

In SIMS II mapping, the following type numbers will apply:
Type 3 = "B" Type Expanders
Type 6 = "M" Type Expanders
Type 7 = "E" Type Expanders

NOTE: "E" and "M" Type Expanders do not report via Securitel.

Zone Debounce Time (Universal Expander Modules only)

A faster debounce time is available, if desired. This is set by DIPswitch SW1, S2 on the Expander Board and changes the debounce time for all Zones on the Expander from 400ms (Default -Off) to 40ms (On).

This feature has been designed specifically for Lift button feedback.
A debounce time of 40 mS on a standard alarm input may produce false alarms.

Refer to the Expander's Installation Guide for further details.

AC Mains Fail Delay Time (Universal Expander Modules only)

A longer Mains Fail Delay time is available, if desired. This is set by DIPswitch SW1, S3 on the Expander Board and changes the Mains Fail Delay Time for the Expander from 20 Seconds (Default -Off) to 255 Seconds (On).

Refer to the Expander's Installation Guide for further details.

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```
Big Expander to
alter: B01
```

```
B01 Present-002
but not secure
```

This screen allows a Big Expander to be selected for programming. Pressing the "ON" key to change modes tells the Installer whether this module is currently in the network. If the module is not in the network it will display the word "Absent" following the Expander number. If the module is present, the Expander number is followed by the words "Present-nnn but not secure", or "Present-nnn and secure", depending on LAN security status. The number (nnn) in the message indicates the number of times the module has failed to send a handshake message to the Control Module since the last LAN Initialisation or LAN Secure operation.

(See "Configuring the Model 3000/Access 4000 LAN" for details of LAN Security)

```
B01 Poll
Time:   060 sec
```

This screen allows the Installer to specify the maximum time a module can remain out of communication with the Control Module. Only modules in unprotected Areas should be selected with short times. Modules in protected Areas can have times set up to 250 seconds maximum. If too many modules are programmed for short times then this may slow down LAN communications.

Note: Poll Time should not be set to 000.

```
B01 LAN
Priority: 0
```

Pressing the ON key allows the LAN Priority to be programmed between 0 and 3 for this module. LAN Priority can be used to give certain modules priority over other modules when sending information to the Control Module. Priority 0 is the highest priority and priority 3 is the lowest. For example, if a module was programmed for priority 0 and another module was programmed for priority 1 and both modules were sending information at *exactly the same time*, then the module with priority 0 would be sent first.

When programming small systems the priority of all modules are most commonly set to 0. In larger systems with many Terminals and Zone Expanders, Zone Expanders may be set to Priority 1 and Terminals may be set to priority 0, giving Terminals a faster response than Expanders during heavy LAN traffic.

```
B01 Battery Test
Time:  000 min
```

This screen allows the Installer to programme the duration of the Dynamic Battery Test for this module. Dynamic Battery Testing is a feature of Diary Programming. A Diary event may be used to initiate a Battery Test on all Modules within the system. The test is performed on each programmed module in turn. The duration of such a Battery Test is individually programmable from one module to the next for periods ranging from 0 (No test) to 255 minutes. Battery life will be dependent upon current consumption.

Refer to the section of this Manual on "Diary Programming" for further details on Dynamic Battery Testing and recommended Battery Test Times.

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Reader Module Programming

Reader Module programming is used to program 2 Door Access Modules and Single Door Access Modules, which, for the purposes of LAN communications and programming are considered the same Module 'Type".
Intelligent 4 Door Access Modules are a different Module Type and are programmed in a separate Menu Option, -<MENU>, 7, 2, 8.

Programming Single Door Access Modules. (995011 and 995011ENH)

The following programming notes must be observed when programming Single Door Access Modules:

1) When programming, the following options relating to the 2nd Door and Reader 2 must not be programmed:
-2nd Door / 2nd Lift. -**2** Door Mode in the Options screen.
-Reader 2 Location. -Reader 2 Format.
-Reader 2 Mode. -Reader 2 Keys for PIN.
-Reader 2 Module for PINs

2) A single Input is provided for an Exit/Entry button. Regardless of whether this input is used for an Exit or Entry button, it must be programmed for Exit button operation. i.e. Select the "B"utton option in the "Exit Options" of the Access Group assigned to the Door. Note that Review will always record the direction for the button operation as "Exit".

3) Zones Rnn:Z03 to Z05 and Z07 and Auxiliaries Rnn:X03 to X08 do not exist on the Single Door Access Module and therefore must not be programmed.

4) DOTL output will only activate if the Door has been open too long after a Valid un-lock command. In the 2 Door Access Module the DOTL output also activates if the Door is open too long after a "Forced Door" condition occurs.

Reader Module LED Indications
The "Invalid" LED output provides error feedback, via a different number of flashes, to indicate the reason for Door Access or Area Control operations being denied. This output may be connected to a Reader LED control connection, or another device to provide visual or audible feedback to the User.

Reason	Number of Flashes	Reason	Number of Flashes
Area On denied - Unseal	5	No Card Found	3
Area On denied - Missing ^	5	User # too big	3
No Door Programmed	4	Site Code not found	3
No Access Group Assigned	4	Card not found	3
Door not in list	4	TimeZone violation	2
Terminal illegal *	4	Card Expired	2
Terminal already in use *	4	Anti-passback violation	2
Terminal not present *	4	Need PIN.	2
Card Cancelled	3	Wrong PIN	2
Area Armed	3	No Terminal for PINs	2
Wrong Issue	3	No Door List	2
Not Site Code User	3	Time-out for 2nd User	2
Format Mismatch	3	Button not Allowed	1

* These conditions relate to the "Terminal Logon" function. See "Reader Purpose" for details.
^ "Missing" means that a Module that has Inputs that are assigned to the Area is Off-line.

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DOTL Warning

A "DOTL Pre-warn" output may be generated for each Door by the Reader Module to indicate that the Door is open past the valid "Door Open Time" as set in Door programming.

This mode is activated by setting the "W" (DOTL **W**arning) option to YES and ensuring that the "N" **(N**o LEDs) option is set to NO under Reader Programming.

If the Zone Inputs are still in alarm after the Lock Auxiliary has turned Off, the Door Open timer will start for the specified time. If at the end of this time the Door Inputs are still in alarm, the "Warn" output will be triggered.

If the Door Inputs are still in alarm for a further "Door Open" time period, the System Input for that Door HELD will be triggered. (i.e. The time taken before the Door Held System Input is triggered is double the programmed Door Open Time).

See the following information for Control Module and Reader Module firmware requirements for this feature.

IMPORTANT NOTE:

Reader Module Firmware Compatibility

Please consult the table below for details of which DOTL Warning features are supported by the various combinations of Reader Module and Control Module firmware.

NOTE:
The 2 Door Reader Module Part no:
- **993012** is a Through-hole PCB assembly which ceased production in 4th quarter 2000.
- **995012** is the replacement Surface mount product which was released in 3rd quarter 2000.

Reader Module.		**Control Module Firmware**	**DOTL Warning**
993012 2 Door Access Modules (Through-hole assembly)			
Chip U1: V14	**Chip U7:** V9	V3 or later	DOTL Warning operates on 1st Door & 2nd Door.
V13	V9	V3 or later	DOTL Warning operates on 1st Door Only. 2nd Door Lock output will not work. i.e. **Can only be used in Single Door mode.**
V12	V9	V3 or later	DOTL Warning not supported.
All 995012, 2 Door Access Modules V1.00 or later. (Surface mount assembly)		V3 or later	DOTL Warning operates.
All 995011, Single Door Access Modules V1.00 or later. (Surface mount assembly)		V3 or later	DOTL Warning operates.

The tables on the following page provide details of the mode configurations that are available for the different versions of the Reader Modules.

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Mode configurations available in 2 Door Access Module, 995012. (Surface mount assembly)

W = Warn DOTL option. N = No LEDs mode.
Y = Yes. n = No. X = Either Yes or No
Note: Spare Auxiliaries may be used for applications other than Door processing.

With Control Module firmware V4 and 2 Door Access Module firmware V1.10 or later.

995012	WN	WN	WN
Auxiliary	**nn**	**Yn**	**XY**
X01	Door #1 Lock	Door #1 Lock	Door #1 Lock
X02	Reader 1. Valid LED.	Reader 1 Valid / Invalid	Spare
X03	Reader 1. Invalid LED.	Spare	Spare
X04	Door #2 Lock	Door #2 Lock	Door #2 Lock
X05	Reader 2. Invalid LED.	Reader 2 Valid / Invalid	Spare
X06	Reader 2. Valid LED.	Spare	Spare
X07	Spare	Door #1 DOTL Pre-warning	Spare
X08	Spare	Door #2 DOTL Pre-warning	Spare

Mode configurations available in Single Door Access Module, 995011.

995011	WN	WN	WN
Auxiliary	**nn**	**Yn**	**XY**
X01	Door #1 Lock	Door #1 Lock	Door #1 Lock
X02	Reader 1. Valid / Invalid LED.	Reader 1 Valid / Invalid / DOTL Pre-warn	Spare

Mode configurations available in 2 Door Reader Module, 993012. (Through-hole assembly)

993012	WN	WN	WN
Auxiliary	**nn**	**Yn**	**XY**
X01	Door #1 Lock	Door #1 Lock	Door #1 Lock
X02	Reader 1. Valid LED.	Rd 1 Valid / Invalid / DOTL Pre-warn (Valid/Invalid suppressed if DOTL On.)	Spare
X03	Reader 1. Invalid LED.	Spare	Spare
X04	Door #2 Lock	Door #2 Lock	Door #2 Lock
X05	Reader 2. Invalid LED.	Rd 2 Valid / Invalid / DOTL Pre-warn (Valid/Invalid suppressed if DOTL On.)	Spare
X06	Spare (no output)	Spare (no output)	Spare (no output)
X07	Spare (no output)	Spare (no output)	Spare (no output)
X08	Spare (no output)	Spare (no output)	Spare (no output)

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Reader Module Programming

Reader Unit to alter: R01

This screen allows a 2 Door Access Module OR a Single Door Access Module to be selected for programming. Pressing the "On" key to change modes displays whether this module is currently in the network. If the module is not in the network it will display the word "Absent" following the Reader number.

R01 Present-000 but not secure

If the module is present, the Reader number is followed by the words "Present-nnn but not secure", or "Present-nnn and secure", depending on the LAN security status. The number (nnn) in the message indicates the number of times the module has failed to acknowledge a poll from the Control Module since the last LAN Init. or LAN Secure operation.
(See "Configuring the 3000/4000 LAN" for details of LAN Security)

R01 Poll Time: 060 sec

This screen allows the Installer to select the maximum time a module can remain out of communication with the Control Module. Only modules in unprotected Areas should be selected with short times. Modules in protected Areas can have times set up to 255 seconds maximum. If too many modules are programmed for short times, this may slow down LAN communications.

R01 LAN Priority: 0

Pressing the ON key allows the LAN Priority to be programmed between 0 and 3 for this module. LAN priority can be used to give certain modules priority over other modules when sending information to the Control Module. Priority 0 is the highest priority and priority 3 is the lowest. For example, if a module was programmed for priority 0 and another module was programmed for priority 1 and both modules were sending information at *exactly the same time*, then the module with priority 0 would send first.

The most common programming in small systems is to leave all priorities at 0. In larger systems with many Terminals, Zone Expanders and Readers; Zone Expanders may be set to priority 2, Readers to Priority 1 and Terminals to Priority 0. This would give Terminals the faster response, whilst Readers would still have a faster response than Expanders during heavy LAN traffic.

R01 Purpose -> Door Control

This screen is used to specify whether the Reader Module is to be used for:
- Door Control
- Lift Control
- LCD Terminal Logon. (V5 or later only) Provides Logon operation for a specified LCD Terminal.
i.e. Card presentation is substituted for the PIN, <OK> logon operation.
The LCD Terminal is defined by programming the "Module for PINs".
Use the right arrow to toggle between the three options.

R01 1st Door D000

R01 1st Lift L000

This screen allows the selection of the first Door (or Lift) that this Reader module is to control.
A Door of D000 means no Door. Once a Door number is selected, the individual Door programming is carried out under "Door Programming" MENU 7-6.

R01 2nd Door D000

This screen allows the selection of the second Door (or Lift) that this Reader module is to control. The 2nd Door will only need to be specified if the "**2** Doors" option is to be set below. (This screen not relevant for Single Door Access Modules)

If Lift Control is chosen, a second Lift Number is not usually assigned. (For Lift Control, the Reader Module is typically installed on the Lift Car and it would not be possible to wire two readers to the same Module.)
See "Lift Programming" in the Basic Programming section for Installation notes.

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```
R01    CEXFWNT2
Opts:  nnnnnnnn
```

This screen allows special options to be saved for this Reader Module that will determine how the Reader operates if it loses communications with the Control Module and sets up some general operational parameters.

The "fail" options are transferred to the Reader when the Reader first communicates with the Control Module or whenever the LAN is initialised. The Reader fail options will be set to "n" when the Reader is powered up and has not been addressed by the Control Module unless at least one "Backup Card" has been programmed. (See "Backup Card Programming" for more details.

C **C**ards — Setting this option to "Y" allows Backup Cards to operate the Door lock at the Reader for 5 seconds in the event of total communications failure with the Control Module. There can be up to 15, 31 or 127 Backup Cards on a Reader Module, depending on the type of Reader Module and the Version of Control Module firmware. See "Backup Cards", (<MENU>, 2, 6) for details and programming information.

E **E**nter button — Setting this option to "Y" allows the Request to Enter button to operate the Door Lock at this Reader for 5 seconds in the event of total communications failure with the Control Module. *See Note below.*

X E**x**it button — Setting this option to "Y" allows the Request to Exit button to operate the Door Lock at this Reader for 5 seconds in the event of total communications failure with the Control Module. *See Note below.*

Note: Type 2, Two Door Access Modules prior to V5.03. (PCB: 935012)
-E option enables both Entry and Exit button operation when offline.
-X option disables both Entry and Exit button operation when offline.

F **F**irst 2 Backup Cards — Setting this option to "Y" causes the Reader to only recognise the First two Backup Cards if the "C" option above is also set. Backup Cards BC003 through to BC127 will not be recognised at this Reader. (This option would be set when a Reader is installed in a high security Area and it is undesirable to recognise all Backup Cards when the Reader cannot communicate with the Control Module.)

NOTE: Type 2, Single Door Access Modules (995011): Must be V1.08 or later.
Type 2, Two Door Access Modules (995012): Must be V1.11 or later.

W DOTL **W**arning — This option starts a "Door Held Warning" timer if the Door is still open after the lock Auxiliary has turned off. If the Door is still open when the timer expires, a local DOTL Warning is generated on one of the local Auxiliary outputs and the Door Open Too Long timer will be started. The Auxiliary will be turned Off if the Door closes or on the next valid Card entry.

See "DOTL Warning Mode" at the end of this chapter for configuration options.

N **N**o LED's — No LED's. Setting this option to "Y" prevents the reader logic from operating the Valid or invalid LED's. This allows these Auxiliaries to be used for other purposes such as DOTL Warnings or an annunciation beeper.

See "DOTL Warning Mode" at the end of this chapter for configuration options.

T **T**ongue Sense — Setting this option to "Y" allows Zone 6 (R??:Z06) and Zone 7 (R??:Z07) to be used as Tongue Sense inputs. If set to "n", Zones 6 and 7 can be used as normal Zone inputs.

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2 **2** Door Mode

Setting this option to "Y" enables "2 Door" mode for this module. In 2 Door mode, Reader Head 1 is associated with the 1st Door and Reader Head 2 is associated with the 2nd Door.
This option must be set to "No" for Single Door Access Modules.

Refer to the table at the end of "Reader Module Programming" for details of Zone Inputs, System Inputs and Auxiliaries used in 1 Door and 2 Door Modes.

R01 Arm Mode -> None

This screen allows selection of the Door Inside or Outside Area ON (arm) option to be programmed for this Reader Module. The "Zone 8" options allow Zone 8 on the Reader Module to be used as a push button input that will allow presentation of a card to turn On the Area. ie. If the card is presented while Zone 8 is in alarm, the Area will be turned On.

The Area will turn on if:

- An Area is defined for that side of the Door.
- The Area is currently Off
- The Area is allowed to be turned OFF by the User.
- Refer to the "Reader Module Installation Notes" for more details.

Options

Note: The "ARM" (PB [Pushbutton]) Input is labelled Z8 (Zone 8) on older 2 Door Reader Modules. (Part No: 993012 - Through-hole assembly)

See "Reader Area Control" in the Applications Programming section for more information on these options..

None — No Reader Arming.

Extra Area if PB — User's Extra Area will arm if "ARM" (Push-Button) Input is Unsealed when Card presented.
See Important Notes following these options.

Exit Area if Count=0 — Door Area you are leaving will arm if Area Count equals zero.

Exit Area if PB — Door Area you are leaving will arm if "ARM" (Push-Button) Input is Unsealed when Card presented.
See Important Notes following these options.

Entry Area if PB — Area on the other side of the Door will arm if "ARM" (Push-Button) Input is Unsealed when Card presented.
See Important Notes following these options.

Exit Area if 3 swipes — Door Area you are leaving will arm if Card presented 3 times in succession. The 3 presentations must be within 5 seconds.
See Important Notes following these options.

Entry Area if 3 swipes — Area on the other side of the Door will arm if Card presented 3 times in succession. The 3 presentations must be within 5 seconds.
See Important Notes following these options.

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IMPORTANT NOTES. 3 SWIPE OR PUSH-BUTTON ARMING:

1) When an Area is turned On via one of these methods:

V2 to V4.9x: No Zone test is performed.
The Area will turn on regardless of any Zones that are not sealed.
Any Unsealed Zone will generate an alarm unless the "No Test on Exit" and "Auto-Isolate" Input options are set to Yes. (Primary or Delayed Zones will only generate an alarm if Unsealed when the Exit Time expires)

V5 or later: Zone testing is performed.
If a Zone is not Sealed (or a relevant Module is Off-line):
-If the "No Test on Exit" Input option is not set to Yes, the Area will not turn On and the "Invalid LED" output on the Reader Module will flash 5 times to indicate "Area On Denied".
-If the "No Test on Exit" Input option is set to Yes, the Area will turn on unconditionally. This will cause the Zone to generate an alarm unless the "Auto-Isolate" Input option is also set to Yes.

2) Any REX or REN button operation on the Module (i.e. From either Door) will be ignored during the 3 Swipe arming procedure.

```
R01  Turn off
Extra Area?  n
```

This screen, if set to "Y", causes the User's Extra Area to be turned Off instead of the door Area they are about to enter.
(The "**E**" xtra Area Off option must be set to "Yes" in User Programming for a User to use this feature).
See "Reader Area Control" in the Applications Programming section for more details.

```
R01:Rdr1 Loc. ->
Inside
```

This screen allows the location of the first Reader head to be chosen by using the right arrow key. The reader location will be either Inside or outside.

```
R01:Rdr1 Format>
26Bit Wiegand
```

This screen allows the type of Reader Head connected to the 1st Reader Input on the Reader Module to be selected.

The formats are as follows:

None	30 bit Wiegand
Swipe	32 bit Wiegand
Swipe Last*	36 bit Wiegand
Insertion	37 bit Wiegand
Nbit Wiegand	40 bit Wiegand
26 bit Wiegand	Nbit Fast
27 bit Wiegand	Proxpin
(Indala. SC = 0 to 8191)	

Refer to the table at the rear of this document for more details.

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R01:Rdr1 Mode -> Direct Entry

This screen determines how the Card will be processed by the 3000/4000 system and what type of Users will be allowed to use this Reader.

The choices are:

Credit Card — This setting is used for magnetic swipe or insertion credit Cards. Users that use this Reader must be programmed as a "Credit Card" User (See User Programming)

Direct Entry — This setting is used for Wiegand format type Cards where the Site Code or Card numbering system is unknown. Users that use this Reader must be programmed as "Direct Entry" Users. (See User Programming)

Site Code — This setting is used for:
-Inner Range 3000/Access 4000 Magnetic Swipe Card format.
-Wiegand formats where the Site Code and Card numbering system is known.
Note: Site Code processing is currently supported in 26 Bit, 27 Bit (Indala) and 34 Bit Wiegand formats.

Users that use this Reader must be programmed as "Site Code" Users. (See User Programming)

The actual Site Codes are programmed and enabled in the Access Menu, and the way the Site Code is stored on the Card is selected as the Site Code method in General System Options programming.

Any Card — This setting is used to allow any credit card to grant access and save the account number to review. For this option to function, "Swipe" format must be selected and the Reader Module must be programmed for single Door operation.

Whenever a card is swiped, the account number will be saved to review in two separate entries.

eg. "Card 1st = 1234567890 (First 10 digits)
"Card 2nd=987654 (Remaining digits)

R01:Rdr1 Keys LCD Term

This screen allows a choice of from where the PIN number is to be obtained when "Card and PIN" operation has been specified.

LCD Term — Get PIN from a 3000/4000 LCD Terminal

LED Term — Get PIN from a 3000/4000 LED only keypad. (Not yet available)

ARK-501 — Get PIN from an **Indala Ark-501 or Keri P-600** Proximity Plus PIN code Reader.

HID5355 — Get PIN from a **HID5355** Proximity Plus PIN code Reader.

MR Access — Get PIN from an **MR Access Model 6AT1B** Magnetic Swipe Plus PIN code Reader.

Wiegand — Get PIN from a **26 Bit Wiegand keypad.**

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NOTES:

1) **HID5355**. If an "HID5355" Proximity and PIN Reader is used, ensure the HID Reader part number is 5355xxK00. The last 3 characters must be K00 for correct keypad option and PIN code buffering. (xx=Revision and colour options which will not affect operation)

2) **Keri P-600.** If a "Keri P-600" Proximity and PIN Reader is used, the Reader must be configured for "8-bit Burst" mode via the following 2 steps:

i) Present the Keri Wiegand Keypad Data Mode control card to the Reader. The Reader beeps 4 times and then enters Site Code programming mode.

ii) Press the "#" key. (This switches the reader to 8-bit Burst mode) The Reader beeps 4 times to indicate programming mode has ended.

3) **MR Access Model 6AT1B. (V4.5 or later).**

If an "MR Access 6AT1B" Reader is used, the Reader must be configured to send a 4 digit PIN as a single packet.

The related options are programmed as follows:

MENU, 7, 2, 4	Reader Format:	Swipe.
	Reader Mode:	Site Code.
MENU, 7, 5, 1	Site Code Type:	General.
	General Site Total Bits:	00
	Site Size / Offset:	As required.
	User Size / Offset:	As required.

4) When using the "Proximity Plus PIN code" Readers (HID5355, ARK-501, Keri P-600 & MR Access), only the "Card + PIN" and "Card Only" operations are supported.
i.e. "PIN Only" operation is <u>not</u> supported.

5) 26 Bit Wiegand Keypad. The Keypad output is wired in parallel with the 26 Bit Wiegand Reader.
The keypad must output standard 26 Bit Wiegand data. i.e. The keypad must be of the type that buffers the digit entries then sends a single 26 Bit Wiegand data string when the terminator key (e.g. # key) or fifth digit is pressed.

PIN Codes must be a number less than 65536.
V5.00 to V5.0x: PIN Codes must be exactly 5 digits in length.
V5.10 or later: PIN Codes can be from 1 digit to 5 digits in length, but must not start with a "0".
(Note that these parameters are set by the nature of the 26 Bit Wiegand format, not the 3000/4000)

The Site Code data from the keypad is ignored, however it is recommended that the Site Code generated by the Keypad is set to a value different to the Site Code on the Cards so that PIN entries are not mistaken for Card data.

```
R01:Rdr1 Module
for PINs:  T000
```

This screen specifies which LCD Terminal module is to be used for keying in PIN codes when this Door requires Card & PIN for access to be granted to the User. It is recommended that all "Alarm Message Types" are set to "NO" for LCD Terminals used in Access Control operations unless it is necessary for alarms to be displayed on them.

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```
R01:Rdr2 Loc. ->
Outside
```

```
R01:Rdr2 Format>
26Bit Wiegand
```

```
R01:Rdr2 Mode ->
Direct Entry
```

```
R01:Rdr2 Keys
LCD Term
```

```
R01:Rdr2 Module
for PINs:  T000
```

The remaining screens are identical to those for the 1st Reader head and allow options for the 2nd Reader head to be programmed.
Note that these screens are not relevant to Single Door Access Modules.

The tables below show how the 2 Door Access Module connections vary between "One Door" and "Two Door" modes:

Reader Zone Inputs

IMPORTANT NOTES:
1) REN/REX Inputs. *These Zones are sealed when open circuit.
   Therefore, the Normally Open and Common contacts of the send button are used.
2) "Spare" Zones. Zones labelled "Spare" are available as general purpose Zone Inputs if Tongue sense is not set.
3) Tamper monitoring. Door Reed Zone Inputs (i.e. Rnn:Z01, Rnn:Z05) and Tongue Sense Zone Inputs (if required) are connected into Reader Modules and are used in Reader Module logic to generate "Door Forced" (i.e. Rnn:S03, Rnn:S05) and "Door Held" (i.e. Rnn:S04, Rnn:S06) System Input Alarms.
   These System Input conditions are monitored by ensuring that these System Inputs are assigned to an Area.
   In order to monitor for a Tamper condition on the actual Zone Inputs, these should also be assigned to an Area using a suitable Process Group that only monitors the Tamper state. e.g. PG009 "System Tamper".

Zone Input	1 Door Mode		2 Door Mode	
	993012	995012 (CE)	993012	995012 (CE)
Rnn:Z01	Door #1 Reed	Door #1 Reed	Door #1 Reed	Door #1 Reed
Rnn:Z02	Door #1 REN Input*	Door #1 REN Input*	Door #2 REX Input*	Door #1 REN Input*
Rnn:Z03	Door #1 REX Input*	Door #1 REX Input*	Door #1 REX Input*	Door #1 REX Input*
Rnn:Z04	Not available	Not used	Not available	Door #2 REN Input*
Rnn:Z05	Spare	Spare	Door #2 Reed	Door #2 Reed
Rnn:Z06	Spare or Door #1 Tongue Sense	Spare or Door #1 Tongue Sense	Spare or Door #1 Tongue Sense	Spare or Door #1 Tongue Sense
Rnn:Z07	Spare	Spare	Spare or Door #2 Tongue Sense	Spare or Door #2 Tongue Sense
Rnn:Z08	Spare or Arm Input	Not used	Spare or Arm Input	Door #2 REX Input*

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Reader System Inputs

If the **T**ongue sense option is set to No, tongue sense Inputs are ignored in this logic.

Input	Alarms when	Seals when
Rnn:S01 (Cabinet Tamper)	When Tamper Inputs go closed circuit.	When Tamper Inputs go open circuit.
Rnn:S02 (Low Volts)	When LAN voltage falls below 11 V	When LAN voltage goes above 11V
Rnn:S03 (1st Door Forced)	A Door Reed (Z01) goes from seal to alarm or tongue sense (Z06) goes from seal to alarm whilst the Door is locked (Aux 1 off).	Door Reed (Z01) and tongue sense (Z06) are sealed and Door is locked (Aux 1 off).
Rnn:S04 (1nd Door Held)	A Door Reed (Z01) seal to or tongue sense (Z06) is in the alarm or tamper condition for greater than the Door open time.	Door Reed (Z01) and tongue sense (Z06) are sealed.
Rnn:S05 (2nd Door Forced)	A Door Reed (Z05) goes from seal to alarm or tongue sense (Z07) goes from seal to alarm whilst Door is locked (Aux 1 off)	Door Reed (Z05) and tongue sense (Z07) are sealed and door is locked (Aux 1 off).
Rnn:S06 (2nd Door Held)	Door Reed (Z05) or tongue sense (Z07) is in the alarm or tamper condition for greater than the door open time.	Door Reed (Z05) and tongue sense (Z07) are sealed.
Rnn:S07 (Illegal Card)	When an illegal card is presented.	No restore generated.
Rnn:S08 (LAN Fail)	When module is lost.	When module is found or recovered.

Reader Auxiliary Outputs

* These Auxiliaries can be prevented from operating due to valid/invalid Cards by setting the "n"o LED option for the Reader. This enables these Auxiliaries to be used for other purposes, if required.

NOTE Later Reader Module firmware allows the assignment of these Auxiliaries to be changed to accommodate Door Open Too Long (Door Held) Pre-alarm Warning. i.e. 2 Stage DOTL alarms.
Refer to the "DOTL Warning" Section at the end of this section.

Auxiliary	1 Door Mode		2 Door Mode	
	993012	995012 (CE)	993012	995012 (CE)
Rnn:X01	Door #1 Lock	Door #1 Lock	Door #1 Lock	Door #1 Lock
Rnn:X02	Reader #1 Valid*	Reader #1 Valid*	Reader #1 Valid*	Reader #1 Valid*
Rnn:X03	Reader #1 Invalid*	Reader #1 Invalid*	Reader #1 Invalid*	Reader #1 Invalid*
Rnn:X04	Reader #2 Valid*	Reader #2 Valid*	Door #2 Lock	Door #2 Lock
Rnn:X05	Reader #2 Invalid*	Reader #2 Invalid*	Reader #2 Invalid*	Reader #2 Invalid*
Rnn:X06	Not available	Spare	Not available	Reader #2 Valid*
Rnn:X07	Not available	Spare or DOTL Pre-warn Door #1	Not available	Spare or DOTL Pre-warn Door #1
Rnn:X08	Not available	Spare	Not available	Spare or DOTL Pre-warn Door #2

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Format	Description
None	This setting disables the Reader Input.
Swipe	Selects a magnetic Card swipe Reader. All digits between the start sentinel and up to and including the 1st separator are read. Also used for MR Access Model 6AT1B Swipe Reader with Keypad. (V4.5 or later)
Swipe Last*	Selects the swipe Last format for a magnetic swipe Card Reader. Swipe Last is similar to the Swipe format, except that instead of returning the first 30 characters of a swiped Card, it returns the last 30 characters of the Card. *See notes below.*
Insertion	Selects an insertion style magnetic Card Reader. All digits between the start sentinel and up to and including the 1stseparator are read.
Nbit Wiegand	Selects any Wiegand type Reader with the Reader automatically detecting the number of bits. If the number of bits is known for the Reader then select one of the options below for better noise immunity.
26 bit Wiegand	Selects a Wiegand Reader which outputs 26 bits including the start bit and stop bit.
27 bit Wiegand (Indala) SC = 0 to 8191	Selects a Wiegand Reader which outputs 27 bits including the start bit and stop bit. If used with Single or 2 Door Access Modules they must be: -Type 2 (995011 / 995012) or -Type 1,Version 7 or later, fitted with at least V11 firmware. (Use Nbit Wiegand on earlier version Readers if cards are 27 bit Wiegand.)
30 bit Wiegand	Selects a Wiegand Reader which outputs 30 bits including the start bit and stop bit.
32 bit Wiegand	Selects a Wiegand Reader which outputs 32 bits including the start bit and stop bit.
34 bit Wiegand	Selects a Wiegand Reader which outputs 34 bits including the start bit and stop bit.
36 bit Wiegand	Selects a Wiegand Reader which outputs 36 bits including the start bit and stop bit.
37 bit Wiegand	Selects a Wiegand Reader which outputs 37 bits including the start bit and stop bit.
40 bit Wiegand	Selects a Wiegand Reader which outputs 40 bits including the start bit and stop bit.
Nbit Fast	Identical to Nbit Wiegand, except that it processes cards approximately 200ms faster. This format should be used in preference to Nbit Wiegand except in rare circumstances where very slow Wiegand data is being read. If used with Single or 2 Door Access Modules they must be: -Type 2 (995011 / 995012) or -Type 1,Version 9 or later, fitted with at least V12 firmware.
Proxpin	This format is identical to Nbit Fast except that keys pressed from an HID5355, Keri P-600 or Indala ARK-501 keypad can be buffered and sent as Wiegand data. If used with Single or 2 Door Access Modules they must be: -Type 2 (995011 / 995012) or -Type 1,Version 9 or later, fitted with at least V12 firmware.

NOTE: "Swipe Last" Format:
This format can be useful for:
1. Allowing 60 characters of magnetic Card data to be inspected using "Test Cards" (Menu 4, 5) by reading the Card twice; once with "Swipe" format set and once with "Swipe Last" format set.
2. For sets of Cards that contain their uniqueness in the last part of the Card data rather than the first part. The Swipe Last format would allow these Cards to be individually distinguished. e.g. Try "Swipe Last" when "Swipe" format returns the same data for all Cards when you test them via Test Cards [MENU 4,5].

The Swipe Last Format should only be used in conjunction with "Credit Card" mode. An Account No. cannot be entered when programming Cards, the Card MUST be read at Reader 01.
In Credit Card mode, with "Swipe" or "Insertion" format, all Card digits up to the first control character (displayed as "A,B,C,D,E or F" on test screen) are used in the hash calculation. When "Swipe Last" format is selected, all digits up to the end sentinel (displayed as a "F" on test screen) are used in the hash calculation.
The Swipe Last format requires Reader Modules to be fitted with U07, Version 6 or higher.

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Wireless Zone Registration

IMPORTANT NOTE: V5.1 OR LATER.
THIS OPERATION IS NOW PERFORMED VIA MENU, 7, 2, 0, 0, 3. (MENU, 7, 2, 5 IS NO LONGER ACCESSIBLE)

The Model 3000/Access 4000 system can be connected to certain Wireless Detection System products via a serial RS232 connection.

This allows up to 208 Wireless Detection devices (Transmitters) to be monitored by the system via a simple interface between a Control Module UART Port and the Wireless Receiver.

NOTE: The number of Wireless Detection devices that can be monitored will depend on the Memory Size and configuration selected, and the PIC Options Microchip fitted to the Control Module.

This programming function allows the Transmitters (Wireless Detectors/Sensors) used in conjunction with particular Wireless Receiver products to be registered with the Model 3000/Access 4000 system.

Inovonics MF Series
Control Module Firmware V4.5 or later only.
Transmitters used in conjunction with an Inovonics MF series Wireless Receiver need to be registered with the Model 3000/Access 4000 system using this programming function.

Important note: This function is not used for Transmitters used in conjunction with the Inovonics FA400 Wireless Receiver. When using the FA series, Wireless Zones are pre-mapped to Transmitter IDs.
Refer to "Comms Task Formats. Comms-24" for FA400 Zone Mapping details.

Registration is performed by first Programming a Comms Task for "Inovonics" format, connecting the IR400 Interface and the Inovonics MF series Receiver, and setting the Comms Task to active. (The "Inovonics" Comms Task must be operational to register the Transmitters.)
Refer to "Comms Task Formats. Comms-24" for information on the operation and programming of the "Inovonics" Comms Task.

When this is done, Wireless Zone Registration can now be performed.

Reporting

Important Note: Some communication formats are unable to report individual Inovonics Zones or are limited as to what they can report on each Zone. See the Tables section at the rear of this manual for Zone mapping details.

NOTE: "N" Type Modules do not report unique Zone IDs via Securitel.

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Using any LCD Terminal, Logon and select RF module programming from the Menu. [MENU, 7, 2, 5]

```
N01:Z01
Not Registered
```

The screen will display the first Wireless Network Zone number and the current registration status.

Press the "Reset" button on the Transmitter you wish to register as N01:Z01. The Transmitter will be registered, the LCD Terminal will beep and the screen will automatically advance to the next zone:

```
N01:Z02
Not Registered
```

The screen will now display the next Wireless Network Zone number and the current registration status.

Now press the "Reset" button on the Transmitter you wish to register as N01:Z02. The transmitter will be registered and the screen will advance as before.

All Transmitters can be registered sequentially by simply pressing the Reset button on each of the Transmitters in the required Wireless Zone order.

At any point, the Arrow keys can be used to select a Zone in order to View the status, or to Register the Transmitter:

^ (Up)	Go back 1 zone
v (Down)	Go to next zone
> (Right)	Advance 16 zones
< (Left)	Go back 16 zones

```
N01:Z09
Registered
```

A "Registered" message will be be displayed if the zone is already registered.

```
Zone already
Registered
```

A "Zone already Registered" message will be displayed if a "Reset" button is pressed for a Zone that is already registered to a Transmitter.

```
N02:Z07
Registered
```

If the displayed Zone is not registered, but a "Reset" button is pushed on a Transmitter that is already registered to another Zone, the LCD Terminal will beep for 1 second and the display will jump to the Zone that it has been registered to.

```
N01:Z01
Not Registered
```

To de-register any Zone, use the arrow keys to display the selected zone as described above and press the <OFF> key.

To register any Zone (not in sequence), use the arrow keys to display the selected Zone. If the Zone is already registered, press the <OFF> key. Now press the "Reset" button on the Transmitter that you wish to register as this Zone.

Note that the registration takes note of all 4 ID bytes used to identify a Transmitter.

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"M" Type Mini Expander Module Programming

IMPORTANT INFORMATION

The 8 Zone Mini Expander, designated as an "M" Type module, provides low cost expansion where only a small number of Zones / Auxiliaries are required. The Module is powered from the LAN or External Supply and has no siren outputs.
Mini Expanders can only be used with Control Module Firmware V2 or later.

External Power Supply Connection Option.
An Inner Range External Power Supply (99405x Series) can be connected to the Mini Expander Header connection, X2, via a Ribbon cable (P/No. 605049).
When this method of connection is used:
-Mini Expander Zones 7 and 8 are connected to the AC Fail (Mxx:Z07) and Low Battery (Mxx:Z08) outputs of the Power Supply and cannot be used as normal Zone Inputs. These Zones should be programmed to report the AC Fail and Low Battery conditions.
-Auxiliary 8 controls the "PSDOWN" function on the Power Supply. If JP2 is fitted on the Power Supply, Auxiliary 8 must be ON to enable AC.

Mini Expander Auxiliary 8
Auxiliary 8 on a Mini Expander has special functionality. If the Auxiliary is programmed for a time in minutes then the auxiliary will turn on for a time in 10 millisecond increments. Eg. If the Auxiliary is programmed for 50 minutes, the Auxiliary will turn on for 50 x 10ms = 500ms = 0.5 seconds.

In addition, whilst the Auxiliary is timing in this mode, if one or more counts are detected on **all** defined counter inputs of 2 Trg points Type, the Auxiliary will be turned off early.

This feature lends itself specifically to the testing of cameras. All counting inputs of 2 Trg Points Type are assigned to an Area with Self Testing Enabled (Refer to the Applications Section of this Manual).

The Test Auxiliary is set to a suitable phantom Auxiliary, buzzer or LED and the "Qualify for Exit" flag is set to YES. A Calculated Auxiliary is configured to turn on Auxiliary 8 on the Mini Expander for a time in minutes when the Test Auxiliary is turned on. (Refer to "Calculated Auxiliaries")

When the Area is turned on a , Test Mode is initiated and Auxiliary 8 is turned on for the corresponding time in 10ms increments. Auxiliary 8 starts all cameras running and will stay on until frame counts have been detected on **all** defined counter inputs on the Mini Expander. It will then turn off, allowing the Area in Test Mode to relinquish the test status and be turned on. A Successful test is achieved in a very short period of time, minimising the amount of film that is used through the cameras. This proves to be a significant saving to customers who operate in environments which demand the frequent testing of cameras.

Reporting
Reporting with most Contact ID maps will treat the Mini Expander, Exp32 and Exp16 as the same. (With the exception of the SIMS II map which identifies all Module Types). This means that care must be taken in a reporting system that the same module number is not used if you want unique reporting.

Eg. B01, B02, E03, B04, M05, E06 etc. will ensure that all zones are reported individually. Installing modules B01, E01 and M01 will mean that only Zones 17 to 32 on Expander B01 will be reported uniquely. Expander 1, Zones 1 to 8 will represent Zones 1 to 8 on all three of the modules and Zones 9 to 16 will represent those Zones on both B01 and E01.

In SIMS II mapping, the following type numbers will apply:
Type 3 = "B" Type Expanders
Type 6 = "M" Type Expanders
Type 7 = "E" Type Expanders

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Mini Expander to alter: M01

M01 Present-002 but not secure

This screen allows a Mini Expander to be selected for programming. Pressing the "ON" key to change modes tells the Installer whether this module is currently in the network. If the module is not in the network it will display the word "Absent" following the Expander number. If the module is present, the Expander number is followed by the words "Present-nnn but not secure", or "Present-nnn and secure", depending on LAN security status. The number (nnn) in the message indicates the number of times the module has failed to acknowledge a poll from the Control Module since the last LAN Initialisation or LAN Secure operation.

(See "Configuring the Model 3000/Access 4000 LAN" for details of LAN Security)

M01 Poll Time: 060 sec

This screen allows the Installer to specify the maximum time a module can remain out of communication with the Control Module. Only modules in unprotected Areas should be selected with short times. Modules in protected Areas can have times set up to 255 seconds maximum. If too many modules are programmed for short times then this may slow down LAN communications.

Note: Poll Time should not be set to 000.

M01 LAN Priority: 0

Pressing the ON key allows the LAN Priority to be programmed between 0 and 3 for this module. LAN Priority can be used to give certain modules priority over other modules when sending information to the Control Module. Priority 0 is the highest priority and priority 3 is the lowest. For example, if a module was programmed for priority 0 and another module was programmed for priority 1 and both modules were sending information at *exactly the same time*, then the module with priority 0 would be sent first.

When programming small systems the priority of all modules are most commonly set to 0. In larger systems with many Terminals and Zone Expanders, Zone Expanders may be set to Priority 1 and Terminals may be set to priority 0, giving Terminals a faster response than Expanders during heavy LAN traffic.

M01 Zone1 Type-> Holdup/Sus

These screens allow the Installer to select the type of Input on Zone 1.
Addtional information on Zone Types is provided at the end of this document.

M01 Zone2 Type-> Holdup/Sus

...etc.

Normal

When selected, the system will treat this Input as a normal input for use with standard detection devices. Three states on the input are recognised; Alarm, Seal and Tamper.

Counter

When selected, the system will treat this input as a Counter Input. The operation of this Counter Input depends on the counter type and trigger values assigned to the input in **Counter Programming MENU 7, 5, 8**

Notes: The "Counter" Zone Type can only be utilized with Control Module Firmware V3 or later.

"2 Trg Points" type counters utilise two trigger levels which are individually programmable by the Installer. When the count on the input

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exceeds the first trigger level, an alarm is generated on that zone input. When the count exceeds the second trigger level, an alarm is generated on a corresponding system input. Both the zone input and the system input may be assigned different Areas in order that different functions or auxiliaries may be activated. Zone Inputs and System Inputs each must be assigned an Area if they are to be used within the system.

The above application is ideally suited to camera frame counting where notification is required when the film is low as well as when the film is out.

The corresponding system inputs have an offset of one.
(M01:S01 is the "Low Voltage" System Input.)

Trigger one	**Trigger two**
M01:Z01	M01:S02
M01:Z02	M01:S03
M01:Z03	M01:S04
M01:Z04	M01:S05
M01:Z05	M01:S06
M01:Z06	M01:S07
M01:Z07	M01:S08

M01:Z08 has no corresponding system input and therefore should not be used for two trigger point counting.

Holdup

When selected, the system will treat this input as a Holdup Input. Upon recognition of an Alarm state, the system will turn On Auxiliary 1 on the Mini Expander (i.e. M01:X01) within several milliseconds.

Notes: The "Holdup" Zone Type can only be utilized with Control Module Firmware V3 or later.

Suspicion

When Selected, the system will treat this input as a Suspicion Input.

Notes: The "Suspicion" Zone Type can only be utilized with Control Module Firmware V3 or later.

M01:S01 is a Low Voltage System Input.

Physical Inputs	**Suspicion Inputs**
M01:Z01	M01:S02
M01:Z02	M01:S03
M01:Z03	M01:S04
M01:Z04	M01:S05
M01:Z05	M01:S06
M01:Z06	M01:S07
M01:Z07	M01:S08

Suspicion Inputs require each input to be physically connected to the Mini Expander Zone Input connectors but do not monitor the Alarm state of the input. Instead, Suspicion Inputs monitor the Seal to Short Circuit change of state via the Zone Extra system input.

M01:Z08 cannot be used, as no corresponding Zone Extra system input exists.

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Holdup/Sus

When selected, the system will treat this input as a Holdup/Suspicion Input.

Notes: The "Holdup/Suspicion" Zone Type can only be utilized with Control Module Firmware V3 or later.

M01:S01 is a Low Voltage System Input.

Holdup Inputs	**Suspicion Inputs**
M01:Z01	M01:S02
M01:Z02	M01:S03
M01:Z03	M01:S04
M01:Z04	M01:S05
M01:Z05	M01:S06
M01:Z06	M01:S07
M01:Z07	M01:S08

M01:Z08 cannot be used as no corresponding Zone Extra system input exists.

```
M01 Zone1      ->
Debounce  400ms
```

```
M01 Zone2      ->
Debounce  400ms
```

```
M01 Zone3      ->
Debounce  400ms
```

...etc.

These screens allow the Installer to set the debounce time for each Zone input.

Note: The "Zone Debounce Time" can only be utilized with Control Module Firmware V3 or later.

Debounce Time

The Debounce time refers to the interval of time a signal on an input must remain at the pre-determined level to be recognised by the system as having changed state. Signal fluctuations occurring for less than the debounce time will be ignored by the system. Those signals that achieve the debounce time generate an event that is reported to the Control Module. A setting of 300-400ms is suitable for most detectors.

The Mini Expander allows the Installer to individually set the debounce time for each of the 8 Zone inputs. Debounce time options range from 5ms to 1250ms (+/- 5ms). This allows the Mini Expander to be used within institutions such as Banks, which specify very low debounce times for Holdup inputs, or as a counter interface for monitoring sensitive electronic devices or meters.

The following Debounce Time settings are available:
5mS, 10mS, 20mS, 30mS, 40mS, 50mS, 75mS,
100mS, 200mS, 300mS, 400mS, 500mS, 600mS 750mS,
1000mS, 1250mS.

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ZONE TYPES

The table below shows the state of the **Zone Input** (Mxx:Zxx) as a function of Zone Type for the 4 possible input conditions.

Condition	Normal Zone	Holdup	Suspicion	Holdup/Sus
Open Circuit	Tamper	Tamper	Tamper	Tamper
Alarm -9k (6k8+2k2)	Alarm	Alarm	Alarm	Alarm
Seal -2k2	Sealed	Sealed	Sealed	Sealed
Short Circuit	Tamper	Tamper	Sealed	Sealed

The table below shows the state of the **Zone Extra System Input** (Mxx:Sxx) as a function of Zone Type for the 4 possible input conditions.

Condition	Normal Zone	Holdup	Suspicion	Holdup/Sus
Open Circuit	None	None	Sealed	Sealed
Alarm -9k (6k8+2k2)	None	None	Sealed	Sealed
Seal -2k2	None	None	Sealed	Sealed
Short Circuit	None	None	Alarm	Alarm

A Holdup Input is identical to a Normal Zone input except that a seal to alarm transition occurring on an enabled zone will unconditionally turn on Auxiliary 1 on the Mini Expander and report the fact to the Control Module. This operation takes only milliseconds and is ideally suited to bank operations where screens need to be activated with minimal delay.

To implement Hold-up buttons, programme an area with the "Hold-up area" option set to YES, the pulse time set to the required number of seconds (eg. 30 seconds) and the pulse count set to a suitable number (eg. 2). Assign all zones to be used as hold-up buttons into that area with the process group set to "Pulse count" and the appropriate alarm processing. Programme at least one user with a Menu Group where the "Cancel Hold-up" option is set.

In the above example, if the hold-up button is pushed, a timer is started and 30 seconds later an alarm is generated, unless a code is entered during the 30 second delay which will cancel any pending hold-up button. If a second button is pushed during the 30 second delay, or the same button is pushed again, the hold-up button(s) will be processed immediately.

A Suspicion Input is identical to a Normal Zone input except the short circuit tamper condition is regarded as a seal. In addition, a Suspicion Zone input will manipulate the corresponding system "Zone Extra" input.

A Holdup/Sus Input performs in both of the above manners. The system treats this input in a similar fashion to that of the Holdup input but in addition utilises the corresponding system "Zone Extra" Input to generate "Suspicion" alarms.
This system input may be placed in an appropriate Area and Processed as required to activate cameras etc.

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Counter Input

When a zone type is defined as counter, the operation of the zone inputs and zone extra system inputs are dependent upon counter type. At this time only the 2 Trigger Points counter type is defined.

2 Trigger Points Type

"Counter" Zone Type

The counter will increment by 1 whenever the input changes from Open Circuit to Short Circuit. The table below shows the operation of the Zone Input and corresponding System Input for a counter of "2 Trg Point" Type.

Condition	Zone Input	System Input
Current Count below Trigger Count 1	Sealed	Sealed
Curernt Count above Trigger Count 1	Alarm	Sealed
Current Count below Trigger Count 2	Alarm	Sealed
Current Count above Trigger Count 2	Alarm	Alarm

Note: 1. The actual input state of the Zone cannot be monitored with a count type input
2. The count is stored in the Mini Expander. This means that even if the control panel is replaced the count is unaltered. If the Mini Expander is replaced, the count must be readjusted.

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"E" Type Expander Module Programming

Refer to "B" Type Expander Module Programming.

[MENU, 7, 2, 3]

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Intelligent 4 Door Access Module Programming

IMPORTANT NOTE. FIRMWARE COMPATABILITY

GENERAL RECOMMENDATION
If Control Module Firmware is V4.70 or later; IFDAM Firmware should be V2.00 or later.
Intellegent 4 Door Access Modules V2 or later can be used on earlier Control Modules provided that Site Codes or User Extra Door / Extra Door List features are NOT required. (See Additional information below)

ADDITIONAL INFORMATION

Site Codes:
If any Site Codes are utilized in a system that uses Intelligent 4 Door Access Modules:

- If Control Module Firmware is V4.70 or later: Intelligent 4 Door Access Module Firmware should be V2.00 or later.
- If Intelligent 4 Door Access Module Firmware is V2.00 or later: Control Module Firmware should be V4.70 or later.

From the Controller and IFDAM Firmware Versions listed above, the way Site Code data is stored has altered. (This change was necessary in order to implement User Definable Site Code programming)
See "Site Code Programming" MENU, 2, 5 in the Programmers Manual V4.5 or later for details.
If a system has either a Control Module or IFDAMs that have earlier Firmware fitted, then the Site Code data must be entered twice for each Site Code. i.e. Program the 1st Site code by entering the data in the 10 character (Hex) screen in the earlier format, and a 2nd Site Code by entering the data in the 10 character (Hex) screen in the new format.

If User Definable (Programmable) Site Codes are enabled.
- Control Module Firmware must be V4.70 or later AND IFDAM Firmware must be V2.00 or later. This is regardless of whether the feature is actually used or not. If this feature is enabled and the Firmware Versions are not as specified above, the IFDAMs will not operate.

NOTE: The User Definable Site Code Feature is enabled in the follow Options Micro Chip Types:

CEPIC_3 V1.15 or later.	CEPIC_7 V1.14 (No longer available)
CEPIC_8 V1.14 or later.	CEPIC_9 V1.14 (No longer available - now in Standard 512k)

If the User Extra Door / Extra Door List feature is to be used.
- Control Module Firmware must be V4.85 or later AND IFDAM Firmware must be V2.00 or later.
NOTE: This feature only available in the 512k "Apartments" and "XDoor" Memory configurations.

INTRODUCTION

The Intelligent 4 Door Access Module provides an interface for up to 4 Doors using 4 Card / Prox Readers or, if used in conjunction with the 4 Reader Expansion board, up to 4 Doors using Card in / Card out operation with 8 Card Readers. Multiple Intelligent 4 Door Access Modules may also be used within the same system, the number of modules being dependent upon the Memory size and configuration used.

Not only does the module boast Door capacity in excess of the standard Access Modules, it also provides continued Door operation in the event of LAN communication failure to an ACCESS 4000 Control Module. The Intelligent 4 Door Access Module will automatically switch to Offline Mode 5 seconds after a failed LAN communication to the controller is detected. A failed communication will be detected, for example, if there is no power to the Control Module or there is a break in the LAN **and** an event has occurred which would require the module to communicate with the Control Module. Events would include a User presenting a Card at a Card Reader which is attached to the Intelligent 4 Door Access Module or a regular poll initiated by the module.

The switch to Offline Mode is fundamentally transparent to the User. Enhanced LCD Terminals attached to the Local LAN of the Intelligent 4 Door Access Module do, however, display a notification message that the module is operating Offline.

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Database. The Module maintains an updated record of many of the Access 4000 database structures including Users, User Types, Doors, TimeZones, Holidays, Access Groups, Site Codes, Area Count, Door Interlock Groups, Intelligent Reader, Area Lists and Door Lists. If at any stage the main database is altered, the changes are automatically downloaded to each Intelligent 4 Door Access Module. Database structures will only complete their comparison and update when all Terminals have been logged off. Once editing is finished, the Installer must therefore log off from the Terminal.

Whereas an initial download at the time of module installation or Memory defaulting may take several minutes, ongoing database alterations are downloaded in a matter of seconds. **Initial** download time for a 128K memory configuration is approximately 1-2 minutes and, for a 512K memory configuration, approximately 15 minutes. These times do not increase with an increased number of Intelligent 4 Door Access Modules on the LAN.

Should a database structure change whilst an Intelligent Access Module is Offline, a comparison will be performed within 60 seconds of the Reader recovering. If the comparison indicates a mismatch of a particular structure, that particular structure will automatically be updated. In the majority of cases, operation of those Doors attached to the Intelligent Access Module is uninterrupted during the update of database structures. If either Intelligent Access Module Programming or Door structures have been altered, Doors attached to Intelligent Access Modules will not operate until the database in each has been updated (a few seconds) and LED1 on the board has returned to the off state.

This comparison will also occur 60 seconds after a LAN Initialize or LAN Secure has been performed. Whereas other modules on the LAN require a LAN Initialize to ensure that all programming changes have been passed onto the relevant modules, this is **not** necessary for programming changes to Intelligent Access Modules only. A LAN Init or LAN Secure will cause a comparison and, if necessary, an update of the altered database structures in each Intelligent Access Module.

When an Intelligent Access Module is powered up, there is a 60 second delay before the database starts to update. This delay is necessary to ensure that all modules, including those within larger systems, have had time to properly address and initialize prior to the update of database structures. On-board LED's indicate the status of the Intelligent Access Module (Refer to the Intelligent 4 Door Access Module Installation Guide).

Commissioning. While not compulsory, it is recommended that all system programming is done prior to connecting the Intelligent 4 Door Access Modules to the LAN. When the programming is complete, connect all the Modules to the LAN, then perform a System Reset (MENU, 7, 8, 9), followed by a LAN Secure (MENU, 7, 8, 1). This will allow all Intelligent 4 Door Access Modules to update at the same time, therefore minimizing the commissioning time, especially in systems where the Control Module is fitted with the 512k (4MBit) Memory option.

Operation

Whilst Online, the Intelligent Access Module supports all the access control features you would expect of such an intelligent module and many more:-

- Control of up to 4 independent Doors
- Connection to 4 Reader head inputs as standard, expandible to 8 Reader heads (Card in / out)
- 4 On board relays with normally open and closed contacts for lock auxiliaries
- Onboard 3A Power Supply
- Deep discharge battery cutoff
- Individual Door Reed, Tongue Sense, REN, REX and Arming inputs for each Door
- Individual Valid, Invalid, DOTL warning outputs for each Door
- 8 General purpose Dual EOL Zone Inputs
- 8 General purpose open collector auxiliary outputs
- Separate Cabinet Tamper Input
- Lock Tamper circuit for detection of lock disconnection
- Fully isolated LAN input up to 5KV
- Separate Local LAN for Terminals used during Communication failure (See below)

The only Offline limitations are those functions that require information from modules that will not be available in the Offline state. Accordingly, Intelligent Access Module Programming allows some Offline assumptions to be made. These include the state of the Inside and Outside Area of a Door and the Open and Closed status of Doors for Interlocking purposes.

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Whilst Offline, Operation of Anti-passback and Door Interlocking features will continue across groups of up to 4 Doors, provided that **all** associated Doors are assigned to the one Intelligent Access Module. In this Offline state with all associated Doors attached to the one Intelligent 4 Door Access Module, Anti-passback and Door Interlocking processing is completely isolated from the rest of the LAN and does not require any additional entity status from the Control Module or any other module on the LAN which is unavailable to the Intelligent Access Module whilst it is in the Offline mode.

Limited Door Interlocking logic will apply for Interlock Groups comprising Doors assigned to other modules in addition to Doors assigned to the Intelligent Access Module. When a User presents his / her card or keyfob at a Card Reader of an Intelligent Door using Interlocking, the following **Interlock** logic steps are performed:

1. The system checks the Interlock Group Door List.
2. The status of those member Doors that are attached and assigned to that particular Intelligent Access Module is checked.
3. The status of all other members Doors that are attached and assigned to other modules on the LAN cannot be checked by virtue of the Intelligent Access Module's Offline mode. Therefore, the "Assumed Interlock State", which has been programmed for the particular Door through which access has been requested, is applied to all other member Doors.
4. Interlock logic processing continues using actual and assumed Door status as described above.
5. Interlock Qualifying Zones and Qualifying Auxiliaries are ignored in the Offline mode.
6. Access through the Door is either granted or denied, all other permissions being satisfied.

It is therefore advantageous if system design incorporates ample contingency planning. All Doors to be used as part of an Interlock Group should, where practicable, be attached to the same Intelligent 4 Door Access Module.

The following features are not available to the Intelligent 4 Door Access Module whilst Offline:

- All Security functions
- Calculated Auxiliaries
- Function Zones
- Area Status Functions
- Reader Arming Modes
- Isolation and de-isolation of inputs
- User Counting in Areas
- Cancel on next Card / PIN entry through a Door
- DOTL and Door Forced System Inputs (DOTL Warn output will still function)
- PIN only access through Doors via Terminals not connected to the Intelligent Reader Local LAN
- TimeZone control of Auxiliaries
- Qualify Auxiliary function of TimeZones *
- User Type Valid Auxiliaries
- Home Auxiliary operation
- Diary Functions

*** Note:** Qualify Auxiliary function of TimeZones when Offline is now provided in Intelligent 4 Door Access Module Firmware V1.09 or later, providing that the Auxiliary used to qualify the TimeZone is on the same Intelligent 4 Door Access Module. The Module assumes the last known state of the Auxiliary when last on-line.

Firmware Compatibility

The Intelligent Access Module requires V3.5 or later firmware to be fitted to the Control Module. Furthermore, a suitable Memory Configuration which accommodates the use of the required number of Intelligent 4 Door Access Modules must be selected on the Control Module.

If computer software is to be used during installation or for administration of the system, this too must be of the correct version. Wdirect V3.5, Accept V3.5 and Insight all support the Intelligent 4 Door Access Module.

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LAN Isolation

The Module connects to the system LAN via a 5KV isolated section of the board. This "ISO LAN" connection provides significant on-board protection against surges to reduce the possibility that the module is damaged in addition to the Control Module and other modules in the event of a power surge.

This section of the board requires power from the LAN in addition to the Power supplied to the rest of the Intelligent Access Module board. (See Installation Notes)

Local LAN

The Intelligent 4 Door Access Module also supports a Local LAN, independent of the system LAN, to which up to eight Enhanced Elite LCD Terminals may be fitted. **No other types of module should be connected to the Local LAN as they will not operate Offline.**

Whilst in the Offline mode, each Terminal only enables PIN and Card access control across those Doors which are attached directly to the Intelligent 4 Door Access Module. Upon reinstatement of communications with the Control Module, these very same LCD Terminals inherit full functionality across the entire system.

NOTE:

1. Terminals to be used on the local LAN must be fitted with T3/4K Enhanced V1.00 or later firmware.
2. Terminals must be mapped via the "Module for Pins" Screen in Intelligent 4 Door Access Module Programming to be used in Offline mode.

Review

Whilst Online, events occurring at the Intelligent 4 Door Access Module are saved to Review on the Control Module. Whilst in the Offline mode, events occurring on each Intelligent 4 Door Access Module are recorded to Review locally on each Module.

The size of the Offline Review in each Intelligent 4 Door Access Module is equal to the size of the Control Module Review. Presently, this is: 6,500 Events for a 512 K Memory Configuration
2,000 Events for a 128K Memory Configuration.

Once communications with the Control Module have been regained, the Review events in each Intelligent Access Module will be uploaded to the Control Module at a maximum rate of approximately one (1) event per second. This means that 6,500 events from one Intelligent Access Module will take approximately 108 minutes to upload and 6,500 events from 16 Intelligent Access Modules will take approximately 29 hours.

As events may have occurred simultaneously at the Control Module as well as each Intelligent 4 Door Access Module whilst the modules were Offline, it is quite feasible that two or more events may have been recorded to review at the same time. In addition, active events will be occurring and entries saved to Review whilst Intelligent Access Module Review is being uploaded to the panel. It is important, therefore, to note that the Control Module Review **DOES NOT SORT REVIEW EVENTS**. Review events are logged as they occur on the Control Module or as they are received by the Control Module.

To assist with Review Management, events saved to Review at the Intelligent Access Module whilst it is Offline are endorsed with a "^" character after the date to signify that they are "Historical" Review events.

eg. 24 Apr 00 ^ 10:21 Card User 0001 Granted Access at Warehouse Door 1

The rate at which Historical Review Events are uploaded to the panel may be altered in line with the number of Intelligent Access Modules present on the system. As the number of Intelligent Access Modules increases on the LAN, the rate of upload should be reduced. This, in turn, will reduce the amount of concurrent traffic on the LAN and optimise LAN performance.

The rate at which Historical Review Events are uploaded to the Control Module is programmable via the "Review Pacing" screen in Intelligent 4 Door Access Module Programming and is entered in the Hex format. Please refer to the table adjacent to the Review Pacing screen in "Intelligent 4 Door Access Module Programming" for "Recommended Review Pacing Settings".

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Zone Debounce.
In line with values on other system Modules, a Debounce time of 300mS is provided on Zone Inputs to minimize False Alarms. Intelligent 4 Door Access Module Firmware V1.09 or later now provides 600mS Zone Input Debounce time on all Door Reed and Tongue Sense Inputs to provide additional immunity on these types of Zones.

Reporting.
Important Note: Some communication formats are unable to report individual Intelligent Access Module Zones or are limited as to what they can report on each Zone. See the Tables section at the rear of this manual for Zone mapping details.

IMPORTANT NOTES:

1. When the Intelligent 4 Door Access Module is initially addressed by powering up or a LAN Initialisation, a delay of approximately 60 seconds will occur before the any programming changes are downloaded from the Control Module to the Intelligent Access Module. This delay allows all modules on large systems to properly initialise before data is transferred.

2. When programming changes are made via a Terminal, the Installer must logoff before the system will download and confirm any relevant Intelligent Access Module programming changes.

3. Most programming changes allow continued control of access through relevant Doors. However, if changes are made to Intelligent Access Module Programming and Door Programming, access through the relevant Doors will be denied until such times as the programming changes have been downloaded and confirmed.

4. Direct Entry of Cards is not available on an Intelligent 4 Door Access Module (ie. cannot enrol cards from this type of Module). Direct entry cards do, however, operate normally via an Intelligent 4 Door Access Module.

5. Card test menu does not operate from the Intelligent 4 Door Access Module.

Intelligent 4 Door Access Module Process Errors.

The following process error messages are logged to Review to indicate Intelligent 4 Door Access Module problems.

Process Error number	Description	Notes
$1122	No Area Structure.	
$1123	Illegal Auxiliary for Lock.	No Lock Auxiliary programmed.
$1124	Illegal Lock Auxiliary.	Module does not exist.
$1138	Area On denied	UK Lockout option prevented Area On.
$2401	Internal error in code.	Contact the manufacturer.
$2402	Broadcast data but no CRC structure.	Interpreter forces a download but no IRDR structure is present in the memory config.
$2403	Broadcast CRC but no CRC structure.	Interpreter forces a download but no IRDR structure is present in the memory config.
$2407	No Modules present.	There must be at least 1 module present to download to.
$2423	No IRDR to broadcast to.	Module is missing.

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Programming Sequence MENU 7,2,8

Intelligent Rdr. to alter: I01

This screen allows an Intelligent 4 Door Access Module to be selected for programming. Pressing the "On" key to change modes displays whether this module is currently in the network. If the module is not in the network it will display the word "Absent" following the Intelligent 4 Door Access Module number.

I01 Present-000 but not secure

If the module is present, the module number is followed by the words "Present-nnn but not secure", or "Present-nnn and secure", depending on the LAN security status. The number (nnn) in the message indicates the number of times the module has failed to acknowledge a poll from the Control Module since the last LAN Init. or LAN Secure operation.
(See "Configuring the 3000/4000 LAN" for details of LAN Security)

I01 Poll Time: 060 sec

This screen allows the Installer to select the maximum time a module can remain out of communication with the Control Module. Only modules in unprotected Areas should be selected with short times. Modules in protected Areas can have times set up to 255 seconds maximum. If too many modules are programmed for short times, this may slow down LAN communications.

I01 LAN Priority: 0

Pressing the ON key allows the LAN Priority to be programmed between 0 and 3 for this module. LAN priority can be used to give certain modules priority over other modules when sending information to the Control Module. Priority 0 is the highest and priority 3 is the lowest. e.g. If one module was programmed for priority 0 and another programmed for priority 1 and both modules were sending information at *exactly the same time*, then the module with priority 0 would send first.

The most common programming in small systems is to leave all priorities at 0. In larger systems with many Terminals, Expanders & Access Modules; Expanders may be set to priority "3", Access Modules to "1" and "2" and Terminals to "0". This would give Terminals the faster response, whilst Access Modules would still have a faster response than Expanders during heavy LAN traffic.

When larger numbers of Intelligent 4 Door Access Modules are installed in a system, it is recommended to divide the total number of these Modules into 4 even groups, and assign a different LAN priority to the Modules in each group.

While implementing LAN priorities will enhance the transfer of Database changes and Review Events during periods of heavy LAN traffic, the timing implications are rarely noticeable to the end User.

I01 Battery Test Time: 000 min

This screen allows the Installer to set the time period for the Dynamic Battery Test to be performed on this module. A time of 1-255 minutes is acceptable.
See "Battery Testing" in the Applications Programming section of this Manual for further details.

I01 Review Pacing: 00

This screen allows the Installer to adjust the rate at which Historic Offline Review events are uploaded to the Control Module. Adjustment of this type allows optimisation of the LAN according to the number of Intelligent 4 Door Access Modules connected.

Settings are entered in the Hex format. The following table details the recommended Review Pacing setting for the particular number of Intelligent 4 Door Access Modules connected:

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No. of Intelligent Access Modules	Review Pacing Setting
1	80
2	81
3	82
4	83
5	84
6	85
7	86
8	87
9	88
10	89
11	8A
12	8B
13	8C
14	8D
15	8E
16	8F


```
I01      ......DT
Opts -> nnnnnnnn
```

This screen allows the Installer to select options which affect the operation of the Intelligent Access Module. Place a "Y" under the option to enable it.

D Detail Review

This option enables detail review when the module is Offline. If set to no, The Module will limit the type of events saved to review whilst it is Offline.

T Tongue Sense

If enabled, this option will cause the Tongue Sense input for each **and every** door programmed on the Intelligent Access Module to be used with the reed input for DOTL, Door Forced and Interlock functions if Interlocking is set for Tongue Sense.

```
I01 Door #1
D000
```

This screen is used to specify which Door is assigned to the first Door position on this Intelligent 4 Door Access Module.

```
I01 Door #2
D000
```

This screen is used to specify which Door is assigned to the second Door position on this Intelligent 4 Door Access Module.

```
I01 Door #3
D000
```

This screen is used to specify which Door is assigned to the third Door position on this Intelligent 4 Door Access Module.

```
I01 Door #4
D000
```

This screen is used to specify which Door is assigned to the fourth Door position on this Intelligent 4 Door Access Module.

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Card Reader Programming

This section of the manual describes the manner in which Card Readers are programmed. Repeat this section for each Card Reader that is attached to the Intelligent 4 Door Access Module.

```
I01 Format Rdr1>
None
```

This screen allows selection of the format to be used by Card Reader #1.
Use the Right Arrow Key to scroll through the available options.

Format	Description
None	This setting disables the Reader Input.
Swipe	Selects a magnetic Card swipe Reader. All digits between the start sentinel and up to and including the 1st separator are read. Also used for MR Access Model 6AT1B Swipe Reader with Keypad. (V4.5 or later)
Swipe Last*	Selects the swipe Last format for a magnetic swipe Card Reader. Swipe Last is similar to the Swipe format, except that instead of returning the first 30 characters of a swiped Card, it returns the last 30 characters of the Card. *See notes below.*
Insertion	Selects an insertion style magnetic Card Reader. All digits between the start sentinel and up to and including the 1stseparator are read.
Nbit Wiegand	Selects any Wiegand type Reader with the Reader automatically detecting the number of bits. If the number of bits is known for the Reader then select one of the options below for better noise immunity.
26 bit Wiegand	Selects a Wiegand Reader which outputs 26 bits including the start bit and stop bit.
27 bit Wiegand (Indala) SC = 0 to 8191	Selects a Wiegand Reader which outputs 27 bits including the start bit and stop bit. If used with Single or 2 Door Access Modules they must be: -Type 2 (995011 / 995012) or -Type 1,Version 7 or later, fitted with at least V11 firmware. (Use Nbit Wiegand on earlier version Readers if cards are 27 bit Wiegand.)
30 bit Wiegand	Selects a Wiegand Reader which outputs 30 bits including the start bit and stop bit.
32 bit Wiegand	Selects a Wiegand Reader which outputs 32 bits including the start bit and stop bit.
34 bit Wiegand	Selects a Wiegand Reader which outputs 34 bits including the start bit and stop bit.
36 bit Wiegand	Selects a Wiegand Reader which outputs 36 bits including the start bit and stop bit.
37 bit Wiegand	Selects a Wiegand Reader which outputs 37 bits including the start bit and stop bit.
40 bit Wiegand	Selects a Wiegand Reader which outputs 40 bits including the start bit and stop bit.
Nbit Fast	Identical to Nbit Wiegand, except that it processes cards approximately 200ms faster. This format should be used in preference to Nbit Wiegand except in rare circumstances where very slow Wiegand data is being read. If used with Single or 2 Door Access Modules they must be: -Type 2 (995011 / 995012) or -Type 1,Version 9 or later, fitted with at least V12 firmware.
Proxpin	This format is identical to Nbit Fast except that keys pressed from an HID5355, Keri P-600 or Indala ARK-501 keypad can be buffered and sent as Wiegand data. If used with Single or 2 Door Access Modules they must be: -Type 2 (995011 / 995012) or -Type 1,Version 9 or later, fitted with at least V12 firmware.

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I01 Mode Rdr1 -> Credit Card

This screen allows selection of the mode to be used by Card Reader #1. Use the Right Arrow Key to scroll through the available options.

Credit Card	This setting is used for magnetic swipe or insertion credit Cards. Users that use this Reader must be programmed as a "Credit Card" User (See User Programming)
Direct Entry	This setting is used for Wiegand format type Cards where the Site Code or Card numbering system is unknown. Users that use this Reader must be programmed as "Direct Entry" Users. (See User Programming)
Site Code	This setting is used for: -Inner Range 3000/Access 4000 Magnetic Swipe Card format. -Wiegand formats where the Site Code and Card numbering system is known. Note: Site Code processing is currently supported in 26 Bit, 27 Bit (Indala) and 34 Bit Wiegand formats. Users that use this Reader must be programmed as "Site Code" Users. (See User Programming) The actual Site Codes are programmed and enabled in the Access Menu, and the way the Site Code is stored on the Card is selected as the Site Code method in General System Options programming.
Any Card	THIS OPTION NOT YET AVAILABLE IN THIS MODULE TYPE. This setting is used to allow any credit card to grant access and save the account number to review. NOTE. For this option to function, "Swipe" format must be selected. **IMPORTANT NOTE:** Cards cannot be directly "Read" into the system using an Intelligent Reader. A standard Reader Module must be used for this purpose and the Reader number programmed in General System Options. [MENU 7, 5, 1]

I01 Arming Rdr1> None

This option sets the Arming Mode for the associated inside, outside or extra Area, dependent on the User permissions set and the Door programming. Use the Right Arrow Key to scroll through the available options.
See Arming Mode options below as well as User, User Type and Door Programming for further details.

None	No Reader Arming.
Extra Area if PB	User's Extra Area will arm if "Arm Input" is Unsealed.
Exit Area if Count=0	Door Area you are leaving will arm if Area Count equals zero.
Exit Area if PB	Door Area you are leaving will arm if "Arm Input" is Unsealed.
Entry Area if PB	Area on the other side of the Door will arm if "Arm Input" is Unsealed.
Exit Area if 3 swipes	Door Area you are leaving will arm if Card presented 3 times in succession.
Entry Area if 3 swipes	Area on the other side of the Door will arm if Card presented 3 times in succession.

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I01 Extra Area Off, Rdr1: n

This screen, if set to "Y", causes the User's Extra Area to be turned Off instead of the door Area they are about to enter.
(The "**E**" xtra Area Off option must be set to "Yes" in User Programming for a User to use this feature and the User must have access through this Door).
See "Reader Area Control" in the Applications Programming section for more details.

I01 Loc. Rdr1 -> Outside, Door #1

This screen allows the location of the first Reader head to be chosen by using the Right Arrow Key. The reader location will be either inside or outside one of the four Doors connected to the Intelligent Access Module. **Door #1, #2 etc refers to those Doors as programmed in Intelligent 4 Door Access Module programming only and may not correspond to Door numbers in general Door Programming**.

Outside, Door #1	Located on the Outside of Door 1.
Outside, Door #2	Located on the Outside of Door 2.
Outside, Door #3	Located on the Outside of Door 3.
Outside, Door #4	Located on the Outside of Door 4.
Inside, Door #1	Located on the Inside of Door 1.
Inside, Door #2	Located on the Inside of Door 2.
Inside, Door #3	Located on the Inside of Door 3.
Inside, Door #4	Located on the Inside of Door 4.

I01 Rdr1 Module for Pins: T000

This screen specifies which LCD Terminal is to be used for keying in PIN codes when access requires Card & PIN. A different LCD Terminal may be specified for each of the 8 possible Card Readers.

It is recommended that all "Alarm Message Types" are set to "NO" for LCD Terminals used in Access Control operations unless it is necessary for alarms to be displayed on them.

I01 Keys Rdr1 -> LCD Term

This screen allows selection of the type of keypad or Terminal from which the PIN number is to be obtained when "Card and PIN" operation has been specified.

LCD Term	Get PIN from a 3000/4000 LCD Terminal
LED Term	Get PIN from a 3000/4000 LED only keypad
ARK-501	Get PIN from an **Indala Ark-501 or Keri P-600** PIN Plus Proximity Reader.
HID5355	Get PIN from a **HID5355** PIN Plus Proximity Reader.
MR Access	Get PIN from an **MR Access Model 6AT1B** Magnetic Swipe Plus PIN code Reader.

The Card Reader Programming section of this Manual is repeated for each of the eight (8) possible Card Readers that can be attached to the Intelligent Access Module. When all Card Readers have been programmed, continue from this point.

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NOTES:

1) **HID5355**. If an "HID5355" Proximity and PIN Reader is used, ensure the HID Reader part number is 5355xxK00. The last 3 characters must be K00 for correct keypad option and PIN code buffering. (xx=Revision and colour options which will not affect operation)

2) **Keri P-600.** If a "Keri P-600" Proximity and PIN Reader is used, the Reader must be configured for "8-bit Burst" mode via the following 2 steps:

i) Present the Keri Wiegand Keypad Data Mode control card to the Reader. The Reader beeps 4 times and then enters Site Code programming mode.

ii) Press the "#" key. (This switches the reader to 8-bit Burst mode) The Reader beeps 4 times to indicate programming mode has ended.

3) **MR Access Model 6AT1B. (V4.5 or later).**

If an "MR Access 6AT1B" Reader is used, the Reader must be configured to send a 4 digit PIN as a single packet.

The related options are programmed as follows:

MENU, 7, 2, 4	Reader Format:	Swipe.
	Reader Mode:	Site Code.
MENU, 7, 5, 1	Site Code Type:	General.
	General Site Total Bits:	00
	Site Size / Offset:	As required.
	User Size / Offset:	As required.

4) When using the "Proximity Plus PIN code" Readers (HID5355, ARK-501, Keri P-600 & MR Access), only the "Card + PIN" and "Card Only" operations are supported.

i.e. "PIN Only" operation is <u>not</u> supported.

<u>Offline Door Configuration</u>

This section of programming allows the Installer to pre-define a number of "Assumptions" that the system will make whilst Offline. These assumptions relate to the Inside and Outside Area status of the Areas that are assigned to a particular Door as well as the status of other Doors in the same Interlock group.

This section of programming is Door specific and is repeated for each of the four (4) possible Doors attached to the Intelligent 4 Door Access Module.

I01:D1 Inside ->
Area State: Off

This screen determines the Offline state of the Inside Area that is assigned to the Door in Door programming. The Offline Area state is only applicable if Areas have been assigned to the Door.

Off — If set to OFF, any User with this Door in their Door List will be allowed access.

On — If set to ON, only Users with this Door in their Door List and the Inside Area in their Area Off List will be allowed access through the Door.

Deny — If set to Deny, no User will be allowed through the Door, regardless of their permissions.

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I01:D1 Outside-> Area State: Off

This screen determines the Offline state of the Outside Area that is assigned to the Door in Door programming. The Offline Area state is only applicable if an Area has been assigned to the Door.

Off — If set to OFF, any User with this Door in their Door List will be allowed access.

On — If set to ON, only Users with this Door in their Door List and the Inside Area in their Area Off List will be allowed access through the Door.

Deny — If set to Deny, no User will be allowed through the Door, regardless of their permissions.

I01:D1 Ilock -> State: Closed

This screen determines the assumed Offline Interlock state for the particular Door. The Offline state is only applicable if an Interlock group has been programmed for this Door.

Closed — If set to Closed, any Door used in the Interlock equation that is attached to a module other than the module to which this Door is attached will be assumed as being always closed.

Open — If set to Open, any Door used in the Interlock equation that is attached to a module other than the module to which this Door is attached will be assumed as being always open. This effectively denies access through this Door.

The Offline Door Configuration section of this Manual is repeated for each of the four (4) possible Doors that can be attached to the Intelligent Access Module. When all Doors have been programmed, Intelligent 4 Door Access Module Programming is complete.

Auxiliary Outputs

Auxiliary Outputs	Description
Inn:X01	Door #1 Lock Relay
Inn:X02	Door #2 Lock Relay
Inn:X03	Door #3 Lock Relay
Inn:X04	Door #4 Lock Relay
Inn:X05	Spare
Inn:X06	Spare
Inn:X07	Spare
Inn:X08	Spare
Inn:X09	Auxiliary 9
Inn:X10	Auxiliary 10
Inn:X11	Auxiliary 11
Inn:X12	Auxiliary 12
Inn:X13	Auxiliary 13
Inn:X14	Auxiliary 14
Inn:X15	Auxiliary 15
Inn:X16	Auxiliary 16

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Zone Inputs

Zone Input	Description
Inn:Z01	General Purpose Zone 1
Inn:Z02	General Purpose Zone 2
Inn:Z03	General Purpose Zone 3
Inn:Z04	General Purpose Zone 4
Inn:Z05	General Purpose Zone 5
Inn:Z06	General Purpose Zone 6
Inn:Z07	General Purpose Zone 7
Inn:Z08	General Purpose Zone 8
Inn:Z09	Door #1 Reed Input
Inn:Z10	Door #2 Reed Input
Inn:Z11	Door #3 Reed Input
Inn:Z12	Door #4 Reed Input
Inn:Z13	Door #1 Tongue Sense Input
Inn:Z14	Door #2 Tongue Sense Input
Inn:Z15	Door #3 Tongue Sense Input
Inn:Z16	Door #4 Tongue Sense Input

IFDAM Inputs

IMPORTANT NOTES:

1) REN, REX and ARM Inputs. These Inputs have specific functions and are processed locally. They are 2 state (non-EOL) inputs and are not regarded as Zone Inputs. These inputs are sealed when open circuit, therefore, the Normally Open and Common contacts of the send button are used.

2) Tamper monitoring. Door Reed Zone Inputs (i.e. Inn:Z09 to Inn:Z12) and Tongue Sense Zone Inputs (i.e. Inn:Z13 to Inn:Z16) are connected into IFDAM Modules and are used in the logic to generate "Door Forced" (i.e. Inn:S05 to Inn:S08) and "Door Held" (i.e. Inn:S09 to Inn:S12) System Input Alarms.
These System Input conditions are monitored by ensuring that these System Inputs are assigned to an Area.
In order to monitor for a Tamper condition on the actual physical Zone Inputs, these should also be assigned to an Area using a suitable Process Group that only monitors the Tamper state. e.g. PG009 "System Tamper".

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System Inputs

System Inputs	Description
Inn:S01	Door #1 Lock Tamper
Inn:S02	Door #2 Lock Tamper
Inn:S03	Door #3 Lock Tamper
Inn:S04	Door #4 Lock Tamper
Inn:S05	Door #1 Forced
Inn:S06	Door #2 Forced
Inn:S07	Door #3 Forced
Inn:S08	Door #4 Forced
Inn:S09	Door #1 DOTL
Inn:S10	Door #2 DOTL
Inn:S11	Door #3 DOTL
Inn:S12	Door #4 DOTL
Inn:S13	Door #1 Invalid Card (in or out)
Inn:S14	Door #2 Invalid Card (in or out)
Inn:S15	Door #3 Invalid Card (in or out)
Inn:S16	Door #4 Invalid Card (in or out)
Inn:S17	Cabinet Tamper
Inn:S18	General Lock Fault
Inn:S19	Battery Test Fail
Inn:S20	AC Fail
Inn:S21	Low Battery
Inn:S22	LAN Fuse
Inn:S23	Detector Fuse
Inn:S24	LAN Comms Status

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Analogue Module Programming (V3 or later)

The Analogue Module is identified by the letter "Q" followed by the module number (eg. Q01). It serves to interface analogue quantities such as temperatures or other variable levels into the 3000/4000 system. The module provides 4 analogue inputs, two on/off type zones without tamper/fault monitoring and four Auxiliary outputs.

The Analogue Module may be programmed such that when an analogue level exceeds or drops below a pre-programmed trigger point an alarm/seal/tamper event is generated. The current analogue value of each input can also be viewed in scaled units at any Terminal or remotely via an externally connected device.

The method by which the state of the Input varies in relation to the Input value is dependent upon the "Calibration String" and the mode in which the device or sensor is operating. This is described in more detail below.
A small hysteresis applies to each Trigger Point to avoid "state chatter".

Important Notes:
1) Serial Temperature Sensors or other devices MUST be connected to the appropriate Inputs, and the correct Jumper links set, before the module is powered up. The action of powering up the module with the sensors attached will allow the Analogue Module to detect the type of sensor connected.
2) The analogue inputs on the standard Module (P/N: 994088 or 995088) are configured for Voltage mode operation. For Current loop mode, the Current Loop version of the Module should be purchased (995088C) or the modification described under "Mode 0" must be performed on the required Inputs.

Calibration Strings.

The Calibration String is chosen to allow arbitrary, 4 digit scaled values to be chosen for each analogue Input. The Calibration String also takes into account rounding errors and resolution in order to keep introduced errors to a minimum. Scaled value must be chosen as four significant digits with a choice of 0, 1, 2 or 3 decimal places. This should allow adequate choice of values in engineering units.

The Calibration string is read as follows: ABCCCCCCCCCC
A = Mode selection. 0, 1, 2, 3, 4 or 5.
B = Decimal places for display.
C = Calibration string for particular device, measurement range, etc.
e.g. The Calibration String used for the Serial Temperature Sensor in Mode2 with 2 digit display and temperature range of 0 to 31.5 degrees is: 2214FA000000

Operational Modes.

Mode 0 is used for Analogue sensor devices providing 0 - 5V or 4 - 20mA current loop output.
Use the 995088C Version of the Module if Current Loop monitoring is required on all 4 Inputs.

Modes 1, 2 and 3 are used with the Serial Temperature Sensor and are essentially the same in operation. i.e:
- Only the "Trigger 1" value can be programmed for each zone.
- Zone is in Alarm when temperature is above the Trigger 1 value, but below the upper limit.
- Zone is Sealed when temperature is below the Trigger 1 value, but above the lower limit.
- Zone is in Tamper when temperature is outside the lower or upper limits.
- A calibration string is required for each Zone you intend to process, regardless of whether or not a sensor is physically connected to the Zone.

The difference between Modes 1, 2 and 3 is the number of Zones assigned to each Temperature Sensor:
In Mode 1, each Temperature Sensor is assigned 1 Zone Input.
In Mode 2, each Temperature Sensor is assigned 2 Zone Inputs.
In Mode 3, each Temperature Sensor is assigned 4 Zone Inputs.

Modes 4 and 5 are used with the Serial Temperature Sensor and provide 2 Trigger values for each zone. The difference between the two modes is the temperature range available. Mode 4 requires Analogue Module Firmware V1.05 or later, Mode 5 requires Analogue Module Firmware V1.09 or later and Control Module Firmware V4 or later.

Each of the 6 Modes are detailed on the following pages.

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Reporting

Important Note: Some communication formats are unable to report individual Analogue Zones or are limited as to what they can report on each Zone. See the Tables section at the rear of this manual for Zone mapping details.

Mode "0"

In this mode each Sensor is attached to one Analogue Input. The Input utilises one positive Trigger Point and operates on a positive scale from 0 to 5 volts. Alternatively, any analogue quantity can be interfaced to the Analogue Module provided it is translated to a 0-5 volt full scale deflection at the analogue input.

4-20mA CURRENT LOOP:
For monitoring a 4-20mA Current loop, the Current Loop must be translated to a 0 to 5 Volt Input signal by the Module. This is done by substituting the 10 kOhm Input Resistor with a 250 Ohm 1% 1/4W Resistor on each Input where Current Loop monitoring is required.

Input:	Resistor to be changed:
1	R23
2	R24
3	R25
4	R26

This modification should only be performed by a qualified technician.
The 995088C Version of the Module is supplied with this modification already fitted on all 4 Inputs.

The status of the Input varies as follows:-

Input Status	**Unit Value Range**
Tamper	< 2
Seal	2 to Trigger Value
Alarm	Trigger Value to 253
Tamper	> 253

The tamper state should only ever be used to indicate a fault condition.

A hysteresis of ± 1 unit has been implemented at the Trigger Value.
Each Analogue Module can accommodate up to 4 Devices each using a single Mode "0" Input.

Mode "1"

This mode is specifically designed for the 994089 Serial Temperature Sensor. In this mode each Sensor is attached to one analogue Input allowing for 4 individual Temperature Sensors to be connected to the Module. This means that 4 separate temperatures can be displayed &/or processed via a single Analogue Module. (Qxx:Z01 to Qxx:Z04)
Each analogue Input utilises one positive Trigger Value and operates on a positive temperature scale of **0° to 31° Celsius**.

Recommended Calibration String = 1214FA000000

Note: Ensure the jumpers on the Analogue Module have been set correctly for use with the 994089 Serial Temperature Sensor and the sensor is connected before power up of the Analogue Module. (Refer to the Analogue Module Installation Instructions for details).

The status of the Input varies as follows:-

Input Status	**Temp Range**
Tamper	< 0.5°
Seal	0.5° to Trigger Value
Alarm	Trigger Value to 31°
Tamper	> 31.5°

The tamper state should only ever be used to indicate a fault condition.

In this Mode, each Analogue Module can accommodate up to 4 independent Serial Temperature Sensors.

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Mode "2"

This mode is specifically designed for the 994089 Serial Temperature Sensor. Mode 2 uses one Sensor attached to Input 1 and/or Input 3 and allows for 2 Inputs to utilize a single Sensor. The Sensor connected to Input 1 will have it's value automatically mirrored to Input 2. (Qxx:Z01 and Qxx:Z02 will register the same temperature) The Sensor connected to Input 3 will have it's value automatically mirrored to Input 4. (Qxx:Z03 and Qxx:Z04 will register the same temperature)

Recommended Calibration String = 2214FA000000.

This configuration allows two trigger points per Temperature Sensor with two independent Zone Inputs representing the two Trigger points. e.g.
1) The trigger points could be used as a HIGH Trigger and a LOW Trigger to control an air-conditioner on and off.
2) The trigger points could be used to provide two different functions from a single Sensor. One Zone could trigger at 24 degrees to turn airconditioning on , while the other Zone could trigger at 16 degrees to turn a heater on.

NOTE: Ensure the jumpers on the Analogue Module have been set correctly for use with the 994089 Serial Temperature Sensor and the sensor is connected before power up of the Analogue Module. (Refer to the Analogue Module Installation Instructions for details).

The status of the Inputs vary as follows:-

Input Status	**Temp Range**
Tamper	< 0.5°
Seal	0.5° to Trigger Value
Alarm	Trigger Value to 31°
Tamper	> 31.5°

The tamper state should only ever be used to indicate a fault condition.

In this manner, each Analogue Module can accommodate up to 2 Serial Temperature Sensors, each using 2 Mode "2" Inputs. (Inputs are paired with each temperature sensor utilising Inputs 1&2 and Inputs 3&4 respectively.)

Mode "3"

This mode is specifically designed for the 994089 Serial Temperature Sensor. Mode 3 uses one Sensor attached to Input 1 and allows for 4 Inputs to utilize a single Sensor. The Sensor connected to Input 1 will have it's value automatically mirrored to Inputs 2, 3 & 4. (Qxx:Z01, Qxx:Z02, Qxx:Z03 and Qxx:Z04 will all register the same temperature).

Recommended Calibration String = 3214FA000000.

This configuration allows four trigger points per Temperature Sensor. e.g.
1) Two of the trigger points (e.g. Set to 18 degrees and 25 degrees) could be used to control air-conditioning and/or heating appliances, while the other two trigger points (e.g. Set to 12 degrees and 28 degrees) could be used to monitor and report when temperatures go outside an acceptable range due to equipment failure.
2) Two trigger points could be used as Mid 1 and Mid 2 Triggers, the other two as High and Low Triggers.

NOTE: Ensure the jumpers on the Analogue Module have been set correctly for use with the 994089 Serial Temperature Sensor and the sensor is connected before power up of the Analogue Module. (Refer to the Analogue Module Installation Instructions for details).

The status of the Inputs vary as follows:-

Input Status	**Temp Range**
Tamper	< 0.5°
Seal	0.5° to Trigger Value
Alarm	Trigger Value to 31°
Tamper	> 31.5°

The tamper state should only ever be used to indicate a fault condition.

In this manner, each Analogue Module can accommodate 1 Serial Temperature Sensor using all 4 Mode "3" Inputs. (Inputs must be grouped as Inputs 1,2,3&4.)

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Mode "4" and Mode "5"

These modes are specifically designed for the 994089 Serial Temperature Sensor. Modes 4 & 5 can operate with one to four Temperature Sensors connected to an Analogue Module. One Temperature Sensor can be connected to each individual analogue Input.
Each Input, however, offers the ability to programme two Trigger Values. The first Trigger Value is the Mean value of the desired range. The second Trigger Value is the Dead band. The deadband value determines the scope of the range. (ie. Maximum desired value to Minimum desired value).
This configuration allows the Installer to programme a HIGH Trigger Value and a LOW Trigger Value for each Input, enabling up to 4 Serial Temperature Sensors to be connected to an Analogue Module.

e.g. If a mean temperature of 22 degrees and a deadband of 4 degrees is programmed, then the Zone will go into alarm at 24 degrees +/-0.5 and will Seal at 20 degrees +/- 0.5. The Zone will be in the Tamper state when the temperature is within the deadband.

IMPORTANT NOTES:
1) Ensure the jumpers on the Analogue Module have been set correctly for use with the 994089 Serial Temperature Sensor and the sensor is connected before power up of the Analogue Module. (Refer to the Analogue Module Installation Instructions for details).
2) Mode 4 requires Analogue Module Firmware V1.05 or later.
3) Mode 5 requires Analogue Module Firmware V1.09 or later and Control Module Firmware V4 or later.

The status of the Inputs vary as follows:-

	Mode 4	**Mode 5 (V4 or later)**
Recommended Calibration String	4214FA000000	5205FA6E0000
Input Status	**Temperature Range**	**Temperature Range**
Seal	0° to (T1 - T2/2)	-55° to (T1 - T2/2)
Tamper	(T1 - T2/2) to (T1 + T2/2)	(T1 - T2/2) to (T1 + T2/2)
Alarm	(T1 + T2/2) to 31.5°	(T1 + T2/2) to 70°

T1 = Trigger1 Value
T2 = Trigger2 Value

A tamper signal will not be returned in these modes for cases where the temperature sensor exhibits full deflection.
i.e. In Mode 4 at the 0° Celsius and 31° Celsius ends of it's range.
In Mode 5 at the -55° Celsius and 70° Celsius ends of it's range.

Each Analogue Module can accommodate up to 4 Serial Temperature Sensors, each using a single Mode "4" or Mode "5" Input with two Trigger Values.

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```
Analog Module to
alter: Q01
```

This screen allows an Analogue Module to be selected for programming. A module may be selected by either using the UP and DOWN Arrow Keys or entering the module number directly using the DIGIT Keys.

```
Q01 Present-000
but not secure
```

Pressing the ON Key to change modes will tell the installer whether the module is currently in the network. If the module is not in the network, it will display the word "Absent" following the Analogue Module number. If the module is present, the Analogue Module number is followed by the words "Present-nnn but not secure" or "Present-nnn and secure", depending upon the LAN security status. The number (nnn) denotes the number of times the module has failed to acknowledge a message from the Control Module since the last LAN Init. or LAN Secure operation.
(See "Configuring the Model 3000/Access 4000 LAN" for further details.)

Press the OK Key to proceed to the next screen.

```
Q01 Poll
Time:  060 sec
```

This screen allows the Installer to specify the maximum time this module can be out of communication with the Control Module. Only modules in unprotected Areas should be programmed with short times. Modules in protected Areas can have times set up to 255 seconds maximum. If too many modules are programmed for short times, LAN communications may slow down.

```
Q01 LAN
Priority: 0
```

Pressing the ON Key allows the LAN Priority to be programmed between 0 and 3 for this module. LAN Priority can be used to give certain modules priority over other modules when sending information to the Control Module. Priority 0 is the highest priority and priority 3 is the lowest. For example, if a module was programmed for priority 0 and another module was programmed for priority 1 and both modules were sending information at *exactly the same time*, the module with priority 0 would send its message first.

The most common programming in small systems is to leave all priorities at 0. In larger systems with many Terminals, Zone Expanders, Readers and Analogue Modules, the Analogue Modules may be set to Priority 3, Zone Expanders to Priority 2, Readers to Priority 1 and Terminals to Priority 0. This would give Terminals the fastest response, while Readers would still have a faster response than Expanders during heavy LAN traffic. Analogue Modules to be used for basic air-conditioning purposes would only require a low priority of 3 but this may be reviewed if the Analogue Module was to be used to monitor more important applications.

```
Q01 Auto Update
Time: 060 min
```

This screen allows the Installer to set the time in minutes between each Analogue Module update. This is the time that each programmed input will log its current value to review.

```
Q001    1234....
Opts -> nnnnnnnn
```

This screen allows the Installer to specify which analogue Inputs, if any, are to log their values to review each time the Auto Update timer above expires. eg. A "Y" under "1" means that analogue Input number 1 will have its value recorded to review each time the Auto Update timer, as set in the previous screen, expires. This allows the system to act as a recorder, logging periodic analogue Input values which can be reported or printed etc. via a Comms Task.

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Q01:Z01 Trigger1 Value: ± ?

This screen will be displayed next. Programming of Trigger Values is explained later in this chapter. However, in the interest of efficiency, it is recommended that the Calibration String be programmed first.

Q01:Z01 Calib: 000000000000

Easy Tip:
The easiest and most efficient manner in which to programme the Analogue Module is to skip all the Trigger Value screens for the moment by repeatedly pressing the OK Key until the Calibration String programming screen is displayed.

Explanation:
The first digit of the Calibration String sets the Mode of the Analogue Module. This determines the number of Trigger points and the manner in which they will be used. If the Calibration String is altered after the Trigger Value is programmed, the Trigger Value may not reflect the value previously set.

Q01:Z01 Calib: 000000000000

Q01:Z02 Calib: 000000000000

etc.

These screens allow each input to be scaled and calibrated via a special calibration string entered in HEX format. This screen is altered by the Installer according to technical notes which should accompany each transducer being connected to an analogue Input.
Use the DIGIT Keys to enter the specific Calibration String for your device. Press the OK Key to proceed to the next screen.

A Calibration String must be entered for each programmed Input.

A separate screen is displayed for each of the four analogue inputs.

Analog Module to alter: Q01

When all Calibration Strings have been entered, the screen will return to the very first Analogue Module programming screen. Move through the Analogue Module programming structure again using the OK Key until the first Trigger Value screen is displayed.

Q01:Z01 Trigger1 Value: ± 0000

Q01:Z02 Trigger1 Value: ± 0000

etc.

The pre-programmed Calibration String will determine the appearance of these screens and the format in which the value is to be entered.
Use the "9" Key to toggle between the "+" and "-" sign and enter the value via the DIGIT Keys. No decimal point is entered. The position of the decimal point is assumed as per the display format configuration setting contained within the calibration string (ie. + 0255 will be interpreted as either 255, 25.5, 2.55 or 0.255 depending upon the calibration string).

For example; A Serial Temperature Sensor input operating in Mode 1 will only accept Trigger1 Value. Furthermore, as per the sensor instructions, the Trigger Value is to be entered in Degrees Celsius and two decimal places are assumed.

The Trigger Value screens for those inputs with valid Calibration Strings will now have changed. The value displayed reflects the full scale value in units of measure appropriate to the type of sensor. The virtual position of the decimal point will be as set by the Input's Calibration String.

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In the case of the 994089 Serial Temperature Sensor, 0000 will be displayed. Desired values are entered in ° Celsius, the valid range being from 0° to 31.5°.

Enter Trigger Values for those of the four analogue Inputs that are to be used. Make note of the mode in which the sensors will be operating as this will affect the number of usable Trigger Values on each Input and the sensor to which each Input refers.

Q01:Z01 Trigger2
Value: ± 0000

This screen allows the Installer to specify the second Trigger Value for this Input. This Trigger Value applies only to Sensors used in Mode 4 or Mode 5. **In any other mode, any value entered in this field will be ignored**. The status of the Zone will change as per the Mode description.

Q01:Z02 Trigger2
Value: ± 0000

etc.

Use the "9" Key to toggle between the "+" and "-" sign and enter the value via the DIGIT Keys. No decimal point is entered. The position of the decimal point is assumed as per the display format configuration setting contained within the calibration string (ie. + 0255 will be interpreted as either 255, 25.5, 2.55 or 0.255 depending upon the calibration string).

Similar screens are used to programme Trigger Values for the remaining 3 analogue Inputs, if required. Programme their values in the same manner as above.

Putting it all together

When all analogue Inputs have been programmed, the Installer can set about programming the Calculated Auxiliaries, Function Zones, Inputs or Areas. These features provide the output or automation which is to occur as a result of the changes of state of the analogue Inputs.

A LAN Initialize [MENU 7,8,2] or LAN Secure [MENU 7,8,1] must be done once all changes have been made. Refer to the relevant sections of this manual for further information.

Testing

Zone testing works as for other modules, with the screen showing the seal/alarm/ tamper status according to the pre-programmed Trigger Values and the Mode being used.

Analogue Input values may be read via MENU 1, 3. This procedure also has the same effect as performing a LAN Init or the specific Analogue Module.

Viewing Analogue Values

MENU 1,3 allows the selected analogue Input to be viewed in scaled units. The Arrow Keys allow other Inputs to be viewed if desired. Whenever a module is selected for viewing, that module will automatically report the latest analogue value every two seconds to the Control Module so that the most up to date value may be viewed. If a module cannot report its latest value for any reason, the display will show "??????". One reason may be that the module is absent.

This screen will automatically time-out after 2 minutes.

Reporting Formats

Analogue Module Inputs do not currently report on Contact ID or Securitel format.

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LAN Power Supply Module Programming

Power Module programming is used to program LAN Power Supply Modules.

Reporting

Reporting of LAN Power Supply Module Zone Inputs and System Inputs will depend on the Communications format. Some formats will only report LAN Power Supply Module alarms as General Area Alarms.

Check the Reporting format details in the Tables section of the Programming Applications and Reference Manual. Refer to Tables with a Revision of V4.5 or later.

Calibration

LAN Power Supply Modules are calibrated at the factory during the manufacturing process. The Module does not normally require any further calibration unless the Module's firmware is upgraded, or a repair has been carried out that required components to be replaced.

Any Firmware upgrade or repair work performed by the manufacturer will also include re-calibration of the Module.

In the rare event of a firmware upgrade being performed in the field, a calibration procedure is available from the Distributor. The following equipment is required to perform the calibration procedure:
- A Digital Multimeter capable of measuring 0 to 20V DC and 0 to 1999mA DC.
- Dummy load. 10 to 15 Ohms. 15W. e.g. 12V, 15Watt Automotive lamp.
- Heavy guage (14/020) test leads for connection of Dummy load and Multimeter.

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Power Module to alter: P01

P01 Present-000 but not secure

This screen allows a LAN Power Supply Module to be selected for programming. Pressing the <ON> key to change modes tells the Installer whether this module is currently in the network. If the module is not in the network it will display the word "Absent" following the Module number. If the module is present, the Module number is followed by the words "Present-nnn but not secure", or "Present-nnn and secure", depending on LAN security status.
The number (nnn) in the message indicates the number of times the module has failed to send an Acknowledge message to the Control Module since the last LAN Initialisation or LAN Secure operation.

(See "Configuring the Model 3000/Access 4000 LAN" for details of LAN Security)

P01 Poll Time: 240 sec

This screen allows the Installer to specify the maximum time a module can remain out of communication with the Control Module. Only modules in unprotected Areas should be selected with short times. Modules in protected Areas can have times set up to 250 seconds maximum. If too many modules are programmed for short times then this may slow down LAN communications.

Note: Poll Time should NOT be set to a value in the range of 000 to 005.

P01 LAN Priority: 0

Pressing the <ON> key allows the LAN Priority to be programmed between 0 and 3 for this module. LAN Priority can be used to give certain modules priority over other modules when sending information to the Control Module. Priority 0 is the highest priority and priority 3 is the lowest. For example, if a module was programmed for priority 0 and another module was programmed for priority 1 and both modules were sending information at *exactly the same time*, then the module with priority 0 would be sent first.

When programming small systems the priority of all modules are most commonly set to 0. In larger systems with many Terminals and/or Reader Modules and Zone Expanders; the Terminals and Reader Modules would be left at Priority 0, while LAN Power Supply Modules, Zone Expanders, etc. may be set to Priority 1. This gives the Terminals and Readers a faster response than Expanders, etc. during heavy LAN traffic.

P01 Battery Test Time: 000 min

This screen allows the Installer to programme the duration of the Dynamic Battery Test for this module. Dynamic Battery Testing is a feature of Diary Programming. A Diary event may be used to initiate a Battery Test on all Modules within the system. The test is performed on each programmed module in turn. The duration of such a Battery Test is individually programmable from one module to the next for periods ranging from 0 (No test) to 255 minutes. Battery life will be dependent upon current consumption.

For further details on Dynamic Battery Testing and recommended Battery Test Times, refer to "Battery Testing" in the Applications Programming section and also "Diary Programming" in the Programming Reference section.

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P01 12.....
Opts -> nnnnnnnn

This screen allows the Installer to select options for the Auxiliary Outputs on the LAN Power Supply Module.

1 Invert Auxiliary 1

If set to "Y", the operation of Auxiliary 1 will be inverted.

2 Invert Auxiliary 2

If set to "Y", the operation of Auxiliary 2 will be inverted.
Normally set to "Y" when a Satellite Siren is connected to this output.
See Note below.

IMPORTANT NOTE: Auxiliary 2 is not an Open Collector output. It provides a switched +12V output via an on-board relay and can therefore be used to control a Battery-backed Satellite Siren or other similar controlled device.
- When used for controlling a Battery-backed Satellite Siren, the 12V output normally needs to be present when the Auxiliary is Off, and removed when the Auxiliary is On. Therefore, the "2" option must be set to "Y".
- When controlling a device such as a Strobe or Piezo Siren (where the 12V output needs to be present when the Auxiliary is ON) the "2" option must be set to "n"

P01 Number of Slaves: 0

This screen allows the Installer to specify the number of Slave Modules connected to a Master LAN Power Supply Module. Up to 3 Slave Modules can be connected.

The default setting of 0 indicates that no Slave Modules are connected and disables the Slave Fail System Input (Pxx:S14) for this LAN Power Supply Module

Slave Modules are connected to provide additional Battery charging current AND/OR Detector current on a LAN Power Supply Module. This is done by connecting additional "Slave" LAN Power Supply Modules to the 2-wire Slave Bus connection provided, and connecting the "+B" and "DET+" outputs of the Slave Module to the "+B" AND/OR "DET+" output of the Master Module.

IMPORTANT NOTES:
1) Both the Master and Slave Modules must be the Enhanced version of the LAN Power Supply Module.
2) Slave Module DIPswitch settings. (SW1)

Switch 8: ON = Slave. (OFF = Master)

Switch 5 & 6:	**Slave Mode**	Switch 5	Switch 6
	Split Mode	OFF	OFF
	Charger Only	ON	OFF
	Power (DET+) Only	OFF	ON

Switches 1 & 2:	**Slave Number.**	Switch 1	Switch 2
	1	OFF	OFF
	2	ON	OFF
	3	OFF	ON

See the Installation Manual for wiring information and additional details.

P01 Aux2 Tamper Current: 25 mA

This screen allows the Installer to specify the minimum current required to prevent a Satellite Siren Tamper Alarm condition. The value can be set from 20 to 50mA in 1mA increments. The default value of 00 means that Aux2 Tamper current is not monitored.
NOTE: Any value less than "20" disables Aux2 Tamper current monitoring.

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P01 Batt Maximum Current: 00 A/10

P01 Det Maximum Current: 00 A/10

These two screens allow the Installer to independently specify the maximum current allowed from the Battery Charger circuit and the Detector Supply circuit before Over-current System Input Alarms are activated.
The value can be set from 0.1A (100mA) to 9.9 Amps in 100mA increments. Ignore the decimal point when entering the value.
e.g. "05" = 500mA; "20" = 2A; "75" = 7.5A; "99" = 9.9A; etc.
A value of 00 means that the Over-current condition is not monitored.

IMPORTANT NOTES:
- If using the Standard version of the Module, or an Enhanced version with no Slave Modules connected, the value should be set to no more than 4A.
- If the Enhanced version is used, and Slave Modules are connected, a value of up to 9.9A may be set depending on the number of Slave Modules connected and the wiring configuration.
- If the Master/Slave configuration chosen is designed to deliver more than 9.9A on a particular circuit, then Over-current monitoring for that circuit must be disabled. (Set value to 00)

CALCULATING THE MAXIMUM CURRENT AVAILABLE.
The Maximum Battery Current or Detector Current available is calculated as follows:
I max. = 2 + 2n.
Where "n" is the number of Slave Supply outputs ("+B" and/or "DET+" outputs) connected to the specified Master output.

Example 1: If one Slave is connected, set to "Charger Only Mode" and +B / -B of the Slave is connected to +B / -B on the Master, then the maximum Battery current available would be 2 + (2x2) = 6A.
"Charger Only Mode" combines the current available from the 2 outputs into the specified output.
(In this case, the Maximum guaranteed Detector current available would remain at 2A.)

Example 2: If three Slaves are connected, set to "Split Mode" and:
- +B / -B from all Slaves is connected to +B / -B on the Master.
- DET+ / 0V from all Slaves is connected to DET+ / 0V on the Master.

Then; The maximum Battery current available would be 2 + (2x3) = 8A;
And the maximum Detector current available would also be 2 + (2x3) = 8A.

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RF Expander Module Programming

INTRODUCTION

The RF Expander Module, designated as an "F" Type module, provides a reliable interface for Visonic RF Detection devices and Visonic RF 4-button Fobs. The Module is powered from the LAN or External Supply and has no Siren outputs. There are 4 Auxiliaries assigned to the Module, but there are no physical Auxiliary outputs provided on the board.

Connecting to the system via the LAN allows one or more RF Expander Modules to be installed in the best possible locations for optimum coverage and reliable operation. System Inputs provide Transmitter Low Battery, Transmitter Poll Fail and RF Jam alarms for each Module in addition to the usual Cabinet Tamper, Low Volts and LAN Fail Inputs.
See "System Inputs" in the Tables section for details.

The RF Detectors and Fobs can then be monitored by the Model 3000/Access 4000 system where the Detectors can be processed as normal Zone Inputs and the Fobs as RF remote control &/or personal alarm devices. Up to 32 RF Detectors can be monitored by each Module. RF Fob transmissions can also be monitored and actioned by any RF Expander Module in the system. Detection devices and Fobs are registered with the system via a simple procedure from an LCD Terminal or Insight software. An RF Zone will indicate an Alarm state when the device is in alarm, and a Tamper state when the housing is opened. A Restoral will occur when the device is in the sealed state and the housing is secure.
Note that Restoral is automatic for "alarm only" devices.

The total number of RF Expander Module Inputs and Fobs is determined by the number of Modules and Fobs available in the Memory size fitted and the Configuration selected.
See the "Memory Configurations" section of the Manual (V5.1 or later) for details.

An option is provided to save detailed Review information including transmitter signal strength which can assist in commissioning and troubleshooting.

IMPORTANT INFORMATION

Firmware compatability

RF Expander Modules can only be used with Control Module Firmware V5.1 or later.

RF Detector and RF Fob Registration

When the RF Expander Modules are installed, programmed and Initialized, the RF Detection devices (Zones) and RF Fobs must be registered before they can be used in the system. This is done via the following menus:
-RF Expander Module Zone registration. MENU, 7, 2, 0, 0, 1.
-RF Expander Module Fob registration. MENU, 7, 2, 0, 0, 2. OR MENU, 2., 7.

Reporting

Reporting of RF Expander Module Zone Inputs and System Inputs will depend on the Communications format.
Some formats will only report RF Expander Module alarms as General Area Alarms.

Reporting with most Contact ID maps will report RF Expander Module Zones on the same Point numbers as Wireless Network Modules or Big Expander Modules. (With the exception of the SIMS II map which identifies all Module Types)
Where the RF Expander Module Zones are reported on the same Point numbers as other Expander types, care must be taken in a reporting system that the same module number is not used if you want unique reporting.
e.g. F01, B02, B03, M04, E05, etc. will ensure that all zones are reported individually.
Installing modules B01, M01 and F01 will mean that the CID Point numbers for Zones 1 to 8 will represent Zones 1 to 8 on all three of the modules and Zones 9 to 32 will represent those Zones on both B01 and F01.

In SIMS II mapping, RF Expander Modules share Module Type 5 with Wireless Network Modules, as it is extremely unlikely that both formats would be used in the same system.

Check the Reporting format details in the Tables section of the Programming Applications and Reference Manual. Refer to Tables with a Revision of V5.1 or later.

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```
RF Expander to
alter: F01
```

```
F01 Present-002
but not secure
```

This screen allows an RF Expander to be selected for programming. Pressing the "ON" key to change modes tells the Installer whether this module is currently in the network. If the module is not in the network it will display the word "Absent" following the RF Expander number. If the module is present, the RF Expander number is followed by the words "Present-nnn but not secure", or "Present-nnn and secure", depending on LAN security status. The number (nnn) in the message indicates the number of times the module has failed to acknowledge a poll from the Control Module since the last LAN Initialisation or LAN Secure operation.

(See "Configuring the Model 3000/Access 4000 LAN" for details of LAN Security)

```
F01 Poll
Time:   060 sec
```

This screen allows the Installer to specify the maximum time a module can remain out of communication with the Control Module. Only modules in unprotected Areas should be selected with short times. Modules in protected Areas can have times set up to 255 seconds maximum. If too many modules are programmed for short times then this may slow down LAN communications.

Note: Poll Time must not be set to 000.

```
F01 LAN
Priority: 0
```

Pressing the ON key allows the LAN Priority to be programmed between 0 and 3 for this module. LAN Priority can be used to give certain modules priority over other modules when sending information to the Control Module. Priority 0 is the highest priority and priority 3 is the lowest. For example, if a module was programmed for priority 0 and another module was programmed for priority 1 and both modules were attempting to send data to the Controller at *exactly the same time*, then the data from the module with priority 0 would be received by the Controller first.

When programming small systems the priority of all modules are most commonly set to 0. In larger systems with many Terminals and Zone Expanders, Zone Expanders may be set to Priority 1 and Terminals may be set to priority 0, giving Terminals a faster response than Expanders during heavy LAN traffic.

```
F01 Tx Poll
Time:   000 Hour
```

This screen allows the Installer to specify the time in hours, in which all RF Zones monitored by this Module need to have reported at least once.
If the Module fails to receive a report from all the Zones within the time specified, an alarm will be generated on the "Transmitter Poll Fail" System Input.

```
F01      J.....ZF
Opts -> nnnnnnnY
```

This screen allows the installer to program a number of RF Expander Module options.

J	US **J**am detection.	If set to "Y": Selects the alternate US Jam detection scheme. If set to "n": The EU (European) Jam detection scheme is used.
.	Spare	Spare for future development.
Z	Detailed Zone Review	If set to "Y" enables detailed Review for RF Zones including transmitter signal strength. This option should be left at "n" for normal operation. Set to "Y" for additional information during commissioning and troubleshooting.
F	Fob	Set to "Y" to enable RF Fobs to be processed by this Module. Factory default setting is Yes. If Fobs are being used in the system, this option is normally set to "Y" for all RF Expander Modules.

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RF Expander Zone Registration

RF Expander Zone Registration allows RF Detection devices such as PIRs, Door/Window Transmitters, Smoke and Glass-break detectors, to be registered as Zone Inputs on a nominated RF Expander Module. These Transmitter devices can then be processed by the Model 3000/Access 4000 system in the same way as a normal Zone Input.

Up to 32 RF devices (Transmitters) can be registered to each RF Expander Module.
Once a Transmitter is registered, it will only be received at the Module that it is registered on.
i.e. A Transmitter cannot be registered on two or more Modules in the same system.

The total number of Transmitters that can be monitored will depend on the number of RF Expander Modules available in the Memory Size and configuration selected. Note that some 32k and 128k Memory configurations do not support RF Expander Modules. *See the "Memory Configurations" section of the manual for details.*

To register a Transmitter, the Transmitter will need to transmit a signal to the nominated Receiver.
Depending on the site layout and the number of Transmitters, registration of Transmitters after they are installed may be difficult and may cause inconvenience.
If possible, it is therefore good practice to register Transmitters prior to installation. Once registered, each Transmitter can then be labelled with the Zone ID (e.g. Fxx:Zxx) and intended location.

Registration Modes. Two Registration Modes are provided:
- "Program" Mode provides the installer with total flexibility in assigning specific Transmitters to specific Zone numbers.
- "Auto" Mode provides a quick registration method allowing up to 32 Transmitters to be registered to a nominated Module simply by activating each Transmitter in turn.

NOTES:

1) Registration. Registration can only be performed when one or more RF Expander Modules have been connected to the LAN, programmed and initialized.
i.e. Any RF Module that Zones are to be registered to, must be "On-line".
Refer to the RF Expander Module Installation manual and "RF Expander Module Programming" MENU 7, 2, 0, 2.

2) Firmware Compatability. RF Expander Modules can only be used with Control Module Firmware V5.1 or later.

3) RF Zone processing. Once an RF Zone is registered it can be processed as a Model 3000/Access 4000 Zone Input.
i.e. Processing will depend on how the Inputs (Fxx:Zxx and Fxx:Sxx), Areas and Process Groups are programmed.
An RF Zone will indicate an Alarm state when the device is in alarm, and a Tamper state when the housing is opened.
A Restoral will occur when the device is in the sealed state and the housing is secure.
Note that Restoral is automatic for "alarm only" devices.

4) Transmitter ID. During RF Zone registration, the individual Transmitter ID information is logged to Review.
e.g. "RFID: xxxxxxxx" Where xxxxxxxx is the actual Transmitter ID for that Transmitter.
The "RFID" Review message is logged immediately after the RF Zone Review message generated by a Zone transmission.

5) Reporting. Some communication formats are unable to report individual RF Expander Zones or are limited as to what they can report on each Zone. "F" Type Modules do not report unique Zone IDs via Securitel.
See "RF Expander Module programming" and the Tables section at the rear of this manual for Zone mapping details.

6) RF Fob Registration. RF Fobs (Portable key fob transmitters) are not registered via this menu.
RF Fob Registration (MENU, 2, 7 or MENU, 7, 2, 0, 0, 2) is used for registering RF Fobs.

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Programming.

Using any LCD Terminal, Logon and select RF Expander Zone Registration from the Menu. [MENU, 7, 2, 0, 0, 1]

```
RF Module to
Use:  F01
```

This screen allows the RF Expander Module to be selected for viewing registration status or for registering Transmitters.

```
F01:Z01   (View)
Not Registered
```

```
F01:Z01   (View)
Registered
```

The Zone registration screen will then be displayed in "View" mode showing the first Zone number and the current registration status; "Not Registered" or "Registered".
View mode allows the current status of any of the 32 RF Expander Module Zones to be inspected. Any RF Zone Transmissions received when in this mode will be ignored.
Use the DOWN (v) and UP (^) Arrow keys to scroll to another Zone to view or to register.

Register a Transmitter - "Program" Mode.

```
F01:Z01   (Prog)
Not Registered
```

Press the RIGHT Arrow key (>) to select "Program" Mode.
"(Prog)" will be displayed on the top line of the screen.

In this mode the Control Module is listening for any Transmitter signal received by the selected RF Expander Module.

```
F01:Z06   (Prog)
Registered
```

-If a Transmitter is received that is already registered, the display will jump to that Zone number and the Terminal will sound a short beep.

```
F01:Z17   (Prog)
Register? (A)
```

-If a Transmitter is received that is not registered, this screen will be displayed. The Zone number display will jump to the lowest un-registered Zone number. The letter in brackets indicates the state transmitted. e.g. A=Alarm.

While this screen is displayed, this Transmitter is now latched to the Zone number and any other Transmissions received will be ignored.

```
F01:Z17   (Prog)
Registered
```

- To register the Transmitter to this Zone number, press the ON key.
- To register the Transmitter to a different Zone number, use the DOWN and UP Arrow keys to select another un-registered Zone number, then press the ON key.
- If you do not wish to register the Transmitter at this time, press the OFF key. This will clear the Transmitter registration and listen for another transmission to be received.

De-register a Transmitter - "Program" Mode.

```
F01:Z17   (Prog)
Registered
```

Press the RIGHT Arrow key (>) to select "Program" Mode.
"(Prog)" will be displayed on the top line of the screen.

Use the DOWN and UP Arrow keys to select the Zone number to De-register, then press the OFF key. This will clear the Transmitter registration and listen for another transmission to be received.

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Register a Transmitter - "Auto" Mode.

```
F01:Z01   (Auto)
Not Registered
```

Press the RIGHT Arrow key (>) to select "Auto" Mode.
"(Auto)" will be displayed on the top line of the screen.

This mode is similar to Program Mode, except that Transmitters are automatically registered when a transmission is received on the selected RF Expander Module.

```
F01:Z06   (Auto)
Registered
```

If a Transmitter is received that is not registered, the Zone number display will jump to the lowest un-registered Zone number and the Transmitter will automatically be registered to that Zone number. (As if the ON key was pressed)

If you do not wish to register the Transmitter to that Zone number, press the OFF key to de-register the Transmitter.

Key Functions Summary

KEY	VIEW MODE	PROGRAM / AUTO MODE
UP Arrow	Increment displayed Zone number.	
DOWN Arrow	Decrement displayed Zone number.	
RIGHT Arrow	Select mode	
ON	None	Register the Transmitter to the displayed Zone number. (If "Register?" displayed and Zone Not Registered)
OFF	None	De-register displayed Zone or Clear latched Transmitter.
MENU	Exit to Main Menu	
END	Exit and Logoff	
HELP	Display Help Text	

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RF Expander Fob Registration

RF Expander Fob Registration allows RF Fobs to be registered to Users in the Model 3000/Access 4000 system. The Fobs can then be processed by the system according to the Fob button programming for each Fob User.

A nominated RF Expander Module (F01 by default) is used to register the Fobs. A different RF Expander may be nominated for Fob registration in the General System options programming, MENU, 7, 5, 1.
Each Fob is registered to a single User. Once a Fob is registered, it can be received for processing by any of the RF Expander Modules in the system.

The total number of Fobs that can be registered will depend on the Memory Size and configuration selected.
Note that some 32k and 128k Memory configurations do not support RF Expander Modules.
See the "Memory Configurations" section of the manual for details.

During the registration procedure, the Fob will need to transmit a signal twice to the nominated Receiver.
It is therefore sensible to register Fobs prior to them being issued to the Users.

NOTES:

1) Registration. Registration can only be performed when one or more RF Expander Modules have been connected to the LAN, programmed and initialized.
Refer to the RF Expander Module Installation manual and "RF Expander Module Programming" MENU 7, 2, 0, 2.

2) Firmware Compatability. RF Expander Modules can only be used with Control Module Firmware V5.1 or later.

3) Fob functions. RF Fob button functions are programmed in User programming, MENU, 2, 1. Additional programming for Auxiliaries, Areas or Zones may also be required depending on the Fob button actions selected.

4) Fob synchronization. RF Fobs use a special synchronization code when communicating with the Model 3000/Access 4000 system to provide protection against replay attacks. i.e. Where the RF transmission is recorded and re-transmitted at a later time to illegally access the system. The code for an RF Fob is automatically sychronized when the Fob is registered. If a Fob transmission is not received by an RF Expander Module (e.g. If a button is pressed when it is out of range), the Fob will become unsychronized.

If a Fob is not synchronized with the system, button presses from that Fob will not be processed and one of the following will occur:
a) If the Fob is slightly un-synchronized, the transmission will be rejected, but the Fob will be re-synchronized and the message "RF Fob Resynced" will be logged to Review. The next transmission from that Fob should be processed normally.
b) If the Fob is badly un-synchronized, the transmission will be rejected and the message "RF Fob Rejected" will be logged to Review. Transmissions from this Fob will continue to be rejected until the Fob is re-synchronized. In this case re-sychronization can only be performed by following the registration procedure again for that Fob.

5) Transmitter ID. During RF Fob registration, the individual Transmitter ID information is logged to Review.
e.g. "RFID: xxxxxxxx" Where xxxxxxxx is the actual Transmitter ID for that Transmitter.
The "RFID" Review message is logged immediately after the RF Fob Review message generated by a Fob transmission.

6) Area On/Off action Feedback. When an Area is Armed or Disarmed via a Fob, the Area Alarm 3 Auxiliary can be used to provide an optional feedback output. An Auxiliary assigned to the Alarm 3 Auxiliary can then be used to control an audible and/or visible output device to advise the Fob User that the action was successful.
Alarm 3 Auxiliary operation: 2 Second Pulse = Area turned On. 5 Second Pulse = Area turned Off.

7) Using Fobs. When using RF Fobs, only 1 button may be pushed at a time and a pause of at least 2 seconds is required between subsequent button pushes. (This avoids repeated processing if the transmission in received by more than one RF Expander Module.)

8) RF Zones. RF Detectors (PIRs, Door/Window Transmitters, Smoke and Glass-break detectors) are <u>not</u> registered via this menu. RF Expander Zone Registration (MENU, 7, 2, 0, 0, 1) is used for registering RF Detectors.

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Programming.

Using an LCD Terminal, Logon and select RF Expander Fob Registration from the Menu. [MENU, 7, 2, 0, 0, 2 or MENU, 2, 7]

```
Select
User: U00002
```

This screen allows the User number to be selected for viewing registration status or for registering Fobs.

The User number is selected by one of the following methods:
a) Enter the User number using the digit keys, then press the OK key, or
b) Use the DOWN (v) and/or UP (^) Arrow keys to select the required User number, then press the OK key.

```
Simon
Not Registered
```

The screen will show the current Fob registration status for the selected User; "Not Registered" or "Registered".
The Control Module now listens for any Fob transmission received by the nominated RF Expander Module. Any Fob button can be pressed to generate a transmission.

```
Simon
Registered
```

Register a Fob.

```
Alice
Register? (4)
```

-If a transmission is received from a Fob that is not registered, and the displayed User number does not have a Fob registered, then this screen will be displayed. The letter in brackets indicates the button that was pressed.

While this screen is displayed, this Fob is now latched to the User number and any other transmissions received will be ignored.

```
Alice
Registered
```

To register the Fob to this User, press the ON key.
To register the Fob to a different User, use the DOWN and UP Arrow keys to select another un-registered User, then press the ON key.
If you do not wish to register the Fob at this time, press the OFF key to clear the latched Fob and listen for another Fob transmission to be received.

-If a transmission is received from a Fob that is already registered, the display will jump to that User and the Terminal will sound a short beep.

-If a transmission is received from a Fob that is not registered, and the displayed User already has a Fob registered, then no change will occur.

De-register a Fob.

To De-register the Fob assigned to this User, press the OFF key.

Key Functions Summary

KEY	FUNCTION
UP Arrow	Increment displayed User number.
DOWN Arrow	Decrement displayed User number.
LEFT or RIGHT Arrow	Go back to User selection screen.
ON	Register the Fob to the displayed User. (If "Register?" displayed and Fob Not Registered)
OFF	De-register displayed User's Fob or Clear latched Fob.
MENU	Exit to Main Menu
END	Exit and Logoff
HELP	Display Help Text

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Inovonics Wireless Zone Registration

IMPORTANT NOTE: V5.0X OR EARLIER.
FROM V4.5 TO V5.1 FIRMWARE THIS OPERATION IS PERFORMED VIA MENU, 7, 2, 5.
(MENU, 7, 2, 0, 0, 3 WAS INTRODUCED IN V5.10)

The Model 3000/Access 4000 system can be connected to certain Wireless Detection System products via a serial RS232 connection.

This allows up to 208 Wireless Detection devices (Transmitters) to be monitored by the system via a simple interface between a Control Module UART Port and the Wireless Receiver.

NOTE: The number of Wireless Detection devices that can be monitored will depend on the Memory Size and configuration selected, and the PIC Options Microchip fitted to the Control Module.

This programming function allows the Transmitters (Wireless Detectors/Sensors) used in conjunction with particular Wireless Receiver products to be registered with the Model 3000/Access 4000 system.

Inovonics MF Series
Control Module Firmware V4.5 or later only.
Transmitters used in conjunction with an Inovonics MF series Wireless Receiver need to be registered with the Model 3000/Access 4000 system using this programming function.

Important note: This function is not used for Transmitters used in conjunction with the Inovonics FA400 Wireless Receiver. When using the FA series, Wireless Zones are pre-mapped to Transmitter IDs.
Refer to "Comms Task Formats. Comms-24" for FA400 Zone Mapping details.

Registration is performed by first Programming a Comms Task for "Inovonics" format, connecting the IR400 Interface and the Inovonics MF series Receiver, and setting the Comms Task to active. (The "Inovonics" Comms Task must be operational to register the Transmitters.)
Refer to "Comms Task Formats. Comms-24" for information on the operation and programming of the "Inovonics" Comms Task.

When this is done, Wireless Zone Registration can now be performed.

Reporting

Important Note: Some communication formats are unable to report individual Inovonics Zones or are limited as to what they can report on each Zone. See the Tables section at the rear of this manual for Zone mapping details.

NOTE: "N" Type Modules do not report unique Zone IDs via Securitel.

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Using any LCD Terminal, Logon and select Inovonics Wireless Zone Registration from the Menu. [MENU, 7, 2, 0, 0, 3]
NOTE: V4.5 to V5.0x select [MENU, 7, 2, 5]

```
N01:Z01
Not Registered
```

The screen will display the first Wireless Network Zone number and the current registration status.

Press the "Reset" button on the Transmitter you wish to register as N01:Z01. The Transmitter will be registered, the LCD Terminal will beep and the screen will automatically advance to the next zone:

```
N01:Z02
Not Registered
```

The screen will now display the next Wireless Network Zone number and the current registration status.

Now press the "Reset" button on the Transmitter you wish to register as N01:Z02. The transmitter will be registered and the screen will advance as before.

All Transmitters can be registered sequentially by simply pressing the Reset button on each of the Transmitters in the required Wireless Zone order.

At any point, the Arrow keys can be used to select a Zone in order to View the status, or to Register the Transmitter:

^ (Up)	Go back 1 zone
v (Down)	Go to next zone
> (Right)	Advance 16 zones
< (Left)	Go back 16 zones

```
N01:Z09
Registered
```

A "Registered" message will be be displayed if the zone is already registered.

```
Zone already
Registered
```

A "Zone already Registered" message will be displayed if a "Reset" button is pressed for a Zone that is already registered to a Transmitter.

```
N02:Z07
Registered
```

If the displayed Zone is not registered, but a "Reset" button is pushed on a Transmitter that is already registered to another Zone, the LCD Terminal will beep for 1 second and the display will jump to the Zone that it has been registered to.

```
N01:Z01
Not Registered
```

To de-register any Zone, use the arrow keys to display the selected zone as described above and press the <OFF> key.

To register any Zone (not in sequence), use the arrow keys to display the selected Zone. If the Zone is already registered, press the <OFF> key. Now press the "Reset" button on the Transmitter that you wish to register as this Zone.

Note that the registration takes note of all 4 ID bytes used to identify a Transmitter.

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Comms Task Programming

Introduction

All system communication is controlled by means of ***Comms Tasks***. As the name suggests a Comms Task is a communications task or job that you wish the system to carry out. Because there can be more than one Comms Task, it is also possible for more than one communications task to be operating at once. For example, to configure the system for a review printer you simply allocate one of the available Comms Tasks to perform the review printer function. If you wish an alarms dialer to be operational as well, you simply assign another Comms Tasks the job of being a dialer format such as Contact ID. The number of Comms Tasks available is dependent upon the Memory Configuration.

Comms Tasks can either be "active" or "idle". When the system is powered up, all programmed Comms Tasks are set to active so they can immediately start their intended function. If you wish to stop a Comms Task, for example abort a dialer format halfway through reporting, simply set that Comms Tasks to idle.

IMPORTANT NOTE: This document covers basic Comms Task format selection and Active/Idle settings. For details of individual Comms Task format programming refer to the "Comms Tasks Formats" section.

Communications Ports

Comms Tasks use ***communications ports*** to communicate with the outside world. Listed below are the possible communications ports:

Port Name	Location	Description
Telecom	Control Module PCB	Connected to the telephone network or a direct line network and used for upload-download, dialer reporting formats, direct line formats etc.
PORT 0	Control Module PCB	Only used during installation. Can be used for direct connect upload/download with an adaptor *only during installation.*
UART 1	UART Expander	A general purpose RS232 port used for review printers, external PC connections, access control monitoring, special formats such as Securitel, fast modems to dial-up lines. Baud rate programmable.
UART 2	UART Expander	Same as UART 1
UART 3	UART Expander	Same as UART 1
UART 4	UART Expander	Same as UART 1
Ethernet	Ethernet UART Expander	(V5.1 or later) Connected to an Ethernet network and used for communications with Insight software or an IPfast Central Station Receiver.

NOTE: The number of UART Ports available will depend upon the version of UART Expander fitted.

When a Comms Task is set to carry out a function, for example send data to a review printer, it will be configured to use one of the communications ports listed above. For example a Comms Tasks programmed for a review printer may be configured to use UART Port 3. This means that UART Port 3 cannot be used for any other purpose unless the Comms Task is set to idle.

Some Comms Tasks may share ports with other Comms Tasks. For example, a Comms Task programmed as a Contact ID dialer and another programmed as an IRfast format dialer. Although both these tasks are configured to use the Telecom port, when they are not reporting they are not using the port. If both tasks needed to use the Telecom port for reporting at the same time, one Comms Task will use the port first and, when finished, the other Comms Task will use the port.

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Comms Task Formats.

Comms Task formats describe the job a particular Comms Task is to perform. For example, programming Comms Task CT003 to Contact ID format will invoke a Contact ID dialer using CT003. The programming of options for the Contact ID dialer using CT003 are unique to Comms Task CT003. If another Comms Task, CT005, were also to be programmed to Contact ID format, the Contact ID options for this Comms Task will be separate from those of CT003. This allows the commissioning of dual reporting with each Comms Task using its own Telephone Numbers and options.

Listed below and opposite are the possible formats that may be assigned to a Comms Task.

Programming of individual formats are explained in more detail in "Comms Task Formats" in the following sections.

Comms Format	Section Number	
Monitor	Comms- 1	
Answer Call	Comms- 2	
PC Direct	Comms- 3	
IRfast Dialer	Comms- 4	
Contact ID Dialer	Comms- 5	
EMS	Comms- 6	
EarthNet Direct Line	Comms- 7	(V1 to V4.5 only)
Securitel	Comms- 8	
Printer	Comms- 9	
External Modem	Comms-10	
Inet	Comms-11	
Accept	Comms-12	
Poll Data	Comms-13	
PACOM	Comms-14	(V3 to V4.5 only)
IRfast Backup Dialer	Comms-15	See Note 1
CID Backup Dialer	Comms-16	See Note 1
GSM	Comms-17	See Note 1
SpreadNet Wireless Interface	Comms-18	
4+2 Pulse Dialer	Comms-19	
Geoquip	Comms-21	See Note 2. Under development
8 pin	Comms-22	See Note 2
C-Bus	Comms-23	See Note 2
Inovonics Wireless Interface	Comms-24	See Note 2
PosData DVR	Comms-25	See Note 2
Dynalite	Comms-26	See Note 2
HPM	Comms-27	See Note 2. Under development
Insight	Comms-28	See Note 2
Insight Internal Modem	Comms-29	See Note 2
Insight External Modem	Comms-30	See Note 2
SIA Dialer	Comms-31	See Note 2

IMPORTANT NOTES:

1) Any Comms Task used as a "Backup" Task operates as an independent Comms Task and must therefore have all the normal options programmed. i.e. Programming options are not automatically taken from the main Comms Task.

2) Available in Type 2 (CE) Control Modules or later only.

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Comms Task Baud Rates

IMPORTANT INFORMATION

Maximum Baud Rate settings.

Whenever more than one Comms Task is programmed it is important to ensure that the **combined** Baud rate of all Comms Tasks to be active at the same time does not exceed: Type 0 / Type 1 Control Modules: 19,200 Baud.
Type 2 Control Modules: 38,400 Baud.

eg. On a Type 1 Controller, if a "SpreadNet" Comms Task, which must communicate at 9600, and a "Printer" Comms Task, set to 1200, are used concurrently; a "PC Direct" Comms Task for PC System Management would have to be set to 4800 Baud to ensure that the total Baud rate does not exceed 19,200. In this example, the total Baud rate would be 15,600.

When assigning Baud rates, do not forget to include the Baud rate of any Comms Task using the Telecom Port at the same time. (For Contact ID and IRfast formats allow 300 Baud; for Upload/Download formats allow 1200 Baud)

Upload / Download.

In addition to the general guidelines above, the following should be noted when connecting to a Type 0 or Type 1 Control Module for Upload/Download (PCDirect or ACCEPT Comms Tasks).

For Upload/Download applications it is recommended that the Baud rate is set to the default value of 9600 Baud or lower. Baud rates of 19200 or above are not recommended and depending on the hardware and cabling used, may result in unreliable communications.

UART Port Diagnostics

```
CT001     .R..
Status    nnnn
```

Pressing the ON Key whilst the Active/Idle screen is displayed will display the UART Port status screen. This screen can be cleared (reset) when desired by pressing the OFF Key. The following table explains the flags:

.	**S**pare	Spare for future development.
R	**R**etry	A "Y" under this flag means the receive fifo (16 bytes) has overflowed and at least one character has been lost. This will normally cause a retry of some kind.
.	**S**pare	Spare for future development.
.	**S**pare	Spare for future development.

The "R" flag may be monitored after communications via this port. In the event that the system places a "Y" flag under the "R", the Status screen should be reset and monitored further. Should a "Y" flag appear under the "R" with some regularity, a potential cause would be the baud rate at which the port is attempting to communicate. In such a case the Installer should reduce the baud rate and monitor the effect via the status screen.

In the event that lower baud rates do not solve the problem, assistance should be sought from the manufacturer's Service Technician.

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Format	Ports Used	Description
Monitor	UART 0 to 4	For manufacturer's use only.
Answer Call	Shares Telecom	Answers calls for upload/download, DTMF (Touch-tone) Telephone Remote Control and performs telephone line monitoring. Can be programmed to Callback the computer that initiated the call, for added security.
PC Direct	UART 1 to 4	Used to allow a PC to be connected permanently to the 3000/4000 system for upload-download or access monitoring.
IR Fast	Shares Telecom	Reports alarm information in Inner Range fast Format (Extended)
Contact ID	Shares Telecom	Reports alarm information in Ademco Contact ID format.
EMS	UART 1 to 4	Used to communicate directly with high level lift control equipment. V3 or later.
EarthNet	Telecom	Reports alarm information in EarthNet Direct Line format via a direct line. Setting an EarthNet Comms Task to "active" will prevent any other Comms Task from sharing the Telecom Port.
Securitel	UART 1 to 4	Reports alarm information via a Securitel STU connected to a UART port.
Printer	UART 1 to 4	Used to continuously dump review information to a serial printer.
External Modem	UART 1 to 4	Used to periodically dump review to a remote PC via a separate line connected to an external modem.
Inet	UART 1 to 4	Allows multiple panels to communicate alarm data and a limited amount of database editing commands to and from an automation package via an RS232 based network. Contact the Distributor for details. V3.5 or later.
Accept	UART 1 to 4	Used to permanently connect a PC running ACCEPT System Management Software. V2 or later.
Poll Data	UART 1 to 4	Allows the 3000/4000 system to be monitored and controlled by an external intelligent system using Contact ID data format &/or system text. V3 or later. e.g. Guardall NZ Tripad or Santana CCTV Interface.
PACOM	UART 1 to 4	Allows the 3000/4000 sytem to be monitored and controlled via a PACOM Network. V3 or later.
IRfast Backup	Shares Telecom	Reports alarm information in Inner Range format (Extended) when primary Comms format fails.
CID Backup	Shares Telecom	Reports alarm information in Ademco Contact ID format when primary Comms format fails.
GSM	UART 1 to 4	Allows secure communications via GSM modem to central stations &/or GSM mobile phones for alarm reporting and remote control. V3.5 or later
SpreadNet	UART 1 to 4	Allows the 3000/4000 system to connect directly to a C&K Spreadnet receiver. V2 or later.
4+2 pulse	Shares Telecom	Allows the 3000/4000 system to connect directly to Central Stations using the 4+2 Pulse format. V3 or later.
Buffer		Special purpose Comms Task generated automatically when the GSM Comms Task is used.
Geoquip		Under development.
8 pin	Auxiliary Outputs	Allows the 3000/4000 system to activate Auxiliary outputs for 8 different types of alarms with Alarm confirmation (verification) logic for "Intruder" alarms. The Auxiliaries can then be used to trigger inputs on: - 3rd party communicators that support at least 8 pin inputs for reporting. e.g. Redcare STU, 8-pin STU, GSM STU, etc. - 3000/4000 Zone Inputs for reporting via any other Comms Task such as Contact ID or IRfast. (Not available on Type 0 or 1 Control Modules)

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Format	Ports Used	Description
C-Bus	UART 1 to 4	Allows the 3000/4000 system to communicate directly with a Clipsal C-Bus Controller. V4 or later. (Not available on Type 0 or 1 Control Modules)
Inovonics	UART 1 to 4	Allows the 3000/4000 system to connect directly to a C&K Spreadnet Receiver. V4 or later. (Not available on Type 0 or 1 Control Modules)
PosData DVR	UART 1 to 4	Allows a PosData Model BX 4 Channel DVR to be controlled from a 3000/4000 LCD Terminal. (Not available on Type 0 or 1 Control Modules)
Dynalite	UART 1 to 4	Allows the 3000/4000 system to communicate directly with a Dynalite Controller. V4.5 or later. (Not available on Type 0 or 1 Control Modules)
HPM		Under development.
Insight	UART 1 to 4 Ethernet UART Shares Telecom (via "Insight Internal Modem")	Used to provide one or more communications paths to Insight Software (V5 or later) and/or an IPfast Central Station Receiver. (Under development)
Insight Internal Modem	Shares Telecom	Used to provide a dialer communications path to Insight Software (V5 or later)
Insight External Modem	UART 1 to 4	Used to provide a dialer communications path to Insight Softwarr via a separate line connected to an external modem. (Under development)
SIA Dialer	Shares Telecom	Reports alarm information in SIA format. (V5 or later)

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Comms task to program: CT001

This screen allows the programmer to select a Comms Task to programme by using the up and down arrows or by entering a number.

CT001 Idle -> Insight

The screen has three roles:

1. It allows a Comms Task format to be selected by using the Right Arrow key to cycle through all the available formats. Pressing the OFF key selects "None" (No format) for this Comms Task and goes to the start of the list of available formats.

2. The "9" key is used to toggle the Comms Task between the "Idle" state and the "Active" state. **A Comms Task format cannot be changed or programming changes made unless the Comms Task is idle.**

3. Pressing HELP, "9" will allow options to be programmed for the particular format chosen for that Comms Task. It is recommended that options are only changed when the Comms Task is idle.

Example: Contact ID has been selected for Comms Task CT001

CT002 Idle -> Contact ID

Although a format has been chosen, because the Comms Task is idle, no dialling or reporting will take place.

To programme options for the Contact ID dialer using Comms Task CT001 press HELP, "9".

CT002 Active -> Contact ID

To start Comms Task CT001, simply press the "9" key. The display will change to that of the screen on the left.

The Contact ID dialer is now operational using CT001. To stop the Contact ID at any time, simply go to the above screen and press the "9" key to toggle the Comms Task back to idle.

Defaults

In V3 to V4.9x, Comms Task 1 (CT001) is defaulted to "PC Direct" format on Port 1 at 9600 Baud.
In V5 or later, Comms Task 1 (CT001) is defaulted to "Insight" format on Port 1 at 9600 Baud. Comms Task 1 should not be used for any other format.

Programming options and screens will vary depending on the format of Comms Task selected.

For details of individual Comms Task format programming refer to the "Comms Tasks Formats" section.

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Telephone Number Programming

Any Comms Task requiring a Telephone Number, uses a Telephone Number chosen from a "telephone directory" in which you can add and delete Telephone Numbers as required. The maximum number of Telephone Numbers in the directory depends on memory configuration, up to a maximum of 250 Telephone Numbers.

```
Phone # to
program: TN001
```

This screen allows the User to jump to a particular Telephone Number to alter or, by pressing the ON button, to search for a particular Telephone Number by name.

```
Find Phone No. ^
ABC SECURITY
```

```
Phone #001 Name:
ABC SECURITY
```

This screen allows an optional name to be assigned to this Telephone Number, up to 16 characters long. (It is recommended that a Telephone Number be assigned a name in order that it may be chosen by name when programming a Comms Task).

```
TN001 T.Zone ->
WEEKDAY
```

```
TN001 TimeZone
TZ001
```

This screen allows an optional TimeZone to be "attached" to this Telephone Number. When a TimeZone is "attached", the Telephone Number only "exists" when the TimeZone is valid. When the TimeZone is invalid, the Telephone Number will be considered as not programmed OR the Alternate Telephone Number specified on the next screen will be used instead, if programmed. To select a TimeZone press the right arrow key to scroll through all the available TimeZones alphabetically. Press the OFF key if you wish no TimeZone control of this Telephone Number. (The ON key may be used to change modes to allow a TimeZone to be selected by number if desired).

WARNING: A Comms Task will become idle if no valid Telephone Number is programmed.

```
TN001 Alt. No.->
BACKUP CS
```

This screen allows an alternate Telephone Number to be programmed. It specifies which Telephone Number will be used instead of this Telephone Number when an "attached" TimeZone is invalid.

```
TN001 Alt. No.
TZ002
```

The ON key may be used to change modes to allow an Alternate Telephone Number to be selected by number if desired.

```
Phone #001 is:
97533488
```

This screen allows the actual Telephone Number to be programmed. You can have up to 16 digits.

A one second **pause** can be inserted in the number by leaving a space in the number. To leave a space you will first need to clear the screen by pressing the OFF key. The number may then be entered and a space inserted by using the arrow keys.

If "*" and "#" characters are required in the Telephone Number, press the On Key before beginning to enter the number. This changes the entry mode to alpha-numeric, allowing the "0" Key to be used to select "*" and/or "#" characters and the "6" Key to be used to select "P" for Pause. (In this mode, any character other than 0-9, *, # and P will be interpreted as a "P"ause.)

"*" and "#" may be required to be sent as part of the telephone number to disable certain telephone network functions such as Call Waiting, Caller ID etc.

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DTMF Control Programming

The "Answer Call" Comms task has been enhanced to allow for DTMF control. Any 3000 / Access 4000 can now be controlled remotely from any telephone which is capable of sending dtmf (dual tone, multi frequency) tones. By dialling the system and using the telephone keypad, specified areas can be turned on or off. Alternatively specified auxiliaries can also be controlled.

The following screens allow the Installer to programme a number of 4 digit control codes for DTMF Control.

See the sections on the "Answer Call" Comms Task format and "Application Programming" for further information.

DTMF Control to alter: DC001

This screen allows the Installer to select a DTMF Control for programming.

DC001 Control Code: 0000

This screen allows a 4 digit control code to be programmed. The digits "0" to "9" may be selected and 4 digits must be entered. Note that "0000" cannot be used as this is reserved as the hang-up code.

DC001 Function-> None

This screen determines the function that will be carried out whenever the above control code is legally entered. Press the Right Arrow Key to scroll through the available options.

The following table describes the available functions and the screens that will need to be programmed as a result of their selection:

Selection	Description	Output Aux Screen	Area to Operate Screen	Aux Time Screen
None	No function programmed	N/A	N/A	N/A
Area On	Turn on an Area	Ignore	Yes	Ignore
Area Off	Turn off an Area	Ignore	Yes	Ignore
Aux On (sec)	Turn on an Aux for a set time in seconds	Yes	Ignore	Yes
Aux On (min)	Turn on an Aux for a set time in minutes	Yes	Ignore	Yes
Aux Off	Turn off an Auxiliary	Yes	Ignore	Ignore

DC001 Output Aux: :X

This screen sets the Auxiliary Output to be controlled for any function that controls Auxiliaries.

DC001 Area to Operate: A000

This screen sets the Area to be controlled for any function that controls Auxiliaries.

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DC001 Aux Time
000 sec/min

This screen sets the Auxiliary Output On time in minutes or seconds for any function that turns on Auxiliaries. A time of zero means turn on the Auxiliary permanently.

Feedback Tones

There are 4 types of tones that can be output:

Tone	Description	When Used
Start Tone	3 short 1650 Hz beeps	On entry to DTMF Control mode. When the "*" or "#" key is pressed.
"On" Tone	1 short 1650 Hz beep	When a legal control is entered, resulting in an "On" type action.
"Off" Tone	2 short 1650 Hz beeps	When a legal control is entered, resulting in an "Off" type action.
Error Code	1 long 980 Hz beep	When an illegal control code is entered. When control code action cannot be carried out. When the 10 second digit timer expires. When the 60 second command timer expires.

Notes:

1. If an attempt is made to turn on an Area and it is already on, an "On" tone will be output.
2. If an attempt is made to turn off an Area and it is already off, an "Off" tone will be output.
3. The only security that is offered is via the DTMF mode access tone and the 4 digit control code. No Area lists etc are checked.

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System Options Programming

General System Options

These screens are used to programme general purpose options associated with the Model 3000/4000 Control Module and the System.

Power Fail Delay Time: 000 min

This screen sets the time that the **Control Module** "AC fail" System Input must stay in alarm before the Control Module will recognise an AC fail alarm. For example, setting a period of around 15 minutes would prevent an AC fail report being sent to the Central Station on brief interruptions to the AC supply. Setting the time to 000 will result in no delay and therefore instant reporting of the alarm (depending on the input programming).

Note: Power Fail Delay Time for a Universal Expander Module is set via a DIPswitch on the Expander's board. This allows the Installer to select a Delay Time of between 20 and 255 seconds.

Site Code Type-> Standard

This screen sets the type of Card data processing that will be used whenever a Site Code type of Reader is defined. When the "General" option is selected, this type of processing will be used for all Readers present on the system.

Standard

For Inner Range Mag Swipe format Cards, this type is selected.

-For 26 bit Wiegand formats, this type expects the Site Code from bit 2 to bit 9 and the Card ID from bit 10 to bit 25. The start & stop bits (bit 1 & 26) are ignored.
-For Indala 27 bit Wiegand formats, this type expects the Site Code from bit 1 to bit 13 and the Card ID from bit 14 to bit 27.
-For 34 bit Wiegand formats, this type expects the Site Code from bit 2 to bit 17 and the Card ID from bit 18 to 33. The start and stop bits (bit 1 & 34) are ignored.
-A 36 bit Wiegand format with 18 bit Site Code is also supported.

See Site Codes, MENU, 2, 5 for more details.

There is no issue number with this type.

General

V4.5 or later. Allows the Installer to define the location and length of the Site Code and Card ID data on the Cards to be used in this system. This allows Site Code processing to be used for any Wiegand or Mag Swipe Card formats that meet the following requirements:

1) The total Card data to be processed is no more than 40 bits or 15 characters. (Cards with more data can be used, but the additional data will be ignored)
2) The Site Code data is in a continuous sequence from Most significant bit (MSB) to Least significant bit (LSB) and is no more than 19 bits or 10 characters.
3) The Card ID data is in a continuous sequence from Most significant bit (MSB) to Least significant bit (LSB) and is no more than 16 bits or 5 characters. (Supports up to 65535 Cards)
4) The data is not scrambled or encrypted.

NOTES:
1. Reader formats "NBit Wiegand" or "NBit Fast" (For Wiegand Readers) and "Swipe" format for Magnetic Stripe Readers should be used for General Site Code Type.
2. The screens for programming the location and length of the General Site Code data are found later in this section.
3. Cards requiring "Standard" Site Code processing and those requiring "General" processing cannot be used together on the same system.

IMPORTANT NOTES:

1) Special PIC Micro Chip option must be fitted to the Control Module to enable "General" Site Code processing.
See "3000 & Access 4000 Model Options" in the Overview and Introduction section.

2) Intelligent 4 Door Access Modules must be fitted with V2.00 firmware or later if "General" Site Code processing is used.

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Real Time Clock Adjustment Options

The real time clock in the panel is crystal controlled but because the crystal frequency is not trimmed in production, the clock may drift with time. Later version PCBs allow the use of AC mains frequency to correct for drift, resulting in a better long term accuracy. Older style PCBs without AC mains frequency synchronisation can be identified by the words "PCB: 0" when the MENU key is pushed whilst logged off. Newer style PCBs can be identified with the words "PCB: 1" instead.

Some communication formats such as IRfast and EarthNet can automatically correct the clock when communication with the Central Station.

The Model 3000 and Access 4000 both allow the clock to be trimmed under general options by the Installer, if desired. Both the older style and newer style PCBs can be trimmed, however it is desirable with newer PCBs to allow the AC power frequency to trim the clock automatically.

```
Clock Adj   6NF
Options->   nnn
```

This screen sets the Clock adjust options:

6 **6**0 Hertz Mains — Set this option to "Y" to adjust the clock synchronisation for countries where the AC mains frequency is 60 Hertz. Leave set to the default "n" for countries where the AC mains frequency is 50 Hertz.
Note: Must not be set to "Y"es on Type 1 Control Modules.

N **N**o mains sync — Set this option to "Y" to prevent synchronisation with AC mains frequency.
Only recognised for Type 1 Control Module boards or later. This option should only be set to "Y" if the AC power frequency is inaccurate as is the case with some un-interruptible power supplies.
If this option is set to "Y"es, a System Reset (MENU, 7, 8, 9) must be performed before the change will take effect.

F Clock is **F**ast — Set this option to "Y" if you wish the clock to run slower. Leave set to "n" if you wish the clock to run faster or maintain the same speed.

```
Clock Error in
100ms/24Hr: 000
```

This screen is used to correct for drift in the real time clock. This screen should be left at 000 for newer style PCBs if the "N" option above is set to "n", in which case the AC power frequency will automatically correct the clock.

The number depicted above is the clock error in 1/10th of a second in a 24 hour period. The clock will be made to run either faster or slower, depending on the setting of the "F" option above.

After adjusting this screen you should reset the time accurately on the time/date screen. This will cause the above changes to be recognised and the clock adjusted accordingly.

Example for older style PCBs (or newer style with "N" option set to "Y")

1. Check the current Clock error is set to 000 (Units are in 100ms/24Hrs)
2. Set the time accurately by pushing the OK key at the exact second.
3. Check the time is set accurately by logging in and inspecting review for the exact time the OK key was pushed when logging in. Adjust if required.
4. Wait at least 24 Hours.

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5. Check the time again by logging in and inspecting review for the exact time the OK key was pushed when logging in.
6. Calculate the correction required
   Correction = (error in seconds)*240/(Hours since clock set)
7. Enter the correction as above and set the "F" flag to "Y" if the clock was running fast and leave at "n" if the clock was running slow.
8. Set the time accurately again by pushing the OK key at the exact second.

Eg. If the clock was running slow by 5.6 seconds in 28 hours, the correction will be: 5.6*240/28 = 048 and the "F" flag should be set to "No" to make the clock run faster.

The first Options screen sets a number of common panel options:

```
Panel  NDFRL+I.
Opts-> nnnnnnnn
```

This screen is displayed in V4.5 or later.

```
Panel  NDFRf+I.
Opts-> nnnnnnnn
```

This screen is displayed in V4 or earlier.

N **N**o Aux off on Reset

Set this option to "Y" to cause the state of **all** auxiliaries to be retained in the event of a system reset unless a timer is defined. (The setting of the "Off on Reset" option in Auxiliary Timer Programming [MENU 5, 5] will be ignored).
NOTE: Prior to V5.1, this option did not apply to Control Module Auxiliaries.

D **D**etailed Review

Set this option to "Y" to enable detailed review mode. This allows more comprehensive review messages when required for debugging programming problems, communication problems and input problems etc.

Detailed review events at this time are:

- A selection of Comms Task messages
- Entry/exit/pulse/siren/ac hold off/low bat. timer start/expired
- Pulse Counts
- Tracing users at various menus.

F **F**ast Processing

If set to "Y", this flag enables faster Zone processing of Zones on external modules. This option is particularly suited to Button Feedback processing when used in Lift Access Control.

R Force **R**eview

This option overrides all "Do not save to review" flags within the programming of all other modules in the system. This option enables the installer to temporarily force all modules to save all events to review for the purposes of debugging. When debugging is complete, this flag should be reset to "n".

L V5.00 or later.
ON key **L**ockout
V4.5 to V4.99
No ON key **L**ockout

"UK" Firmware Only.
V5.00 or later. If set to "Y", the On Key Lockout function is Enabled.
V4.50 to V4.99. If set to "Y", the On Key Lockout function is Disabled.
This feature operates as follows:
Any Area that has had an alarm that generates an "Xmit" (Comms) Entry in Review, and is subsequently turned Off, will have the On key disabled for re-arming that Area.

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The On key can only be Enabled (Reset) by:
- The Installer logging on to the Terminal.
- An "Engineering Code" being entered. *See details below.*
- A Calculated Auxiliary "Reset Alarms +ON" action.
- A User logging on to the Terminal who has the "Un-**L**ock" option set to "Y" in the "RHOL...." screen in their Menu Group. V5 or later only.

The Engineering Code method requires the following steps:
1) Select MENU, 3, 9 (Reset Alarms) at the LCD Terminal while logged off.
2) Provide the Central Station with the Date and Time Data shown on the display.
3) While still in MENU, 3, 9, enter the 4 digit Code supplied by the Central Station.
NOTE: The Engineering Code is not a User PIN code.

The Calculated Auxiliary "Reset Alarms +ON" function allows the system to be configured so that the On key can be Enabled/Reset by:
-A Command-Back Auxiliary action from the Central Station.
(If supported by the communications format)
-An Auxiliary control command from system management software.
-A Keyswitch wired to a Zone Input.

f **f**ast Zones (V3 to V4)

If set to "Y", this option applies a faster Zone debounce time to all zone inputs attached to the Control Module. The faster debounce time is, on average, 165ms.
Note: 165mS Debounce is standard on Type 2 Control Modules.

\+ +1 Duress Code

The +1 Duress Code option causes **every** PIN code to also have an associated duress code which is one digit different from the PIN number. This enables a Duress alarm report to identify the individual User. The Code length remains the same. To work out the duress version of a PIN code, simply add 1 to the last digit. If the digit is already a "9", adding 1 causes the digit to be "0". The code will behave exactly as if a code was entered with the User's (D)uress flag set.
IMPORTANT NOTE: When this option is used, the number of available PIN codes is effectively halved. i.e. If 4 digits are used, only 5000 combinations will be available instead of the normal 10,000 combinations.
e.g. If a User's PIN code is 2468, their Duress version will be 2469. So the system will not allow 2469 to be programmed as another User's PIN code.

I **I**gnore AC Problems

The Ignore Power problems level messages option causes all AC fail inputs to be ignored as far as "Had Power Problems" level messages are concerned.

```
Panel    EUe.....
Opts2->  nnnnnnnn
```

The second Options screen sets a number of additional panel options:

E **E**xtra Area programming denied.

Set this option to "Y" to disable the ability to assign or edit the "User Extra Area" when programming Users. Once this option is set to Yes Areas can only be assigned to a User via the Area List in their User Type and avoids the possibility of Users being assigned an Area that they should not have access to.
Has particular relevance in multi-tenancy installations, etc.
V3.5 or later only.

U **U**se Start Bit.

Normally the First and Last Bits of a Wiegand Data string are stripped from the Card Data as these are normally parity Bits and are not required.
If the system utilizes the Wiegand NBit or NBit Fast "Direct Entry" Mode for Card Data, this option can be set to "Y" to enable the First and Last Bits to be used in the Card Data. This is useful to prevent duplication of card IDs if the card data is a proprietary format that does not use parity Bits. V3.5 or later only.

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e **E**xtra Door/Door List programming denied.

Set this option to "Y" to disable the ability to assign or edit the "User Extra Door" or "User Extra Door List" when programming Users. Once this option is set to Yes Doors can only be assigned to a User via the Door List in their User Type and avoids the possibility of Users being assigned a Door that they should not have access to. Has particular relevance in multi-tenancy installations, etc.
V4.5 or later only.
Only relevant to Memory Configurations that allow Extra Door / Extra Door List programming.

Reader for User Prog: R00

This screen is used to allow any Single Door or 2 Door Reader Module in the system to be used for:

- Programming User's cards by swiping. (In "Direct Entry" mode)
- Programming Backup Cards for Readers
- Reading Card Data in Test mode.

Enter in the new Reader Module ID if a Reader Module other than Module 01 is to be used.

NOTE:
1) The prompt screen under the Test Card menu [MENU 4,5] or when enrolling Direct Entry or Backup Cards will display "Waiting for Card at Rxx", where xx = Reader Module number specified above.
(Prior to V4 the prompt screen displays "Waiting for Card at R01" regardless of the Reader Module specified above.)
2) On 2 Door Reader Modules, either Reader Port can be used.

Area Defer Time: 000 min

This screen allows the Installer to specify the time period in minutes for the Deferred Area Arming option. This time period will be used if no "Defer Time" is programmed in the individual Area options.

Note that the total Defer Arming time will be the programmed "Defer Time" plus the 250 second Defer Warning period.

See the "Application Programming" section and "Area Programming" for details of the Deferred Area Arming options.

C01 Battery Test Time: 000 min

This screen allows the Installer to programme the Battery Test Time for the Control Module. (Battery Test times for other Modules are set within the programming for each individual Module.

Battery testing is initiated by a Diary event which allows the installer to specify the frequency of such testing, dependent on the specific requirements.

The period can be set from 0 (no test) to 255 minutes for each module to be tested.

Only the Control Module, B and E type expanders, Intelligent 4 Door Access Modules and LAN Power Supply Modules are capable of battery testing.

The battery test is activated within the Control Module when a diary with a function of "battery test" goes valid. Once completed successfully or in the event of failure the next module programmed will then start its battery testing sequence. Battery testing finishes once all modules set for testing have completed their test.

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Battery test times should be set with module load in mind. It should be realized that if a battery test of 4 hours is performed and the AC supply to the premises fails shortly after the test was complete, the charge of the battery would be severely effected. This, coupled with the age of the battery, would greatly reduce the integrity of the system.
The battery test does NOT turn off the AC Mains supply to the module being tested. Instead, it turns off the Battery charge circuit allowing the module to run off the battery supply only.

As a general rule, a battery test time of between 1-10 minutes would be used to determine only that a battery was connected. A time of between 60-120 minutes would deduce that a battery should be in good working order. Periods greater than 120 minutes should only be set for deep discharge testing conditions where the reliability of the AC mains supply can be guaranteed.

General Site Code Type parameters.

The following screens allow the Installer to define the Site Code data parameters to be used when the "General" Site Code Type is selected.
These values are entered as the number of:

Bits	When Readers with Wiegand output are used.
or Characters	When Mag Swipe Readers are used.

IMPORTANT NOTE: Refer to "Test Cards" (MENU, 4, 5) in the Testing Menu section for information on reading and interpreting Card Data.

```
General Site
Total bits:    00
```

This screen is used to define the total length of the data string to be processed from the Card. This value must include any parity bits included within the string of data to be processed. The maximum is 40 bits, or 15 characters.
e.g. HID Corporate 1000 format: 35 bits.

```
General Site
Site Size:     00
```

This screen is used to define the length of the Site Code (Facility Code) data.
The maximum that can be processed is 19 bits, or 10 characters.

```
General Site
Site Offset:   00
```

This screen is used to define the number of bits in the data string **before** the **first** bit/character of the Site Code (Facility Code) data.
i.e. The number of bits by which the Site Code data is offset from the start of the data.

```
General Site
User Size:     00
```

This screen is used to define the length of the Card ID (Card number) data.
The maximum that can be processed is 16 bits, or 5 characters.

If a value greater than that specifed above is programmed, the bits or characters above this maximum will be set to 0 when the Card ID data is processed.
This means that any Card ID greater than 65535 will be interpreted as lower card numbers, and will effectively be duplicate cards of the Card IDs below 65535.
e.g. Card ID 65536 will be read as Card ID 0. (Cannot be used)
Card ID 65537 will be read as Card ID 1.
Card ID 65538 will be read as Card ID 2. etc.

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```
General Site
User Offset:   00
```

This screen is used to define the number of bits in the data string **before** the **first** bit of the Card ID (Card number) data.
i.e. The number of bits by which the Card ID data is offset from the start of the data.

EXAMPLE 1.
A batch of Proximity Cards has a 35 bit data format.
P P S S S S S S S S S S S C C C C C C C C C C C C C C C C C C C P
Where P = Parity bit. S = Site Code bit (12 bits) C = Card ID bit (20 bits)

The General Site Code Type parameters would be programmed as follows:

Total Bits:	35	The total number of bits to be processed.
Site Size:	12	The number of Site Code bits.
Site Offset:	2	The number of bits before the Site Code data starts.
User Size:	16*	The number of Card ID bits.
User Offset:	18	The number of bits before the usable* Card ID number starts.

* The 3000/4000 can only process up to 16 Bits of Card ID data. The 4 Most significant bits of the Card ID in this format are ignored.

EXAMPLE 2.
HID Inner Range 36 Bit Proximity Card Format.
P C C C C C C C C C C C C C C C C C X X X X S S S S S S S S S S S S P P P
Where P = Parity bit. S = Site Code bit (12 bits) C = Card ID bit (16 bits)
X = Spare.

The General Site Code Type parameters would be programmed as follows:

Total Bits:	36	The total number of bits to be processed.
Site Size:	12	The number of Site Code bits.
Site Offset:	21	The number of bits before the Site Code data starts.
User Size:	16	The number of Card ID bits.
User Offset:	1	The number of bits before the usable* Card ID number starts.

EXAMPLE 3.
A batch of Mag Swipe Cards has a 10 character data format. e.g. 1234009776.
When this card is presented at a Reader using the Test Card Menu, the data displayed will be; 2143007967. This is because ISO2 Cards are encoded with each pair of characters swapped.
Note: When the system is programmed for "General" Site Code Type, it automatically swaps each pair when processing so that the data is presented in the correct order.

Testing other cards throughout the batch reveals that the 1st four characters (1234) are the same for all Cards. This data can be used as the Site Code.
The remaining data (009776) corresponds with the Card number printed on each Card. The last 5 characters of this data can therefore be used as the Card ID data.

The General Site Code Type parameters would be programmed as follows:

Total Bits:	10	The total number of characters to be processed.
Site Size:	4	The number of Site Code characters.
Site Offset:	0	The number of bits before the Site Code data starts.
User Size:	5	The max. number of Card ID characters that can be processed.
User Offset:	5	The number of characters before the usable Card ID characters start.

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Holdoff Siren Time: 000 min

Siren Holdoff Time. (V4.5 or later)
This screen allows a Siren Holdoff Timer to be programmed. The Timer can be programmed in 1 minute intervals from 0 to 127 minutes.

Set to 000: All Siren outputs will operate according to the Area Siren options, with no Holdoff delay.
Set from 1 to 127: Any Siren output activation in any Area to be delayed by the programmed Holdoff Time.

NOTE: The Siren Holdoff Timer has no effect on the operation of the Area Siren Auxiliary. The Siren Auxiliary will always operate with no Holdoff delay.

Any valid PIN Code that has permission to cancel Sirens, will only cancel the Sirens when the Sirens are sounding. If the PIN is entered during the Holdoff time before the Sirens are activated, the Sirens will not be cancelled.
If the Area is turned Off while the Holdoff Timer is running, the Holdoff Timer will expire immediately and the Sirens will be cancelled.

Example.
Siren mode is programmed for "Instant" operation. The Siren Time is 5 minutes and the Holdoff Siren Time is 2 minutes. When an alarm occurs:
-The Siren Timer and the Siren Holdoff Timer will start, and the Siren Auxiliary (if defined) will be activated.
-2 minutes after the alarm the Holdoff Timer expires and the Sirens are activated.
-7 minutes after the alarm the Sirens are cancelled after sounding for 5 minutes. (If not already cancelled by a valid PIN Code or Area Off)

Delay Report Time: 000 sec

Delayed Report Time. (V5 or later)
This screen allows a Report Delay Timer to be programmed for the "Delay Report" (Dial Holdoff) option now available in Dialer Comms Tasks.

The Timer can be programmed in 1 second intervals from 1 to 255 seconds.
If left at "000", a Default value of 30 seconds will be used.
See "Delay Report" in Process Group Extra Options (RNED...L screen) and Dialer Comms Task information for details.

Dual Wait Time: 000 sec

Dual User Wait Time. (V5.1 or later)
This screen allows a Dual User Wait Timer to be programmed for the "Dual User" option available in the Access Group Entry and Exit options.
The timer is programmable from 1 to 255 seconds, and if set to "000" a default value of 10 seconds will be used.

Card Wait Time: 000 sec

Card Wait Time. (V5.1 or later)
This screen allows a Card Wait Timer to be programmed for the "Waiting for Card" function used when enrolling Direct Entry Cards in User programming (MENU, 2, 1), or using the Test Card menu option (MENU, 4, 5).
The timer is programmable from 1 to 255 seconds, and if set to "000" a default value of 10 seconds will be used.

RF Module for Prog: F00

RF Module for Fob programming. (V5.1 or later)
This screen allows the RF Expander Module to be selected that will be used for Registering RF Fobs. If set to "00" the default Module F01 will be used.
When registered, Fob transmissions can then be received by any RF Expander Module in the system.
Fob registration is performed via MENU, 2, 7; or MENU, 7, 2, 0, 0, 2.

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Memory Defaulting

Memory Configuration Options

There are a range of Memory Configurations available in the Model 3000/4000. The actual numbers of various items available in any of the options will also depend on the size and version of the Memory Chip fitted to the Control Module. eg. The "Enlarged" option is not available with the 32K Memory Chip set.

The configurations currently available are:

Standard. Provides a balance of item numbers allowing for larger security installations with a generous number of access controlled doors and/or lifts.

Access Still provides for large security installations, but **expands the access control capabilities**.

Enlarged 128k and 512k configurations. This option decreases the number of access control features such as Doors, Door Lists, Access Modules and Interlocks but **expands input/output functionality** .
32k configuration. This option **provides 2 Intelligent 4 Door Access Modules** in addition to 2 Single Door / 2 Door Access Modules providing up to 12 Doors in total.

Apartments V4.5 or later. Provides a balance of item numbers with an emphasis on access control and automation functions. Also provides the option to assign an "Extra Door" and/or "Extra Door List" to any of the 2000 Users.

Access 2 V4.5 or later. Similar to the Access configuration but with Door control being mainly via Intelligent 4 Door Access Modules. Also provides a larger number of PIN codes/User names (2000) and LAN Power Supply Modules (16).

V2 Standard V3 to V4 only. This option allows a database created under the "Standard" Memory Configuration of version 2 firmware to be imported into a similar memory configuration of version 3 firmware or later.

V2 Access V3 to V4 only. This option allows a database created under the "Access" Memory Configuration of version 2 firmware to be imported into a similar memory configuration of version 3 firmware or later.

Special This option has been devised for special needs identified in each of the three Memory Size options.
In 32k: **Oriented toward Domestic applications** with additional Home Auxiliaries, Home Zones and DTMF Control Codes.
In 128k: **Additional Mini Expanders** supported for installations where Mini Expanders are the most suitable form of expansion. **Support for Intelligent 4 Door Access Module** (V3.5 or later)
In 512k: Similar to 512k Access but with additional PIN Codes, User Names, LCD Terminals and **support for Intelligent 4 Door Access Modules** (V3.5 or later). Has slightly fewer Doors, less standard Reader Modules and less Card Only Users.

Alarm This option has been devised for supporting larger numbers of 32 Zone Expander Modules to maximize the input / output capability of the system, in addition to generous Access Control capabilities.

XDoor 512k: V4.86 or later only. This option has been developed to provide 25,000 Users (4096 Normal Users & 20904 Card Only Users), with the ability to assign an "Extra Door" and/or "Extra Door List" to every User. Up to 96 Doors are supported on either Standard 1Door/2Door Reader Modules or Intelligent Reader Modules. Up to 16 Expander Modules, 16 LCD Terminals and 64 Areas are also supported.

Refer to the "Memory Configurations" section of this manual for complete details of all configurations.

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Memory Defaulting

CAUTION: IMPORTANT INFORMATION. This screen is used to completely erase all options programming in the system and re-set it back to factory default settings. Excercise extreme care - once erased, programming cannot be recovered unless an up-to-date copy is stored in an Upload/Download program.

```
Memory Default->
Don't default
```

This option is used to select which Memory Configuration is to be used in this system.
Press the Right Arrow key until the required configuration is displayed.

Note that you cannot change memory configurations without erasing all programming unless an Upload/Download software is used.

```
Memory Default->
Standard
```

When the required configuration is displayed, press the OK key.

```
Push '9' key to
Confirm Default
```

When this screen is displayed you have 10 seconds to push the "9" key to confirm that you wish to default the memory to the configuration selected.

IMPORTANT NOTE: Once the "9" key is pressed all programming will be erased in a fraction of a second and the memory defaulted to the required configuration.

Pressing any other key will abort the process and leave the current programming and configuration intact.

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Memory Expansion or Re-configuration.

The following procedures must be followed in order to expand an existing system to that of a different Memory Size and/or Configuration.
IMPORTANT NOTE: If upgrading the Control Module firmware Version, (with or without expanding the Memory) refer to "Firmware Upgrade" following the Diagrams.

1. You will need a PC or Laptop loaded with:
   - Insight V5.0.0 (or later) for Version 5.00 or later Control Module firmware.
   - WDirect V4.72 (or later) for Version 1 to V4.99 Control Module firmware.
     See notes below regarding V1 and V2 Control Module firmware.
     (PC DIRECT V4.01 (or later), may also be used for Version 3 to V4.39 Control Module firmware)
   - PC DIRECT V2.00c for Version 2 Control Module firmware.
   - IRPC3 V1.02b for Version 1 Control Module firmware.

The following table will assist in choosing the correct Upload/Download software.

Upload/Download Software	**Control Module Firmware Version**						
	V1	V2	V3	V3.5	V4	V4.5	V5
IRPC3 V1.02b	YES						
PC DIRECT V2.00c		YES					
PC DIRECT V4.01			YES	YES	YES		
Wdirect V4.72 or later.	YES*	YES*	YES	YES	YES	YES	
Insight V5.0.0 or later.					YES^	YES^	YES

* Some Database Entries will need to be checked after downloading V1 or V2 data back into the Control Module. It is advised to ensure that a hard copy of the current system programming exists before performing Memory Expansion or Re-configuration.
See "IF UPGRADING FROM V1.nn to V3.nn or later." and "OTHER CHECKS" on Page 9 of this section.

^ Upload Only.

2. You will also need:
   -A Programmer's manual of the same Version as the Control Module firmware.
   -Previous training and experience uploading and downloading to 3000/4000 product. If you are unsure during any stage of the upgrade STOP and consult your distributor, as data may be lost.

3. Perform a full upload of the system **as it exists** using the relevant copy of Upload/Download software described at Step 1 above.

4. IF fitting Memory Expansion, power the panel down and disconnect the battery.
   (NOTE: Damage may occur to the panel if power is not removed when changing chips).

5. IF fitting Memory Expansion remove the existing OPTIONS chip and RAMSIZE GAL or OPTIONS MICRO CHIP and fit the new OPTIONS and GAL / OPTIONS MICRO chips as shown in:
   -Diagram 1, IF Type 0 PCB. (Older V1 and V2 systems - Australia and New Zealand only)
   -Diagram 2, IF Type 1 PCB. ("Concept Access 4000 REV C" or later)
   -Diagram 3, IF Type 2 (CE) PCB. ("Concept 3K/4K CE. 935001 Rev. ?")
   NB: Ensure the jumper setting of the 28/32 Pin Link on the Control Module reflects the number of pins on the RAM chip.

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6. Power the panel up. The Control Module will run a short internal diagnostic test and illuminate LED 2 on the Control Module board to signify that the RAM has not yet been initialised. This is to be expected. To initialise the RAM, short the pins on LK4 on the Control Module board. The new RAM chip may then be defaulted to a suitable Memory Configuration <MENU>, 7, 5, 2.
   If Memory Expansion has just been fitted, the Memory configuration chosen should match the nature of the system's original database. (Standard, Access, etc.) See the relevant Programmers manual for Memory configuration details.

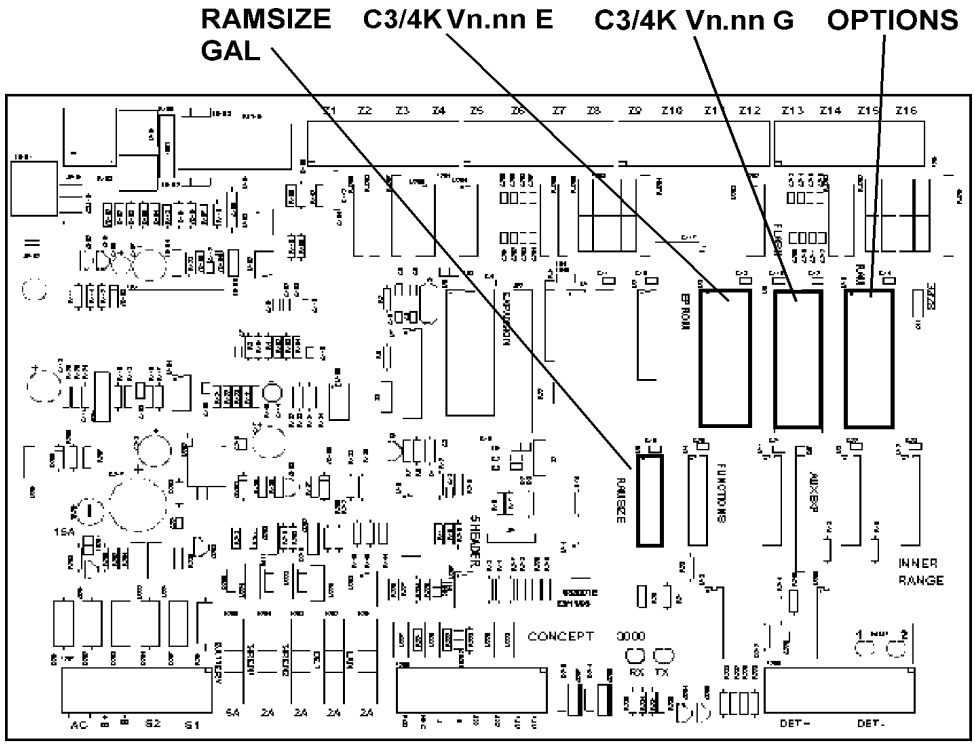
7. Using the LCD Terminal, set up a Comms Task in the panel for "PC Direct". If the previous database had a PCDirect Comms Task, keep the PCDirect Comms Task number in the new database the same as that of the previous database. Using the same Version of Upload/Download Software used to Upload from the panel in Step 3, download the database back into the panel.

8. When communications is first initiated, it will fail on the configuration comparison. This is because the new Memory size and/or configuration will have some different structures than the original Memory size and/or configuration. By viewing the communications report you may check the differences between the database (PC) and panel (upload configuration). As long as the panel configurations are larger than those in the database, no entries will be lost.
   In the event that any databases in the upload configuration are smaller, entries will be automatically deleted.

9. Assuming the panel has been defaulted to the best match configuration in Step 6, choose "USE UPLOAD CONFIGURATION" and then choose "Yes" at the database size warning. Once the Download is complete, a LAN initialize and Secure must be done. <MENU>, 7, 8, 1.

10. Do a complete upload into a version of Upload/Download Software that matches the Control Module firmware version again. This will now become the new client database for this site.

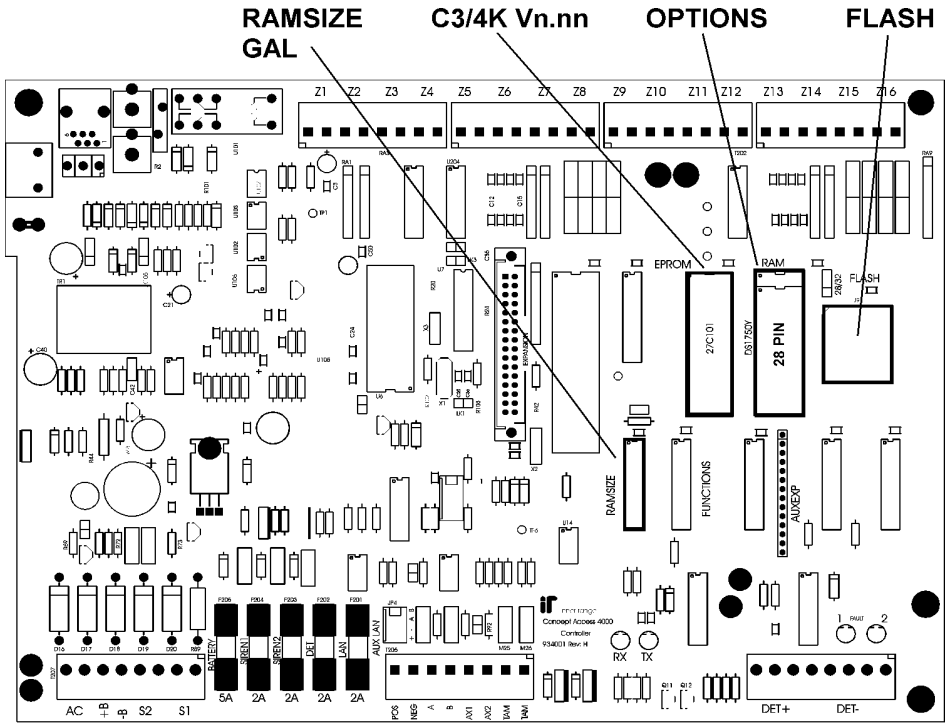
Diagram 1



3000 / ACCESS 4000 CONTROL MODULE, TYPE 0.

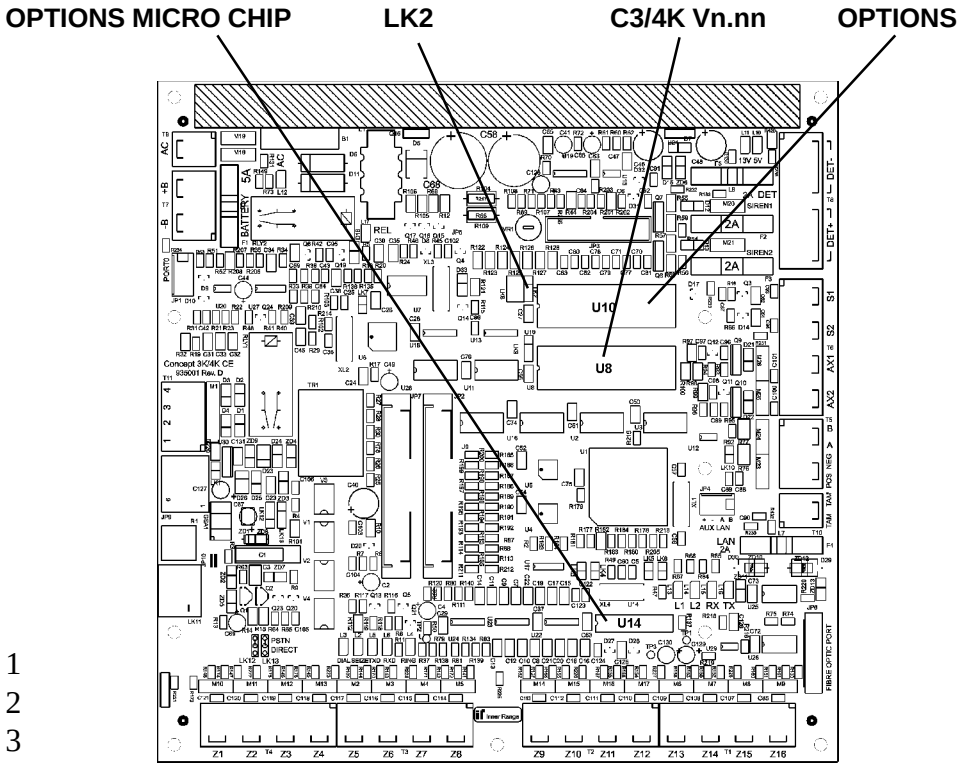
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Diagram 2



3000 / ACCESS 4000 CONTROL MODULE, TYPE 1.

Diagram 3



LK2



1
2
3

Link 1-2 32 Pin (128k or 512k Memory)
Link 2-3 28 Pin (32k Memory)

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Firmware Upgrade.

The following procedures must be followed in order to upgrade an existing system to Version 3.nn firmware or later.
This procedure describes the Firmware Upgrade with option for Memory Expansion to be performed at the same time.

IMPORTANT NOTES:

1) Type 0 Control Modules. V3 firmware or later cannot be fitted in Type 0 Control Module PCB Hardware. If upgrading a system with Type 0 Control Module to Version 3 or later, the Control Module will have to be replaced with current Type 1 or Type 2 Control Module PCB or later. To check Control Module PCB Type, press <MENU> (or <MENU>, 2 if prompted for a menu option) on the LCD Terminal. The scrolling message will display "PCB: 0" if Type 0, or "PCB: 1" if Type 1, or "PCB: 2" if Type 2 (CE).
Diagrams 1, 2 and 3 on the previous pages will also assist in identifying the PCB Type. (Type 1 PCB has the square "FLASH" RAM socket. Type 2 PCB is surface mount)

2) Special Firmware. If special firmware is used (e.g. Country specific, Distributor specific or Customer specific [LANkey], etc.), the upgrade firmware must be of the same type.
See "System Information" in the Overview & Introduction section.

3) LAN Key Firmware.
Type 0 Control Modules: LAN Key not available.
Type 1 Control Modules: Firmware upgrades do not affect the LAN Key settings.
Type 2 Control Modules: Special LAN Key Firmware must be ordered for upgrades.
NOTE: If a Control Module with the LAN Key option is returned to the factory for service, instructions must accompany the board to indicate if the LAN Key is to be retained.

4) Custom Memory Configurations.
Custom memory configurations are structured for the specific Firmware Version stream fitted to the Control Module at the time the configuration was developed. Different Firmware Streams are: V1, V2, V3, V3.5, V4, V4.5 & V5.
If upgrading to a new Firmware stream, a new Custom memory configuration must also be purchased. Contact your distributor for details of the current Custom Memory configuration pricing.
If upgrading the firmware to another version within the same stream, a new custom memory configuration is not necessary. (e.g. From V3.52 to V3.61 or From V4.01 to V4.08, etc.)
To detemine if a Control Module has a Custom Memory configuration, check the RAM details in the System Information screen on an LCD Terminal. e.g. RAM: 128K-CC-04.08 where "CC" is the configuration option.
If this number is 80 or greater, then the configuration is a custom configuration.
(At present, the factory configuration options are numbered 00 to 07)

PROCEDURE:

1. To maintain the existing programmed database whilst upgrading from V1 or V2 firmware to V3 firmware or later you will need a PC or Laptop loaded with:
-IRPC3 V1.02b (For upgrade from Version 1) or
-PC DIRECT V2.00c (For upgrade from Version 2)
This software is available from distributors free of charge.

2. Other Requirements:
-If upgrading to V3, PC DIRECT V3.00 (or later), or Wdirect V3.00 (or later) must be installed on the PC/Laptop.
-If upgrading to V3.5 or later, Wdirect V3.50 (or later) must be installed on the PC/Laptop.

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-If upgrading to V5.0 or later, Insight V5.0.0 (or later) must be installed on the PC/Laptop.
(Can only upgrade to V5 from V4 or later. Control Module must be Type 2 or later hardware)
-Programmer's manual/s of the same Version/s as the Control Module firmware.
-Previous training and experience uploading and downloading to 3000/4000 product. If you are unsure during any stage of the upgrade STOP and consult your distributor, as data may be lost.

3. Before proceeding a full upload of the system **as it exists** must be performed using the relevant copy of Upload/ Download software. This is required in case any corruption occurs or data is accidentally lost during the upgrade.
If V1 firmware use IRPC3 V1.02b.
If V2 firmware use PCDirect V2.00c.
If V3 firmware use PCDirect V3.00 (or later) or Wdirect V3.00 (or later)
If V3.5 firmware or later use WDirect V3.50 or later. (WDirect must not be an earlier version than the firmware)
If V5 firmware or later use Insight V5.0.0 or later.

4. If Upgrading to a Version from V3 to V4.99:
Using WDirect V4.72 (or later), create a new client and take a full Upload from the panel.
(This is in addition to the previous Upload)
If upgrading from V4.0 or later to V5.0 or later:
Using Insight V5.0.0 (or later), create a new client and take a full Upload from the panel.
(This is in addition to the previous Upload)

5. Power the Control Module down and disconnect the battery.
(NOTE: Damage may occur to the panel if power is not removed when changing chips).

6. IF Type 0 PCB:
   a) If upgrading the firmware to V3 or later replace the Type 0 Control Module with a Type 1 or Type 2 Control Module that has V3.nn (or later) firmware fitted.
   b) If upgrading the Memory size, remove the existing OPTIONS chip and RAMSIZE GAL / OPTIONS MICRO CHIP and fit the new OPTIONS and GAL / OPTIONS MICRO chips as shown in diagram 2 or 3 on the previous pages.

   NB: Ensure the jumper setting of the 28/32 Pin Link on the Control Module reflects the number of pins on the RAM chip.

   IF Type 1 PCB ("Concept Access 4000 REV C" or later):
   a) If upgrading the firmware to V3, remove the existing firmware chip and fit the new V3.nn chip as shown in diagram 2 on the previous page.
   b) If you are upgrading the Memory size, remove the existing OPTIONS chip and RAMSIZE GAL and fit the new OPTIONS and GAL chips as shown in diagram 2 on the previous pages.

   IF Type 2 PCB ("Concept 3K/4K CE" or later):
   a) If upgrading the firmware to Vn.nn , remove the existing firmware chip and fit the new Vn.nn chip as shown in diagram 3 on the previous page.
   b) If you are upgrading the Memory size, remove the existing OPTIONS chip and OPTIONS MICRO CHIP and fit the new OPTIONS and OPTIONS MICRO chips as shown in diagram 3 on the previous pages.

7. Power the panel up and default it to the appropriate Memory Configuration <MENU>, 7, 5, 2. (If upgrading the firmware, pick the configuration best suited to the previous Version of firmware). See the Default Memory configurations tables in the "Memory Configurations" section of this manual for details of all Memory configurations.

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8. NOTE: If upgrading the firmware from Version 1, the "E" type expanders in V1.nn are now "B" type expanders. All zones and relevant auxiliaries previously programmed as an "E" will be automatically converted to a "B" and saved in their original position. However, it should be noted that in most configurations in V3 there are now less "B" type expanders than in V1.nn.

9. Set up a Comms Task in the panel for "PC Direct" (For PCDirect or WDirect) or "IR-IP" (For Insight). If the previous database had a PCDirect or IRIP Comms Task, keep the Comms Task number in the new database the same as that of the previous database. Using the Version of Upload/Download software used to Upload from the panel in Step 4, download the database back into the panel.

10. When communications is first initiated, it will fail on the configuration comparison. This is because V3.nn has many more structures than V1.nn or V2.nn. It may also be because you have fitted Memory Expansion.
By viewing the communications report you may check the differences between the database (PC) and panel (upload configuration). As long as the panel configurations are larger than those in the database, no entries will be lost.

    However, should any database in the upload configuration be smaller, entries will be automatically deleted. An example is the panel when fitted with V1.07 with a 128k ram was defaulted to Access, giving 1000 users with names. When fitted with V3.nn it was defaulted to standard which has 2000 users but only 100 with names, consequently 900 user names are deleted. This is why a backup copy is always recommended.

11. Assuming the panel has been defaulted to the best match configuration in Step 7, choose "USE UPLOAD CONFIGURATION" and then choose "Yes" at the database size warning. Once the Download is complete, a LAN initialize and Secure must be done. <MENU>, 7, 8, 1.

12. Do a complete upload into the Upload/Download software again. This will now become the new client database for this site.

IMPORTANT: Please read the following notes on Upgrading from specific Versions.

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IF UPGRADING FROM V1.nn to V3.nn or later.

After the download is complete, a <MENU> 7, 8, 9 system reset must be performed. Once this has been completed a LAN initialize and Secure must be performed again.
After this is done open a new client within PC direct and do a full upload. This will set all TimeZones within the Upload to the new type.
The TimeZones must then be checked and altered by the installer to match the parameters that were set in the previous version of firmware to achieve the same operation. (TimeZone structures were changed after V1)
If this is not performed, the original TimeZone data will not be able to be viewed or edited.

Once this is achieved, a full system check must be done to ensure correct operation of the entire system and all communications. Once this is confirmed the first upload client in PC DIRECT may be deleted as it is no longer needed.

OTHER CHECKS

After upgrading from V1 or V2 to V3, check the settings of the following options to ensure they are set as required:

1. "S"ummary option in Input Programming. May be set to Yes. Set to No unless specifically required.
2. "S"ingle Hit in the Comms options in Process Groups. May be set to Yes. Set to No unless specifically required.
3. "R"eview in the "Options Access" options in Menu Groups.
   New option. Will need to be set to Yes in any Menu Groups that are to allow access to Review. (MENU, 1, 1)
   (Note that the "R"eview & Info Menu option in the "Menu" options, must also be set to Yes)
4. Interlock Groups assigned to Doors. Check that unwanted Interlock Groups have not been assigned.
5. Lift Programming. Check all programming for Lifts.

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Function Zones

Function Zones allow certain specified Zones/Inputs to be singled out to perform special operations in addition to their normal operation. Up to 250 Function Zones may be defined, depending on the current memory size and configuration.

Function Zones are used for two main purposes:-

1. Operate an Auxiliary independent of Area (eg. unique to one or more inputs) OR turn On and/or Off an Auxiliary when the Zone/Input changes state.

2. Turn ON / OFF an Area (or Areas) when the Zone/Input changes state.

(Users of the 2000 system will recognise these functions as "Function Auxiliaries" and "Key-switch Zones" in the 2000 system).

ENABLING FUNCTION ZONES

In Order for Function Zones to operate they must be assigned to an Area that is turned ON.

Function Zones are used to trigger Auxiliaries or turn Areas On and Off by the state of a Zone. The operation of a Function Zone is independent of Area and Process Group operation. However, for a Function Zone to activate, the Zone to be used for the function must be enabled.

This is achieved by placing that Zone in an Area with a Process Group that must at least process alarms; and then ensuring that this Area is turned on. This procedure is required because all Zone Inputs on remote modules are normally in the disabled state to minimise unwanted LAN traffic.

Function Zones **cannot** be Enabled and Disabled by simply turning the Area On and Off. If the result of a Function Zone needs to be disabled from time to time, a Calculated Auxiliary which can be User controlled should be used.

Example: Use 1st and 2nd (where 1st is the Function Zone Auxiliary and the 2nd is a Home Auxiliary) to effectively prevent the result from activating. A "Close" Auxiliary in an Area could also be used in place of the Home Auxiliary to disable the result.

IMPORTANT ADDITIONAL NOTES:

V1.00 to V3.5x:
The following applies if Function Zones are programmed via a PC then downloaded to the Control Module.
The Installer must then access the Function Zone programming menu (MENU, 7, 5, 3) via an LCD Terminal and scroll through each option in each Function Zone programmed in order to enable the Function Zone.

V4.00 or later:
Any Area that has Zone Inputs assigned that are used in Function Zones must now have the "F"unction Zone Area option set to "Y"es in the Miscellaneous Area Options screen. When this option is set, when a change of state occurs on a Zone Input in that Area, the system will scan the Function Zones to check whether that Zone is used in a Function Zone and then process the Zone accordingly. *See Area Programming. MENU, 7, 1.*
It is recommended that Zones used in Function Zones are assigned to separate Areas set aside for that purpose, or to Areas that do not have a lot of Zone activity, such as a System Area.
Avoid assigning these Zones to Areas that have a lot of other Zone Inputs assigned that generate large amounts of Zone activity.

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```
Func. Zone to
alter: FZ001
```

This screen allows a Function Zone to be selected for programming.

```
FZ001 Input:
C01:Z03
```

This screen allows the Installer to select what Zone/Input is going to be associated with this Function Zone. Any Zone or System Input from within the 3000/4000 system can be chosen.

```
FZ001 Aux. OFof
Control -> YnnY
```

This screen selects whether the Function Zone is going to be used for Auxiliary control:

O This option turns an Auxiliary ON when the Zone/Input seals

F This option turns an Auxiliary OFF when the Zone/Input seals

o This option turns an Auxiliary ON when the Zone/Input un-seals

f This option turns an Auxiliary OFF when the Zone/Input un-seals

Note that if a Toggle On/Off operation is required for use with Input devices such as spring return key switches, this can be provided by:
-Setting both of the Upper case "O" and "F" options to Yes if the toggle action is to occur when the Input changes to the seal state.
-Setting both of the Lower case "o" and "f" options to Yes if the toggle action is to occur when the Input changes to the un-seal state.

```
FZ001 Output
Aux:   C01:X03
```

This screen allows an output Auxiliary to be chosen to operate as per the previous options selected.

```
FZ001 Area OFof
Control -> YnnY
```

This screen selects whether the Function Zone is going to be used for Area control:

O This option turns Area/s ON when the Zone/Input seals

F This option turns Area/s OFF when the Zone/Input seals

o This option turns Area/s ON when the Zone/Input un-seals

f This option turns Area/s OFF when the Zone/Input un-seals

Note that if a Toggle Area On/Off operation is required for use with Input devices such as spring return key switches, this can be provided by:
-Setting both of the Upper case "O" and "F" options to Yes if the toggle action is to occur when the Input changes to the seal state.
-Setting both of the Lower case "o" and "f" options to Yes if the toggle action is to occur when the Input changes to the un-seal state.

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FZ001 Use Area List? n

This screen selects whether an Area List, instead of a specific Area is going to be used for defining Area Control. This provides the options of Function Zone control over single or multiple Areas.

FZ001 Arm Area -> HOUSE

This screen will be displayed if "Use Area List" above is set to "n". It specifies which Area will be controlled by this Function Zone according to the previous options. To select an Area press the right arrow key to scroll through all available Areas alphabetically. Press the OFF key to select no Area control.

FZ001 Area to Operate: A001

The ON key may be used to change modes to allow an Area to be selected by number if desired.

FZ001 ON List -> Staff Areas

This screen will be displayed if "Use Area List" above is set to "Y". It specifies which Area List will be used to determine the Area/s controlled by this Function Zone according to the previous options. To select an Area List press the right arrow key to scroll through all available Areas Lists alphabetically. Press the OFF key to select no Area List.

FZ001 ON List AL002

The ON key may be used to change modes to allow an Area List to be selected by number if desired.)

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Removing All programming from ALL Function Zones

There exists an easy and efficient method of removing ALL programming from ALL Function Zones. This is explained below:

Func. Zone to alter: FZ001	At the first Function Zone Programming screen press HELP, "9".
F.Zone Default -> Don't Default	This screen is then displayed. Available defaulting options are viewed by pressing the right Arrow Key. To make a selection, press the OK Key.
Don't Default	Selecting this option will abort the procedure.
Clear All	Selecting this option will remove ALL programming from ALL Function Zones.
Push '9' key to Confirm Default	The confirmation screen is displayed. Press the "9" Key to confirm your selection.
Default Done	The default procedure is confirmed.

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Calculated Auxiliaries

Calculated Auxiliaries are a very powerful feature of the system that allows all sorts of logical actions to be set-up without external wiring or timers. Basically, a Calculated Auxiliary is an Auxiliary or Action that will turn on or off, based upon the operation of one or two other Auxiliaries. One of the simplest Calculated Auxiliaries is specifying one Auxiliary to always follow another Auxiliary.

When a Calculated Auxiliary Action controls an Auxiliary, the Auxiliary that is to be controlled is called the "Result" Auxiliary. There can be one or two Auxiliaries that control the "Result" Auxiliary. These are called the "1st" and "2nd" Auxiliaries. The type of control that you wish to use is called the "Action" that you wish to perform.

If required, the "Result" can be programmed to trigger a Zone Input instead of an Auxiliary, allowing Alarm or other Zone Input functions to be generated by Calculated Auxiliary actions.

When a Calculated Auxiliary Action controls an Area, Door, Lift Floor, Counter Reset or other process, only the 1st Auxiliary can be assigned to control the Action.

The number of Calculated Auxiliaries allowed to be defined depends upon the current memory configuration up to a maximum of 250.

Level Triggered versus Edge Triggered Calculated Auxiliaries

There are two distinct types of Calculated Auxiliaries:

1. **Level Triggered** Calculated Auxiliaries will continuously check the state of the 1st and/or 2nd Auxiliary and hold the Result in the specified state.

   The Auxiliary (or Zone) assigned as the Result Auxiliary (or Zone) should never be used as the Result entity in more than one Calculated Auxiliary or attempt to be controlled by any other system function. Any attempt to control the Result Auxiliary (or Zone) via other means such as a TimeZone, Function Zone or Area Auxiliary etc, will always be overridden by a Level Triggered Calculated Auxiliary.

   The Level Triggered Actions are:
   - EQUAL to 1st
   - OPPOSITE to 1st
   - 1st AND 2nd
   - 1st OR 2nd
   - 1st OPPOSITE 2nd

   NOTE: Auxiliary List must not be assigned to Level Triggered Actions.

2. **Edge Triggered Calculated Auxiliaries** will look for any change of state on the 1st and/or 2nd Auxiliaries and then perform the "Result" action if appropriate. No further action will be performed unless a relevant change of state occurs again on the 1st and/or 2nd Auxiliaries.

   Edge Triggered Calculated Auxiliaries can therefore be used when a Result Auxiliary needs to be controlled by a variety of different means.

   eg. Outdoor lighting may be turned on for 5 minutes when movement is detected outdoors OR the Garage Door is opened OR an alarm is activated. The same outdoor lighting may be turned on permanently when a Home Auxiliary is turned on OR the "Holiday" TimeZone is valid.

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Calculated Auxiliary Actions

Action	Operation	Trigger Type	Introduced
None	Result Aux is not affected.		
EQUAL to 1st	Result Aux will be held ON if 1st Aux is ON. Result Aux will be held OFF if 1st Aux is OFF. 2nd Aux has no effect.	Level	V1
OPPOSITE to 1st	Result Aux will be held ON if 1st Aux is OFF. Result Aux will be held OFF if 1st Aux is ON. 2nd Aux has no effect.	Level	V1
ON if 1st ON	Result Aux will turn ON if 1st Aux turns ON. Result Aux will not be affected if 1st Aux turns OFF. 2nd has no effect.	Edge	V1
OFF if 1st OFF	Result Aux will turn OFF if 1st Aux turns OFF. Result Aux will not be affected if 1st Aux turns ON. 2nd has no effect.	Edge	V1
ON if 1st OFF	Result Aux will turn ON if 1st Aux turns OFF. Result Aux will not be affected if 1st Aux turns ON. 2nd has no effect.	Edge	V1
OFF if 1st ON	Result Aux will turn OFF if 1st Aux turns ON. Result Aux will not be affected if 1st Aux turns OFF. 2nd has no effect.	Edge	V1
1st OR 2nd	Result Aux will be held ON if 1st Aux OR 2nd Aux is ON. Result Aux will turn OFF when the 1st Aux and 2nd Aux are **both** turned OFF.	Level	V1
1st AND 2nd	Result Aux will be held ON if 1st Aux AND 2nd Aux are ON. Result Aux will turn OFF if either the 1st Aux **or** 2nd Aux are turned OFF.	Level	V1
1st OPPOSITE 2nd	Result Aux will be held ON if 1st Aux is opposite state to 2nd Aux. Result Aux will turn OFF if the 1st Aux and 2nd Aux are in the same state. (XOR - Exclusive OR)	Level	V1
Area Control	Area or Area List, as programmed on a separate screen, will turn ON and/or OFF when the Auxiliary turns ON and/or OFF according to the option programming. (2nd Aux is not used)	Edge	V1
Amnesty +ON	Every User's current location is set to "Not found" (ie. Outside the access system) whenever the 1st Auxiliary is turned ON. (2nd Aux is not used). This provides User Amnesty for Anti-passback. By tying the 1st Auxiliary to TimeZone, Area, Home Auxiliary etc, that item can, via the Calculated Auxiliary, control when Amnesty is granted. When Amnesty is granted, a review message is saved once for all users.	Edge	V1
Amnesty -OFF	Every User's current location is set to "Not found" (ie. Outside the access system) whenever the 1st Auxiliary is turned OFF. (2nd Auxiliary is not used) See description above.	Edge	V1
Lock on +ON	Lock all Doors in the specified Door List (turn off door lock Auxiliaries) whenever the 1st Auxiliary turns ON. (2nd Auxiliary is not used) This provides a very useful feature for general door control. By tying the 1st Auxiliary to TimeZone, Area, Home Auxiliary, Function Zone etc, that item can, via the Calculated Auxiliary, lock and/or unlock Doors.	Edge	V1
Unlock on +ON	Unlock all Doors in the specified Door List (turn on door lock Auxiliaries) whenever the 1st Auxiliary turns ON. (2nd Auxiliary is not used) See description above.	Edge	V1
Lock on -OFF	Lock all Doors in the specified Door List (turn off door lock Auxiliaries) whenever the 1st Auxiliary turns off. (2nd Auxiliary is not used) See description above.	Edge	V1

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Action	Operation	Trigger Type	Introduced
Unlock on -OFF	Unlock all Doors in the specified Door List (turn off door lock Auxiliaries) whenever the 1st Auxiliary turns off (2nd Auxiliary is not used) See description above.	Edge	V1
Secure on +ON	Secure all Floors in the specified Floor List for a specified Lift Car (turn all relevant floor Auxiliaries ON) whenever the 1st Auxiliary turns ON. (2nd Auxiliary is not used) Along with the three following options, this provides a very useful feature for general lift control. By tying the 1st Auxiliary to TimeZone, Area, Home Auxiliary, Function Zone (keyswitch, etc, that item can, via the Calculated Auxiliary, Secure and /or provide free access to floors. If a Calculated Auxiliary attempts to upgrade floor button Auxiliaries whilst a lift is being accessed by a User, the Calculated Auxiliary action will be deferred until the end of the button time.	Edge	V1
Free on +ON	Provide Free Access to all Floors in the specified Floor List for a spacific Lift Car (turn all relevant floor Auxiliaries off) whenever the 1st Auxiliary turns ON (2nd Auxiliary is not used). See description above.	Edge	V1
Secure on -OFF	Secure all Floors in the specified Floor List for a specified Lift Car (turn all relevant floor Auxiliaries On) whenever the 1st Auxiliary turns Off. (2nd Auxiliary is not used). See description above.	Edge	V1
Free on -OFF	Provide Free Access to all Floors in the specified Floor List for a specific Lift Car (turn all relevant floor Auxiliaries Off) whenever the 1st Auxiliary turns Off (2nd Auxiliary is not used). See description above.	Edge	V1
Area Cnt=0 +ON	This function allows the Area Count for a specified Area to be cleared whenever a pre-defined Auxiliary is turned ON. (This will not alter the state of the Count Auxiliary)	Edge	V2
Area Cnt=0 -OFF	This function allows the Area Count for a specified Area to be cleared whenever a pre-defined Auxiliary is turned OFF. (This will not alter the state of the Count Auxiliary)	Edge	V2
ON / OFF with 1st	Result Aux will follow (mimic) changes of state on the 1st Aux (Combination of "ON if 1st ON" and "OFF if 1st OFF".) It is Different from"EQUAL to 1st" as this Action is Edge Triggered.	Edge	V2
Ripple Counter	Auxiliaries in Result Auxiliary List will be triggered in turn on 1st Auxiliary action according to the Result Auxiliary List options. Only the "F" and "o" options are relevant. The Auxiliary timer option ("O" and "M") can also be used with this action. An Auxiliary List MUST be used with at least the first Auxiliary defined.	Edge	V2
Event Cnt=0 +ON	This allows the defined counter to be reset to a value of "0" when the defined Auxiliary is turned ON.	Edge	V3
Event Cnt=0 -OFF	This allows the defined counter to be reset to a value of "0" when the defined Auxiliary is turned OFF.	Edge	V3
Reset Alarms +ON	Causes the "ON key Lockout" function to be reset for all Areas that have transmitted an alarm in the last arming period and are now turned Off (disarmed). Provides for remote reset via STU output pin, DTMF control or GSM modem, etc. *See "No ON key **L**ockout" in the General System options for more information.*	Edge	V4.5 Used with "UK" firmware ONLY.

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```
Calculated Aux.
to alter: CA001
```

This screen allows a Calculated Auxiliary to be selected for programming.

```
CA001 Action  ->
EQUAL to 1st
```

This screen selects the manner in which the Result Auxiliary or another action will be controlled by the other two Auxiliaries. Use the right arrow key to select the desired action. The next screen to be displayed will depend upon the action selected. Press OFF to set to "None" or refer to the previous table for option details.

```
CA001 Trigger
Zone ? n
```

This screen is displayed if one of the Auxiliary logic actions are selected. It allows the Programmer to select whether the Calculated Auxiliary action will trigger an Auxiliary or a Zone Input.

```
CA001 Result
Aux:  C01:X03
```

If "Trigger Zone" above is set to "n", this screen is displayed to allow the Programmer to select the Auxiliary or Auxiliary List that is going to be controlled by the 1st and/or 2nd Auxiliaries in the Calculated Auxiliary logic.
In the instances where the Result Auxiliary is not actually used, (Amnesty, Area Control & Door/Lift Control actions) this screen is not displayed. Any Auxiliary on any module that is currently present in the system can be chosen.

To assign an Auxiliary List, press the ON Key.

```
CA001 Result OFof
XList Opts:  nnnn
```

This screen selects the manner in which the Auxiliary List will be controlled.
If all options are set to "n" and the OK key is pressed, the screen for selecting an individual Auxiliary to trigger will be displayed.
ie. At least one of these options must be set if you wish to assign an Auxiliary List.

O	List **O**n if Aux On	Set means turn Auxiliary List On when Auxiliary On.
F	List O**F**F if Aux On	Set means turn Auxiliary List Off when Auxiliary On.
o	List **o**n if Aux Off	Set means turn Auxiliary List on when Auxiliary Off.
f	List o**f**f if Aux Off	Set means turn Auxiliary List off when Auxiliary Off.

```
OFof          SOME TYPICAL SETTINGS
Ynnn  All Auxes in List ON when 1st ON
YnnY  All Auxes in List ON when 1st ON; OFF when 1st Off
nYYn  All Auxes in List OFF when 1st ON; ON when 1st Off
YYnn  All Auxes in List Toggle state when 1st ON
```

See "Auxiliary List Programming" MENU 2,3,6 for further details.

```
CA001 Result Aux
List: XL002
```

This screen allows the Programmer to select the Auxiliary List that is going to be controlled by other Auxiliaries in the Calculated Auxiliary logic.

NOTES:

1. If an Auxiliary List is assigned the Timer **must not** be used.
2. Auxiliary List **must not** be assigned to "Level Triggered" Calculated Auxiliary Actions.

ie. EQUAL to 1st, OPPOSITE to 1st, 1st AND 2nd, 1st OR 2nd, 1st OPPOSITE 2nd

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Phantom Auxiliaries

A number of spare Control Module Auxiliaries exist which do not have any outputs. (C01:X11 to C01:X32) These can be useful in Calculated Auxiliary programming as an intermediate or phantom Auxiliary when using a number of Calculated Auxiliaries to perform a function and should be always be used before any other Auxiliaries are used (for faster processing).

Eg. When cascading Calculated Auxiliaries to create a Boolean expression with more than two inputs, such as;

C01:X04 AND C01:X07 AND E02:X03 = T02:X02,

the following two Calculated Auxiliaries could be programmed:

Function	1st	2nd	Result
1st+2nd	C01:X04 AND	C01:X07	= C01:X28
1st+2nd	C01:X28 AND	E02:X03	= T02:X02

```
CA001 Trigger
Zone: C01:Z01
```

If "Trigger Zone" above is set to "Y, this screen is displayed to allow the programmer to select the Zone Input that is going to be controlled by the Calculated Auxiliary logic. Any Zone Input on any module that is present in the system can be chosen. (Avoid using System Inputs)
When "Trigger Zone" is used, the Zone Input will go into Alarm when the Calculated Auxiliary Result is On and will Restore when the Result is Off. When in alarm, the Input will be processed in exactly the same way as any other Zone Input.

For a Trigger Zone to function correctly the Zone Input must be assigned a Process Group, programmed into an Area and the Area must be On.

As a general rule, when a Zone is used in a Calculated Auxiliary it should not be used as a wired Zone and when a Zone is used as a wired Zone it should not be used in a Calculated Auxiliary.

If the selected Zone Input is also a wired Zone Input, the state of the input will momentarily be determined by the Calculated Auxiliary but will then resort back to the physical state of the input. To prevent this from occurring, the use of wired Zone Inputs in Calculated Auxiliaries should firstly be avoided and secondly, the "Calculated Zone" flag should be set to "Y" within the Input's Programming options. This option causes all physical changes of state on the Zone Input to be ignored.

Advanced Programmers may wish to note that, under exceptional circumstances, Edge Triggered Calculated Auxiliaries may be used to cause a wired Zone Input to **momentarily** change its state. This momentary change of state may, in turn, be used to start an Auxiliary Timer or similar. This is achieved by leaving the "Calculated Zone" flag set to "n" in the Zone's Programming options.

Area Control Option

If "Area Control" was selected above, the following screens will be displayed before the screens for programming the "1st" and "2nd" Control Auxiliaries.

```
CA001 Area OFof
Control:   nYYn
```

This screen selects how the Calculated Auxiliary is going to be used to turn an Area or Areas On and/or Off:

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O	ON when Aux Off	Set means turn Area/s ON when 1st Auxiliary turns Off
F	OFF when Aux Off	Set means turn Area/s OFF when 1st Auxiliary turns Off
o	ON when Aux On	Set means turn Area/s ON when 1st Auxiliary turns On
f	OFF when Aux On	Set means turn Area/s OFF when 1st Auxiliary turns On

```
CA001 Use Area
List?   n
```

This screen selects whether an Area List, instead of a specific Area, is going to be used for defining Area Control. This provides the options for Calculated Auxiliary control over single or multiple Areas.

If "Use Area List" above is set to "n", the following screen will be displayed.

```
CA001 Arm Area ->
HOUSE
```

```
CA001 Area to
Operate: A001
```

This screen specifies which Area will be controlled by this Calculated Auxiliary according to the previous option. To select an Area press the right arrow key to scroll through all the available Areas alphabetically. Press the OFF key to select no Area control. (The ON key may be used to change modes to allow an Area to be selected by number if desired).
If "Use Area List" above is set to "Y", the following screen will be displayed.

```
CA001 ON List
AL002
```

This screen specifies the Area List that will be used to determine the Area/s controlled by this Calculated Auxiliary according to the previous options. To select an Area List, programme the Area List number with the digit keys and the left and right arrow keys. Press the Off key to select no Area List.

Door Control Options

If a "Lock..." or "Unlock..." action was selected as the function, the following screen will be displayed before the screens for programming the 1st and 2nd Control Auxiliaries.

```
CA001 Door List
DL003
```

This screen specifies the Door List that will be used to determine the Door/s controlled by this Calculated Auxiliary according to the action selected. To select a Door List, programme the Door List number with the digit keys and the left and right arrow keys. Press the OFF key to select no Door List.

Lift Control Options

If a "Secure on ..." or "Free on ..." action was selected as the function, the following screen will be displayed before the screens for programming the 1st and 2nd Control Auxiliary.

```
CA001 Lift Car
to use:  LC002
```

This screen specifies the Lift Car that will be controlled by this Calculated Auxiliary. To select a Lift Car, programme the Lift number with the digit keys and the left and right arrow keys. Press the OFF key to select all Lift Cars (LC000).

```
CA001 Floor List
FL004
```

This screen specifies the Floor List that will be used to determine the Floor button enable auxiliaries controlled by this Calculated Auxiliary according to the action selected. To select a Floor List, Programme the Floor List number with the digit keys and the left and right arrow keys. Press the OFF key to select no Floor List. Only floor button enable Auxiliaries that belong to the Lift Car specified above will be controlled by this Calculated Auxiliary.

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Clear Area User Count Options

If either of the "Area Cnt=0" actions were selected as the function, the following screen will be displayed.

```
CA001 Area   ->
STRONG ROOM
```

This screen selects the Area that will have the counter cleared according to the action selected. Use the right arrow key to scroll through the list of Areas or press the On key to select an Area by number.

Clear Event Counter Options

If one of the "Event Cnt=0" actions was selected as the function, the following screen will be displayed before the screens for programming the 1st and 2nd Control Auxiliaries.

```
CA001 Counter ->
Camera 1 Film
```

This screen allows the programmer to specify the counter which will be reset by the function.

Control Auxiliaries

```
CA001 1st
Aux:  C01:X03
```

This screen allows the User to select the 1st Auxiliary that is going to be used to control the Result Auxiliary. Any Auxiliary can be chosen in the 3000/4000 system.

```
CA001 2nd
Aux:  C01:X03
```

This screen allows the User to select the 2nd Auxiliary that is going to be used to control the result Auxiliary. Any Auxiliary can be chosen in the 3000/4000 system. For many selected actions the 2nd Auxiliary will be ignored.

```
CA001 Result   OM
Aux Options    nn
```

This screen allows the Installer to programme various Result Auxiliary timer options: Do not use the timer options if assigning an Auxiliary List as the Result Auxiliary. If timing is required, use Auxiliary Timers (MENU 5, 5).

O **O**verride Time — If set to "Y", the timing parameters associated with this function will over-ride any existing timing condition that is currently running on the Auxiliary.

M **M**inute Timer — If set to "Y", the time period specified in the following screen will be in minutes. If left at "n", the time will be in seconds.

```
CA001 Result Aux
Time: 000 sec/min
```

This option allows the Calculated Auxiliary action to be timed. To enable the timer option, programme the time period in seconds or minutes (As specified above). To disable the timer option, ensure the time period is set to 000.

NOTE:

1. Over-ride times have no effect if the Result Auxiliary is controlled by a Level Triggered Action.

2. Do not use the timer options if assigning an Auxiliary List as the Result Auxiliary. If timing is required, use Auxiliary Timers (MENU 5, 5).

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Removing All programming from ALL Calculated Auxiliaries

There exists an easy and efficient method of removing ALL programming from ALL Calculated Auxiliaries. This is explained below:

Calculated Aux to alter: CA001	At the first Calculated Auxiliary Programming screen press HELP, "9".
C.Aux Default -> Don't Default	This screen is then displayed. Available defaulting options are viewed by pressing the right Arrow Key. To make a selection, press the OK Key.
Don't Default	Selecting this option will abort the procedure.
Clear All	Selecting this option will remove ALL programming from ALL Calculated Auxiliaries.
Push '9' key to Confirm Default	The confirmation screen is displayed. Press the "9" Key to confirm your selection.
Default Done	The default procedure is confirmed.

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Home Auxiliaries

Home Auxiliaries are specific Auxiliaries within the 3000/4000 system that are meant to be used by Users directly in day to day operations. To make operation of these Auxiliaries easier and more user-friendly, a name can be assigned to them. The number of Home Auxiliaries is dependant on memory size and configuration up to a maximum of 250.

A Home Auxiliary can be controlled by a Zone Input, if required, allowing facilities such as lighting and Air-conditioning to simultaneously execute a number of control options.

Example: Outdoor lighting is controlled from an LCD Terminal as well as a push button switch.

See "Home Auxiliaries" in the Application Programming section and "Home Auxiliaries for Zones" in Process Group Programming [MENU 2,4,3].

Home Auxiliaries can also be controlled by SMS text commands from a mobile phone via the GSM Comms Task. (V3.5 or later)
See GSM Comms Task programming (Comms-17) in the "Comms Task Formats" section for more information.

```
Home Aux. to
program: HA001
```

This screen allows a Home Auxiliary to be selected for programming. By pressing the ON Key, the operator is allowed to search alphabetically for a Home Auxiliary name using the digit keys and the up and down arrows.

```
Find Home Aux ^
POOL PUMP
```



```
HA001 Name:
POOL PUMP
```

A name can be assigned to each Home Auxiliary up to 16 characters long. Naming your Home Auxiliaries is recommended as it makes system administration easier and also simplifies operation for the end user.

```
HA001 Aux:
C01:X03
```

This screen allows the User to select the Auxiliary to be allocated to this Home Auxiliary. Any Auxiliary within the 3000/4000 system can be chosen.
Alternatively, press the On Key to assign an Auxiliary List.

```
HA001        OFof
XList Opts:  nnnn
```

If the On Key has been pressed at the previous screen and an Auxiliary List is to be assigned, this screen is then displayed. At this point the Installer can determine the operation of the Auxiliary List.

O	List **O**N if HAux On	Set means turn Auxiliary List On when the Home Auxiliary turns On.
F	List O**F**F if HAux On	Set means turn Auxiliary List Off when the Home Auxiliary turns On.
o	List **o**n if HAux Off	Set means turn Auxiliary List on when the Home Auxiliary turns Off.
f	List o**f**f if HAux Off	Set means turn Auxiliary List on when the Home Auxiliary turns Off.

```
HA001 Aux:
List: XL000
```

This screen allows the Installer to specify the Auxiliary List to be turned On and /or Off as per the previous screen.

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```
HA001    12345678
Type -> YnYnnnnn
```

This screen allows a type to be assigned for this Home Auxiliary. The type is used in conjunction with User Type programming to determine which User (Types) are allowed to control which Home Auxiliaries from the main control menu.

```
HA001     TS......
Options-> nnnnnnnn
```

This screen sets Home Auxiliary options:

T **T**oggle from Keypad

If set to "Y", the Home Auxiliary may be toggled ON and OFF by pressing any arrow key on any LCD Terminal in the system, when NOT logged on. Once a User has logged onto a Terminal, the arrow keys will behave in the normal manner and cannot be used to toggle the Auxiliary.

NOTE: The LCD Terminal must have the "Home Aux" option set to Yes in the "Logged Off" options.

S **S**MS Control

If set to "Y", the Home Auxiliary may be controlled by SMS text commands from a mobile phone via the GSM Comms Task. (V3.5 or later only)

NOTE. The following programming options must also be considered.
1) Home Auxiliary control via SMS is only allowed if the "X" option is set to Yes in the SMS Options screen (AXLI...N) in GSM Comms Task programming.
2) If PIN Code SMS control is used, the Home Auxiliary Types allowed must be enabled in User Type programming.

See GSM Comms Task programming (Comms-17) in the "Comms Task Formats" section for more information.

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Air Conditioning Control

Introduction

```
Air Cond. to
program : AC001
```

NOTE:
Control Module Firmware must be V2.00 or later.

The ACCESS 4000 can control a number of air conditioning units depending on memory configuration. Each air conditioning unit can service up to 8 individually controlled air conditioning zones. Each air conditioning zone has its own thermostat and its own zone damper which controls air flow into that air conditioning zone. The thermostats can either signal warm air, cool air, dead-band (halfway between warm and cool) or off. The individual zone dampers can be closed, not supplying air, or open and supplying air. The Access 4000 reads the thermostats via zone inputs, one zone input per thermostat. Zone dampers are controlled by Auxiliary outputs, one Auxiliary output per zone damper.

The system is controlled by four special control inputs connected via four nominated concept zone inputs. The state of these zones tells the air conditioning system how it should behave.

The compressor sub-system is controlled by five nominated Auxiliary outputs. These outputs signal when the compressor should be on and whether heating or cooling is required.

An optional bypass damper may be provided which allows a proportion of air to by-pass the main compressor/fan when the number of zones requiring air drops below a certain number. The damper is controlled via an Access 4000 Auxiliary.

An optional fresh air damper and fresh air thermostat may be provided. If the fresh air temperature is more optimum for heating/cooling, the fresh air damper will be opened. The fresh air thermostat connects via an Access 4000 zone whilst the damper is controlled via an Access 4000 Auxiliary.

Inputs and Outputs

Zone Damper — A motorised vane within a duct to control air flow to an air conditioned "zone". When the auxiliary is on, power is applied to the motor which closes the damper, preventing air flow into the zone.

Bypass Damper — A motorised vane within a duct to control air flow around the compressor unit. When the Auxiliary is on, power is applied to the motor which closes the damper, causing all air to pass through the compressor sub-system. When the bypass damper is open, a proportion of air passes around the compressor.

Fresh Air Damper — A motorised vane within a duct to control fresh air flow into the compressor sub-system. When the Auxiliary is on, power is applied to the motor which closes the damper, causing all air to be recirculated air. When the fresh air damper is open, a greater proportion of fresh air is used.

Exhaust Air Damper — A motorised vane within a duct to control whether returned air is re-circulated or exhausted. When the auxiliary is on, power is applied to the motor which closes the re-circulate damper and opens the exhaust damper, causing air to be exhausted.

Zone Thermostat — A device to measure the temperature of an air conditioned zone and input temperature to the Access 4000 via a zone input. The thermostat is wired such that:

Cool temperature	-	zone will be sealed
Warm temperature	-	zone will be in alarm
Dead-band	-	zone will be in tamper mode

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Fresh Air Thermostat A device to measure the temperature of fresh air to deduce whether the fresh air damper should be open or closed. Wired the same way as zone thermostats.

Dead-band The state of a thermostat when it is signalling neither warm or cool air.

Compressor On/Off Input An input to the compressor sub-system connected to an Access 4000 Auxiliary. When the Auxiliary is on, the compressor is on.

Compressor Reverse Cycle On/Off An input to the compressor sub-system connected to an Access 4000 Auxiliary. When the Auxiliary is on, reverse cycle heating is selected. When the Auxiliary is off, compressive cooling is selected.

Compressor Fan On/Auto Input An input to the compressor sub-system connected to an Access 4000 Auxiliary. When the Auxiliary is on, the fan turns on continuously. When the Auxiliary is off, the fan will only turn on when the compressor is on.

System On/Off Input A three state zone input used to control the system. The states are:

Zone sealed	-	Compressive cooling allowed
Zone in alarm	-	Compressor Heating allowed
Zone in tamper	-	Compressor Off

In Industrial Mode, cooling or heating is allowed when the zone is not in tamper.

Recirculated/Fresh Input A three state zone input used to control fresh or recirculated air selection. The states are:

Zone sealed	-	Select recirculated air
Zone in alarm	-	Select fresh air
Zone in tamper	-	Select fresh/recirculated air automatically.

Fan Mode Input A 3 state zone input used to control fan operation. The states are:

Zone sealed	-	Turn fan on continuously (ventilation)
Zone in alarm	-	Turn fan on in "Heat Pump" mode
Zone in tamper	-	Fan controlled automatically.

Programming

Programming is carried out under the Installer System menu. After entering the Installer code, press MENU, 7, 5, 6 to access air conditioning module programming.

```
Air Cond. To
program: AC001
```

This screen selects which air conditioning module you wish to programme. The number of air conditioning modules available depends on configuration. (Pressing the up arrow will select the maximum module number, telling you how many modules are present).

```
AC001 Mode  ->
Disabled
```

This screen selects the overall operating logic mode for this air conditioning module. The table below summarised the modes:

Disabled No control performed.

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Industrial Selects a mode suitable for industrial situations where the compressor can swap between heat and cool automatically. The fan is on all the time to provide continuous ventilation.

Domestic Selects a mode suitable for domestic situations where the compressor can only heat or cool as selected. The fan is only on when the compressor is on unless a ventilate only mode is selected.

```
AC001 Min. On
Time: 000 min
```

This screen allows the compressor minimum on time to be selected in minutes. The compressor will remain on for this time regardless of whether heating or cooling is still required. See the compressor manufacturer's specifications for this value.

```
AC001 Min. Off
Time: 000 min
```

This screen allows the compressor minimum off time to be selected in minutes. The compressor will remain off for this time regardless of whether heating or cooling is required. See the compressor manufacturer's specifications for this value.

```
AC001 Number
of Zones:  0
```

This option sets the number of individual zones that this air conditioning unit will control, i.e. number of thermostats fitted (excluding fresh air). It may be set to between 1 and 8 zones.

```
AC001 Return Air
Zone:  0
```

This option sets which zone has the return air duct. If this option is left at zero then the air duct is not associated with any particular zone. If it is set to a valid zone, the zone damper can be forced to remain open with the "force return air zone" option. Additionally, defining this zone allows domestic heat pump mode to be implemented.

```
AC001 Zones for
Bypass:  0
```

This option sets the minimum number of zone dampers that can be open before the compressor bypass damper will be closed. If less than this number of zone dampers are open, the bypass damper output will turn off thus opening the bypass damper to lessen air flow from the fan. If this option is left at 0, the bypass damper will remain closed.

```
AC001    DTFN
Options  nnnn
```

This screen allows special options to be set up for the current air conditioning module. A "Y" under the option enables the option. The available options are listed below:

D **D**omestic Heat & Cool — Selects a mode for domestic situations where the compressor can swap between heat and cool automatically. As with normal "Domestic" mode operation, the fan is on only when the compressor is on unless a ventilate only mode is selected.

T **T**erminals — Enabling this option allows the air conditioning to be controlled by nominated LCD Terminals instead of control inputs. The control inputs will be ignored, except for the fresh air thermostat. (See Terminal Programming for additional options that must be set)

F **F**ree Return Air — Enabling this option will cause the zone damper for the return air zone to always remain open, as long as it has been defined for a valid air conditioning zone.

N **N**o Review — Enabling this option will prevent review messages from being saved for any damper or control auxiliary changes. This may be useful if review memory is limited and other review activity such as security information is more important.

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AC001 Zn Damper Aux: C01:X01

This screen defines the starting Auxiliary for the zone dampers. Any Auxiliary within the Access 4000 system can be nominated as long as there are enough consecutive Auxiliaries on the module for the number of zones required. When the Auxiliary is on, the damper should be closed. The zone damper auxiliaries run in the order zone1, zone2 etc.

AC001 Control Auxes: :X

This screen defines the starting Auxiliary for the control Auxiliary outputs. Any Auxiliary within the Access 4000 system can be nominated as long as there are at least 8 consecutive Auxiliaries on the selected module. The table below shows the order of the outputs and what they control.

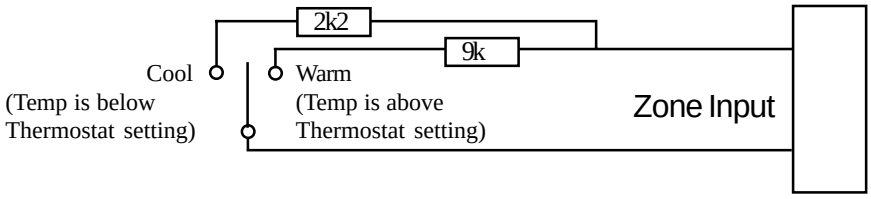
Output Auxiliary	Auxiliary On	Auxiliary Off
Compressor	Turn compressor on.	Turn compressor off
Reverse Cycle Valve	Select Reverse Cycle Heating	Select Cooling
Recirculate/Fresh	Select fresh air	Select recirculated air.
Fan On/Auto	Turn on fan continuously	Fan controlled by compressor On/Off
Bypass Damper	Close bypass damper	Open bypass damper
Exhaust Damper	Exhaust re-circulated air	Re-circulate air
Disable Auxiliary	Disable air conditioner	Allow air conditioning
Smoke Auxiliary	Implement smoke mode	Allow normal operation

The air conditioning module does not control the Disable and Smoke Auxiliaries. These Auxiliaries are manipulated by other tasks in order to control the air conditioning module.

AC001 Thermostat Inputs: C01:Z01

This screen defines the starting zone input to connect to the individual zone thermostats. Any zone within the Access 4000 system can be nominated as long as there are enough consecutive zones remaining on the selected module for the number of thermostats required. The thermostats are wired so that:

Thermostat Cool	=	Seal condition. (2k2)
Thermostat Warm	=	Alarm condition (9k [2k2+6k8])
Thermostat Dead-band	=	Tamper condition (Open Circuit)
Thermostat Off	=	Tamper condition



AC001 Control Inputs: C01:Z01

This screen defines the starting zone input to connect to the control zone inputs. Any zone within the Access 4000 system can be nominated as long as there are a minimum of 4 consecutive zones available on the selected module. The following table shows the order of the control inputs and the manner in which they operate:

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Input	Seal	Alarm	Tamper
Fresh Air Thermostat	Fresh air is cool.	Fresh air is warm.	Fresh air is neither warm or cool.
Heat/Cool Control	Heat/Cool allowed if industrial mode and TimeZone above is valid. Cool only allowed in domestic mode, irrespective of TimeZone.	Heat/Cool allowed in industrial mode or Heat only allowed in domestic mode.	No compressor operation is allowed.
Recirc/Fresh Control	Use recirculated air only.	Use fresh air only.	Automatic selection of fresh/recirculated air based upon fresh air thermostat.
Fan On/Auto Control	Fan on continuously.	Selects domestic heat pump mode.	Fan operation determined by compressor.

NOTES:

1. **If the "T" (Terminal) option is set in the DTFN screen above, these inputs are ignored with the exception of the fresh air thermostat.**
2. **Every Zone Input and Control Input to be used must be assigned to a physical or virtual Area and that Area must be turned on. Failure to do so will result in the system being unable to sense the status of these inputs and the air conditioning not operating properly.**

```
AC001 T.Zone ->
DAYTIME
```

This screen allows an optional TimeZone to control the on/off operation of the air conditioning system in **Industrial Mode only** when the on/off zone input is in the sealed condition. The system is considered on when the TimeZone is valid.

```
AC001 ZnX Area->
WAREHOUSE
```

This screen allows an optional Area to be assigned to each of the 8 possible air conditioning zones. When an Area is assigned it allows:

- Individual On/Off control of each zone via an LCD Terminal.
- Individual On/Off control based upon the Alarm4 Auxiliary of the Area.

Refer to the "Building Automation" section of this Manual for further details.

```
AC001   12345678
Aux On  nnnnnnnn
```

This screen specifies whether an air conditioning zone will be enabled every time the Alarm4 Auxiliary turns on in the associated Area above.

Refer to the "Building Automation" section of this Manual for further details.

```
AC001   12345678
Aux Off nnnnnnnn
```

This screen specifies whether an air conditioning zone will be disabled every time the Alarm4 Auxiliary turns off in the associated Area above.

When the "T" Terminal control option is set, the individual air conditioned zones can be enabled or disabled via the LCD screen. In Industrial Mode, however, there are no inputs to allow individual enable/disable control of individual zones.

Whenever the air conditioner mode is set to disabled, all 8 zones are reinstated. This allows individual area control via Alarm4 auxiliaries to be used even if the "T" Terminal control option is not set, and still provides an "override" to reinstate all 8 zones.

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Operating Modes

Industrial Heating/Cooling

A/C Mode	=	Industrial
Heat/Cool Control.	=	On or Off
Recirc/Fresh Control.	=	Auto
Fan Mode.	=	Not Used

If the Heat/Cool control is on, the fan will turn on and compressor operation is allowed. If the Heat/Cool control is off, the fan will turn off, all zone dampers will open and the compressor and reverse cycle valve will be off.

Recirculated air will be used unless the fresh air thermostat indicates warm air and heating is required or the fresh air thermostat indicates cool air and cooling is required. (Recirculate/Fresh can be forced if desired using the Recirc/Fresh control).

Zone dampers will close if the zone gets too hot and heating is on or if the zone gets too cool and cooling is on, otherwise the zone dampers will be open, providing fan ventilation.

The bypass damper will be closed unless the number of closed zone dampers drops below the minimum bypass zones, in which case the bypass damper will open.

The Compressor will turn on and reverse cycle valve will turn on/off if any zone requires heating or cooling. The compressor will remain on, heating or cooling until no zone indicates that it is too cool/hot. At this time the reverse cycle will toggle state if the reverse of heat/cool is required, otherwise the compressor will turn off.

Domestic Heating/Cooling

Mode	=	Domestic
Heat/Cool Control.	=	Heat/Cool
Recirc/Fresh Control.	=	Auto
Fan Mode.	=	Auto

If the Heat/Cool control is set to Heat then compressive heating will be allowed. If the Heat/Cool control is set to Cool then compressive cooling will be allowed. The compressor itself will control the fan.

Recirculated air will be used unless the fresh air thermostat indicates warm air and heating is required or the fresh air thermostat indicates cool air and cooling is required. (Recirculate/Fresh can be forced if desired using the Recirc/Fresh control).

Zone dampers will close if the zone gets too hot and heating is on or if the zone gets too cool and cooling is on, otherwise the zone dampers will be open.

The bypass damper will be closed unless the number of closed zone dampers drops below the minimum bypass zones, in which case the bypass damper will open.

The Compressor will turn on and reverse cycle valve will turn on/off if any zone requires heating and Heat is selected or if any zone requires cooling and Cool is selected. The compressor will remain on, heating or cooling until no zone indicates that it is too cool/hot. At this time the compressor will turn off.

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Domestic Ventilation

Mode	=	Domestic
Heat/Cool Control.	=	Off
Recirc/Fresh Control.	=	Recirc/Fresh/Auto
Fan Mode.	=	On

In this mode all zone dampers will be open and the fan is on continuously. All zone dampers are open providing ventilation air to all zones. Recirculated air will be used unless the Recirculate/Fresh control is set to Fresh. No compressor operation is allowed.

Domestic Heat Pump

Mode	=	Domestic
Heat/Cool Control.	=	Off
Recirc/Fresh Control.	=	Auto
Fan Mode.	=	Heat Pump

This mode is used when the return air zone is defined and contains another source of heat such as a wood heater. This mode allows heat from the return air zone to be "pumped" to other cooler zones without using the compressor for additional heat.

The return air zone damper will be forced open and if the return air thermostat indicates warm air in the return zone then the fan will turn on, providing air circulation in the return air zone and allow warm air to be pumped to other zones. If the setting of the return air thermostat indicates cool air, then the fan will turn off.

All other zone dampers will be open unless they indicate they are too hot, in which case the zone damper will close. The bypass damper will operate as in other modes and the fresh air damper will be closed.

Air-conditioning control via the LCD Terminal

The Air-conditioning module can now be programmed to be controlled via nominated LCD terminals. Instead of overall air-conditioning control being done by switches connected to nominated zone inputs, pushing the Left Arrow Key on nominated "logged off" terminals gives access to screens to allow:

- Individual A/C zone control by Area names
- Overall on/off control
- Control of fan settings
- Control of ventilation settings

Air-conditioning Areas

The relationship between air-conditioned zones and security Areas can be defined by allowing a security Area to be associated with an air-conditioned zone in Air-conditioning Module Programming. This allows:

- Individual A/C zone on/off control via an LCD Terminal, selecting the A/C zone to control by Area name;

- The Alarm4 Auxiliary in the associated Area attached to an A/C zone can also be programmed to enable or disable the A/C zone. This allows the A/C zone to be controlled by Area functions such as detection of movement or the absence of movement for a pre-defined time.

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Disable Auxiliary

When the Disable Auxiliary is turned on, the air conditioning will turn off. When the Disable Auxiliary is turned off, the air conditioning will turn on. This is particularly useful for turning the air conditioning off whilst an area or system is secure and back on again when the area or system is in access.

This feature may also be used to immediately shut down all air conditioning auxiliaries, fans and dampers in the event of fire or other such emergency.

Smoke Auxiliary

If the nominated smoke auxiliary turns on (normally as the result of a smoke alarm) the air conditioner is placed in exhaust smoke mode. In the this mode, irrespective of whether the unit is currently on or off, the following settings are adopted:

- The fan is turned on.
- All zone dampers are opened.
- The re-circulated air is exhausted
- The fresh air is selected.
- The compressor is turned off

The mode is designed to provide fresh air to all zones and attempt to clear all zones of smoke.

Example of Air-conditioning Integration

Turn on the air conditioner when there is any movement in the air-conditioned area. Turn off the air conditioner when there has been no movement in the air-conditioned area for 30 minutes. If a nominated area is turned on, then turn off the air conditioner.

Program a dummy area as follows:

- Instant siren mode.
- A dummy siren auxiliary.
- Alarm4 auxiliary = Siren auxiliary.
- No siren list.
- Siren time = 30 minutes.
- Zone processing only activates sirens, with re-trigger mode set.

Program security area as follows:

- A dummy close auxiliary = Air conditioner disable auxiliary.

Program air conditioner module as follows:

- Assign dummy area to the appropriate air-conditioned zone to control.
- Enable "auxiliary-On" and "auxiliary-off" options for the appropriate A/C zone.

A variation on the above is to turn on the air conditioner manually, but automatically turn it off. Simply don't enable the "auxiliary-On" option in air conditioner programming.

Allow lights to be turned on or off via nominated switches. Implement "N-way" switching where desired (i.e. a light may be controlled by any number of switches).

Whenever a security area is turned on, turn off any lights that are on in that area.

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Turn on and off specified security lights with a time zone.

During the night only, allow movement in certain areas to turn on specified lights and when no movement in that area is detected for 10 minutes turn off specified lights. Allow the automatic off to be overridden easily at the keypad when required.

Review Messages

The review memory can be used to track all logic decisions made by an air conditioning module. All auxiliary output changes are normally saved to review unless nominated otherwise. To aid in tracking logic flow, when auxiliaries are operated via the air conditioning module, a phrase is appended to end of the review entry to indicate what auxiliary is being controlled:

Phrase	Meaning
(Zone Damper)	A zone damper auxiliary has been operated. (On = damper close)
(A/C Unit)	The compressor has been turn on/off
(R/Cycle)	Compressive heating (auxiliary on) or cooling (auxiliary off) selected
(Fan)	Fan has been turn on (auxiliary on) or in auto mode (auxiliary off)
(Fresh)	Fresh air damper has been opened (auxiliary on)
(Bypass)	Bypass damper has been closed (auxiliary on)
(Exhaust)	The exhaust output has bee turned on.

Changes to the zone and fresh air thermostats and the control inputs are not recorded to review unless they are in an area and the area is turned on.

ALL RELEVANT ZONES MUST BE PLACED IN AN AREA AND THE AREA TURNED ON.

For zone thermostats and control inputs, the seal, alarm and tamper states must be interpreted appropriately.

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Home Zone Programming

There are no screens within the 3000/4000 that allow alpha searching of Zone names. This is because names are up to 24 characters in length and spread over a number of different databases, making searching very difficult. This presents a problem if a user is manually isolating zones because they have to understand the Zone naming convention, type, module number and zone number.

eg. B03:Z11, M12:Z06, etc.

Home Zones are designed to overcome this problem. They are fundamentally the same as Home Auxiliaries in that they provide an easy way to assign text to a Zone for the purpose of isolation and they are programmed in a very similar fashion.

```
Home Zone to
program: HZ001
```

This screen allows the Installer to select a Home Zone for programming.

```
HZ001   I.......
Opts -> nnnnnnnn
```

This screen allows various options to be set for this Home Zone.

I **I**solate — If set to "Y", this Home Zone may be Isolated via MENU 3.

. **S**pare — Spare for future development.

```
HZ001 Input ?
C01:Z01
```

This screen specifies the Input to be assigned to this Home Zone. Use the DIGIT Keys to enter the Module number and the Zone Input number in the standard convention.

```
HZ001 Name:
Rear Fire door
```

This screen allows the Installer to specify a name for this Home Zone. This will be the text displayed when a Home Zone user accesses MENU 3 to isolate one or more Zones.

NOTE:
In larger systems it would be impossible to create a HomeZone for every Zone in the system. There may be many hundreds of Zone Inputs but the HomeZone database is currently limited as follows:

0-16 in 32K Memory Configurations
16-64 in 128K Memory Configurations
32-128 in 512K Memory Configurations

If HomeZones are required, use the available HomeZones for Zones that are most likely to be needed in alpha-search functions such as Input Isolate.

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Counter Programming

The Counter feature allows Inputs on the Mini Zone Expander ("M" Type - Version 3.0 or later) to be used as Counter Inputs. The Counter Inputs can be used for 2 trigger point counting, tollgate style counting functions and tariff counting. At this time, Version 3 firmware allows the use of 2 Trigger Point counting only.

```
Counter to
program: CR001
```

This screen allows the Installer to select a Counter to programme.

```
CR001 Name:
.Counter 001
```

This screen allows a 16 character name to be assigned to this Counter. These names can be searched for alphabetically when selecting a counter to display under the information screens [MENU 1,4] "Read Count".

```
CR001 Input ?
C01:Z01
```

This screen allows the Installer to define the Input that is to be used for this counter.

Note:

1. At this time, only Mini Zone Expander Zone Inputs can be used for counters.
2. Mini Zone Expander Zone type must be set to "Counter". (Refer Mini Expander Programming [MENU 7,2,6])
3. Mini Zone Expander must be fitted with version 3.0 or later module firmware.

```
CR001 Type    ->
2 Trg Points
```

This screen allows the Counter Type to be selected. The purpose of the counter, as set by its Type, will determine the manner in which the counter will operate.

Counter Type	Description
2 Trg Points	The operation of this Counter Type is only relevant when used with Mini Zone Expander inputs. The Trigger Count 1 and Trigger Count 2 values are downloaded and stored in the Mini Expander. The states of the Zone Input and the corresponding Zone Extra System Input are dependent upon the relationship between the actual count and the preset Trigger Count1 and Trigger Count2 values. The states of the inputs, in turn, determine the resultant course of action. (Refer to the section on the Mini Zone Expander for further information [MENU 7,2,6]).

```
CR001 Trigger
Count1: 00000000
```

This screen allows an 8 digit trigger count to be defined. Its function depends upon the Counter Type above.

```
CR001 Trigger
Count2: 00000000
```

This screen allows a 2nd 8 digit trigger count to be defined. Its function depends upon the Counter Type above.

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```
CR001      ..4D
Options -> nnnn
```

This screen allows the Installer to programme a number of Counter options.

.	**S**pare	Spare for future development. Set to "n".
4	**4** digits	If set to "Y", only the lower 4 digits will be displayed when viewed via MENU 1, 4.
D	**D**isplay	If set to "Y", this option enables this counter to be viewed via MENU 1, 4. **NOTE: The 1st counter (CR001) is always displayed, regardless of the (D)isplay option.**

Count Display

The count display is accessed via MENU 1, 4. Every 2 seconds the display is refreshed by reading the appropriate count from the relevant module.

NOTE: No indication is given if the module is absent.

Count Adjustment

The count can be adjusted (and updated in the relevant module) via MENU 9, 6. This operation requires the Menu Group (A)djust option to be set in the "Access Options" and the (C)ontrol option set to Yes in the "Main Menu Options".

Clearing the Counter

A counter may be cleared by using the adjust menu and setting the count value to "0". Alternatively, there are 2 Calculated Auxiliaries (Event Cnt=0+ON, Event Cnt=0-OFF) which automatically clear the count when an ON or OFF operation is detected on the 1st Auxiliary.

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C-Bus Auxiliaries

Note: C-Bus Auxiliaries are only available in Type 2 (CE) Control Module Hardware and V4.00 Firmware or later.

IMPORTANT NOTE
Menu location for C-Bus Auxiliaries has altered to provide for additional automation interfaces.

A Clipsal C-BUS PC interface can be connected to a serial UART Port on the Control Module. The Control Module must be fitted with 128k (V4.5 or later) or 512k Memory expansion which currently allows up to 16 (128k) or 64 (512k) C-Bus Auxiliaries to be defined, depending on the memory configuration chosen.

Version 4.5 or later.
C-Bus Auxiliaries programming is now accessed via:
MENU, 7, 5, 9, 1

The connection between the UART Port and C-Bus PC interface is made using the C-Bus Interface Cable, Part Number 993013.

A "C-Bus" Comms Task must be programmed to establish communications between the Control Module and the C-Bus PC interface.
See Comms Task programming, MENU, 7, 3, 1
and Comms Task Formats: Comms 23 - C-Bus.

Version 4.
C-Bus Auxiliaries is accessed via:
MENU, 7, 5, 9

C-Bus Auxiliaries can provide the following functions:-

1. Cause nominated C-Bus output devices to turn on, turn off, or ramp on/off to a specified level as defined 3000/Access 4000 Auxiliaries turn on or off.

2. Update the state of defined 3000/Access 4000 Auxiliaries as C-Bus functions turn C-Bus output devices on or off within the C-Bus network.

3. Save C-Bus activity to the 3000/Access 4000 Review Memory.

4. Allow two separate applications to be controlled simultaneously. e.g. Lighting and Heating.

Each C-Bus Entry allows a single 3000/Access 4000 Auxiliary to be defined and programmed as to how it will operate in conjunction with the C-Bus system.

```
CBus Entry
to alter: CB001
```

This screen allows a C-Bus Entry to be selected for programming.

```
CB001   2.....AR
Opts -> nnnnnnnn
```

This screen allows various C-Bus options to be selected:

2 **2**nd Application. If set to "Y"es, the 2nd Application option specifies that this Auxiliary is to be associated with the 2nd Application programmed in C-Bus Comms Task programming. If set to "N"o, the Auxiliary will be associated with the 1st Application.

5. System

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A **A**larm feedback.

If set to "Y"es, the Alarm feedback option allows the state of the Auxiliary defined below to be updated by associated C-Bus activity. Associated C-Bus activity will be those C-Bus commands that have the same "Application" and "On/Off Group Address" as defined in this C-Bus Entry.
-An ON command with the same "On Group Address" will turn the Auxiliary On.
-An OFF command with the same "Off Group Address" will turn the Auxiliary Off.
-A RAMP command with the same "On Group Address" will turn the Auxiliary Off if the final Ramp level is below the "Threshold" defined below.
-A RAMP command with the same "On Group Address" will turn the Auxiliary On if the final Ramp level is equal to, or above, the "Threshold" defined below.

For the Alarm Feedback option to function:
1) The "Review" option in the C-Bus Comms Task options screen must be set to Yes (MENU, 7, 3, 1).
2) The "Save to Review" option in Auxiliary Timer programming (MENU, 5, 5) must be set to Yes for the Auxiliary defined as the C-Bus Auxiliary in the next screen.

(The factory default for this option is "Yes")

Note that when the Auxiliary is turned On or Off via C-Bus activity, no C-Bus commands will be output as a result of that action.

R **R**e-send.

If set to "Y"es, the Re-send option causes the On/Off commands assigned to this C-Bus Entry to be sent even if the Auxiliary does not change state. e.g. If an Auxiliary is already On and an 3000/Access 4000 operation attempts to turn on the Auxiliary again, the On command will be re-sent to the C-Bus network.

CB001 Auxiliary
_ :X

This screen allows the Installer to select which Auxiliary is going to be associated with this C-Bus Entry. Any Auxiliary from within the 3000/4000 system can be chosen.

CB001 On Cmd
NONE

This screen defines which C-Bus operation is to be initiated when the Auxiliary defined above turns <u>On</u>:

None — No C-Bus command will be sent.

ON — A C-Bus ON command will be sent to the "On Group Address" defined below.

OFF — A C-Bus OFF command will be sent to the "On Group Address" defined below.

Ramp Period. (16 available) — A C-Bus RAMP command for the "ramp period" selected will be sent to the "On Group Address" defined below. The ramp periods available are:
0 s, 4 s, 8 s, 12 s, 20 s, 30 s, 40 s, 1 m,
1.5 m, 2 m, 3 m, 5 m, 7 m, 10 m, 15 m, 17 m.

Note that the "On Ramp Level" below must also be set.

CB001 On Group
Address: 000

This screen sets the C-Bus Group Address that will be operated by the "On Command" defined above. The address is programmable in decimal digits from 000 to 255.

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CB001 On Ramp
Level: 000

This screen is required if a RAMP command has been selected from the "On command" screen above. The final level for the RAMP command can be programmed in decimal digits from 000 to 255.
e.g If a Ramp command of 20s is selected above, and an On Ramp Level of 64 is programmed, the resultant command will cause the C-Bus Group Address defined to ramp to 25% of full voltage over 20 seconds.

CB001 Off Cmd
NONE

CB001 Off Group
Address: 000

CB001 Off Ramp
Level: 000

These screens define:
-Which C-Bus operation is to be initiated,
-Which "Off Group Address" will be operated,
-And the desired "Off Ramp Level" (if a RAMP command is selected)
when the Auxiliary defined above turns Off.
These screens are programmed in exactly the same manner as the "On Command" screens above.

CB001 Ramp
Threshold: 000

This screen is required if the "A"larm feedback option has been selected earlier. The Ramp Threshold setting is used to determine whether the Auxiliary should be turned On or Off when a RAMP command is received from the C-Bus network.
-If the final ramp level of the RAMP command is lower than this threshold, the Auxiliary will turn Off.
-If the final ramp level of the RAMP command is equal to, or higher than, this threshold, the Auxiliary will turn On.

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Dynalite Auxiliaries

A Dynalite Lighting Controller can be connected to a serial UART Port on the Control Module.

IMPORTANT NOTES:
1) Dynalite Auxiliaries are only available in Type 2 (CE) Control Module Hardware and V4.50 Firmware or later.

The Control Module provides Automation (Dynalite) Auxiliaries as follows:

512k (4MBit):	Up to 64 depending on memory configuration chosen.
128k (1MBit):	Up to 16 depending on memory configuration chosen.
32k	NO Automation Auxiliaries provided.

The connection between the UART Port and the Dynalite Lighting Controller is made using the Model 3000/Access 4000 Dynalite Interface Kit (P/N: 993032).

The Rx, Tx, RTS and Gnd connections are utilized in the Cable set.
(RTS is used to control DE on the RS485)

A "Dynalite" Comms Task must be programmed to establish communications between the Control Module and the Dynalite Controller.
See Comms Task programming, MENU, 7, 3, 1
and Comms Task Formats: Comms 26 - Dynalite.

A Dynalite Auxiliary provides for a nominated Dynalite Area to turn on or off over a timed period as defined 3000/Access 4000 Auxiliaries turn on or off.

Each Dynalite Entry allows a single 3000/Access 4000 Auxiliary to be defined and programmed as to how it will operate in conjunction with the Dynalite system.


```
Dynalite Entry
to alter: DN001
```

This screen allows a Dynalite Entry to be selected for programming.

```
DN001   .......R
Opts -> nnnnnnnn
```

This screen allows various Dynalite options to be selected:

R **R**e-send. If set to "Y"es, the Re-send option causes the On/Off commands assigned to this Dynalite Entry to be sent even if the Auxiliary does not change state. e.g. If an Auxiliary is already On and a 3000/Access 4000 operation attempts to turn on the Auxiliary again, the On command will be re-sent to the Dynalite network.

```
DN001 Auxiliary
_   :X
```

This screen allows the Installer to select which Auxiliary is going to be associated with this Dynalite Entry. Any valid Auxiliary from within the 3000/4000 system can be chosen.

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```
DN001  On Area
Address:   000
```

This screen defines which Dynalite Area the Auxiliary "ON" Command will control. The Area Address is programmable from 000 to 255.

See the Dynalite product documentation for more information on Area addresses.

```
DN001  On
Preset:  000
```

This screen sets the Dynalite Preset that will be operated by the Auxiliary "ON" command. The Preset is programmable from 000 to 255.

Note that the Preset value programmed here does not correspond to the actual Dynalite Preset value.
See the table on page 3 for details of the programmed and actual Presets.

See the Dynalite product documentation for more information on Presets.

```
DN001 On Fade
Rate:   00000
```

This screen sets the period of time the Dynalite Controller will take to reach the "On" Preset level defined above.

This value is programmed between 00000 and 65535 in 20 milliSecond increments. e.g. A programmed value of 100 = 2000 milliSeconds = 2 Seconds.

See the table on Page 3 for more examples of Fade rate periods.

```
DN001  Off Area
Address:   000
```

This screen defines which Dynalite Area the Auxiliary "OFF" Command will control. The Area Address is programmable from 000 to 255.

See the Dynalite product documentation for more information on Area addresses.

```
DN001  Off
Preset:  000
```

This screen sets the Dynalite Preset that will be operated by the Auxiliary "OFF" command. The Preset is programmable from 000 to 255.

Note that the Preset value programmed here does not correspond to the actual Dynalite Preset value.
See the table on page 3 for details of the programmed and actual Presets.

See the Dynalite product documentation for more information on Presets.

```
DN001 Off Fade
Rate:   00000
```

This screen sets the period of time the Dynalite Controller will take to reach the "Off" Preset level defined above.

This value is programmed between 00000 and 65535 in 20 milliSecond increments. e.g. A programmed value of 100 = 2000 milliSeconds = 2 Seconds.

See the table on Page 3 for more examples of Fade rate periods.

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Presets

The programmed Preset does not correspond directly to the actual Dynalite Preset Value.
This table shows the Value to be programmed for the actual Dynalite Preset required.

Actual Preset	Programmed Preset		Actual Preset	Programmed Preset		Actual Preset	Programmed Preset
1	0		23	50		45	37
2	8		24	58		46	45
3	16		25	3		47	53
4	24		26	11		48	61
5	32		27	19		49	6
6	40		28	27		50	14
7	48		29	35		51	22
8	56		30	43		52	30
9	1		31	51		53	38
10	9		32	59		54	46
11	17		33	4		55	54
12	25		34	12		56	62
13	33		35	20		57	7
14	41		36	28		58	15
15	49		37	36		59	23
16	57		38	44		60	31
17	2		39	52		61	39
18	10		40	60		62	47
19	18		41	5		63	55
20	26		42	13		64	63
21	34		43	21			
22	42		44	29			

Fade Rates

This table shows some useful examples of the value to be programmed for various Fade Rate periods.

Fade Rate	Programmed Value		Fade Rate	Programmed Value		Fade Rate	Programmed Value
00	00000		1.5Sec	00075		12Sec	00600
20mS	00001		2Sec	00100		15Sec	00750
100mS	00005		2.5Sec	00125		20Sec	01000
240mS	00012		3Sec	00150		30Sec	01500
300mS	00015		4Sec	00200		1Min	03000
500mS	00025		5Sec	00250		2Min	06000
720mS	00036		7.5Sec	00375		5Min	15000
1Sec	00050		10Sec	00500		10Min	30000

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Door Programming

The following screens allow programming of an individual Door. A number of pre-defined times may be set by default for each Door (Max. Door Open Time of 30 seconds and Lock Open Time of 5 seconds.) Door Auxiliaries are also cleared. **The procedure to reset Door Programming to the factory default is explained in more detail at the end of this chapter.**

```
Door to
Alter: D001
```

This screen allows a Door to be selected for programming, allowing the User to jump to the selected Door or search for a particular Door by name. Pushing the up/down arrows selects the previous/next door.

```
Find Door   ^
FRONT DOOR
```

The maximum number of doors in any system is determined by the memory configuration.

Door numbers are allocated in LCD Terminal and/or Reader Module programming. If these options have already been programmed, you may need to refer to those options to see what Door numbers you need to programme. Alternatively, the Doors can be programmed here first and then the appropriate Door numbers allocated to the Terminal/s and Reader Module/s later.

```
Door . 001 Name
REAR FIRE DOOR
```

This screen allows an optional Door name to be entered up to 16 characters long. It is recommended that names be programmed to simplify programming of the other options where Doors are allocated.

```
D001 Inside  ->
None
```

```
D001 Inside
Area: A000
```

These screens allow the Installer to define which Areas are on the inside and outside of the Door being programmed. To select an Area, press the right arrow key to scroll through all available Areas alphabetically. Press the OFF key to select no Area. (The ON key may be used to change modes to allow an Area to be selected by number, if desired).

If the Area on one side of the Door is not within the system's control, set the Area to None by pressing the Off Key or alternatively, if selecting the Area by number, set the Area to A000.

```
D001 Outside  ->
None
```

```
D001 Outside
Area: A000
```

For example, in the case of an external Door in a Warehouse, the outside Area might be a region that is not protected or monitored by the system. This Area should be set to None (A000). If a User were to leave via this door using a card, pin or proximity card or fob, the system would not need to monitor the User's movements, other than identifying that the User is no longer in an Area that is monitored by the system.

The inside Area would be that Area sought to be protected if the Door were secured. In the same above example, the inside Area for the Warehouse external Door might be "WAREHOUSE".

It is not compulsory to assign Areas to a Door, however, in doing so the following advantages become available:

- Allow anti-passback rules to be enforced.
- Keep track of where Users are.
- Prevent exit/entry if Areas are ON.
- Automatically turn OFF Areas, if allowed.
- Automatically turn Area/s On when exiting, if allowed.

See "Anti-Passback & Wrong Area processing" & "Reader Area Control" in the Applications Programming section.

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D001 Acc.Group->
CARD USER

This screen allows the User to assign an Access Group to this Door. The Access Group programming will determine how access works at this Door.

D001 Access
Group: AG002

D001 Lock
Aux: R01:X01

This screen allows an Auxiliary output to be specified that will operate the Door lock associated with this Door. If a Control Module Auxiliary is chosen to operate a Door Lock, the Auxiliary timer units must be set to seconds. For all other Module types the Auxiliary timer is completely independent from the lock open time. (See next screen).

Lock Auxiliaries

It is recommended that the following Auxiliaries be used as Lock Auxiliaries:

Single Door & 2 Door Access Modules:

1st Door	Rxx:X01
2nd Door	Rxx:X04

LCD Terminal	Txx:X01

Intelligent 4 Door Access Module: (Lock Auxiliaries shown must be used)

1st Door	Ixx:X01
2nd Door	Ixx:X02
3rd Door	Ixx:X03
4th Door	Ixx:X04

D001 Lock Open
Time: 005 S/0.1S

This screen determines the time for which this Door will be un-locked during a normal access event. This value is programmable from 0 to 255 Seconds.

IMPORTANT NOTES:
1) A value of "000" causes the Door to un-lock indefinitely. The Door must then be re-locked by another operation. (e.g. MENU.9.2, TimeZone, etc.)
2) The Lock Open Timer is independent of the "Auxiliary Timer" for the Lock Auxiliary. Normally, the "Lock Open Time" is the only timer that needs to be programmed for the Lock Auxiliary. However, if any other operation is to be used to momentarily unlock the Door, the Auxiliary Timer [MENU 5,5] for the Lock Auxiliary should also be programmed. (Unless the actual operation already includes a timer).

Fast Lock Open Time option.
(Only available in Intelligent 4 Door Access Module firmware V1.08 or later.)

The "Lock Open Time" defined in Door programming is normally specified in Seconds. e.g. A Lock Open Time of "5", will activate the Lock Auxiliary for 5 Seconds. In some installations, the Lock Open Time needs to be shorter than 1 second. e.g. When providing a short pulse output to trigger a special access device such as a turnstile system.
An option is available to allow an Intelligent 4 Door Access Module to process the "Lock Open Time" as 100 milli-Second increments instead of 1 Second increments.

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e.g.
-Lock Open Time of "5", will activate the Lock Aux. for 500 mS. (5 x 100mS)
-Lock Open Time of "50", will activate the Lock Aux. for 5 Sec. (50 x 100mS)
This is done by setting Switch 8 on DIPswitch 2 to the ON position.
When set, the Lock Open Time will then be processed as 100 milli-Second increments for all 4 Doors on that particular Module.
See the Intelligent 4 Door Access Module installation manual for location of DIPswitch.

Only Modules with the DIPswitch set to ON will process the Lock Open Time in this way. Any other Modules with the DIPswitch left in the OFF position, will process the Lock Open Time in the normal manner as 1 second increments.

```
D001 Max. Open
Time:   030 sec
```

This screen determines the maximum time this Door may be left open before creating a "Door Open Too Long" (Door Held Open) alarm. The "Door Open Too Long" alarm is a System Input generated from the LCD Terminal or Reader Module associated with the Door. This time is programmable from 1 to 255 seconds.

Note: In earlier 2 Door Reader Modules (Part no: 993012) configured for "2" Door mode, the "Maximum Door Open Time" set for the 1st Door on the Module was utilized as the Max. Door Open Time for both Doors.

All current Access Modules allow the Max. Door Open time to be defined and operate separately for each Door.
i.e. 995012-2 Door Access Modules and Intelligent 4 Door Access Modules.

```
D001    E.......
Opts -> nnnnnnnn
```

This screen allows the Installer to programme various Door options.

E **E**xtra Area Counting

This option allows the User count in the User's "Extra Area" to be incremented/ decremented when the User is granted access through this door.

If the reader is on the "Outside", the User count is incremented in the User's Extra Area.

If the reader is on the "Inside", the User count is decremented in the User's Extra Area.

No "count" or "Arm on count = 0" will occur on the Door Areas when this option is enabled.

. **S**pare

Spare for future use. This option must be set to "n".

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Door Interlocking *ACCESS 4000 ONLY*

The Access 4000 model supports convenient Door Interlocking without the need to programme Calculated Auxiliaries or Function Zones. Every Door can have an Interlock Group assigned to it. When a Door has an Interlock Group assigned, access through the Door may be further qualified by the programming of that Interlock Group. Doors can share Interlock Groups if required. The number of Interlock Groups programmable depends upon the memory configuration.

Special Note:
In order for the 4000 system to correctly sense the state of the door reed switches, these zones should be placed in an Area which is left on permanently with a benign Process Group.

```
D001 Interlock
Group: IL000
```

This screen allows an optional Interlock Group to be assigned to the Door. If the group is left at zero, access will not be denied through this Door due to an Interlock violation, although this door can participate in Interlock decisions for other Doors. If an Interlock Group is specified, it must be programmed to determine the Interlocking rules.

```
Interlock to
program: IL001
```

To programme Interlock Group options, press HELP, "9".

Door Interlocking Programming

This screen selects which Interlock Group to programme. The number of Interlock Groups depends on the memory configuration.
See the Applications Programming section for further details.

```
IL001 T.Zone ->
None
```

This screen allows a TimeZone to be applied to this Interlock Group. If a TimeZone is defined and is valid, this Interlock Group will be active; that is Interlock logic will be applied. If a TimeZone is invalid then either the Interlock Group will not be active and no Interlock logic will be applied or, if an alternative group is defined, that group will be used.

```
IL001 Alt.
Interlock: IL000
```

This screen defines an alternative Interlock Group to use if the TimeZone is invalid.

```
IL001  ZT......
Opts-> nnnnnnnn
```

This screen allows certain Interlock Group options to be programmed:

Z	**Z**one Inputs	If this option is set to "Y", an optional Zone Input can be used to qualify Interlock operation.
T	**T**ongue Sense	If this option is set to "Y", Tongue Sensing is used in addition to qualify the Interlock operation. Note: Do not set to "Y" if Tongue sense inputs not connected. If set to Yes when not used, & Input/s are not sealed, Interlock logic will not allow Doors to un-lock.
.	Spare	Spare option for future development. Leave set to "n".

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```
IL001   Door List
DL001
```

This screen allows an optional list of Doors to be selected from the available Door Lists which will be used in Interlock Decisions. If the list is left at 000, no other doors will prevent doors with this Interlock Group from working. If a Door List is defined, all Doors in the list must be locked (Door Auxiliary must be off) and all Doors must be closed (Door Zones must be sealed).

All Door Contact (Reed switch) Zone Inputs used in Door Interlock functions must be assigned to an Area that is always On (24 Hrs) so that the Zone state is always known by the Control Module.

ie.	Rxx:Z01	For 1st Door on a Reader Module
	Rxx:Z05	For 2nd Door on a Reader Module
	Txx:Z01	For a Door controlled and monitored by an LCD Terminal.

When assigning these Zones to an Area use a Process Group programmed for this purpose that simply monitors for the (A)larm state but does no other processing. (ie. No other Comms Auxiliary or Siren options).

```
IL001   Area List
Area
```

This screen allows an optional list of Areas to be selected from the available Area Lists which will be used in Interlock decisions. If the list is left at 000, the state of no Areas will prevent Doors with this Interlock Group from working. If an Area List is defined, all Areas in the list must be off to allow access through Doors with this Interlock Group.

```
IL001   Qualify
Aux:     :X
```

This screen allows an optional Auxiliary to be defined which will be used in Interlock decisions. If an Auxiliary is defined then the Auxiliary must be On to allow access through Doors with this Interlock Group.

```
IL001   Qualify
Zone:    C01:Z01
```

This screen allows an optional Zone to be defined which will be used in Interlock decisions. If the "Z" option above is set to "Y", this input must be sealed to allow access through the Doors with this Interlock Group.

When programming of Interlock Group is complete, return to Door Programming by pressing HELP, "0".

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Door Defaulting

Two options are available by which to default Door Programming to factory settings. These are explained below:

Door to alter: D001	At the first Door Programming screen press HELP, "9".
Door Default -> Don't Default	This screen is then displayed. Available defaulting options are viewed by pressing the right Arrow Key. To make a selection, press the OK Key.
Don't Default	Selecting this option will abort the procedure.
Clear All	Selecting this option will reset all Door configuration times to zero. **Door names, if present, are not altered.**
Standard	Selecting this option will reset selected Door configuration times as follows: Lock Open Time 5 seconds Max. Open Time 30 seconds **Door names, if present, are not altered.**
Push '9' key to Confirm Default	The confirmation screen is displayed. Press the "9" Key to confirm your selection.
Default Done	The default procedure is confirmed.

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1. Secure LAN

MENU, 7, 8, 1

Secure LAN is a special operation the installer carries out after all LAN modules have been commissioned and tested. The purpose of Secure LAN is to tell the system that the LAN modules that are currently present are the only ones that are going to be in this system and to seal LAN fail inputs on other modules that are not present in this system. This will remove the "Had Network Problem" message that will always be present if the modules present do not match the modules that were present when a "Secure LAN" was last carried out.

In addition, "Secure LAN" will automatically generate a secret encryption key that will be copied to all modules in the network at the time of secure LAN. This secret encryption key is used to guard against covert module substitution. If communication with a module is lost temporarily, a "Module Lost" and "Module Found" message will be saved in review along with an alarm/restore on the appropriate LAN fail input for that module. If the module was powered down during the communication loss, an additional message will appear in review. This may be treated by some operators as a suspected module substitution.

Push "9" key to Confirm Secure

Press the "9" key at the prompt to perform the "Secure LAN" function.

It is recommended that Installers carry out a LAN Secure each time they have had reason to work on the LAN or LAN Modules and that it be conducted immediately prior to leaving the site.

The LAN Secure operation also performs a LAN Init operation at the same time. See Initialise LAN [MENU 7,8,2].

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2. Initialise LAN

MENU, 7, 8, 2

Initialise LAN results in the system sending initialisation data to all modules. This must be carried out if changes have been made to the module priorities or module poll times as these new settings will not be recognised until a LAN initialisation has been performed.

This operation must also be carried out if the Installer has made changes to any Module Programming (e.g. LCD Terminal or Reader Module Programming, etc.), or any programming relating to Module functions such as Door Programming, Diary Programming or similar.

```
Push "9" key to
Init LAN
```

Press the "9" key at the prompt to perform the "Initialise LAN" function.

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3. LAN Statistics

MENU, 7, 8, 3

The LAN statistics menu provides an advanced utility for LAN debugging. The quality of the LAN can be measured and an indication of system loading also obtained.

```
Lan Stat 001:1
00000000
```

Due to the complexity of diagnostic information available and the requirement of anecdotal comparison figures, this utility should only be used under the instruction of the Distributor.

See the "Installation and Troubleshooting" section for more information on the LAN.

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9. System Reset

MENU, 7, 8, 9

The Reset operation performs a software reset of the system. It fundamentally simulates a power down and power up procedure on the Control Module.

This procedure should only ever be performed when advised by the Distributor as part of an upgrade or similar.

Having reset the system, a LAN Secure [MENU 7,8,1] must also be performed.

See the "Installation and Troubleshooting" section for more information on the LAN.

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Lift Car Programming *(ACCESS 4000 Only)*

Each Lift Car to be controlled must be individually programmed.

Lift Car to alter: LC001

This screen allows the Installer to select the Lift Car to programme. A Lift Car cannot be assigned a text name.

LC001 Acc.Grp -> None

LC001 Access Group: AG001

This screen determines what access options will be applied to this lift car in exactly the same way access groups are applied to doors. Pressing the On key, allows selection by Access Group number. Setting the access group to None (directly or via a time-zone) will prevent any floors being accessed from this lift car.

LC001 Floor List FL000

This screen determines whether certain floors will be restricted for this lift car. If this screen is non-zero then only floors belonging to this list can be accessed from this lift car. If this screen if left at zero then floors are not restricted by Lift Car. Note that if the screen is set to a non zero list but the list is cancelled due to a tine-zone then floor access will be denied.

LC001 number of floors: 000

This screen sets the "top floor" to be accessed by this lift car. Up to 64 floors may be accessed.

LC001 1st Floor Aux: :X

This screen allows the Installer to set the first floor Auxiliary. "Floor button enable" auxiliaries start at this auxiliary and run in sequence up to the "top floor" specified above. For example if the 1st floor Auxiliary was set to E01:X12 and the number of floors was set to 5 then the auxiliaries controlled by this lift car are:

E01:X12 controls floor 1 button enable for this lift.
E01:X13 controls floor 2 button enable for this lift.
E01:X14 controls floor 3 button enable for this lift.
E01:X15 controls floor 4 button enable for this lift.
E01:X16 controls floor 5 button enable for this lift.

Note that if the required number of auxiliaries over-runs the 1st module then the auxiliary 1 of the next module is automatically used.

This screen must be left blank if using a High Level Interface for this lift.

LC001 Valid Aux: :X

This screen is only used in button feed back mode and specifies the Auxiliary that will be turned on for the button time (see below). It must be specified in button feedback mode.

LC001 Error Aux: :X

This screen is only used in button feedback mode and specifies the Auxiliary that will be turned on if an illegal button is pushed. (It should have a time associated with it to turn it off automatically).

LC001 But.Area-> None

If this screen is left at "None", no button feedback is used. Alternatively if this screen is non zero, then this determines which Area is to be used for lift button feedback processing for this Lift Car. This is the Area to which all button Inputs relating to this Lift Car are assigned for the purposes of button feed back processing.
IMPORTANT NOTE: A separate Area must be used for each Lift Car.

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LC001 Button Time: 000 sec

This screen specifies the maximum time the floor buttons remain active for a normal user. It is programmable from 5 to 255 seconds. At the end of this time all auxiliaries are returned to their free access/secure state.

LC001 Disabled Time: 000 sec

This screen specifies the maximum time the floor buttons remain active for a user type with the "disabled" flag set. It is programmable from 5 to 255 seconds. At the end of this time all auxiliaries are returned to their free access/secure state.

LC001 Unused Floors: 000

This screen allows auxiliary outputs/zones to be saved when a lift car doesn't start at floor 1. For example if a lift starts at floor 14, then this screen should be set to 13. If the 1st floor auxiliary was set to B19:X01 then the 14th floor Aux should be connected to B19:X14 but auxiliaries between B19:X01 to B19:X13 are available for other temporary uses and will not be manipulated by this lift car.

LC001 EMS ID Group/Lift: 00

This screen allows this lift to be controlled via high level interface and determines which EMS group and lift car represents this lift.
A setting of zero disables this lift from working with the high level interface.
The 1st digit is the EMS group and must be programmed between 1 and 8 inclusive.
The 2nd digit is the EMS lift car and must also be programmed between 1 and 8 inclusive.

The Floor Auxiliary should be zero and an EMS Comms Task should be running.

LC001,Floor 01-> None

These screens allow an optional area to be applied to each floor. Normally these screens are left at "None". Use the right arrow key to scroll the available Areas. The OK button moves the user to the screen for the next floor. The left arrow key goes back to the previous screen.

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COMMS TASK FORMATS

This section provides programming information for specific Comms Task formats.

CONTENTS

Comms Formats Index 1
IMPORTANT NOTES
Contact ID Mapping 2
Alternate Dial Tones 2
Contact ID Mapping 3
Contact ID Input Point Mapping Summary Tables ..... 5 - 6
Dialer Attempts and Dial Holdoff Times 7

Comms Format	**Introduced**	**Section Number Index**	
Monitor	V1	Comms- 1	Website only.
Answer Call	V1	Comms- 2 ^	
PC Direct	V1	Comms- 3	
IRfast Dialer	V1	Comms- 4 *^	
Contact ID Dialer	V1	Comms- 5 *^	
EMS	V3	Comms- 6	Website only.
EarthNet Direct Line	V1 to V4.5 only.	Comms- 7 *	Website only.
Securitel	V1	Comms- 8	
Printer	V1	Comms- 9	
External Modem	V1	Comms-10	
Inet	V3.5	Comms-11 *	Website only.
Accept	V2	Comms-12	
Poll Data	V3	Comms-13 *	Website only.
PACOM	V3 to V4.5 only.	Comms-14	Website only.
IRfast Backup Dialer	V1	Comms-15 *^	
CID Backup Dialer	V1	Comms-16 *^	
GSM	V3.5	Comms-17 *	
SpreadNet Wireless Interface	V2	Comms-18	Website only.
4+2 Pulse Dialer	V3	Comms-19 ^	Website only.
Geoquip	Under development	Comms-21	
8 Pin	V4.5	Comms-22	
C-Bus Serial Interface	V4	Comms-23	
Inovonics Wireless Interface	V4	Comms-24	Website only.
PosData DVR	V4.5	Comms-25	Website only.
Dynalite	V4.5	Comms-26	
HPM	Under development	Comms-27	
Insight	V5	Comms-28	
Internal Modem	V5	Comms-29 ^	
Insight External Modem	V5	Comms-30	
SIA Dialer	V5	Comms-31 ^	

* or ^ *See Important notes on the following page.*

Website: Advanced Tech Support: http://support.innerrange.com/restricted/index.phtml (Logon required)
http://support.innerrange.com/registration.phtml (To register)
Home Page: http://www.innerrange.com

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IMPORTANT NOTES:

*** Contact ID Mapping.**

Please refer to Pages 3 to 6 for information on Contact ID Input Mapping, relevant to programming options in the following Comms Tasks formats:

-IRfast Dialer	Comms- 4
-Contact ID Dialer	Comms- 5
-EarthNet Direct Line	Comms- 7
-Inet	Comms-11
-Poll Data	Comms-13
-IRfast Backup Dialer	Comms-15
-CID Backup Dialer	Comms-16
-GSM	Comms-17

*** ^ Alternate Dial Tones**

Some Telecommunications carriers have introduced services (e.g. Message bank services) that cause a different dial tone to be present on the PSTN line under certain circumstances. *See the Table below for examples.*

The more sophisticated alarm systems available, including the Model 3000/Access 4000, test for dial tone on the PSTN line before making a call. e.g. To report an alarm or perform a test report, etc.

Changes to the dial tone caused by some services are often significant enough to cause some systems to not recognise the different dial tone as a dial tone. If the tone is not recognised, the system may generate a comms failure condition and not attempt to make the call, thereby failing to report. Local alarm annunciation (e.g. Sirens, strobes, etc) will still occur, but the system may not transmit the alarm to the monitoring station.

Details of services known to effect the Model 3000/Access 4000 and the solution are provided in the following table:

CARRIER	SERVICE	DETAILS	SOLUTION
Telstra Australia	Message Bank 101	If the service is activated, the dial tone changes when there is a message awaiting retrieval. A warning is provided in the introduction message when customers set up this service for the first time. ("...some dial up modems or alarms may need to be adjusted to allow for the Telstra 101 service, contact your supplier for assistance...")	Select the "Dumb dial" option in any Dialer Comms Task that uses a PSTN line with this service enabled. i.e. Set the "D" option to "Y" in the PpDFTMA6 screen./field.

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Contact ID Mapping

Any Comms Task that has the ability to send data in the Contact ID format provides the ability to select the "Contact ID Map" that will provide the most suitable Input mapping for the site.

The following screen is used to determine the input mapping for the Comms Task.

```
CT001 Mapping ->
Standard
```

In order to cater for different types of system configurations within the limitation of the number of points available in the Contact ID format, several input mapping options have been provided as follows:
-Standard
-MAP-1
-School 30
-School 19
-SIMS II
-Access-1 (V3 or later)
-Pacom (V3 or later)
-Standard-2 (V3.5 or later)
-School 19B (V3.59 or later).

The major differences between the maps currently available are as follows:

Standard
LCD Terminal Zones are reported on unique Zone points for LCD Terminals 1 to 9.
LED Keypad Zones are reported on unique Zone points for LED Keypads 1 to 9.
32 Zone inputs can be reported from each of Expander Modules 1 to 9.
8 Zone inputs can be reported from each of Reader Modules 1 to 9.

MAP-1
Similar to Standard, except:
LED Keypad Zones share the LCD Terminal Zone points.
16 Zone inputs can be reported from each of Expander Modules 1 to 18.

School 30
Similar to Standard, except:
LED Keypad Zones share the LCD Terminal Zone points
16 Zone inputs can be reported from each of Expanders 1 to 30.
No Reader Modules are reported.

School 19
Similar to Standard, except:
LED Keypad Zones share the LCD Terminal Zone points
32 Zone inputs can be reported from each of Expanders 1 to 19.
No Reader Modules are reported.

SIMS II
Takes advantage of SIMS II Automation system message mapping technique.
All Zones/System inputs reported uniquely on any module type up to Module Number 35.
Open/Close on up to 35 Areas with single client code, or up to 250 Areas with unique client code for each Area. Details of the mapping technique are provided in the Tables section under "SIMS II Alarm Report Mapping."

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Access-1 (V3 or later) This map accommodates the extensive use of Reader Modules and may be more suitable for larger installations that place particular emphasis on Access Control.
LCD Terminal Zone points can be reported from each of the Terminals 1 to 9
16 Zone inputs can be reported from each of Expanders 1 to 9 (E type).
Reader Module Zone points can be reported from each of the Reader Modules 1 to 36.
Big Expanders, Wireless Network Modules & Mini Expanders share the Expander Zone point numbers.
No Intelligent Reader Modules or Analogue Modules are reported.

Pacom (V3 or later) This map has been specifically designed for the Pacom format. Please contact the Manufacturer for further details.

Standard-2 (V3.5 or later) This map allows all Modules available on the system to report in some form. The map introduces new conventions to allow the Control Module and all the current 8 Types of LAN Modules to report. While all Module Types can be reported, the total number of Modules on the system and the limit of 999 Contact ID point numbers will restrict the number of any individual Type of Module that can be reported.

A number of Inputs (mostly System Inputs) on some Modules are not reported with an individual point number. These inputs are grouped together and reported as "General Input Alarms".
e.g. Keypad Lockout for all LCD Terminals (Txx:S07) is reported as Point number 98.
Door Held for the 1st Door on all Reader Modules (Rxx:S04) is reported as Point number 93.
All Zone Inputs and System Inputs on the Control Module, B type Expanders and E type Expanders are individually reported. (With the exception of "Program change" on E type Expanders. [Exx:S10])
All Zone Inputs on Mini Expanders and Wireless Network Modules are individually reported.

The Standard-2 Map splits the 999 available point numbers into blocks of 50 points.
- Points 0 to 99 are reserved for the Control Module and "General Input Alarms".
- Each of the different remote Module Types are then designated a "Starting block".

Mapping tables for Standard-2 Map in each of the Memory Size and configuration options will be available on the Website.

School 19B (V3.59 or later) This map is very similar to School19 except that the System Inputs for all Expander Modules start at the same point numbers. In the School19 Map, the system inputs would start immediately after the last Zone Input on that module type.

FOR MORE INFORMATION:

The tables on the following pages provide a summary of the Input Point Mapping for every Module.

For full details of Point Mapping for the "Standard" map refer to theTables section at the rear of this manual.

Full details of all other Contact ID Mapping table options are available on the Website.

Note: LED Keypads and Geoquip are not currently available.

Website: Advanced Tech Support: http://support.innerrange.com/restricted/index.phtml (Logon required)
http://support.innerrange.com/registration.phtml (To register)
Home Page: http://www.innerrange.com

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Contact ID Input Point Mapping Summary. (Continued on the following page)

	Standard	Map-1	School 30	School 19
Control Module	All Inputs individually reported	All Inputs individually reported	All Inputs individually reported	All Inputs individually reported
LCD Terminal	All Inputs to Module #9 individually reported	All Inputs to Module #9 individually reported	All Inputs to Module #10 individually reported	All Inputs to Module #10 individually reported
LED Keypad (Not yet available)	All Inputs to Module #9 individually reported	All Inputs to Module #9 individually reported on LCD Term Points.	All Inputs to Module #10 individually reported on LCD Term Points.	All Inputs to Module #10 individually reported on LCD Term Points.
Big Expander	All Inputs to Module #9 individually reported.	1st 16 Zones & all System I/Ps to Module #18 individually reported.	1st 16 Zones & all System I/Ps to Module #30 individually reported.	All Inputs to Module #19 individually reported.
1 Door/2 Door Access	All Inputs to Module #9 individually reported.	All Inputs to Module #9 individually reported.	All Inputs report on Point 99.	All Inputs report on Point 99.
Wireless Network	All Inputs to Module #9 individually reported.	All Inputs to Module #9 individually reported.	All Inputs to Module #13 individually reported on Big Exp Point numbers.	All Inputs to Module #13 individually reported on Big Exp Point numbers.
Mini Expander	All Inputs to Module #9 individually reported on Big Exp Point numbers.	All Inputs to Module #18 individually reported on Big Exp Point numbers.	All Inputs to Module #30 individually reported on Big Exp Point numbers.	All Inputs to Module #19 individually reported on Big Exp Point numbers.
16Z Expander	All Inputs to Module #9 individually reported on Big Exp Point numbers.	All Inputs to Module #18 individually reported on Big Exp Point numbers.	All Inputs to Module #30 individually reported on Big Exp Point numbers.	All Inputs to Module #19 individually reported on Big Exp Point numbers.
Intell 4 Door Access	All Inputs to Module #9 individually reported on Big Exp Point numbers.	All Inputs to Module #9 individually reported on Big Exp Point numbers.	All Inputs report on Point 99.	All Inputs report on Point 99.
Analogue Module	All Inputs report on Point 99.	All Inputs report on Point 99.	All Inputs report on Point 99.	All Inputs report on Point 99.
Geoquip	Not yet available.	Not yet available.	Not yet available.	Not yet available.
LAN Pwr Supply	All Inputs report on Point 99.	All Inputs report on Point 99.	All Inputs report on Point 99.	All Inputs report on Point 99.
RF Expander	Zones 1-16 & all System I/Ps to Module #9 individually reported on same Point numbers as Wireless Network Zones (S'net/Inov) Zones 17-32 = Point 99	Zones 1-16 & all System I/Ps to Module #9 individually reported on same Point numbers as Wireless Network Zones (S'net/Inov) Zones 17-32 = Point 99	Zones 1-16 & all System I/Ps to Module #30 individually reported on Big Exp Point numbers. Zones 17-32 = Point 99	All Inputs to Module #19 individually reported on Big Exp Point numbers.
Open/Close by User	User 1 to 900 individually reported. Users >900 = Point 999.			
Open Close Area	Area 1 to 98 individually reported. Areas >98 = Area 99. General Open/Close = Area 00.			

NOTES.

Pacom: Specifically designed for the Pacom format. Contact Inner Range for further details.

School 19B: Similar to School-19 except that System I/Ps for all Expander Module Types start at the same Point number.

Standard-2: Allows all Module Types to report. Mapping varies with Memory Size and Configuration selected. See Website for details.

Unmapped Inputs: Inputs not mapped to an individual Point number are reported as Point number 99. Note that the Event Code and Group Byte (Area number) can still be used to identify different types of alarms reported on Point 99.

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Contact ID Input Point Mapping Summary. (Continued on the following page)

	School 19B	SIMS II	Access-1	
Control Module	All Inputs individually reported	All Inputs individually reported	All Inputs individually reported	
LCD Terminal	All Inputs to Module #10 individually reported	All Inputs to Module #35 individually reported	All Inputs to Module #9 individually reported	
LED Keypad (Not yet available)	All Inputs to Module #10 individually reported on LCD Term Points.	All Inputs report on Point 99.	All Inputs report on Point 99.	
Big Expander	All Inputs to Module #19 individually reported.	All Inputs to Module #35 individually reported	1st 16 Zones & all System I/Ps to Module #9 individually reported.	
1 Door/2 Door Access	All Inputs report on Point 99.	All Inputs to Module #35 individually reported	All Inputs to Module #36 individually reported	
Wireless Network	All Inputs to Module #13 individually reported on Big Exp Point numbers.	All Inputs to Module #13 individually reported	All Inputs to Module #9 individually reported on Big Exp Point numbers.	
Mini Expander	All Inputs to Module #19 individually reported on Big Exp Point numbers.	All Inputs to Module #35 individually reported	All Inputs to Module #9 individually reported on Big Exp Point numbers.	
16Z Expander	All Inputs to Module #19 individually reported on Big Exp Point numbers.	All Inputs to Module #35 individually reported	All Inputs to Module #9 individually reported on Big Exp Point numbers.	
Intell 4 Door Access	All Inputs report on Point 99.	All Inputs to Module #35 individually reported	All Inputs report on Point 99.	
Analogue Module	All Inputs report on Point 99.	All Inputs to Module #35 individually reported	All Inputs report on Point 99.	
Geoquip	Not yet available.	Not yet available.	Not yet available.	
LAN Pwr Supply	All Inputs report on Point 99.	All Inputs to Module #35 individually reported	All Inputs report on Point 99.	
RF Expander	All Inputs to Module #19 individually reported on Big Exp Point numbers.	All Inputs to Module #13 individually reported on Wireless Network Module Point numbers. (Module Type 5)	Zones 1-16 & all System Inputs to Module #9 individually reported on Big Exp Point numbers. Zone 17-32 = Point 99.	
Open/Close by User	User 1 to 900 individually reported. Users >900 = Point 999.			
Open Close Area	Area 1 to 98 individually reported. Areas >98 = Area 99. General Open/Close = Area 00.			

NOTES.

Pacom: Specifically designed for the Pacom format. Contact Inner Range for further details.

School 19B: Similar to School-19 except that System I/Ps for all Expander Module Types start at the same Point number.

Standard-2: Allows all Module Types to report. Mapping varies with Memory Size and Configuration selected. See Website for details.

Unmapped Inputs: Inputs not mapped to an individual Point number are reported as Point number 99. Note that the Event Code and Group Byte (Area number) can still be used to identify different types of alarms reported on Point 99.

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DIALER ATTEMPTS AND DIAL HOLDOFF TIMES

Introduction.

The Dialer reporting formats in Model 3000/Access 4000 panels incorporate the ability to dial up to 4 different Telephone numbers. The number of Dial Attempts can be specified and a variable Dial Holdoff Timer further enhances the integrity of the Central Station communications and helps to protect against purposeful blocking of the call attempts.

Telephone Numbers.

The Installer can define a main Telephone Number (1st Number) and up to 3 additional numbers that can be used to contact a Central Station.

Dial Attempts.

Dial attempts will begin with the 1st Number which **must** be present, and will continue up to the maximum number of attempts specified. The Default setting is 8 attempts.
(Note that Telecommunications regulatory authorities usually limit the maximum number of attempts allowed. Check with your local authority.)

If different telephone numbers are needed for the subsequent attempts, these Telephone Numbers can be assigned as the 2nd, 3rd and 4th Numbers.

If a dial attempt on the 1st Number fails, the additional numbers are tried in the order 2nd, 3rd, 4th, 1st, 2nd and so on. If a number is not present, the next available number in the sequence is substituted.

Examples:

NUMBERS ASSIGNED

	ATTEMPTS									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
	NUMBER USED.									
All 4 numbers.	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd
Only the 1st 2nd and 3rd numbers.	1st	2nd	3rd	1st	1st	2nd	3rd	1st	1st	2nd
Only the 1st and 2nd numbers.	1st	2nd	1st	1st	1st	2nd	1st	1st	1st	2nd
Only the 1st number.	1st	1st	1st	1st	1st	1st	1st	1st	1st	1st

Note that the 1st Number, being the next available number in the cycle, is substituted for attempts on any number that has not been assigned its own Telephone Number. This simply means that when fewer than 4 Numbers are assigned, the 1st Number, or Primary Number will be tried more often.

If the system is required to dial 2 different telephone numbers alternately, (i.e. TN001 and TN002), then the telephone numbers need to be assigned as follows:
1st Number: TN001
2nd Number: TN002
3rd Number: TN001
4th Number: TN002

Dial Holdoff.

The Dial Holdoff time is kept to a minimum (around 5 Seconds) for the 1st 4 attempts allowing the panel to quickly try all 4 possible telephone numbers. After the 4th attempt, the Holdoff time between attempts is then varied.
This Holdoff time never exceeds 120 Seconds.

In the Comms Task programming for Dialer Comms Tasks, a "60 Second Redial" option is available to cater for countries where regulations require a 60 Second Holdoff time between any re-dial attempts. E.g. Singapore.
This option overrides the Dial Holdoff timers described above.

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"Monitor" Comms Task Format

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"Answer Call" Comms Task Format

Answer Call (with Callback & Fax Bypass option)

The Answer Call format is used if you wish the Model 3000 to be able to answer the dialer line (or call back the computer) and provide:
-A modem connection for the purposes of upload / download.
-Panel remote control from any "touch-tone" (DTMF) telephone or mobile phone.
It can also be used to automatically monitor the status of the dialer line by periodically checking for DC voltage on the line. You cannot have more than one Comms Task assigned to answer the phone. If more than one "Answer Call" Comms Task has been programmed in error, the Comms Task with the **lower** Comms Task number will answer the call (CT001 will take priority over CT002). Normal operation is as follows:

The task will periodically test the dialer line for DC voltage and will alarm / restore the Control Module System Input "Phone" (C01:S22) as required. In addition, the task will monitor the dialer line for a ringing phone and after the required amount of rings will answer the dialer line and attempt a modem connection at the highest baud rate available (300 or 1200 Baud).

If Callback is programmed, the panel will hang-up, wait 15 seconds, then dial the pre-programmed "Callback Tel. No." (If another Comms Task requires the phone line during the 15 second pause, Callback will be aborted) After dialling, the Concept 3000 waits 30 seconds for the start of the modem answer tone.
(If the phone is ringing whilst attempting a call back, the Model 3000 will wait until the ringing stops before trying to dial.)

If Fax Bypass is programmed and rings are sensed but cease before the required number of rings is reached, the task will loop the line in parallel with whatever may have answered the dialer line and wait a pre-determined time for a single or series of DTMF tones. If a DTMF tone is sensed, the task will seize the line and wait a further time before initiating the modem answer connect sequence. If DTMF tone is not sensed within the required time, the task will un-loop the line. This allows fax machines and the like to be bypassed by simply sending any DTMF tone when the fax machine answers.

Answer Call Options

Options are reached by pressing HELP, "9" at the Active / Idle screen. Options are divided into common options and less common or Special options. Usually only the common options need to be programmed, however, Special options are reached by pressing HELP, "9" twice at the Active / Idle screen.

```
CT001 Rings to
Answer: 000
```

This screen sets the number of rings to answer the incoming call. Legal values are between 001 and 019 rings.

```
CT001 Ans.F3CTSD..
Options-> nnnnnnnn
```

This screen allows some answer options to be programmed:

F **F**ax bypass — This option enables Fax bypass by sensing if the phone stops ringing before the required amount of rings. If detected the Comms Task will then loop the line in parallel with whatever answered the phone and wait a pre-determined time for DTMF tone to be sensed.

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3	**3**00 Baud	This option forces 300 Baud to be used to connect the modem, irrespective of the modem type installed.
C	**C**all back	This option forces the panel to always Call back the Upload / Download package thus implementing a higher degree of security. The "Remote Access" option in the Installer's Menu Group must be set to "Yes".
T	**T**imed bypass	This option enables Timed Bypass. The [F]ax Bypass option above must be set to "Yes". This option allows the PC Operator to achieve Fax Bypass by dialling the panel, aborting the call immediately after the fax has answered ([F10] then "Yes") and then dialling the panel again 1 minute later. The panel will now answer on the first ring, thereby gaining the line before the fax/answering machine can answer.
S	**S**ingle DTMF	This option must be set to "Y" if the "F" flag above is set to Yes **and** DTMF Control is to be used. This instructs the modem to monitor the line for a DTMF tone for a time once a fax or other device has answered the line.
D	**D**TMF Control	This option enables DTMF Control, once the system has answered a call and the correct DTMF tone has been detected. "Single DTMF Tone" must also be programmed in special options below. **DTMF cannot be used with Timed bypass**. *See "DTMF Control Programming" [MENU 7,3,3].*
.	**S**pare	This option has been left spare for future development.
.	**S**pare	This option has been left spare for future development.

```
CT001 Line Test
Time: 000 min
```

This screen sets the time between automatic dialer line tests. Dialer line tests are performed by detecting line voltage. If the line voltage is not detected then C01:S22 will be set to the alarm condition. Setting a time of 000 minutes disables line testing. The maximum time is 255 minutes (4 hours, 15 minutes).

Answer Call Special Options

Special options are reached by pressing HELP, "9" twice at the Active / Idle screen, or by pressing HELP, "9" from any common options screen. HELP, "0" will take you back to the common options, when programming of special options is complete.

```
CT001   PpDFTM.6
Dial -> nnnnnnnn
```

This screen sets various dialling options:

P	**P**ulse Dial (Tel)	Selects Pulse ("decadic") dial when dialling the main Telephone Number.
p	**P**ulse Dial (PABX)	Selects Pulse ("decadic") dial when dialling the PABX phone number if present.
D	**D**umb Dialling	Selects Dumb dialling. If "n" then Smart dialling is selected (default). *See the section on "Introduction to Dialer formats" at the end of this chapter for more details.*
F	**F**orce 300 Baud	Not used in "Answer Call" Comms Task.

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T	**T**est Mode	Not used in "Answer Call" Comms Task.
M	**M**ax Count	Not used in "Answer Call" Comms Task.
A	**A**bort Pre-dial	Not used in "Answer Call" Comms Task.
6	**6**0 sec Redial	Not used in "Answer Call" Comms Task.

```
CT001 PABX No.->
None
```

```
CT001 PABX No.->
TN000
```

These screens allow the installer to define an optional PABX Access number and Call-back Telephone Number. When the Call-back number is defined, extra security is provided by forcing the task to ring back this number on a successful log-on sequence as an added precaution against "hacking".

Telephone numbers are selected from a pre-programmed list of Telephone Numbers, selected alphabetically by name or by number, if desired.

See Telephone Number Programming.

```
CT001 Back No.->
None
```

```
CT001 Back No.->
TN000
```

```
CT001 Cust No.->
None
```

```
CT001 Cust No.->
TN000
```

This screen allows the installer to specify the Telephone Number of the dialer line connected to the panel and is useful for reference purposes. It is not required for programming or panel functionality.

```
CT001 Seize Aux
C01:X08
```

This screen allows an Auxiliary output to be specified that will turn on whenever the dialer line is seized and turn off whenever the dialer line is released.

```
CT001 DTMF Tone
Wait: 000/10 sec
```

This screen sets the time a task will wait to sense the DTMF tone when in fax bypass mode. The time is programmable from 1/10 second to 255/10ths of a second (25.5 secs). If this option is left at 000/10 then the default time of 5 seconds will be used.

The DTMF tone wait time is also used as the main dial tone wait time in Callback operation and is best left at its default value (000/10) if Callback is utilised.

If the phone is ringing whilst attempting a call back, the system 3000 will wait till the ringing stops before trying to dial.

```
CT002 Single
DTMF Tone: 000
```

This screen allows the Installer to specify the DTMF tone which will be used to initiate the modem answer sequence in fax bypass mode and also selects the tone that will be used to initiate DTMF Control Mode. The programmed tone is the one that will initiate the modem connect sequence. The programmed tone **plus one** is the tone that will initiate DTMF Control Mode..

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eg. if "005" is programmed, the DTMF digit 5 will be the Fax bypass tone in PC Direct and DTMF tone 6 will initiate DTMF Control Mode.

"(**D**)TMF Control" option must be set to "Yes" under "Answer Options" above. *See "DTMF Control Programming" [Menu 7,3,3] for more details.*

CT001 Line Test Count: 000

This screen sets parameters associated with line testing and should be left at 000 unless advised by the manufacturer.

CT001 Answer Wait: 000/10 sec

This screen allows an answer wait time between 0 and 255/10ths of a second (25.5 seconds) to be programmed. The default is 0 seconds. When a non-zero answer wait time is programmed, upon answering the call and accessing the interpreter for upload/download, all incoming characters will be ignored until the answer wait time has expired. This is useful when connecting with a mobile data network where unnecessary additional characters are output immediately after modem connection.

The Answer Wait time is also used as the PABX dial tone wait in Callback operation and is best left at its default value (000/10) if Callback is utilised.

Introduction to Dialer Formats

When activated, a Comms Task set to a Dialer format (Contact ID, IRfast, or SIA) will continually look for any reports to be sent. When a reportable event is found, the dialer line will be used to attempt a connection to the Central Station. If the dialer line is being used, the attempt will be deferred until whatever is using the dialer line is finished. When finished, this Comms Task will "take-over" the dialer line and will not release it until it is finished. The connection attempt works in one of two ways:

- Smart Dial This is the default setting. The task will monitor the line for line faults, dial-tone, busy etc. and make dialling decisions based on results of attempts to connect to the Central Station as quickly as possible. All activity will be recorded to review.

- Dumb Dial This setting does not make "smart" decisions based on sensed tones, although all tones sensed and dialer progress are recorded to review.

The operation of these two modes is described in more detail in the section headed "Attempting Dialer Connection".

Once connected, the task will report all alarms until either there are no more alarms, or the on-line timer expires (default is 10 minutes). Alternatively, if the "Look Ahead" option is set, old alarms will be skipped in favour of new alarms.

Attempting Dialer Connections

Most Comms Tasks formats which need to dial a number to report information follow the logic below. Either "Smart dial" or "Dumb dial" can be selected on a per Comms Task basis.

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Smart Dial

1. Seize Line and wait 3 seconds to see if phone is ringing. If phone is ringing wait till it stops ringing.

2. Test Line for DC voltage. If no line then unloop line, wait variable time then try again to same Telephone Number up to maximum attempts.

3. If got PABX number then loop line and wait for dial tone. If get dial tone then begin dialling. If get busy then unloop line, wait variable time then try again up to maximum attempts. If don't get dial tone then dial PABX number anyway.

4. Now wait for main dial tone. If get dial tone then begin dialling. If get busy or don't decode dial-tone then unloop line, wait variable time then try again to same Telephone Number up to maximum attempts.

5. Wait for Central Station required handshake for this format. If get dial tone or busy then unloop line, wait variable time then try again to a new Telephone Number up to maximum attempts. If get time out then unloop line, wait variable time then try again to a new Telephone Number up to maximum attempts. If get required handshake then start on-line timer.

6. Proceed with communications for this format. If redial is required due to errors then unloop line, wait minimum time then try again to the same Telephone Number up to maximum attempts.

Dumb Dial

1. Seize Line and wait 3 seconds to see if phone is ringing. If phone is ringing wait until it stops ringing.

2. Test Line for DC voltage. If no line, save review message and continue.

3. If got PABX number then loop line and wait for dial tone. If get dial tone, begin dialling. If get busy, save review message and continue. If do not get dial tone, dial PABX number anyway.

4. Wait for main dial tone. If get dial tone, begin dialling. If get time-out or any other tone, save to review and continue.

5. Wait for Central Station required handshake for this format. If get time-out, unloop line, wait variable time then try again to a new Telephone Number up to maximum attempts. If get required handshake, start on-line timer.

6. Proceed with communications for this format. If redial is required due to errors, unloop line, wait minimum time then try again to the same Telephone Number up to maximum attempts.

NOTE:
Many telephone lines in Australia and New Zealand have a Message Bank or similar service connected. The differential dial tones used as indicators for such services can impede communication by the panel.

To avoid possible communication problems either disable the connected service or set the (D)umb Dialling option in Comms Task Programming.

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"PC Direct" Comms Task Format

This communication format allows the 3000/4000 system to connect to the PC Direct Upload / Download programme.

```
CT001 Idle ->
PC Direct
```

Programming options are found by pressing HELP, "9" at this screen.

```
CT001  Port   ->
to use: 0
```

This screen allows the Installer to define the UART Port to which the PC will be connected. Depending on the version of UART Expander fitted to the Control Module, a Port number from 0 to 4 may be used. The Port number is selected by scrolling through the available options using the right arrow key.
Port "O" should only be used as a temporary connection as the on-board dialer is disables whilst Port "O" is connected. Ports 1 to 4 are on the UART board and should be used for permanent or frequent connection.

```
CT001  Baud   ->
Rate:  9600
```

This screen allows selection of the Baud Rate (Data speed) at which the UART will communicate. The Baud Rate is selected by scrolling through the available options using the right arrow key. A setting of 9600 Baud is recommended for normal use but 19200 may be used for Upload/Download.
See "Comms Task Baud Rates" in Comms Task Programming [MENU 7,3,1] for further details.

Return to the first screen by pressing HELP, "0" and toggle the Comms task On and Off by pressing the "9" Key.

Diagnostics

```
CT001     ..R.
Status -> nnnn
```

Pressing the ON Key whilst the Active/Idle screen is displayed will display the UART Port status screen. This screen can be Reset (cleared) when desired by pressing the OFF Key. The following table explains the flags:

.	**S**pare	Spare for future development.
R	**R**etry	A "Y" under this flag means the receive fifo (16 bytes) has overflowed and at least one character has been lost. This will normally cause a retry of some kind.
.	**S**pare	Spare for future development.
.	**S**pare	Spare for future development.

The "R" flag may be monitored after communications via this port. In the event that the system places a "Y" flag under the "R", the Status screen should be reset and monitored further. Should a "Y" flag appear under the "R" with some regularity, a potential cause would be the baud rate at which the port is attempting to communicate. In such a case the Installer should reduce the baud rate and monitor the effect via the status screen.

In the event that lower baud rates do not solve the problem, assistance should be sought from the distributor's Technical Support.

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"IRfast" Comms Task Format

Dialer Operation - IRfast

The Model 3000 and Access 4000 panels can communicate in IRfast dialer format to a suitably equipped Central Station. IRfast can be used to report Area opens/ closes and Zones/Input isolations, tampers, alarms and restores to a Central Station equipped with a FE100 digital receiver. No input or user mapping is required because **all** Model 3000 and Access 4000 alarm reports and events can be reported uniquely, including optional review text if desired.

IRfast format features include:

- Very fast reporting
- Compatible with all other formats
- Unique reporting of all events
- Optional Review text for alarm clarification
- Optional Contact ID Interpretation
- Optional Panel system information
- Up to 65000 users
- Up to 250 Areas
- Encrypted Communications
- Supports panel remote control

Dialer Options

Options are reached by pressing HELP, "9" at the Active / Idle screen. Options are divided into common options and less common or Special options. Usually only the common options need to be programmed.

Special options are reached by pressing HELP, "9" twice at the Active / Idle screen.

```
CT001 Client
Code: 0000
```

This screen sets the client code to be used for this Comms Task. The client code is programmable in decimal from 0001 to 9999. (Client codes of 0000 and 9999 should be avoided). If the "Multiple Area Client Code" is set, it is possible for a different client code to be used.

```
CT001 PABX No.->
None
```

```
CT001 PABX No.->
TN000
```

These screens allow the installer to define an optional PABX access number. Telephone Numbers are chosen from a pre-programmed list of Telephone Numbers, selected alphabetically by name or by number. See Telephone Number programming.

```
CT001 1st No.->
None
```

This screen allows the Installer to define the main Telephone Number to be used to contact the Central Station. Attempts will begin with the 1st number which **must** be present, up to the maximum number of attempts specified. (Default is 8 attempts)

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CT001 2nd No.-> None

If different telephone numbers are needed for subsequent attempts, the 2nd, 3rd and 4th telephone numbers may also be defined.
If a dial attempt on the 1st telephone number fails, the additional numbers are tried in the order 2nd, 3rd, 4th, 1st, 2nd and so on. If a number is not present, it is skipped and the next number in the above sequence is tried.

After an initial 4 attempts, the Holdoff time between attempts is then varied to enhance the chances of a successful call and help protect against blocking.
(The Holdoff time never exceeds 120 Seconds)

Telephone Numbers are chosen from a pre-programmed list of Telephone Numbers, selected alphabetically by name or by number.
See Telephone Number Programming.

CT001 Dial PpDFTM.6 Options-> nnnnnnnn

This screen sets various dialling options:

P	**P**ulse Dial (Tel)	Selects Pulse ("decadic") dial when dialling the main Telephone Number.
p	**P**ulse Dial (PABX)	Selects Pulse ("decadic") dial when dialling the PABX phone number if present.
D	**D**umb Dialling	Selects Dumb dialling. If "n" then Smart dialling is selected (default). *See "Introduction to Dialer Formats" at the end of this chapter.*
F	**F**orces 300 Baud	Forces all communications to 300 Baud instead of the default 1200 Baud. This need only be set if there are communication difficulties at 1200 Baud. (Relevant to IRfast format only).
T	**T**est Mode	This enables Test Mode which causes changes to the dial sequence to suit the Victorian Schools Tester. These changes are: -Do not dial the Telephone Number -Do not wait for initial handshake -Do not require an acknowledgement -Shorten inter-round time from 500ms to 300ms
M	**M**aximum Count	This enables the Maximum Count option. This option allows the maximum call time in Contact ID to be based on valid acknowledgements received, rather than time. If this option is set, the maximum call time is based upon the number of packets sent (1 to 255) programmed in the "Online Time" screen, under Special Options.
A	**A**bort Pre-dial (**S** in V1 & V2)	If set to "Y", when connection is attempted, any pre-dial error (e.g. no line) will cause the attempt to be aborted and go straight to the Backup Task (If programmed) (Formerly Single Hit in V1 & V2. This option now in Process Groups.)
6	**6**0 sec Redial	This option forces the Comms Task to wait 60 seconds between any redial attempt. This option must be set to comply with **Singapore** Telecom regulations.

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```
CT001    MLGPN...
Ropts -> nnnnnnnn
```

This screen sets various reporting options:

M	**M**ultiple Area Codes	If Multiple Area client codes are selected, whenever a report from an Area is performed (open/close/alarms/tampers/isolations/restores) the client code defined in Area Programming will be used if it is not "0000". If the Area Client code is "0000", the Comms Task client code will be used. If this option is set to "n" then the Comms Task client code will always be used. (See Area Programming for more details of this application)
L	**L**ook Ahead	Normally all reportable events will be sent in the order that they occur; one at a time until no more reports are required. The Comms Task will ensure the order will not alter, even if the dialer takes a long time to get through to the Central Station or if reports are being generated faster than they can be sent. If this option is set to "Y", **Look Ahead** operation is selected. With Look Ahead selected, a sequence of multi-breaks on a single Zone/Input will be ignored if a restore report has already been sent for that Zone/Input and there are new alarms from a different Zone/Input that have not been sent yet. Open/Close reports do not follow this logic and are always reported. This option is useful to track intruder movement through a larger installation and ignore multibreaking detectors.
G	**G**eneral O/C	This option selects general open and close reporting. Whenever **all** Areas (programmed for Open/Close reporting) are turned ON a general Area close is reported. As soon as the **first** Area is turned OFF, a general Area open is reported. In Area programming, some Areas can be nominated as "Not General Area" and are ignored in the general Area calculation. Open/Close will not be reported on these Areas in any Comms Task with this "General Open/Close" option set to YES. Another Comms Task with this option set to NO may be used to allow these Areas to trigger individual Open/Close reports. See Area Programming "Not General Area" option for details.
P	**P**revents Restores	This option prevents restores form being reported via this Comms Task.
N	**N**o Area Still Open	In Area programming, it is possible to enable reporting of "Area Still Open" and "Area 24Hour Offs". Not all reporting formats can handle these reports. Setting this option to "Y" will disable these reports for this Comms Task. Both of these reports are sent without any loss of information in IRfast format.
D	**D**elay Reports (V5 or later)	This option enables Delayed Reporting (Dial Holdoff) for this Comms Task. *See "Delay Report" in Process Group Extra Options (RNED...L screen) for details.*

```
CT001 Area List
Filter: AL002
```

This screen allows an optional Area List filter to be defined for this Comms Task. If a non-zero Area List is chosen, only information from Areas in the specified Area List will be sent using this Comms Task.

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CT001 EOA.....
Efilt-> nnnnnnnn

The "Extra Filter" screen option allows a Comms Task to only respond to certain types of events.

E	**E**xtra Filter	This option enables Extra Filter options. If left at "n", no extra filtering is used. ie. normal operation.
O	**O**pens/Closes	This option enables Opens/Closes reports to be sent via this Comms Task. This option only applies if the "E" option above is set to "Yes".
A	**A**larms	This option allows Alarms/Tampers/Isolations to be sent via this Comms Task. This option only applies if the "E" option above is set to "Yes".
.	**S**pare	Spare options for future filters. Leave set to "n".

For example: To configure a Model 3000 system so that all openings and closings are sent via Securitel and all alarms/tampers/isolates go via Contact ID, set the Securitel Comms Task with the "E" and "O" Extra Filter options and the Contact ID Comms Task with the "E" and "A" Extra Filter options.

CT001 Mapping ->
Standard

This screen determines the input mapping for this Comms Task.
This is only relevant if sending Contact ID messages via the IRfast format.
The (**C**)ontact ID option must be set to "Yes" under Special Options for this feature to operate correctly.

In order to cater for different types of system configurations within the limitation of the number of points available in the Contact ID format, several input mapping options have been provided as follows:

-Standard		-MAP-1	
-School 30		-School 19	
-SIMS II		-Access-1	(V3 or later)
-Pacom	(V3 or later)	-Standard-2	(V3.5 or later)
-School 19B	(V3.5 or later)		

For more details of Mapping options refer to "Comms Task Formats" at the beginning of this section and to the tables at the rear of this manual.

Because IRfast format doesn't require mapping, this mapping selection is used to determine the Contact ID mapping to be used when Contact ID information is to be sent in addition to native IRfast information.

Dialer formats - Special Options

Special options are reached by pressing HELP, "9" twice at the Active/Idle screen, or by pressing HELP, "9" from any common options screen. HELP, "0" will take you back to the common options when programming of special options is complete.

CT001 Maximum
Attempts: 008

This screen sets the maximum dial attempts this task will use to attempt to contact the Central Station. If left at zero then the default of 8 attempts will be used. Telecommunication regulatory authorities may limit this number. (In Australia, Austel specify a maximum of 10 attempts).
In "UK" firmware, the value cannot be set to greater than 14.

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CT001 Backup Attempts: 003

This screen sets the number of dial attempts before the backup input will be triggered (C01:S20). If left at 000 the default value of 4 will be used.

CT001 Backup Task: CT000

This screen allows an optional backup task to be specified that will be triggered if this Comms Task fails to communicate within its maximum attempts. Leaving the task at CT000 specifies no backup task will be triggered.

CT001 Seize Aux C01:X08

This screen allows an Auxiliary output to be specified. This Auxiliary will turn on whenever the dialer line is seized and will turn off whenever the dialer line is released.

CT001 Pass Aux C01:X08

This screen allows the installer to specify an Auxiliary output to turn on whenever the dialer successfully sends a report to the Central Station. It must be turned off by some other mechanism such as a timer.

CT001 PABX Dial Wait: 030/10 sec

This screen sets the time the task will wait to sense dial-tone before dialling the PABX number. The time is programmable from 1/10 sec to 255/10 sec (25.5 seconds). If this option is left at 000/10 then the default time of 3 seconds will be used.

CT001 Main Dial Wait: 030/10 sec

This screen sets the time the task will wait to sense dial-tone before dialling the Main number. The time is programmable from 1/10 sec to 255/10 sec (25.5 seconds). If this option is left at 000/10 then the default time of 3 seconds will be used.

CT001 Handshake Wait: 030

This screen sets the time the task will wait for an initial handshake after dialling the Central Station. The time is programmable from 1 second to 255 seconds. If this option is left at 000 then the default time of 30 seconds will be used.

CT001 Max.Online Time: 010 min

This screen sets the maximum time the task will stay on-line before hanging up and re-dialling. The time is programmable from 1 minute to 255 minutes. If this option is left at 000 then the default time of 10 minutes will be used.
If the timer expires, the Comms Task will hang up and "Call too long" will be logged to Review.

If the "Maximum Count" option in the Dial Options is set to Yes, this screen is used to program the maximum number of packets sent (1 to 255).

CT001 Line Test Count: 000

This screen sets the parameters associated with line testing and should be left at 000 unless advised by the manufacturer.

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IRfast Special Options

If IRfast format has been chosen, the previous special options will be followed by two more special option screens only relevant to the IRfast format. These screens will not appear if other dialer formats are selected.

```
CT001   RCT..LIU
Sopts-> nnnnnnnn
```

This screen specifies a number of send options.
If any of these options are enabled for IRfast format in the FE100 Receiver, they do not need to be enabled in this screen. i.e. The function will be performed if the option is enabled in either the FE100 or in this screen.
See additional notes under the "Update Clock" option below for exception.

R	**R**eview Text	Setting this option to "Y" will cause the Model 3000 panel to send review text for each event reported.
C	**C**ontact ID	Setting this option to "Y" will cause the Model 3000 panel to send an equivalent Contact ID string for each event reported, using the mapping option selected above. This is useful when the FE100 is being used to receive IRfast format but the automation system cannot understand native IRfast information.
T	**T**ime/Date	Setting this option to "Y" will cause the Model 3000 to send a text string of the Time/Date the event was recorded into review on the Model 3000 panel.
L	**L**ink to PC	Setting this option to "Y" will cause the FE100 to hand on to the line for a short period to allow the Automation to send commands back to the panel. Only set this option after consultation with the Central Station.
I	**I**nformation	Setting this option to "Y" will cause the Model 3000 panel to send miscellaneous panel information before hanging up, including panel serial number, software version and security option settings.
U	**U**pdate Clock	Setting this option to "Y" will cause the FE100 to Update the Model 3000 panel time and date from the FE100 system clock prior to hanging up. V4.5 or later. This option must be enabled in the Model 3000 panel for the function to be enabled. This option can then be set to "n" to disable the function regardless of the setting in the FE100, for panels being monitored in a different Time Zone.
.	**S**pare	This option has been reserved for future developments and must be set to "n".

NOTE: An FE100 can set any of the above options to Yes on a per receiver basis. The above options should only be enabled upon instruction from the Central Station.

```
CT001   IU...DXA
Eopts-> nnnnnnnn
```

This screen configures various panel remote control options.
Remote Control options are only relevant where the appropriate facilities exist at the Central Monitoring Station.

I	**I**nstaller	This option causes the system to consider the Central Station as the Installer as far as panel control is concerned.
U	**U**ser	This option causes the system to consider the Central Station as a normal User as far as panel control is concerned.
D	**D**oors	Setting this option to "Y" will allow Doors to be unlocked and locked by the Central Station. (Not yet implemented)

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X	**A**uxiliaries	Setting this option to "Y" will allow Auxiliaries to be turned on and off by the Central Station. (Not yet implemented)
A	**A**reas	Setting this option to "Y" will allow Areas and Area Lists to be turned on and off by the Central Station.
.	**S**pare	This option has been reserved for future developments and must be set to "n".

Introduction to Dialer Formats

When activated, a Comms Task set to a Dialer format (Contact ID, IRfast, or SIA) will continually look for any reports to be sent. When a reportable event is found, the dialer line will be used to attempt a connection to the Central Station. If the dialer line is being used, the attempt will be deferred until whatever is using the dialer line is finished. When finished, this Comms Task will "take-over" the dialer line and will not release it until it is finished. The connection attempt works in one of two ways:

- Smart Dial This is the default setting. The task will monitor the line for line faults, dial-tone, busy etc. and make dialling decisions based on results of attempts to connect to the Central Station as quickly as possible. All activity will be recorded to review.

- Dumb Dial This setting does not make "smart" decisions based on sensed tones, although all tones sensed and dialer progress are recorded to review.

The operation of these two modes is described in more detail in the section headed "Attempting Dialer Connection".

Once connected, the task will report all alarms until either there are no more alarms, or the on-line timer expires (default is 10 minutes). Alternatively, if the "Look Ahead" option is set, old alarms will be skipped in favour of new alarms.

Attempting Dialer Connections

Most Comms Tasks formats which need to dial a number to report information follow the logic below. Either smart dial or dumb dial can be selected on a per Comms Task basis.

Smart Dial

1. Seize Line and wait 3 seconds to see if phone is ringing. If phone is ringing wait till it stops ringing.

2. Test Line for DC voltage. If no line then unloop line, wait variable time then try again to same Telephone Number up to maximum attempts.

3. If got PABX number then loop line and wait for dial tone. If get dial tone then begin dialling. If get busy then unloop line, wait variable time then try again up to maximum attempts. If don't get dial tone then dial PABX number anyway.

4. Now wait for main dial tone. If get dial tone then begin dialling. If get busy or don't decode dial-tone then unloop line, wait variable time then try again to same Telephone Number up to maximum attempts.

5. Wait for Central Station required handshake for this format. If get dial-tone or busy then unloop line, wait variable time then try again to a new Telephone Number up to maximum attempts. If get time out then unloop line, wait variable time then try again to a new Telephone Number up to maximum attempts. If get required handshake then start on-line timer.

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6. Proceed with communications for this format. If redial is required due to errors then unloop line, wait minimum time then try again to the same Telephone Number up to maximum attempts.

Dumb Dial

1. Seize Line and wait 3 seconds to see if phone is ringing. If phone is ringing wait until it stops ringing.

2. Test Line for DC voltage. If no line, save review message and continue.

3. If got PABX number then loop line and wait for dial tone. If get dial tone, begin dialling. If get busy, save review message and continue. If do not get dial tone, dial PABX number anyway.

4. Wait for main dial tone. If get dial tone, begin dialling. If get time-out or any other tone, save to review and continue.

5. Wait for Central Station required handshake for this format. If get time-out, unloop line, wait variable time then try again to a new Telephone Number up to maximum attempts. If get required handshake, start on-line timer.

6. Proceed with communications for this format. If redial is required due to errors, unloop line, wait minimum time then try again to the same Telephone Number up to maximum attempts.

NOTE:
Many telephone lines in Australia and New Zealand have a Message Bank or similar service connected. The differential dial tones used as indicators for such services can impede communication by the panel.

To avoid possible communication problems either disable the connected service or set the (D)umb Dialling option in Comms Task Programming.

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"Contact ID" Comms Task Format

Dialer Operation - Contact ID

Contact ID is used to report Area opens/closes and Zone /Input isolates, tampers, alarms and restores using the Ademco Contact ID format to a Central Station Digital Alarm Receiver. All the Model 3000 Zones / Inputs are mapped to particular Contact ID points. Because Contact ID cannot support a fully featured Model 3000 system certain reporting restrictions apply when using Contact ID. Some of these restrictions will vary depending on the Contact ID "Mapping" option chosen.

The restrictions applicable to "Standard Mapping" are:

- Up to 99 Areas
- Up to 900 Users
- Up to 9 LCD Terminals and up to 9 LED Terminals
- Up to 9 Zone Expanders
- Up to 9 Reader Modules

For restrictions applying to other Mapping options refer to the tables at the rear of this manual.

If you attempt to report information outside this range, a specific Contact ID report will be sent to indicate incorrect programming.

Although most receivers will receive the raw information correctly, many automation systems cannot handle large Contact ID systems or partition information. Check with your Central Station service provider.

Each event in Contact ID is sent as a string of 16 DTMF digits. For example, an alarm followed by a restore and then an opening would be 3 events. This makes this format slower than some others such as Ademco fast format, particularly for multiple alarms. All Contact ID strings follow the format below:

CCCC 18 SXYZ GG PPP Kwhere

CCCC	is the 4 digit client code that identifies the panel.
18	is always the digits "18"
SXYZ	is the event code for the type of event
GG	is the Group Byte which signifies the Area being opened/closed or the Area in which the alarm occurred. (Often = 00)
PPP	is the Point ID. This refers to either the point number or the user ID depending on the type of event.
K	is the checksum.

Some receivers will display a "U" or a "C" in front of the PPP, depending on whether the PPP represents a User ID or an alarm point.
U=User C=Alarm point

Dialer Options

Options are reached by pressing HELP, "9" at the Active / Idle screen. Options are divided into common options and less common or Special options. Usually only the common options need to be programmed.

Special options are reached by pressing HELP, "9" twice at the Active / Idle screen.

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```
CT001 Client
Code: 0000
```

This screen sets the client code to be used for this Comms Task. The client code is programmable in decimal from 0001 to 9999. (Client codes of 0000 and 9999 should be avoided). If the "Multiple Area Client Code" is set, it is possible for a different client code to be used.

```
CT001 PABX No.->
None
```

```
CT001 PABX No.->
TN000
```

These screens allow the installer to define an optional PABX access number. Telephone Numbers are chosen from a pre-programmed list of Telephone Numbers, selected alphabetically by name or by number. See Telephone Number programming.

```
CT001 1st No.->
None
```

This screen allows the Installer to define the main Telephone Number to be used to contact the Central Station. Attempts will begin with the 1st number which **must** be present, up to the maximum number of attempts specified. (Default is 8 attempts)

```
CT001 2nd No.->
None
```

If different telephone numbers are needed for subsequent attempts, the 2nd, 3rd and 4th telephone numbers may also be defined.
If a dial attempt on the 1st telephone number fails, the additional numbers are tried in the order 2nd, 3rd, 4th, 1st, 2nd and so on. If a number is not present, it is skipped and the next number in the above sequence is tried.

After an initial 4 attempts, the Holdoff time between attempts is then varied to enhance the chances of a successful call and help protect against blocking.
(The Holdoff time never exceeds 120 Seconds)

Telephone Numbers are chosen from a pre-programmed list of Telephone Numbers, selected alphabetically by name or by number.
See Telephone Number Programming.

```
CT001   PpDFTM.6
Dial -> nnnnnnnn
```

This screen sets various dialling options:

P	**P**ulse Dial (Tel)	Selects Pulse ("decadic") dial when dialling the main Telephone Number.
p	**P**ulse Dial (PABX)	Selects Pulse ("decadic") dial when dialling the PABX phone number if present.
D	**D**umb Dialling	Selects Dumb dialling. If "n" then Smart dialling is selected (default). *See "Introduction to Dialer Formats" at the end of this chapter.*
F	**F**orces 300 Baud	Forces all communications to 300 Baud instead of the default 1200 Baud. This need only be set if there are communication difficulties at 1200 Baud. (Relevant to IRfast format only).
T	**T**est Mode	This enables Test Mode which causes changes to the dial sequence to suit the Victorian Schools Tester. These changes are: -Do not dial the Telephone Number -Do not wait for initial handshake -Do not require an acknowledgement -Shorten inter-round time from 500ms to 300ms

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M	**M**aximum Count	This enables the Maximum Count option. This allows the maximum call time in Contact ID to be based on valid acknowledgements received, rather than time. If this option is set, the maximum call time is based upon the number of packets sent (1 to 255) programmed in the "Online Time" screen, under Special Options.
A	**A**bort Pre-dial (**S** in V1 & V2)	If set to "Y", when connection is attempted, any pre-dial error (e.g. no line) will cause the attempt to be aborted and go straight to the Backup Task (If programmed) (Formerly Single Hit in V1 & V2. This option now in Process Groups.)
6	**6**0 sec Redial	This option forces the Comms Task to wait 60 seconds between any redial attempt. This option must be set to comply with **Singapore** Telecom regulations.

5.

```
CT001    MLGPN...
Ropts -> nnnnnnnn
```

This screen sets various reporting options:

M	**M**ultiple Area Codes	If Multiple Area client codes are selected, whenever a report from an Area is performed (open/close/alarms/tampers/isolations/restores) the client code defined in Area Programming will be used if it is not "0000". If the Area Client code is "0000", the Comms Task client code will be used. If this option is set to "n" then the Comms Task client code will always be used. (See Area Programming for more details of this application)
L	**L**ook Ahead	Normally all reportable events will be sent in the order that they occur; one at a time until no more reports are required. The Comms Task will ensure the order will not alter, even if the dialer takes a long time to get through to the Central Station or if reports are being generated faster than they can be sent. If this option is set to "Y", **Look Ahead** operation is selected. With Look Ahead selected, a sequence of multi-breaks on a single Zone/Input will be ignored if a restore report has already been sent for that Zone/Input and there are new alarms from a different Zone/Input that have not been sent yet. Open/Close reports do not follow this logic and are always reported. This option is useful to track intruder movement through a larger installation and ignore multibreaking detectors.
G	**G**eneral O/C	This option selects general open and close reporting. Whenever **all** Areas are turned ON a general Area close is reported. As soon as the **first** Area is turned OFF, a general Area open is reported. In Area programming, some Areas can be nominated as "Not General Area" and are ignored in the general Area calculation. Open/Close will not be reported on these Areas in any Comms Task with this "General Open/Close" option set to YES. Another Comms Task with this option set to NO may be used to allow these Areas to trigger individual Open/Close reports. See Area Programming "Not General Area" option for details.
P	**P**revents Restores	This option prevents restores being reported via this Comms Task.
N	**N**o Area Still Open	In Area programming, it is possible to enable reporting of "Area Still Open" and "Area 24Hour Offs". Not all reporting formats can handle these reports. Setting this option to "Y" will disable these reports for this Comms Task. Both of these reports are sent without any loss of information in IRfast format.
D	**D**elay Reports (V5 or later)	This option enables Delayed Reporting (Dial Holdoff) for this Comms Task. *See "Delay Report" in Process Group Extra Options (RNED...L screen) for details.*

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```
CT001 Area List
Filter: AL002
```

This screen allows an optional Area List filter to be defined for this Comms Task. If a non-zero Area List is chosen, only information from Areas in the specified Area List will be sent using this Comms Task.

```
CT001   EOA.....
Efilt-> nnnnnnnn
```

The "Extra Filter" screen option allows a Comms Task to only respond to certain types of events.

E **E**xtra Filter — This option enables Extra Filter options. If left at "n", no extra filtering is used. ie. normal operation.

O **O**pens/Closes — This option enables Opens/Closes reports to be sent via this Comms Task.

A **A**larms — This option allows Alarms/Tampers/Isolations to be sent via this Comms Task.

. **S**pare — Spare options for future filters. Leave set to "n".
For example: To configure a Model 3000 system so that all openings and closings are sent via Securitel and all alarms/tampers/isolates go via Contact ID, set the Securitel Comms Task with the "E" and "O" Extra Filter options and the Contact ID Comms Task with the "E" and "A" Extra Filter options.

```
CT001 Mapping ->
Standard
```

This screen determines the input mapping for this Comms Task.
In order to cater for different types of system configurations within the limitation of the number of points available in the Contact ID format, several input mapping options have been provided as follows:

-Standard		-MAP-1	
-School 30		-School 19	
-SIMS II		-Access-1	(V3 or later)
-Pacom	(V3 or later)	-Standard-2	(V3.5 or later)
-School 19B	(V3.59 or later)		

For more details of Mapping options refer to "Comms Task Formats" at the beginning of this section and to the tables at the rear of this manual.

Dialer formats - Special Options

Special options are reached by pressing HELP, "9" twice at the Active/Idle screen, or by pressing HELP, "9" from any common options screen. HELP, "0" will take you back to the common options when programming of special options is complete.

NOTE: The values shown in the following 10 screen examples are the default values

```
CT001 Maximum
Attempts: 008
```

This screen sets the maximum dial attempts this task will use to attempt to contact the Central Station. If left at zero then the default of 8 attempts will be used. Telecommunication regulatory authorities may limit this number. (In Australia, the ACA specifies a maximum of 10 attempts).
In "UK" firmware, the value cannot be set to greater than 14.

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CT001 Backup Attempts: 004

This screen sets the number of dial attempts before the backup input will be triggered (C01:S20). If left at 000 the default value of 4 will be used.

CT001 Backup Task: CT000

This screen allows an optional backup Comms Task to be specified that will be triggered if this Comms Task fails to communicate within its maximum attempts. Leaving the task at CT000 specifies no backup task will be triggered.
Backup Comms Tasks are available in IRFast, Contact ID and GSM modem formats. (GSM requires V3.5 or later)

CT001 Seize Aux :X

This screen allows an Auxiliary output to be specified. This Auxiliary will turn on whenever the dialer line is seized and will turn off whenever the dialer line is released.

CT001 Pass Aux :X

This screen allows the installer to specify an Auxiliary output to turn on whenever the dialer successfully sends a report to the Central Station. It must be turned off by some other mechanism such as a timer.

CT001 PABX Dial Wait: 030/10 sec

This screen sets the time the task will wait to sense dial-tone before dialling the PABX number. The time is programmable from 1/10 sec to 255/10 sec (25.5 seconds). If this option is left at 000/10 then the default time of 3 seconds will be used.

CT001 Main Dial Wait: 030/10 sec

This screen sets the time the task will wait to sense dial-tone before dialling the Main number. The time is programmable from 1/10 sec to 255/10 sec (25.5 seconds). If this option is left at 000/10 then the default time of 3 seconds will be used.

CT001 Handshake Wait: 030

This screen sets the time the task will wait for an initial handshake after dialling the Central Station. The time is programmable from 1 second to 255 seconds. If this option is left at 000 then the default time of 30 seconds will be used.

CT001 Max.Online Time: 010 min

This screen sets the maximum time the task will stay on-line before hanging up and re-dialling. The time is programmable from 1 minute to 255 minutes. If this option is left at 000 then the default time of 10 minutes will be used.
If the timer expires, the Comms Task will hang up and "Call too long" will be logged to Review.

If the "Maximum Count" option in the Dial Options is set to Yes, this screen is used to program the maximum number of packets sent (1 to 255).

CT001 Line Test Count: 000

This screen sets the parameters associated with line testing and should be left at 000 unless advised by the manufacturer.

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Introduction to Dialer Formats

When activated, a Comms Task set to a Dialer format (Contact ID, IRfast, or SIA) will continually look for any reports to be sent. When a reportable event is found, the dialer line will be used to attempt a connection to the Central Station. If the dialer line is being used, the attempt will be deferred until whatever is using the dialer line is finished. When finished, this Comms Task will "take-over" the dialer line and will not release it until it is finished. The connection attempt works in one of two ways:

- Smart Dial This is the default setting. The task will monitor the line for line faults, dial-tone, busy etc. and make dialling decisions based on results of attempts to connect to the Central Station as quickly as possible. All activity will be recorded to review.

- Dumb Dial This setting does not make "smart" decisions based on sensed tones, although all tones sensed and dialer progress are recorded to review.

The operation of these two modes is described in more detail in the section headed "Attempting Dialer Connection".

Once connected, the task will report all alarms until either there are no more alarms, or the on-line timer expires (default is 10 minutes). Alternatively, if the "Look Ahead" option is set, old alarms will be skipped in favour of new alarms.

Attempting Dialer Connections

Most Comms Tasks formats which need to dial a number to report information follow the logic below. Either smart dial or dumb dial can be selected on a per Comms Task basis.

Smart Dial

1. Seize Line and wait 3 seconds to see if phone is ringing. If phone is ringing wait till it stops ringing.

2. Test Line for DC voltage. If no line then unloop line, wait variable time then try again to same Telephone Number up to maximum attempts.

3. If got PABX number then loop line and wait for dial tone. If get dial tone then begin dialling. If get busy then unloop line, wait variable time then try again up to maximum attempts. If don't get dial tone then dial PABX number anyway.

4. Now wait for main dial tone. If get dial tone then begin dialling. If get busy or don't decode dial-tone then unloop line, wait variable time then try again to same Telephone Number up to maximum attempts.

5. Wait for Central Station required handshake for this format. If get dial tone or busy then unloop line, wait variable time then try again to a new Telephone Number up to maximum attempts. If get time out then unloop line, wait variable time then try again to a new Telephone Number up to maximum attempts. If get required handshake then start on-line timer.

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6. Proceed with communications for this format. If redial is required due to errors then unloop line, wait minimum time then try again to the same Telephone Number up to maximum attempts.

Dumb Dial

1. Seize Line and wait 3 seconds to see if phone is ringing. If phone is ringing wait until it stops ringing.

2. Test Line for DC voltage. If no line, save review message and continue.

3. If got PABX number then loop line and wait for dial tone. If get dial tone, begin dialling. If get busy, save review message and continue. If do not get dial tone, dial PABX number anyway.

4. Wait for main dial tone. If get dial tone, begin dialling. If get time-out or any other tone, save to review and continue.

5. Wait for Central Station required handshake for this format. If get time - out, unloop line, wait variable time then try again to a new Telephone Number up to maximum attempts. If get required handshake, start on-line timer.

6. Proceed with communications for this format. If redial is required due to errors, unloop line, wait minimum time then try again to the same Telephone Number up to maximum attempts.

NOTE:
Many telephone lines in Australia and New Zealand have a Message Bank or similar service connected. The differential dial tones used as indicators for such services can impede communication by the panel.

To avoid possible communication problems either disable the connected service or set the (D)umb Dialling option in Comms Task Programming.

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"EMS" Comms Task Format

This communication format allows the 3000/4000 system to connect to a Lift Controller via a High Level Lift Interface and requires a special version of Control Module. Contact your distributor or the manufacturer for further details.

```
CT001 Idle ->
EMS
```

Programming options are found by pressing HELP, "9" at this screen.

```
CT001  Port   ->
to use: 1
```

This screen allows the Installer to define the UART Port which is to be connected to the Lift controller. Depending on the version of UART Expander fitted to the Control Module, a Port number from 1 to 4 may be used. The Port number is selected by scrolling through the available options using the right arrow key.

```
CT001  Baud   ->
Rate:  9600
```

This screen allows selection of the Baud Rate (Data speed) at which the UART will communicate. The Baud Rate is selected by scrolling through the available options using the right arrow key. A setting of 9600 Baud is recommended.
See "Comms Task Baud Rates" in Comms Task Programming [MENU 7,3,1]

Return to the first screen by pressing HELP, "0" either one or twice and toggle the Comms task On and Off by pressing the "9" Key.

Special options are found by pressing HELP, "9" *twice* at the first EMS screen.

```
CT001 Number of
EMS Floors 000
```

This screen determines the maximum number of floors to which any one lift may go. It directly determines the packet size sent by the EMS Comms Task to the EMS Lift Controller.

```
CT001 Grp 1
Floors: FL000
```

This screen allows up to 8 EMS Groups to be configured. The EMS Group ID is assigned to a Lift Car to determine the manner in which the Lift Car is to be controlled via the EMS High Lift Interface. An optional Floor List may be assigned to each EMS lift group. This restricts the scope of service for certain Lift Cars. This may be necessary, depending on the EMS programming.

In some high rise buildings, certain Lift Cars service specific ranges of Floors. eg. Lifts 1-5 service floors 1-20 and Lifts 6-10 service Floors 21-30.

EMS Group configuration allows the Installer to specify an optional Floor List. If a Floor is not included in this Floor List, the Lift Car will not stop at that Floor, regardless of the User's permissions. The User should take the appropriate Lift Car for the desired Floor and Floor access is only then granted if all other User permissions are in order.

Refer to "Lift Programming" in the Application Programming section of this manual.

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```
CT001    K......D
Opts -> nnnnnnnn
```

This screen allows the Installer to select options which affect the operation of the EMS Comms Task. Place a "Y" under the option to enable it.

K	Kone Protocol	If enabled, this option will cause the EMS Comms Task to use the Kone HLI Security Protocol. If set to No, the Otis E.M.S. - Security Protocol is used.
D	Detail Review	This option enables detail review for the EMS Comms Task. This setting is for diagnostic use and should only be enabled if instructed by the Manufacturer or Distributors Technical Support/Engineering personnel.

Diagnostics

```
CT001      .R..
Status -> nnnn
```

Pressing the ON Key whilst the Active/Idle screen is displayed will display the UART Port status screen. This screen can be cleared when desired by pressing the OFF Key. The following table explains the flags:

.	**S**pare	Spare for future development.
R	**R**etry	A "Y" under this flag means the receive fifo (16 bytes) has overflowed and at least one character has been lost. This will normally cause a retry of some kind.
.	**S**pare	Spare for future development.
.	**S**pare	Spare for future development.

The "R" flag may be monitored after communications via this port. In the event that the system places a "Y" flag under the "R", the Status screen should be reset and monitored further. Should a "Y" flag appear under the "R" with some regularity, a potential cause would be the baud rate at which the port is attempting to communicate. In such a case the Installer should reduce the baud rate and monitor the effect via the status screen.

In the event that lower baud rates do not solve the problem, assistance should be sought from the manufacturer's Service Technician.

Technical Specifications

Null Poll Time (one group at a time)	1 second
Security mask refresh rate with no activity (one lift car at a time)	30 seconds
Minimum time from end of response to next null or set mask command	50ms
Maximum wait for reply	300ms
Maximum retries before error registered	5
Low level error logging	Yes
Button feedback saved	Yes
Send all Masks on CT start	Yes
Send all masks on reception of watchdog flag	Yes
Preferred Baud Rate	2400 Baud
Data Format	8,0,1

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"EarthNet" Comms Task Format

EarthNet

The "EarthNet" Direct Line communications format allows Model 3000 and Access 4000 panels to be monitored via an EarthNet direct line system to a Central Station. **All** alarm information can be reported including Area opens/closes and Zones/Inputs isolations, tampers alarms and restores, plus optional review text if desired. No input or User mapping is required if the 3000/Access 4000 system is to only interface with an FE100 Receiver as this combination enables all events to be reported uniquely. If, however, the FE100 is to relay events to an automation package via Contact ID protocol, a suitable Contact ID map may be used.

Refer to the Standard and Access-1 "Contact ID Maps" in the Tables section of this manual.

3000/4000 EarthNet features include:

- Unique Reporting of all events
- Optional Review text for alarm clarification
- Optional Contact ID Interpretation
- Optional Panel time/date stamp
- Optional Panel system information
- Up to 65000 Users
- Up to 250 Areas
- Encrypted Communications
- Easier panel commissioning
- Supports panel remote control

Direct Line Programming

```
CT001 Idle ->
EarthNet
```

Programming options are reached by pressing HELP, "9" at the Active/Idle screen. Options are divided into common options and less common or Special options. Usually only the common options need be programmed.

Special options are reached by pressing HELP, "9" twice at the Active/Idle screen.

```
CT001 Client
Code:  0000
```

This screen sets the client code to be used for **EarthNet**. The client code is programmable in decimal from 0001 to 9998. (Client codes of 0000 and 9999 should be avoided) In the EarthNet system, a panel is identified by a client code stored in the Node to which the panel is connected. The client code programmed at the Node should be programmed the same as the client code programmed in the panel. If the "Multiple Area client code" option is set then it is possible for a different panel client code to be reported, based upon Area. If this occurs both the Node client code and the panel client code will be reported.

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```
CT001    MLGPN...
Ropts -> nnnnnnnn
```

This screen sets various reporting options:

M	**M**ultiple Area Codes	This option selects Multiple Area Client Codes. In this mode, whenever a report from an Area is performed (open/close/alarms/tampers/isolates/restores) , the client code defined in Area programming will be used if it is not "0000". If the Area client code is "0000", the Comms Task client code will be used. If the option is set to "n", the Comms Task client code will always be used. (See Area Programming for more details)
L	**L**ook Ahead	Normally, all reportable events will be sent in the order in which they occurred; one at a time until no more reports are required. The Comms Task will guarantee the order will not alter, even if the dialer takes a long time to get through to the Central Station or if alarm reports are being generated faster than they can be sent. If this option is set to "Y", **Look Ahead** operation is selected. With Look Ahead selected, a sequence of multi-breaks on a single zone/input will be ignored **if a restore report has already been sent for that Zone/Input and there are new alarms from a different Zone/Input that have not been sent yet**. Open/Close reports do not follow this logic and are always reported. This option is useful to track intruder movement through a larger installation and ignore multi-breaking detectors.
G	**G**eneral Open/Close	This option selects General Open/Close reporting. Whenever all Areas are turned On, a general Area close is reported. As soon as the first Area is turned Off, a general Area open is reported. In Area Programming, some Areas can be nominated to be ignored in the general Area calculation. Open/Close will not be reported on these Areas in any Comms Task with this "General Open/Close" option set to YES.
P	**P**revents Restores	This option prevents restores being reported via this Comms Task.
N	**N**o Area Still Open	This option selects No Area Still Open or Area 24Hr Off reports. In Area Programming, it is possible to enable reporting of "Area Still Open" and "Area 24Hour Offs". Not all reporting formats can handle these reports. Setting this option to "Y" will disable these reports for this Comms Task. Both of these reports are sent without any loss of information in IRfast format.
.	**S**pare	Spare for future developments. This option must be set to "n".

```
CT001  Area List
Filter: AL002
```

This screen allows an optional Area List filter to be defined for this Comms Task. If a non-zero Area List is chosen, only information from Areas in this specified Area List will be sent using this Comms Task.

```
CT001   EOA.....
Efilt-> nnnnnnnn
```

The "Extra Filter" screen options allow a Comms Task to only respond to certain types of events. For example, to configure a Model 3000 so that only the alarms / tampers/isolates go via Direct Line, set the Direct Line Comms Task with the "E" and "A" options set to "Y". Opens/Closes will not be sent.

E	**E**xtra Filter	This option enables the Extra filter options. If set to "n", no extra filtering is used.
O	**O**pens/Closes	This option enables Opens/Closes to be sent via this Comms Task. "E" flag must also be set to "Y".
A	**A**larms/T/I	This option enables Alarms/Tampers and Isolations to be sent via this Comms Task. "E" flag must also be set to "Y".
.	**S**pare	Spare for future developments. Set to "n".

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```
CT001    Mapping
Standard
```

This screen determines the input mapping for this Comms Task. To cater for different types of system configurations within the limitation of the number of points available within the Contact ID format, several input mapping options have been provided.

Because EarthNet format does not require mapping, this mapping selection is used to determine the Contact ID mapping to be used if Contact ID information is to be sent in addition to EarthNet information. See EarthNet Special options for more details.

For more details on Mapping Options, refer to the Tables at the rear of this manual.

EarthNet Special Options

Special options are reached by pressing HELP, "9" twice at the Active/Idle screen or by pressing HELP, "9" from any common options screen. HELP "0" will take you back to the common options when special options is complete.


```
CT001   RCT..LIU
Sopts-> nnnnnnnn
```

This screen sets up various send options:

R	**R**eview Text	Setting this option to "Y" will cause the Model 3000 panel to send review text for each event reported.
C	**C**ontact ID	If set to "Y", the panel will send an equivalent Contact ID string for the message or event being sent
T	**T**ime/Date	This option causes the Model 3000 to send a text string of the Time/Date the event was recorded into review on the Model 3000 panel.
L	Not Applicable	This option only applies to IRfast. Set to "n" for EarthNet.
I	**I**nitialise Encryption	Setting this option to "Y" whilst the Comms Task is idle, then starting the Comms Task, will cause the encryption key to be reset to the manufacturer's default. The panel can now be connected to the EarthNet system and an "**I**nitialise panel" option can be performed at a node to allow communications to proceed.
U	**U**pdate Time	This option allows the panel time to be updated by the remote Receiver.
.	**S**pare	Spare. Set to "n".

NOTE: An FE100 receiver can set any of the above options to Yes on a per receiver basis. The above options should only be set to Yes on instruction from the Central Station.

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```
CT001    IU...DXA
Eopts-> nnnnnnnn
```

This screen sets up various panel control options. Remote control options are only relevant where the appropriate facilities exist at the Central Monitoring Station.

I	**I**nstaller	This option causes the system to consider the Central Station as the **I**nstaller as far as panel control is concerned.
U	**U**ser	This option causes the system to consider the Central Station as a normal **U**ser as far as panel control is concerned. (User03)
D	**D**oors	This option will allow **D**oors to be unlocked and locked by the Central Station. (Not currently operational, for future use)
X	**Auxiliaries**	This option will allow Au**x**iliaries to be turned on and off by the Central Station. (Not currently operational, for future use)
A	**A**reas	This option allows **A**reas and Area Lists to be turned on and off by the Central Station.
.	**S**pare	Spare. Set aside for future development.

```
CT001   Polls
Before Test: 000
```

This screen sets the number of polls the system will receive before initiating a test message. A test message is sent regularly to the node to check that encryption is operational and that the panel has not been substituted. If left at 000, the default is 20 polls. If the node does not receive a test message after about 3 minutes, a line tamper is generated by the node. This means that the number of polls before test needs to be set in conjunction with how often the panel is polled, allowing for longer poll times when data is present. This field should not be altered unless advised by your Central Monitoring Station.

```
CT001 Max alarms
per poll:   000
```

This screen sets the maximum number of alarms that can be sent by the panel following each poll received from the Central Station. This field should not be altered unless advised by your Central Monitoring Station.

Remote EarthNet Nodes

Remote EarthNet Nodes using the Port 3 Back up line **must not** be on a telephone line which has a Message Bank or similar service connected. The differential dial tones used as indicators for such services will impede the operation of back up communication.

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"Securitel" Comms Task Format

Overview

Selecting the Comms Format "Securitel" allows communication events to be reported via the Securitel network. An IRPX UART board and an MCM STU are required for Securitel operation.

Only the Securitel Serial data channel is used to report information, the pin data returned will always be "all normal". The Model 3000 uses the serial channel according to the ASIAL ratified "Serial Protocol Agreement-1990". **Refer to the Tables section of this manual for full details of the Zones and system inputs which may be reported via Securitel.** There is no programming of mapping required as a fixed map has been chosen at this time. The following are examples of the type of information that can be reported:

- All Control Module Zones
- The first 16 Zones on the first 6 "B" Type Zone Expanders
- The first Zone on the first 8 LCD Terminals
- The first Zone on the first 8 Readers

Any Zone reported outside the above will be reported according to the Area to which it belongs as a General Area Zone Alarm. After Area 30 the Zone will be reported as a General Zone Alarm for Areas Above 30. A restore on a general Area Zone alarm does not indicate that all Zones are sealed in that Area.

All External module System Inputs are reported as general Inputs. For example, a General Zone Expander Cabinet Tamper will be reported if any cabinet tamper is alarmed on any expander, but will not send a restore until all Zone Expander cabinet tampers are sealed.

Openings and Closings can be reported up to Area 30 uniquely, alternatively a general open/close can be used where you can nominate what Areas are to belong to the general open/close calculation. User ID can be reported uniquely up to User 238.
For further details on Zone and event mapping, refer to the "Tables" section in this manual.

Securitel Programming Summary

The following Comms Task items must be programmed for Model 3000 to operate on Securitel:

1. Programme the Comms Task to "Securitel"
2. Programme the Hard ID in hex
3. Choose a UART which is going to connect to the MCM STU (Port 1 to 4)
4. Select the Baud Rate (must be 9600 Baud)
5. Select what report options are desired:
   Look Ahead Option
   Single Hit Reporting
   General Open/Close Option

The Multiple Area Client Code option has no effect when selected for Securitel

6. Now set the Comms Task to Active

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Under Special Programming options you can select an Auxiliary that can be controlled via the Securitel interface from the Central Station. This Auxiliary can be used to operate external devices or turn on Areas, if desired.

Other Programming

- Programme what Areas and Zones/Inputs are going to report
- Programme which Areas are to report openings/closings and whether the Area is to be ignored in a general open/close calculation.
- Programme the Area alarm action for a UART Fail (C01:S13 to C01:S16) which will occur if the Model 3000 does not get a poll from the STU within 10 seconds.
- Programme an Area and Alarm action for a Comms Fail (C01:S21) which will occur if the STU informs the Model 3000 of a Scanner (Exchange) - STU communication problem. (If the STU provides this information)

The UART DTR line will go high whilst the Securitel Comms Task is running. The UART RTS line will remain high whilst the Model 3000 is being polled by the STU and will go low after the polling is absent for more than 10 seconds.

Review Messages

All Securitel oriented review messages are explained below. "*nn*" represents the Comms Task number. All but the "On-Line" and the "Off-Line" messages are only saved when the detail mode is selected for review.

CT*nn* - On Line	This message means that the Model 3000 can "hear" polls from the STU. The UART Fail Input will be restored.
CT*nn* - Off Line	This message means that the Model 3000 has not received polls from the STU for 10 seconds. The UART Fail Input will be set to the alarm condition.
CT*nn* - STU Data-I	This message means that the Model 3000 is sending the hard ID to the STU.
CT*nn* - STU Data-DN	This message means the Model 3000 is about to send report information via the serial channel. The N signifies how many reports are being transferred at this time and can be a value between 1 and 4 inclusive.
CT*nn* - STU Data-DN (old)	This message means the Model 3000 is about to re-send N reports via the serial channel where N can a value between 1 and 4 inclusive. This can occur if an error occurs between the Model 3000 and the STU or if the serial data channel is full at the time of transmission. Only one review entry is saved if multiple (old) reports are sent.
CT*nn* - STU Info <text>	

Examples of Review Text are detailed in the following Table.

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Review Entry Table

Review Entries are saved when a change is detected in the STU status as sent by the STU to the Model 3000.

Review Text	Normal State	Meaning
FAULT on(off)	off	If on, the STU has informed the panel that a Hard ID has not been downloaded or the STU has a hardware fault. The UART Fail Input will be alarmed.
NO COMMS on(off)	off	If on, the STU has informed the panel that communication has failed between the Scanner and the STU. The Comms Fail System Input will be alarmed.
FULL on(off)	off	If on, the STU has informed the panel that the serial channel is currently full and can accept no more alarm reports.
NO ACK on(off)	off	If on, the STU has informed the panel that a Hard ID has not been doenloaded ot the STU has a hardware fault.
POLL on(off)	on	If on, the STU has informed the panel that it has alarms that have not been achnowledged by the Scanner.
NO ID on(off)	off	If on, the STU has informed the panel that a Soft ID has not been downloaded.
ACK on(off)	off	If on, the STU has received an "Auxiliary On" command from the Scanner. If off, the STU has received an "Auxiliary Off' command from the Scanner.

8

Securitel Options

```
CT001 Idle ->
Securitel
```

Options are reached by pressing HELP, "9" at the Active/Idle screen. Options are divided into common options and less common or special options.

Usually only the common options need be programmed.

Special options are reached by pressing HELP, "9" *twice* at the Active/Idle screen.

```
CT001 Hard
ID: 0000
```

This screen sets the Securitel Hard ID to be used for this Comms Task. The Hard ID is the Securitel equivalent to the client code used in other formats and is programmable in decimal from 0001 to 9999. (Hard IDs of 0000 and 9999 should be avoided.) The "Multiple Area Client Code" option has no effect when selected for securitel. The Hard ID programmed here is always used.

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```
CT001  Port   ->
to use: 0
```

This screen allows the Installer to define the UART Port to which the STU will be connected. Depending on the version of UART Expander fitted to the Control Module, a Port number from 1 to 4 may be used. The Port number is selected by scrolling through the available options using the right arrow key.

```
CT001  Baud   ->
Rate:  9600
```

This screen allows selection of the Baud Rate (Data speed) at which the UART will communicate with the STU. The Baud Rate is selected by scrolling through the available options using the right arrow key. A setting of 9600 Baud is mandatory for the MCM STU.
See Comms Task Baud Rates in Comms Task Programming [MENU 7,3,1].

```
CT001    MLGPN...
Ropts -> nnnnnnnn
```

This screen sets various reporting options:

M	**M**ultiple Area	Multiple Area client codes are not used in the Securitel format. This option should be set to "n".
L	**L**ook Ahead	Normally, all reportable events will be sent in the order in which they occurred; one at a time until no more reports are required. The Comms Task will guarantee the order will not alter, even if the dialer takes a long time to get through to the Central Station or if alarm reports are being generated faster than they can be sent. If this option is set to "Y", **Look Ahead** operation is selected. With Look Ahead selected, a sequence of multi-breaks on a single zone/input will be ignored **if a restore report has already been sent for that Zone/Input and there are new alarms from a different Zone/Input that have not been sent yet**. Open/Close reports do not follow this logic and are always reported. This option is useful to track intruder movement through a larger installation and ignore multi-breaking detectors.
G	**G**eneral Open/Close	This option selects General Open/Close reporting. Whenever all Areas are turned On, a general Area close is reported. As soon as the first Area is turned Off, a general Area open is reported. In Area Programming, some Areas can be nominated to be ignored in the general Area calculation. Open/Close will not be reported on these Areas in any Comms Task with this "General Open/Close" option set to YES.
P	**P**revents Restores	This option prevents restores being reported via this Comms Task.
N	**N**o Area Still Open	This option selects No Area Still Open or Area 24Hr Off reports. In Area Programming, it is possible to enable reporting of "Area Still Open" and "Area 24Hour Offs". Not all reporting formats can handle these reports. Setting this option to "Y" will disable these reports for this Comms Task. Both of these reports are sent without any loss of information in IRfast format.
.	**S**pare	Spare for future developments. This option must be set to "n".

```
CT001  Area List
Filter: AL002
```

This screen allows an optional Area List filter to be defined for this Comms Task. If a non-zero Area List is selected, only the information from Areas in the specified Area List above will be sent using this Comms Task.

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```
CT001    EOA.....
Efilt ->nnnnnnnn
```

The "Extra Filter" screen options allow a Comms Task to only respond to certain types of events. For example, to set up a Model 3000 so that only alarms/tampers/ isolations go via Direct Line, set the Direct Line Comms Task with the "E" and "A" options set to "Y". Opens/Closes will not be sent.

E	**E**xtra Filters	This option enables the Extra filter options. If left at "n", no filtering is used. ie. normal operation.
O	**O**pen/Closes	This option enables Open/Closes to be sent via this Comms Task.
A	**A**larms/T/I	This option enables Alarms/Tampers/ Isolations to be sent via this Comms Task.
.	**S**pare	Spare for future developments. This option must be set to "n".

Securitel - Special Options

Special options are reached by pressing HELP, "9" *twice* at the Active/Idle screen or by pressing HELP, "9" from any common options screen. HELP "0" will take you back to the common options when special options is complete.

```
CT001   Poll Wait
Time:    000 sec
```

This screen sets the time the task will wait to receive a poll from the STU before activating a System Input to indicate a UART fail condition. The time is programmable from 1 to 255 seconds. If this option is left at 000, the default time of 10 seconds will be used.

```
CT001   CmdBk Aux
C01:X09
```

This screen allows the Command-Back Auxiliary output to be specified. The Command-Back Auxiliary can be controlled via the Securitel interface from the Central Station and can be used to provide remote control of external devices and turn Areas On and Off, if required.

```
CT001    Backup
Task:    CT000
```

This screen allows another Comms Task number to be specified as the "Backup Comms Task" that will be activated if this Comms Task fails to communicate with the Central Station.

Diagnostics

```
CT001     ..R.
Status -> nnnn
```

Pressing the ON Key whilst the Active/Idle screen is displayed will display the UART Port status screen. This screen can be cleared when desired by pressing the OFF Key. The following table explains the flags:

.	**S**pare	Spare for future development.
R	**R**etry	A "Y" under this flag means the receive fifo (16 bytes) has overflowed and at least one character has been lost. This will normally cause a retry of some kind.
.	**S**pare	Spare for future development.
.	**S**pare	Spare for future development.

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The "R" flag may be monitored after communications via this port. In the event that the system places a "Y" flag under the "R", the Status screen should be reset and monitored further. Should a "Y" flag appear under the "R" with some regularity, a potential cause would be the baud rate at which the port is attempting to communicate. In such a case the Installer should reduce the baud rate and monitor the effect via the status screen.

In the event that lower baud rates do not solve the problem, assistance should be sought from the manufacturer's Service Technician.

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"Printer" Comms Task Format

A Serial Printer may be connected that will continuously print review information.

IMPORTANT NOTES:
1) Printer Data will not be output unless CTS is high.
(CTS indicates to the Control Module that the Printer is ready to receive the data. i.e. It is turned on and is not out of paper, etc.)
2) Maximum possible line length is 160 characters which includes <CR> <LF> at the start of the line, and <CR> <AT> at the end of the line.

Serial Options

```
CT001 Idle ->
Printer
```

Options are reached by pressing HELP, "9" at the Active/Idle screen. Options are divided into common options and less common options or *Special Options*. Usually only the common options need be programmed.

```
CT001  Port   ->
to use: 0
```

This screen allows the Installer to define the UART Port to which the device will be connected. Depending on the version of UART Expander fitted to the Control Module, a Port number from 1 to 4 may be used. The Port number is chosen by scrolling through the available options using the right arrow key.

```
CT001  Baud   ->
Rate:  300
```

This screen allows selection of the Baud Rate (Data speed) at which the UART will communicate with the device. The Baud Rate is selected by scrolling through the available options using the right arrow key. Settings will vary depending on the device being used.
See "Comms Task Baud Rates" in Comms Task Programming [MENU 7,3,1]

The following screens will appear when the Printer Comms Task is selected and allow the Installer to define which types of review message will be sent to the Printer.

```
CT001    ATXSLOIM
Filter-> nnnnnnnn
```

First Filter Screen

A	**A**larm/Tamper	If enabled, Alarm/Tamper messages will be sent to the Printer.
T	**T**riggers	If enabled, Comms Triggers will be sent to the Printer.
X	Au**x**iliaries	If enabled, Auxiliary events will be sent to the Printer
S	**S**iren	If enabled, Siren messages will be sent to the Printer.
L	**L**og On/Off	If enabled, Log On, Log Off and User access messages will be sent to the Printer.
O	**O**pen/Closes	If enabled, Area Open/Closes will be sent to the Printer.
I	**I**solations	If enabled, Isolations will be sent to the Printer.
M	**M**odules	If enabled, Module messages will be sent to the Printer

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```
CT001    GTDCL..E
Filter-> nnnnnnnn
```

Second Filter Screen

G	**G**eneral	If enabled, General system messages will be sent to the Printer.
T	**T**imes	If enabled, Time messages will be sent to the Printer.
D	**D**etails	If enabled, Details messages will be sent to the Printer
C	**C**ommunications	If enabled, Communication messages will be sent to the Printer.
L	**L**ift Control	If enabled, Lift control messages will be sent to the Printer.
.	Spare	Spare for future developments. This option must be set to "n".
.	Spare	Spare for future developments. This option must be set to "n".
E	**E**rrors	If enabled, Error messages will be sent to the Printer.

```
CT001 Area List
Filter:  AL000
```

This screen allows an optional Area List filter to be defined for this Comms Task. (V4.5 or later)
If a non-zero Area List is chosen, only information from Areas in the specified Area List will be sent using this Comms Task.

```
CT001      ..R.
Status -> nnnn
```

Diagnostics
Pressing the ON Key whilst the Active/Idle screen is displayed will display the UART Port status screen. This screen can be cleared when desired by pressing the OFF Key. The following table explains the flags:

.	**S**pare	Spare for future development.
R	**R**etry	A "Y" under this flag means the receive fifo (16 bytes) has overflowed and at least one character has been lost. This will normally cause a retry of some kind.
.	**S**pare	Spare for future development.
.	**S**pare	Spare for future development.

The "R" flag may be monitored after communications via this port. In the event that the system places a "Y" flag under the "R", the Status screen should be reset and monitored further. Should a "Y" flag appear under the "R" with some regularity, a potential cause would be the baud rate at which the port is attempting to communicate. In such a case the Installer should reduce the baud rate and monitor the effect via the status screen.

In the event that lower baud rates do not solve the problem, assistance should be sought from the manufacturer's Service Technician.

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"Ext. Modem" Comms Task Format

External Modem Comms Task

A Comms Task option is available which allows a high speed external modem to be connected to an external UART port for the purposes of upload/download via a telephone line.

External Modem Operations

When the Comms Task is started the RTS and DTR lines are placed in the high state and the modem is initialised to answer a ringing telephone line according to the programmed "Rings to answer" setting.
When a valid connection is made, a path through to the interpreter is established. At the end of the call the modem is instructed to hang up and await another call.

Modem Re-initialisation

If the modem is powered down, accidentally disconnected, or placed in the wrong state, you will probably need to re-initialise the modem.
All Versions: Abort and Re-start the Comms Task to re-initialise the modem.
V4 or later: Modem Initialisation string is automatically re-sent 5 seconds after the Control Module detects that the CTS line has gone High again. (The CTS line from the modem is normally High when the connection is OK.)
Note: The Ext Modem cable-993027 must be used and CTS must be High. If a modem or cable is used that does not support hardware flow control, then the Modem's CTS line must be tied High in the interface cable.

Typical Review Messages:

CT001 Modem Connect	Modem has just connected at its preferred baud rate. The baud rate is a function of the UART Port Baud rate setting and the type of modem is not displayed.
CT001 Hang-up	The modem has hung up because of an error or because the remote PC has instructed that the connection be terminated.
CT001 Lost Carrier	The CD line on the modem has gone low, indicating the connection has been broken.
CT001 Modem Status nn	In detail mode only, the modem has returned a result code to the 3000. These codes are modem dependent but common ones are:

00	Modem is idle	01	Modem OK
02	Ring Signal detected	03	No Carrier
04	Command string problem (Contact ID)		
06	No dial tone	07	Busy
08	No Answer		
90	Init string has been sent to the Modem.	99	CTS has gone Low.

External Modem Options

Options are reached by pressing HELP, "9" at the Active/Idle screen. Options are divided into common options and less common or Special options. Usually, only common options need be programmed.

Special options are reached by pressing HELP, "9" twice at the Active/Idle screen.

```
CT001   Rings to
Answer:  000
```

This screen sets the number of rings to answer an incoming call. Legal values are between 001 and 015 rings.

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```
CT001   Port ->
to use:  0
```

This screen sets the external port to be used in conjunction with the appropriate modem accessory cable. Legal port settings are 1 to 4 depending on the type of external UART Expander installed on the Control Module. Port 0 is not allowed. The port number is selected by scrolling through the available options using the right arrow key.

```
CT001  Baud ->
Rate:   9600
```

This screen allows selection of the Baud Rate (Dataspeed) at which the UART will communicate with the modem. Depending on the modem type however, it is not necessarily the Baud rate of a modem connection. The setting will be chosen according to the type of modem being used and is selected by scrolling through the available options using the right arrow key. It is recommended that the Baud rate be set no higher than 9600 Baud.
See "Comms Task Baud Rates" in Comms Task Programming [MENU 7,3,1]

External Modem Special Options

Special options are reached by pressing HELP, "9" twice at the Active / Idle screen, or by pressing HELP, "9" from any common options screen. HELP, "0" will take you back to the common options, when programming of special options is complete.

```
CT001 Dial PpDF
Options -> nnnn
```

This screen sets various dialling options:

P	**P**ulse Dial (Tel)	Selects Pulse ("decadic") dial when dialling the main Telephone Number.
p	**P**ulse Dial (PABX)	Selects Pulse ("decadic") dial when dialling the PABX phone number if present.
D	**D**umb Dialling	Selects Dumb dialling. If "n" then Smart dialling is selected (default).
F	**F**orce 300 Baud	Not used in "Ext. Modem" Comms Task.
T	**T**est Mode	Not used in "Ext. Modem" Comms Task.
M	**M**ax Count	Not used in "Ext. Modem" Comms Task.
A	Abort Pre-dial	Not used in "Ext. Modem" Comms Task.
6	**6**0 sec Redial	This option forces the Comms Task to wait 60 seconds between any redial attempt. This option must be set to comply with **Singapore** Telecom regulations.

```
CT001 PABX No.->
None
```

```
CT001 PABX No.->
TN000
```

```
CT001 Back No.->
None
```

```
CT001 Back No.->
TN000
```

These screens allow the installer to define an optional PABX Access number and Call-back Telephone Number. When the Call-back number is defined, extra security is provided by forcing the task to ring back this number on a successful log-on sequence as an added precaution against "hacking".

Telephone numbers are selected from a pre-programmed list of Telephone Numbers, selected alphabetically by name or by number, if desired.

See Telephone Number Programming.

*NOTE: Callback **not** implemented in "Ext Modem" Comms Task Format.*

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```
CT001 Cust No.->
None
```

```
CT001 Cust No.->
TN000
```

This screen allows the installer to specify the Telephone Number of the dialer line connected to the panel and is useful for reference purposes.

```
CT001 Seize Aux
C01:X08
```

This screen allows an Auxiliary output to be specified that will turn on whenever the dialer line is seized and turn off whenever the dialer line is released.

```
CT001 DTMF Tone
Wait: 000/10 sec
```

This screen sets the time a task will wait to sense the DTMF tone when in fax bypass mode. The time is programmable from 1/10 second to 255/10ths of a second (25.5 secs). If this option is left at 000/10 then the default time of 5 seconds will be used.

The DTMF tone wait time is also used as the main dial tone wait time in Callback operation and is best left at its default value (000/10) if Callback is utilised.

If the phone is ringing whilst attempting a call back, the Model 3000 will wait till the ringing stops before trying to dial.

*NOTE: Fax Bypass **not** implemented in "Ext Modem" Comms Task Format.*

```
CT002 Single
DTMF Tone: 000
```

This screen allows the Installer to specify the DTMF tone which will be used to initiate the modem answer sequence in fax bypass mode and also selects the tone that will be used to initiate DTMF Control Mode. The programmed tone is the one that will initiate the modem connect sequence. The programmed tone plus one is the tone that will initiate DTMF Control Mode..

eg. if "005" is programmed, the DTMF digit 5 will be the Fax bypass tone in PC Direct and DTMF tone 6 will initiate DTMF Control Mode.

NOTE:
*DTMF Control mode **not** implemented in "Ext Modem" Comms Task Format.*

```
CT001 Line Test
Count: 000
```

This screen sets parameters associated with line testing and should be left at 000 unless advised by the manufacturer.

```
CT001 Answer
Wait: 000/10 sec
```

This screen allows an answer wait time between 0 and 255/10ths of a second (25.5 seconds) to be programmed. The default is 0 seconds. When a non-zero answer wait time is programmed, upon answering the call and accessing the interpreter for upload/download, all incoming characters will be ignored until the answer wait time has expired. This is useful when connecting with a mobile data network where unnecessary additional characters are output immediately after modem connection.

The Answer Wait time is also used as the PABX dial tone wait in Callback operation and is best left at its default value (000/10) if Callback is utilised.

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```
CT001     .R..
Status -> nnnn
```

Diagnostics

Pressing the ON Key whilst the Active/Idle screen is displayed will display the UART Port status screen. This screen can be cleared when desired by pressing the OFF Key. The following table explains the flags:

.	**S**pare	Spare for future development.
R	**R**etry	A "Y" under this flag means the receive fifo (16 bytes) has overflowed and at least one character has been lost. This will normally cause a retry of some kind.
.	**S**pare	Spare for future development.
.	**S**pare	Spare for future development.

The "R" flag may be monitored after communications via this port. In the event that the system places a "Y" flag under the "R", the Status screen should be reset and monitored further. Should a "Y" flag appear under the "R" with some regularity, a potential cause would be the baud rate at which the port is attempting to communicate. In such a case the Installer should reduce the baud rate and monitor the effect via the status screen.

In the event that lower baud rates do not solve the problem, assistance should be sought from the manufacturer's Service Technician.

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"Inet" Comms Task Format

Purpose.
The purpose of the Inet Comms Task is to allow multiple panels to communicate alarm data and a limited amount of database editing commands to and from an automation package via an RS232 based network.
The Inet Comms Task is available in Control Module firmware V3.5 or later.

Overview.
Inet is a Comms Task within the Model 3000/Access 4000. Inet is designed to allow up to 65000 panels to be addressed to a central point via RS232. Although 65000 panels can be individually addressed, the amount of traffic generated on a single RS232 link would exceed the practical limits of the communications network. Therefore a general limit of 300 panels per RS232 network is advised.
Inet can communicate alarm activity in both the IRFast and Contact ID formats (4+2 format NOT supported). When reporting via IRFast format Inet also provides the ability to send the raw text review event for that alarm activation.
(Note that Inet is currently only supported in English language version)

Features.

- Full Duplex communications up to 9600 baud.
- Individual Alarm reporting from multiple panels to a single point via RS232.
- Individual reporting of all modules when using IRFast.
- Panel entity Control such as Areas, Doors and Auxiliaries.
- Permanent Connection.
- Automatic Backup task to IRFast and Contact ID via Dialer.

Connection.
The Inet task was initially developed to communicate via an ULTRAK RD19 Multiplexer to a PATRIOT II (V3) automation package. Connection of the Model 3000/Access 4000 to the network is achieved via an RS232 UART (P/N. 993065, 993066, 993068). The standard PC Interface cable (P/N. 993025 or 993009) can be used to connect to RS232 devices.
No hardware flow control is used so therefore only RX, TX and GND are utilized.

Configurations.
There are basically three typical system configurations, although the first is not practical it is the simplest method of using the Inet task.

1. A single Model 3000/Access 4000 panel is connected via RS232 to a PATRIOT PC. This is the most basic configuration and is given as an example only.

2. Multiple Model 3000/Access 4000 panels can communicate to PATRIOT via an RD19 MUX. When using a single RD19 up to 8 panels may be connected via RS232.

3. Up to 8 RD19 Multiplexers each supporting up to 8 Model 3000/Access 4000 panels can be connected to another RD19 which then connects to PATRIOT. By continuing this method in a "pyramid" style layout, it is possible to connect hundreds of panels back to the one common point.

Note that any of the above configurations can be extended by the use of protocol converters as discussed under "Network design considerations" on the following page.

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Network design considerations.

Traffic.
Along with limitations of the protocol being used as discussed below, communications traffic is the biggest limitation of the Inet comms task. When designing a network that will involve the use of the Inet format, considerations must be made as to the expected levels of traffic during normal, peak and worst case scenarios of operation. For example, a small network of 10 panels, with less than 100 zones on each network would have a fairly minimal normal traffic level. Assuming a power failure occurred on every system at the same time, each panel would send up to 5 alarm message (depending on the number and type of expander used) back to the automation system at the same time. This would be a total of 50 messages that would all have to be processed and acknowledged. This is an example of a worst case scenario. To help deal with such a scenario, communication devices with their own internal buffers may be necessary. In addition to this the backup comms task may also be utilized to send the information via another Task.

RS232.
The RS232 protocol has a distance limitation by nature. The maximum reliable distance for RS232 is 15 metres (50 feet) @ 300 baud. Increases in baud rate will reduce this distance. To increase the distance panels may be away from the device they are communicating with, converters are required. As to what type of converter is used depends mainly on application and cost.

Non RS232 Networks.
It is now more common for a TCP/IP network to be readily available in most installations. In this case you would require a TCP/IP to RS232 converter such as a Lantronic MSS100.
If a network is unavailable then a converter such as RS422, 485, or "short haul" type may be used. Such converters should firstly be checked for their specification and transparency for the signal they will carry. Depending on the application, either the Model 3000/Access 4000, the Software and/or the communication protocol being used may be effected by any delays or infringement on the transmitted signal.

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Inet Options

```
CT001 Idle ->
Inet
```

Options are reached by pressing HELP, "9" at the Active / Idle screen. Options are divided into common options and less common or Special options.

Special options are reached by pressing HELP, "9" twice at the Active / Idle screen.

A Backup Comms Task may be programmed by pressing HELP, "9" three times at the Active/Idle screen.

```
CT001  Port   ->
to use: 1
```

This screen allows the Installer to define the UART Port to which the Multiplexer or PC will be connected. Depending on the version of UART Expander fitted to the Control Module, a Port number from 1 to 4 may be used. The Port number is selected by scrolling through the available options using the right arrow key.

```
CT001  Baud   ->
Rate:  2400
```

This screen allows selection of the Baud Rate (Data speed) at which the UART will communicate with the Multiplexer or PC. The Baud Rate is selected by scrolling through the available options using the right arrow key. A maximum setting of 9600 Baud may be used, however a Baud rate of 2400 is recommended.
See Comms Task Baud Rates in Comms Task Programming [MENU 7,3,1]

Inet Special Options

```
CT001 Client
Code: 0000
```

This screen sets the panels primary network address as well as the primary client code to be used for this Comms Task. The client code is programmable in decimal from 0001 to 9999. (Client codes of 0000 and 9999 should be avoided). If the "Multiple Area Client Code" is set, it is possible for a different client code to be used.

```
CT001    MLGPN...
Ropts -> nnnnnnnn
```

This screen sets various reporting options:

M **M**ultiple Area Codes — If Multiple Area client codes are selected, whenever a report from an Area is performed (open/close/alarms/tampers/isolations/restores) the client code defined in Area Programming will be used if it is not "0000". If the Area Client code is "0000", the Comms Task client code will be used. If this option is set to "n" then the Comms Task client code will always be used. (See Area Programming for more details of this application)

L **L**ook Ahead — Normally all reportable events will be sent in the order that they occur; one at a time until no more reports are required. The Comms Task will ensure the order will not alter, even if communication takes a long time to get through to the Central Station or if reports are being generated faster than they can be sent. If this option is set to "Y", **Look Ahead** operation is selected. With Look Ahead selected, a sequence of multi-breaks on a single Zone/Input will be ignored if a restore report has already been sent for that Zone/Input and there are new alarms from a different Zone/Input that have not been sent yet. Open/Close reports do not follow this logic and are always reported. This option is useful to track intruder movement through a larger installation and ignore multi-breaking detectors.

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G	**G**eneral O/C	This option selects general open and close reporting. Whenever **all** Areas are turned ON a general Area close is reported. As soon as the **first** Area is turned OFF, a general Area open is reported. In Area programming, some Areas can be nominated as "Not General Area" and are ignored in the general Area calculation. Open/Close will not be reported on these Areas in any Comms Task with this "General Open/Close" option set to YES. Another Comms Task with this option set to NO may be used to allow these Areas to trigger individual Open/Close reports. See Area Programming "Not General Area" option for details.
P	**P**revents Restores	This option prevents restores being sent via this Comms Task.
N	**N**o Area Still Open	In Area programming, it is possible to enable reporting of "Area Still Open" and "Area 24Hour Offs". Not all reporting formats can handle these reports. Setting this option to "Y" will disable these reports for this Comms Task. If it is necessary that these events be reported, an additional Comms Task should be programmed using the IRfast format which supports them.

```
CT001 Area List
Filter: AL002
```

This screen allows an optional Area List filter to be defined for this Comms Task. If a non-zero Area List is chosen, only information from Areas in the specified Area List will be sent using this Comms Task.

```
CT001   EOA.....
Efilt-> nnnnnnnn
```

The "Extra Filter" screen option allows a Comms Task to only respond to certain types of events.

E	**E**xtra Filter	This option enables Extra Filter options. If left at "n", no extra filtering is used. ie. normal operation.
O	**O**pens/Closes	This option enables Opens/Closes reports to be sent via this Comms Task.
A	**A**larms	This option allows Alarms/Tampers/Isolations to be sent via this Comms Task.
.	**S**pare	Spare options for future filters. Leave set to "n".

For example: To configure a Model 3000 system so that all openings and closings are sent via Securitel and all alarms/tampers/isolates go via Inet, set the Securitel Comms Task with the "E" and "O" Extra Filter options and the Inet Comms Task with the "E" and "A" Extra Filter options.

```
CT001 Mapping ->
Standard
```

This screen determines the input mapping for this Comms Task.
In order to cater for different types of system configurations within the limitation of the number of points available in the Contact ID format, several input mapping options have been provided as listed in the following table:

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Contact ID Mapping options:
-Standard
-MAP-1
-School 30
-School 19
-SIMS II
-Access-1 (V3 or later)
-Pacom (V3 or later)
-Standard-2 (V3.5 or later)
-School 19B (V3.59 or later)

For more details of Mapping options refer to "Comms Task Formats" at the beginning of this section and to the tables at the rear of this manual.

Because IRfast format doesn't require mapping, this mapping selection is used to determine the Contact ID mapping to be used when Contact ID information is to be sent in addition to native IRfast information.

Inet Extra Options

The Extra options may be programmed by pressing HELP, "9" three times at the Active / Idle screen.

```
CT001    T.....EN
Opts -> nnnnnnnn
```

The "Inet Options" screen sets the following specific Inet options.

T **T**ranslate. This option must be set to YES for the Inet Comms Task to operate correctly.

E **E**ncrypt. This option is set to YES to allow an Encrytion key (programmed in the next screen) to be sent with each data packet. Note that if set to Yes, encryption must be available and enabled in the Automation software that the Inet Comms Task is communication with. (V4 or later only)

N **N**o CRC This option is for diagnostic purposes only and should not be enabled unless instructed to do so by the manufacturer.

```
CT001 Encryption
Key:  00000000
```

This screen sets the Encryption key to be used when the "E"ncrypt option above is set to YES. The Encryption key is programmed as eight Hexadecimal digits and must be the same as the encryption key programmed in the Automation software that the Inet Comms Task is communicatint with. (V4 or later only)

```
CT001 Alarm
Format: 0
```

This screen selects the primary reporting format to be used in this Inet installation.
0 IRfast.
1 Text.
2 Contact ID.
3 Time Only (Not yet implemented)

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```
CT001 Ack Time
(sec) 000
```

This screen sets the amount of time that Inet will wait for an acknowledge from the PC to an alarm transmission. Valid values of 5 to 255 seconds will be accepted. If left at 000, then a value of 20 seconds will be assumed.

```
CT001 Test time
(sec) 000
```

This screen sets the time between TEST reports that are sent to the automation system. When a valid communication is sent, this timer is reset. Valid values between 5 to 255 seconds will be accepted. If left at 000, then a value of 30 seconds will be assumed.

```
CT001 Pace Time
(100mS) 000
```

This screen is used for diagnostic purposes only and should be left at 000. Valid values are between 1 to 255 in 100mS increments. If left at 000, then a value of 5 seconds will be assumed.

```
CT001 Backup
Task: CT000
```

This screen allows the Installer to specify which Comms Task is to be used as the Backup Comms Task. A Backup Comms Task for Inet can be IRfast Backup, Contact ID Backup or GSM modem.

IMPORTANT NOTE: Whenever the Inet Comms Task is used, at least 1 spare Comms Task must be left available. Inet, when set to "Active" will automatically generate a "Buffer" Comms Task in the next available Comms Task position. While Inet is active this Task cannot be set to Idle or deleted.

Backup Tasks.
The Inet comms task allows a dialer backup task to be assigned should Inet fail to communicate successfully with the automation system. Inet will attempt to re-send any unacknowledged alarm message twice. If an acknowledge is still not received the alarm message will then be sent via the appropriate backup task if programmed. Backup Comms Tasks are available in IRFast, Contact ID and GSM modem formats. (GSM requires V3.5 or later)

Diagnostics

```
CT001     ..R.
Status -> nnnn
```

Pressing the ON Key whilst the Active/Idle screen is displayed will display the UART Port status screen. This screen can be cleared when desired by pressing the OFF Key. The following table explains the flags:

R	**R**etry	A "Y" under this flag means the receive fifo (16 bytes) has overflowed and at least one character has been lost. This will normally cause a retry of some kind.
.	**S**pare	Spare for future development.

The "R" flag may be monitored after communications via this port. In the event that the system places a "Y" flag under the "R", the Status screen should be reset and monitored further. Should a "Y" flag appear under the "R" with some regularity, a potential cause would be the baud rate at which the port is attempting to communicate. In such a case the Installer should reduce the baud rate and monitor the effect via the status screen.

In the event that lower baud rates do not solve the problem, assistance should be sought from the manufacturer's Service Technician.

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"Accept" Comms Task Format (Previously Comm-Pass)

Overview

Selecting the Comms Task "Accept" allows communications with the Accept System Management Software. This Windows based software package is installed on a PC and allows Database maintenance, Control, System monitoring and alarm handling. An IRPx UART board is required to provide the Serial Data port for connection to the PC Serial Port.

Important

1. With V2 firmware only the Access 4000 can connect to Accept V2. With V3 the Model 3000 and Access 4000 can connect to Accept V3.

2. The 3000 Control Module firmware must be at least V3.0.

Accept Options

```
CT001 Idle ->
Accept
```

Options are reached by pressing HELP, "9" an the Active/Idle screen. Options are divided into common options and less common or Special options. Usually only the common options need be programmed.

Special options are reached by pressing HELP, "9" *twice* at the Active/Idle screen. Changes will only take effect if the Comms Task is idle.

```
CT001  Port   ->
to use: 1
```

This screen allows the Installer to define the UART Port to which the PC will be connected. Depending on the version of UART Expander fitted to the Control Module, a Port number from 1 to 4 may be used. The Port number is selected by scrolling through the available options using the right arrow key.

```
CT001  Baud   ->
Rate:  9600
```

This screen allows selection of the Baud Rate (Data speed) at which the UART will communicate with the PC. The Baud Rate is chosen by scrolling through the available options using the right arrow key. A setting of 9600 Baud is recommended.
See "Comms Task Baud Rates" in Comms Task Programming [MENU 7,3,1].

Accept Special Options

Special options are reached by pressing HELP, "9" *twice* at the Active/Idle screen or by pressing HELP, "9" from any common options screen. HELP "0" will take you back to the common options when special options is complete.

```
CT001 Client
Code : 0000
```

This screen sets the Client Code to be used for this Comms Task. The Client Code is programmable in decimal from 0001 to 9999. **A Client Code of "0001" must be used for ACCEPT.**

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```
CT001   MLGPN...
Ropts-> nnnnnnnn
```

This screen sets various reporting options:

These should all be set to "n" for ACCEPT.

M	**M**ultiple Area	Multiple Area client codes are not used in the Accept format. This option should be set to "n".
L	**L**ook Ahead	Normally, all reportable events will be sent in the order in which they occurred; one at a time until no more reports are required. The Comms Task will guarantee the order will not alter, even if the dialler takes a long time to get through to the Central Station or if alarm reports are being generated faster than they can be sent. If this option is set to "Y", **Look Ahead** operation is selected. With Look Ahead selected, a sequence of multi-breaks on a single zone/input will be ignored **if a restore report has already been sent for that Zone/Input and there are new alarms from a different Zone/Input that have not been sent yet**. Open/Close reports do not follow this logic and are always reported. This option is useful to track intruder movement through a larger installation and ignore multi-breaking detectors.
G	**G**eneral Open/Close	This option selects General Open/Close reporting. Whenever all Areas are turned On, a general Area close is reported. As soon as the first Area is turned Off, a general Area open is reported. In Area Programming, some Areas can be nominated to be ignored in the general Area calculation. Open/Close will not be reported on these Areas in any Comms Task with this "General Open/Close" option set to YES.
P	**P**revents Restores	This option prevents restores being reported via this Comms Task.
N	**N**o Area Still Open	This option selects No Area Still Open or Area 24Hr Off reports. In Area Programming, it is possible to enable reporting of "Area Still Open" and "Area 24Hour Offs". Not all reporting formats can handle these reports. Setting this option to "Y" will disable these reports for this Comms Task. Both of these reports are sent without any loss of information in IRfast format.
.	**S**pare	Spare for future developments. This option must be set to "n".

```
CT001  Area List
Filter: AL002
```

This screen allows an optional Area List filter to be defined for this Comms Task. If a non-zero Area List is selected, only the information from Areas in the specified Area List above will be sent using this Comms Task. **Leave set to AL000 for ACCEPT.**

```
CT001   EOA.....
Efilt ->nnnnnnnn
```

The "Extra Filter" screen options allow a Comms Task to only respond to certain types of events. For example, to set up a Model 3000 so that only alarms/tampers/ isolations go via Direct Line, set the Direct Line Comms Task with the "E" and "A" options set to "Y". Opens/Closes will not be sent.

These should all be set to "n" for ACCEPT.

E	**E**xtra Filters	This option enables the Extra filter options. If left at "n", no filtering is used. ie. normal operation.
O	**O**pen/Closes	This option enables Open/Closes to be sent via this Comms Task.
A	**A**larms/T/I	This option enables Alarms/Tampers/ Isolations to be sent via this Comms Task.
.	**S**pare	Spare for future developments. This option must be set to "n".

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Accept - Extra Options

Extra Options are reached by pressing HELP, "9" *three times* at the Active/Idle screen or by pressing HELP, "9" from the Special Options screen. HELP, "0" will take you back to the Special Options screen when programming of Extra Options is complete.

```
CT001   ...SPCKD
Sopts ->nnnnnnnn
```

The Extra Options screen allows the programming of settings which are unique to Accept.

S	**S**ingle User	**Set this option to "Y" .** This option set to "Y"es by default in V4.0 or later.
P	**P**acket Numbers	This option enables packet numbers in Debug mode. Leave set to "n".
C	**C**RC On	This option enables CRC in Debug mode. Leave set to "n".
K	**K**ey Default	This option defaults the Encryption Key. **Set this option to "Y" on the first communication with ACCEPT. Having connected, the system will automatically reset this flag to "n".** This option set to "Y"es by default in V4.0 or later.
D	**D**ebug Mode	This is a factory facility only. Leave set to "n".
.	**S**pare	Spare for future use. Set to "n".

Diagnostics

```
CT001     ..R.
Status -> nnnn
```

Pressing the ON Key whilst the Active/Idle screen is displayed will display the UART Port status screen. This screen can be cleared when desired by pressing the OFF Key. The following table explains the flags:

.	**S**pare	Spare for future development.
R	**R**etry	A "Y" under this flag means the receive fifo (16 bytes) has overflowed and at least one character has been lost. This will normally cause a retry of some kind.
.	**S**pare	Spare for future development.
.	**S**pare	Spare for future development.

The "R" flag may be monitored after communications via this port. In the event that the system places a "Y" flag under the "R", the Status screen should be reset and monitored further. Should a "Y" flag appear under the "R" with some regularity, a potential cause would be the baud rate at which the port is attempting to communicate. In such a case the Installer should reduce the baud rate and monitor the effect via the status screen.

In the event that lower baud rates do not solve the problem, assistance should be sought from the manufacturer's Service Technician.

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"Poll-Data" Comms Task Format

The "Poll-Data" format allows an external intelligent system to obtain alarm information from the Model 3000 or Access 4000 using one of the UART Ports. The external system regularly polls the panel for alarm data, thereby ensuring that both systems are aware that the other is operational. A simple protocol provides for error free transfer of alarms. At this time, alarm information can be returned in the Contact ID format or as system text.

Compatible external systems.

Guardall (New Zealand) Tripad.
Provides a supervised communications link for the transmission of Alarms & other Events to Alarm Monitoring Software via TCP/IP and Ethernet based local and wide area networks (LANs and WANs).
This allows existing Corporate or Public networks to be used for alarm monitoring. The Tripad can also connect to a second 3000/Access 4000 UART Port to provide for connection of Upload/Download software over the same network.

Santana CCTV Camera Management System interface.
Provides a supervised communications link that allows 3000/Access 4000 Alarms and other Events to control operations on a CCTV Camera controller such as a MAX1000. The Santana interface translates the panel's Contact ID data into the required Camera Management System commands.
The RS232 connection between the 3000/Access 4000 UART Port and the Santana Interface can be via TCP/IP using suitable protocal converters.

Operation

All characters sent or received are displayable ASCI characters. All data from the external system begins with a line-feed and ends with a carriage return. The maximum number of characters that may be sent to the external system in one packet is 160 characters.

Communication is always initiated by the external system sending a single character command. The panel will reply with a multiple character packet within 2 seconds maximum. The 3000/4000 will discard any characters received whilst it is sending a reply.

The 3000/4000 expects a legal command every 30 seconds. If a command is not received within 30 seconds the panel considers communications to have failed and sets the panel Comms Fail system input to the alarm condition. A legal poll will restore the alarm condition.

Backup Comms Task

A backup Comms Task can be defined if desired. If no valid poll has been received for 30 seconds (60 seconds on startup), the UART problems input will be placed in alarm and the backup Comms Task will be triggered. Alarms will now be sent via the backup Comms Task. When a valid poll is next received, if the backup Comms Task has not caught up yet then a "No Data" reply will be given. If a backup Comms Task has caught up, it will be terminated and control will be returned to the Poll Data Comms Task. The UART problems input will then be restored.

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Poll-Data Options

```
CT001 Idle ->
Poll-Data
```

Options are reached by pressing HELP, "9" at the Active / Idle screen. Options are divided into common options and less common or Special options.

Special options are reached by pressing HELP, "9" twice at the Active / Idle screen.

A Backup Comms Task may be programmed by pressing HELP, "9" three times at the Active/Idle screen.

```
CT001  Port   ->
to use: 0
```

This screen allows the Installer to define the UART Port to which the Tripad will be connected. Depending on the version of UART Expander fitted to the Control Module, a Port number from 1 to 4 may be used. The Port number is selected by scrolling through the available options using the right arrow key.

```
CT001  Baud   ->
Rate:  9600
```

This screen allows selection of the Baud Rate (Data speed) at which the UART will communicate with the Tripad. The Baud Rate is selected by scrolling through the available options using the right arrow key. A setting of 9600 Baud is recommended. *See Comms Task Baud Rates in Comms Task Programming [MENU 7,3,1]*

Poll-Data Special Options

```
CT001 Client
Code: 0000
```

This screen sets the client code to be used for this Comms Task. The client code is programmable in decimal from 0001 to 9999. (Client codes of 0000 and 9999 should be avoided). If the "Multiple Area Client Code" is set, it is possible for a different client code to be used.

```
CT001    MLGPN...
Ropts -> nnnnnnnn
```

This screen sets various reporting options:

M **M**ultiple Area Codes

If Multiple Area client codes are selected, whenever a report from an Area is performed (open/close/alarms/tampers/isolations/restores) the client code defined in Area Programming will be used if it is not "0000". If the Area Client code is "0000", the Comms Task client code will be used. If this option is set to "n" then the Comms Task client code will always be used. (See Area Programming for more details of this application)

L **L**ook Ahead

Normally all reportable events will be sent in the order that they occur; one at a time until no more reports are required. The Comms Task will ensure the order will not alter, even if communication takes a long time to get through to the Central Station or if reports are being generated faster than they can be sent. If this option is set to "Y", **Look Ahead** operation is selected. With Look Ahead selected, a sequence of multi-breaks on a single Zone/Input will be ignored if a restore report has already been sent for that Zone/Input and there are new alarms from a different Zone/Input that have not been sent yet. Open/Close reports do not follow this logic and are always reported. This option is useful to track intruder movement through a larger installation and ignore multi-breaking detectors.

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G **G**eneral O/C

This option selects general open and close reporting. Whenever **all** Areas are turned ON a general Area close is reported. As soon as the **first** Area is turned OFF, a general Area open is reported.

In Area programming, some Areas can be nominated as "Not General Area" and are ignored in the general Area calculation. Open/Close will not be reported on these Areas in any Comms Task with this "General Open/Close" option set to YES. Another Comms Task with this option set to NO may be used to allow these Areas to trigger individual Open/Close reports. See Area Programming "Not General Area" option for details.

P **P**revents Restores

This option prevents restores being sent via this Comms Task.

N **N**o Area Still Open

In Area programming, it is possible to enable reporting of "Area Still Open" and "Area 24Hour Offs". Not all reporting formats can handle these reports. Setting this option to "Y" will disable these reports for this Comms Task. If it is necessary that these events be reported, an additional Comms Task should be programmed using the IRfast format which supports them.

```
CT001 Area List
Filter: AL002
```

This screen allows an optional Area List filter to be defined for this Comms Task. If a non-zero Area List is chosen, only information from Areas in the specified Area List will be sent using this Comms Task.

```
CT001   EOA.....
Efilt-> nnnnnnnn
```

The "Extra Filter" screen option allows a Comms Task to only respond to certain types of events.

E **E**xtra Filter

This option enables Extra Filter options. If left at "n", no extra filtering is used. ie. normal operation.

O **O**pens/Closes

This option enables Opens/Closes reports to be sent via this Comms Task.

A **A**larms

This option allows Alarms/Tampers/Isolations to be sent via this Comms Task.

. **S**pare

Spare options for future filters. Leave set to "n".

For example: To configure a Model 3000 system so that all openings and closings are sent via Securitel and all alarms/tampers/isolates go via Poll Data, set the Securitel Comms Task with the "E" and "O" Extra Filter options and the Poll Data Comms Task with the "E" and "A" Extra Filter options.

```
CT001 Mapping ->
Standard
```

This screen determines the input mapping for this Comms Task.
In order to cater for different types of system configurations within the limitation of the number of points available in the Contact ID format, several input mapping options have been provided as follows:

-Standard	-Access-1	(V3 or later)
-MAP-1	-Pacom	(V3 or later)
-School 30	-Standard-2	(V3.5 or later)
-School 19	-School 19B	(V3.59 or later)
-SIMS II		

For more details of Mapping options refer to "Comms Task Formats" at the beginning of this section and to the tables at the rear of this manual.

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Backup Comms Task

A Backup Comms Task may be programmed by pressing HELP, "9" three times at the Active / Idle screen.

```
CT001 Backup
Task: CT000
```

This screen allows the Installer to specify which Comms Task is to be used as the Backup Comms Task.

Diagnostics

```
CT001     .R..
Status -> nnnn
```

Pressing the ON Key whilst the Active/Idle screen is displayed will display the UART Port status screen. This screen can be cleared when desired by pressing the OFF Key. The following table explains the flags:

.	**S**pare	Spare for future development.
R	**R**etry	A "Y" under this flag means the receive fifo (16 bytes) has overflowed and at least one character has been lost. This will normally cause a retry of some kind.
.	**S**pare	Spare for future development.
.	**S**pare	Spare for future development.

The "R" flag may be monitored after communications via this port. In the event that the system places a "Y" flag under the "R", the Status screen should be reset and monitored further. Should a "Y" flag appear under the "R" with some regularity, a potential cause would be the baud rate at which the port is attempting to communicate. In such a case the Installer should reduce the baud rate and monitor the effect via the status screen.

In the event that lower baud rates do not solve the problem, assistance should be sought from the manufacturer's Service Technician.

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"PACOM" Comms Task Format

The PACOM Comms Task format is used to transfer alarms to a PACOM 1026 Receiver via RS232. The basic Format is in Contact ID.

Enquiries regarding the PACOM format should be directed to your distributor or the manufacturer.

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"IRfast Backup" Comms Task Format

This Comms Task format has been specifically designed to operate as a dialer communication backup to the primary reporting format. When triggered, the backup task monitors the status of the primary task and, provided all outstanding data has been sent, allows the means of reporting to resort back to the primary Comms Task when that task is once again operational.

```
CT001 Idle ->
IRfast Backup
```

As far as programming is concerned, this format is programmed in exactly the same manner as the normal IRfast format.

See "IRfast Comms-4" for programming options.

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"CID Backup" Comms Task Format

This Comms Task format has been specifically designed to operate as a dialer communication backup to the primary reporting format. Once all data has been sent via the backup Task, communication will automatically revert to the primary task. In addition, if the primary Comms Task is "Securitel", communications revert to using the designated UART port.

```
CT001 Idle ->
CID Backup
```

As far as programming is concerned, this format is programmed in exactly the same manner as the normal Contact ID format.

Refer to "Contact ID Comms-5" for programming options.

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"GSM" Comms Task Format

INTRODUCTION

The Model 3000 / Access 4000 allows a GSM modem to be connected via a UART port to provide the 3000/4000 system with GSM Digital Mobile facilities. By selecting the GSM Comms task in conjunction with the requried GSM Modem, the 3000/4000 is able to:

- Backup the hard-wired dialler with a wireless GSM transmission sending in Contact ID
- Send Contact ID data via the GSM network as the primary data path.
- Send alarms as text messages to nominated GSM mobile phones using the GSM short message service (SMS).
- Accept control commands from nominated or arbitrary GSM mobile phones via SMS text strings, to control the Model 3000 / Access 4000 and send back a text message confirmation via SMS.

The status and call progress of the GSM Modem can be followed or inspected via a comprehensive review log, including display of received signal strength to ensure installation is reliable.

IMPORTANT INSTALLATION NOTES.

GSM MODEM COMPATABILITY.

Check the tables below to detemine which GSM Modem models are supported by each Version of Control Module Hardware & Firmware:

TYPE 1 CONTROL MODULE HARDWARE.

Controller Firmware	GSM Modem	Notes
V3.5 to V4.02	FE2000 only (P/N:994090)	IR version. This GSM Modem is no longer available.
V4.06 or later.	FE2000 OR FE3000.	Order IR Part No: 994101 for Upgrade chip.

TYPE 2 CONTROL MODULE HARDWARE.

Controller Firmware	GSM Modem	Notes
V4.00 to V4.39	FE2000 only (P/N:994090)	IR version. This GSM Modem is no longer available.
V4.5 to V4.76	FE3000 only.	Options Microchip (U14) must be V1.14 or later.
V4.77 to V5.0x	FE3000 only.	Options Microchip (U14) can be any Version or Type.
V5.10 or later	FE2000 OR FE3000.	Options Microchip (U14) can be any Version or Type.

UART.

Before a GSM Modem can be connected, one of the following UART board options must be fitted to the Control Module, and the correct interface cable used to connect from a UART Port to the RS232/Interface Port on the GSM Modem.

TYPE 1 CONTROL MODULE	TYPE 2 CONTROL MODULE
993065 Single Port UART	995065 Single Port UART
993066 Dual Port UART	995066 Dual Port UART
993068 Four Port UART	995068 Four Port UART
	995090 Ethernet & UART

FE3000.

The FE3000 must be defaulted to "Interface Mode" prior to connection.

SIGNAL STRENGTH.

The Model 3000 / Access 4000 can log GSM Modem Signal strength values to Review to assist with antenna positioning. For reliable communications, the signal strength should be better than -85dB.
Around -95dB, the Modem will fail to communicate.
-113 dB usually indicates no Antenna connected.

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"BUFFER" COMMS TASK.

When the GSM Comms Task is set to Active, the system automatically creates an additional Comms Task named "Buffer" in the next available Comms Task location. This Comms Task handles background tasks relating to the GSM Comms Task and does not need to be programmed by the Installer.
Before programming a GSM Comms Task into the system, the Installer must check that there is at least one additional spare Comms Task available for the "Buffer" task.
e.g. If CT001 has been programmed for PCDirect, CT002 for Contact ID and CT003 for GSM. The system will automatically assign the Buffer Comms Task to CT004 whenever the GSM Comms Task is set to Active.

OPERATION

Sending alarms via Contact ID to a Central Station Digital Receiver.

The GSM Comms task can send alarm information as Contact ID to a Central Station Digital Receiver.

In the event of failure, a backup Comm Task can be defined, for example CID Backup using the normal PTSN telephone connection. All the usual reporting options are available including Area List and event filtering, look ahead, etc.

Backing up other Comms Tasks.

If the GSM Comms task is not used as the primary reporting task, it can still act as a backup to any other task that allows backup tasks to be defined. For example a Contact ID Comms Task using the PTSN telephone line can specify a GSM backup task, to report telephone line failures and alarms in the event the PTSN line fails or is compromised.

All SMS facilities are available when acting as backup task, including alarm reporting via SMS. (A new dialling option has been added to all dialling Comms Tasks to allow a backup Comms Task to be triggered immediately if no line is detected)

Sending text alarms to a GSM mobile phone.

Alarms, presented as review style text, can be sent using the SMS to any GSM mobile phone. This feature can be used in conjunction with, or instead of, sending alarms via the GSM network using Contact ID.
"Xmit" type review entries are sent and can be filtered with event types (Open/Close Events and/or Alarm Events) and Area Lists. The text is displayed on the GSM mobile phone screen.

The System will send the specified messages to the nominated GSM Mobile phone with a validity period of 168 hours (1 week). i.e. The message will be discarded by the network if not received by the nominated Mobile phone within 168 hours. (Note: Validity time was 5 minutes in FE2000 GSM Modem firmware V1.04 or earlier shipped in June/July 2000. The firmware in these earlier units can be upgraded to V1.05 or later to provide 168 hours Validity time)

The SMS Alarm message text.

SMS Alarms are any "Xmit" Review entries that match the send criteria and are sent in a text format similar to review text. The send criteria are programmed in the Comms Task and also in the relevant Process Groups if V4.5 or later.
The text message comprises the following components:

<Date & time>	
<"Xmit [input state] on">	Input State = alarm/tamper/isolate/restore
<Input name>	
<Abbreviated input name>	
<"in">	
<Area name>	
<Flags>	For debugging purposes.
<Alarm ID>	V4.5 or later only. For SMS Alarm Acknowledgement.

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For example:
Jan01 14:02:45.4
Xmit Alarm on FACTORY PIR (E02:Z09) in FACTORY saAo 01AA

The abbreviated name input is included so that the receiver can isolate the Zone if they wish, without having to remember the Zone ID.

Additional SMS Alarm messaging features available in Control Module Firmware V4.5 or later.

NOTE: These additional SMS alarm features are not available if FE2000 is used.

Filtering messages by Alarm Type.
Two new programming screens are provided in Process Group programming to allow the type of SMS Alarm Messaging and the nominated Telephone number/s to be defined. This allows SMS Alarm messages to be limited to specific types of alarms and also allows for different types of alarms to be sent to different Telephone numbers.

Sending SMS Alarms to multiple Mobile Phones.
The Process Group programming options allow the installer to select whether the SMS Alarms will be sent to a single Telephone number or a series of Telephone numbers.

SMS Alarm Acknowledgement feature.
One of the Process Group programming screens allows the installer to select whether SMS Alarms need to be acknowledged. If the SMS Alarm needs to be Acknowledged and is being sent to a series of Telephone numbers, once the Alarm is acknowledged, the message will not be sent to any more Telephone numbers in the series.

A 4 character ID string is attached to the end of every SMS Alarm message. The 1st two characters indicate which mobile phone in the series the message is being sent to, and the 2nd 2 characters are the actual Alarm ID.
This allows up to 576 unique Alarm IDs before wrap-around occurs.
e.g. 01AA = 1st phone number tried for Alarm ID "AA". 03AF = 3rd phone number tried for Alarm ID "AF"

NOTE: Open/Close messages also have an ID, but do not need to be acknowledged.
To acknowledge an Alarm, the phone user simply replies to the message sender with a "K", followed by the Alarm ID.
e.g. To acknowledge Alarm ID "AA". Send KAA. (No PIN number is required. The senders phone number is checked)

If there are multiple alarm messages to be acknowledged, the additional Alarm IDs can be added to this reply.
e.g. To acknowledge Alarm IDs "AF", "AG" and "AH". Send KAFAGAH

Up to 8 Alarms can be outstanding (waiting for acknowledgement) at any one time and each Alarm has its own Acknowledge timer. Subsequent Alarms (relevant "Xmit"review entries) are buffered and sent as soon as an Acknowledge timer is free.
NOTE: For diagnostic purposes, the operation of the 8 SMS alarm states can be monitored in Review by enabling Detailed Review mode in the General System options, MENU 7, 5, 1.

The "R" command can be sent to clear any pending SMS Alarms that have not begun to be sent. This can be sent from the "SMS 2" phone without a PIN code, or from any phone using a valid PIN code from the 1st 32 Users.

See "Process Groups" (MENU, 2, 4, 3) for more details and examples.

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Controlling a Model 3000 / Access 4000 via a GSM mobile phone.

The GSM SMS can be used to send short text style commands to the 3000/4000 to:

- ✓ Turn on/off a home auxiliary.
- ✓ Turn on a home auxiliary for a specified time in minutes.
- ✓ Turn on a home auxiliary for a specified time in seconds.
- ✓ Turn on/off an area.
- ✓ Request the current name and state of any 6 home auxiliaries.
- ✓ Request the current name and state of any 6 areas.
- ✓ Isolate/Restore a zone.
- ✓ Discard pending SMS messages waiting to be sent.
- ✓ Request a short help message

All actions are recorded to review and a message is sent back to the GSM mobile phone to confirm the action when appropriate.

Sending Text Commands via SMS

Text commands may be sent to the Model 3000 / Access 4000 from any SMS capable GSM mobile phone. If the command is valid and accepted, a reply will be sent back to the sender's GSM phone.

There are two forms of authorisation:
1. (P)IN Option clear

V3.5 to V4. Commands may be received from either SMS1 or SMS2 GSM phones without a PIN number entered.
V4.5 or later. Commands may be received from the SMS2 GSM phone without a PIN number entered.
The user will be marked as "unknown". Alternatively a command may be received from any GSM phone if preceded by a valid PIN number within the 1st 32 users. The user type must NOT be set to "None".

2. (P)IN Option Set

A valid PIN number from within the 1st 32 users must precede commands. Any GSM phone can be used.
The user type must NOT be set to "None".

Additional Notes.

- If the user is marked as "unknown", no further checks are made to see if a user is allowed certain operations.
- If a PIN number was used, operations may be restricted according to user programming.
- The command letters can be uppercase or lower case. Only one command may be sent per SMS message.

The following table shows the available commands.

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SMS Control Commands

Command	Description
HE	Returns a SMS message, listing the available commands. Any User may use this command.
AnnnN ("A" Option set)	Turn Area nnn On. Leading zeros are not required (eg. Turn on Area 3 is <PIN>A3N.) If a valid User is present the Area must be in the User's Area On List. The reply is: <area name> is now <on/off> or <area name> <error message>.
AnnnF ("A" Option set)	Turn Area nnn Off. Leading zeros are not required (eg. Turn on Area 34 is <PIN>A34F.) If a valid User is present the Area must be in the User's Area Off List. The reply is: <area name> is now <on/off> or <area name> <error message>.
HnnnN ("X" Option set)	Turn Home Auxiliary nnn On. Leading zeros are not required (e.g. Turn on Home Auxiliary 112 is <PIN>H112N.) The Home Auxiliary must be marked for SMS control. If a valid User is present, the User Home Auxiliary types need to match the Home Auxiliary type being controlled. The reply is: <home aux name> turned <on/off> for <xxx> sec/min.
HnnnF ("X" Option set)	Turn Home Auxiliary nnn Off. Leading zeros are not required. (e.g. Turn off Home Auxiliary 4 is <PIN>H4F.) The Home Auxiliary must be marked for SMS control. If a valid User is present, the User Home Auxiliary types need to match the Home Auxiliary type being controlled. The reply is: <home aux name> turned <on/off> for <xxx> sec/min.
HnnnNyyyS ("X" Option set)	Turn Home Auxiliary nnn On for yyy seconds. Leading 0's are not required. yyy can be from 1-255. (e.g. Turn On Home Auxiliary 23 for 56 seconds is <PIN>H23N56S.) The Home Auxiliary must be marked for SMS control. If a Valid Use is present, the User's Home Auxiliary Type must match the Home Auxiliary Type being controlled. The reply is: <home aux name> turned <on/off> for <yyy> sec/min.
HnnnNyyyM ("X" Option set)	Turn Home Auxiliary nnn On for yyy minutes. Leading zeros are not required. yyy can be from 1-255. (e.g. Turn On Home Auxiliary 2 for 5 minutes is <PIN>H2N5M.) The Home Auxiliary must be marked for SMS control. If a Valid Use is present, the User's Home Auxiliary Type must match the Home Auxiliary Type being controlled. The reply is: <home aux name> turned <on/off> for <yyy> sec/min.
AnnnL ("L" Option set)	Returns a SMS message, listing the names and states of 5 Areas beginning at Area nnn. (e.g. To return the name and on/off state of Areas 12,13,14,15,16 send <PIN>A12L.)
HnnnL ("L" Option set)	Returns a SMS message, listing the names & states of 5 Home Auxiliaries beginning at Home Auxiliary nnn. (e.g. To return the name & on/off state of Home Auxiliaries 45,46,47,48,49 send <PIN>H45L.)
ZTxxZyyI ("I" Option set)	Isolates Zone TxxZyy where T=Type, xx=module number and yy=Zone number. (e.g. To Isolate Zone 12 on Big Expander 3 send <PIN>ZB03Z12I.) The reply is: <input name> isolated.
ZTxxZyyR ("I" Option set)	Restores Zone TxxZyy where T=Type, xx=module number and yy=Zone number. (e.g. To Isolate Zone 12 on Big Expander 3 send <PIN>ZB03Z12R.) The reply is: <input name> restored.
R	Resets the SMS pointer. This command cancels any pending alarms that are queued in the main buffer to be sent via SMS and resets the SMS 5 minute timer used to pace SMS messages. If SMS List function is used this command will not clear any SMS Alarm that has already begun to be sent to the numbers in the List. (There can be up to 8 Alarms outstanding that have begun to be sent at any one time)
Kxx Kxxyyzz	Acknowledge an Alarm message. xx = Alarm ID. Acknowledge multiple Alarm messages. xxyyzz = 3 different Alarm IDs.

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```
CT001 Idle ->
GSM
```

This screen allows the programmer to select a Comms Task to programme by using the up and down arrows or by entering a number.

The screen has three roles:

1. It allows a Comms Task format to be selected by using the right arrow key to cycle through all the available formats. Pressing the OFF key selects no format for this Comms Task and goes to the start of the list of available formats.

2. The "9" key is used to toggle the Comms Task between the "Idle" state and the "Active" state. **A Comms Task format cannot be changed or programming changes made unless the Comms Task is idle.**

3. Pressing HELP, "9" will allow options to be programmed for the particular format chosen for that Comms Task. It is recommended that options are only changed when the Comms Task is idle.

IMPORTANT NOTE:
"Buffer" Comms Task.

When the GSM Comms Task is set to Active, the system automatically creates an additional Comms Task named "Buffer" in the next available Comms Task location.

See "Buffer Comms Task" in the Installation Notes at the beginning of this document for details.

Example: GSM has been selected for Comms Task CT001

Although a format has been chosen, because the Comms Task is idle, no dialling or reporting will take place.

```
CT001 Idle ->
GSM
```

Options are reached by pressing HELP, "9" at the Active/Idle screen. Options are divided into Options, Special Options and Advanced Options.

Special options are reached by pressing HELP, "9" *twice* at the Active/Idle screen. Advanced options are reached by pressing HELP, "9" *three times* at the Active/ Idle screen.

Options Programming

```
CT001 Port    ->
to use: 1
```

This screen allows the Installer to define the UART Port to which the GSM Modem will be connected. Depending on the version of UART Expander fitted to the Control Module, a Port number from 1 to 4 may be used. The Port number is selected by scrolling through the available options using the right arrow key. Port 0 is not allowed.

```
CT001  Baud   ->
Rate:  600
```

This screen allows selection of the Baud Rate (Data speed) at which the UART will communicate with the GSM Modem. The Baud Rate is selected by scrolling through the available options using the right arrow key.

- A setting of 2400 Baud is mandatory for the FE2000 GSM Modem up to V1.07. (Unit supplied in Black Plastic enclosure)
- A setting of 600 Baud is mandatory for FE2000 GSM Modem V8000 or later. (Unit supplied in metal enclosure)
- **This screen is not visible in V4.5 to V5.0x.** Baud rate is preset to 9600 for FE3000 only.
- This screen was re-introduced in V5.10 to support FE2000 operation, and is only used if the "2" option is set to "Y" in the "BCSAP2DR" screen. i.e. If FE2000 interface is selected.

See Comms Task Baud Rates in Comms Task Programming [MENU 7,3,1].

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CT001 Serv. No->
None

This screen sets the SMS service centre number, which can be obtained from the Network you subscribe to. It is mandatory for any SMS operations. It must be entered in international format starting with the country code. For example: "61418706700" is the Telstra Australia SMS service number. Available Phone Numbers are as per those set in Phone Number Programming [MENU 7,3,2].

CT001 SMS1 No.->
None

V3.5 to V4: (Also relevant to V5.1 or later if FE2000 is used) This screen sets the SMS mobile phone number that SMS alarm messages are going to be sent to. This number can also be used to send SMS text commands back to the C3000 if the "(P)IN required" option *(See Special Options)* is not enabled.

V4.5 or later: This screen sets the SMS mobile phone number that SMS Area Open/Close reports and FE3000 System Input Alarms are going to be sent to.

The selected Telephone number, must be programmed in international format starting with the country code. (Time-Zone logic on Phone Numbers is active). Available Phone Numbers are as per those set in Telephone Number Programming [MENU 7,3,2].

SMS TEXT COMMANDS
When SMS Text Commands are required from:
1 Phone only;
Program "SMS2 No."
2 Phones only; (V3.5 to V4 only)
Program "SMS1 No."
and "SMS 2 No."
Any GSM Mobile Phone;
Enable "(P)IN Required".

IMPORTANT NOTES FOR V4.5 OR LATER:
(NOT APPLICABLE FOR FE2000)
1) If any SMS Alarm messaging is required, the "Tx SMS" option and "SMS No." must be programmed in the relevant Process Groups. MENU, 2, 4, 3.
The "Tx SMS" options include the following features.
-Different types of Alarms can to be sent to different Telephone numbers.
-Acknowledgement of SMS Alarm messages. (Process Group option)
-SMS Alarm messages can be sent to multiple Telephone numbers.

2) If these options are programmed, the "SMS 1 No." only needs to be programmed for receiving Area Open/Close reports and FE3000 System Input Alarms.
No Acknowledgement is required for Open/Close reports.

3) If Alarm acknowledgement is required, the "SMS Ack Time" must also be programmed in this Comms Task.

4) If this Comms Task is programmed to report SMS text messages ("S" option in the BCSAP.DR screen) and the "SMS 1" Telephone number is not programmed, the SMS Event filtering must be programmed to Disable Open/Close reporting. e.g. Set to YnY If this is not done, a "No Ack" Review message and the "GSM Problems" System Input will be triggered.

CT001 SMS2 No.->
None

V3.5 to V4: (Also relevant to V5.1 or later if FE2000 is used) This screen defines a 2nd SMS mobile phone number that can be used to send SMS text commands to the Concept 3000 if the "(P)IN required" option *(See Special Options)* is not enabled.

V4.5 or later: This number defines a single SMS mobile phone number that can be used to send SMS text commands if the "(P)IN required" option *(See Special Options)* is not enabled.

NOTE: Alarms cannot be paged to this number.

The selected Telephone number, must be programmed in international format starting with the country code. (3000/4000 Time-Zone logic on Phone Numbers is active). Available Phone Numbers are as per those set in Phone Number Programming [MENU 7,3,2].

17.

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CT001 CID No. -> None

This screen sets the Central Station Digital Receiver telephone number. It must be entered in international format starting with the country code. Note that no backup number exists at this time. (Time-Zone logic on Phone Numbers is active).
Available Phone Numbers are as per those set in Phone Number Programming [MENU 7,3,2].

CT001 GSM Reg. Zone: C01:Z01

This screen allows any unused zone input to be used to signal changes in the state of the GSM modem registration. The input is alarmed when the modem de-registers and sealed when the modem re-registers. The (I)gnore option in Zone Input Programming must be set for that zone so that the actual input is ignored and used only as a phantom zone. (Used to be (C)alc option)

Special Options

CT001 BCSAP2DR Opts -> nnnnnnnn

This screen allows a number of reporting options to be set.

B	**B**ackup	If set to Yes, Contact ID alarm messages will only be sent as a backup to one or more other Comms Task. IMPORTANT NOTE: When a GSM Comms Task is programmed for Backup only, there is no periodic testing performed to ensure that the GSM Modem Reporting is fully operational. (The GSM Task would only be used if the Primary Comms Task fails)
C	**C**ontact ID	If set to Yes, Contact ID alarm messages will be sent via this Comms Task when required.
S	**S**MS	If set to Yes, Short Message Service (SMS) text style messages will be sent to GSM mobile phones according to pre-programmed SMS Options as defined in the following screens. *See "SMS 1" Telephone number for more information.* IMPORTANT NOTE: V4.5 or later. Process Group Options for "Tx SMS" and "SMS No." must also be programmed.
A	**A**nswer Phone	This option is currently not used.
P	**P**IN Required	If set to Yes, this option forces all SMS command strings sent to the 3000/4000 that are preceded by the PIN number of any user between User1 and User32 to be accepted. The command can be sent from any GSM mobile phone. If the (P)in option is not set, then text commands can only be accepted by the 3000/4000 if they originate from either of the pre-programmed SMS1 or SMS2 numbers. (SMS2 only if V4.5 or later)
2	FE**2**000 Interface (V5.1 or later only)	If set to Yes, this option allows an FE2000 GSM Modem to communicate with this Comms Task. For FE3000 this option must be set to "n".
D	**D**ebug	The (D)ebug option is for manufacturer use only and should be set to (n).
R	**R**SSI Level	If set to Yes, the (R)SSI display option will cause the Network Registration and RSSI level to be saved to review every 5 seconds for the purposes of antenna placement. (Normally this message is only saved when there is a change in Network Registration status. Permanently setting this option to Yes causes review to fill up very quickly.) For reliable communications, the signal strength should be better than -85dB. Around -95dB, the Modem will fail to communicate. -113 dB usually indicates no Antenna connected.

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CT001 AXLI...N
SOpts-> nnnnnnnn

This screen allows the Installer to set specific **SMS Options**.

A	**A**rea control	If set to Yes, SMS control of Areas is allowed.
X	Home Au**x**. Control	If set to Yes, SMS control of Home Auxiliaries is allowed. NOTE: "SMS Control" must also be selected in the Home Auxiliary Options; MENU, 7, 5, 5.
L	Status Requests	If set to Yes, SMS status requests of Areas and Home Auxiliaries are allowed.
I	**I**solations/Restorals	If set to Yes, SMS isolation and restoral of Zone Inputs are allowed.
.	**S**pare	
N	**N**o Error replys	If set to Yes, SMS Error replys will not be sent back to unauthorised Users.

CT001 SMS Area
Filter: AL000

This screen allows an area filter to be applied to all text messages sent using SMS to the SMS1 number on a GSM mobile phone.

CT001 EOA.....
SMS Evt:nnnnnnnn

This screen allows "Xmit" type only entries sent via **SMS** to be filtered according to the options specified.

E	**E**vent Filter	This option allows SMS Event Filtering.
O	**O**pen/Close	If set to Yes, Open and Close events may be sent via SMS. For this option to function correctly the (E) Event Filter option must also be enabled.
A	**A**larm	If set to Yes, Alarm events may be sent via SMS. For this option to function correctly the (E) Event Filter option must also be enabled. NOTE: See "SMS 1" Telephone number programming for more information.

CT001 MLGPN...
Mopts-> nnnnnnnn

This screen allows the Installer to specify a number of **SMS** reporting options.

M	**M**ult. Client Codes	If set to Yes, Multiple Area client codes may be sent via SMS.
L	**L**ook Ahead	Normally, all reportable events will be sent in the order in which they occurred; one at a time until no more reports are required. The Comms Task will guarantee the order will not alter, even if the dialler takes a long time to get through to the Central Station or if alarm reports are being generated faster than they can be sent. If this option is set to "Y", **Look Ahead** operation is selected. With Look Ahead selected, a sequence of multi-breaks on a single zone/input will be ignored **if a restore report has already been sent for that Zone/Input and there are new alarms from a different Zone/Input that have not been sent yet**. Open/Close reports do not follow this logic and are always reported. This option is useful to track intruder movement through a larger installation and ignore multi-breaking detectors.

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G	**G**eneral Open/Close	This option selects General Open/Close reporting. Whenever all Areas are turned On, a general Area close is reported. As soon as the first Area is turned Off, a general Area open is reported. In Area Programming, some Areas can be nominated to be ignored in the general Area calculation. Open/Close will not be reported on these Areas in any Comms Task with this "General Open/Close" option set to YES.
P	**P**revents Restores	This option prevents restores being reported via this Comms Task.
N	**N**o 24Hr/Still Open	This option selects No Area Still Open or Area 24Hr Off reports. In Area Programming, it is possible to enable reporting of "Area Still Open" and "Area 24Hour Offs". Not all reporting formats can handle these reports. Setting this option to "Y" will disable these reports for this Comms Task. Both of these reports are sent without any loss of information in IRfast format.
.	**S**pare	Spare for future developments. This option must be set to "n".

CT001 Max Msgs per 5min : 000

This screen allows the Installer to restrict the maximum number of SMS "Xmit" type messages that may be sent in any 5 minute period. Note that messages will bank up if they are occurring faster than this rate. (The "R" command may be sent to discard any pending messages.)

NOTE: V4.5 or later. Exercise caution if using this option in conjunction with SMS List operation where an SMS Acknowledge timer is used.

CT001 Client Code: 0000

This screen sets the primary client code when sending alarms via Contact ID.

CT001 Mapping -> Standard

This screen determines the Contact ID input mapping for this Comms Task.
In order to cater for different types of system configurations within the limitation of the number of points available in the Contact ID format, several input mapping options have been provided as follows:

-Standard
-MAP-1
-School 30
-School 19
-SIMS II
-Access-1 (V3 or later)
-Pacom (V3 or later)
-Standard-2 (V3.5 or later)
-School 19B (V3.59 or later)

For more details of Mapping options refer to "Comms Task Formats" at the beginning of this section and to the tables at the rear of this manual.

CT001 CID Area Filter: AL000

This screen allows an Area filter to be applied to all CID data sent via the GSM Comms Task.

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```
CT001   EOA.....
CIDEvt: nnnnnnnn
```

This screen allows **CID data** sent via GSM to be filtered according to the options set.

E	**E**vent Filter On	This option allows Contact ID Event Filtering.
O	**O**pen/Close	If set to Yes, Open and Close events may be sent via Contact ID. For this option to function correctly the (E) Event Filter option must also be enabled.
A	**A**larms	If set to Yes, Alarm events may be sent via Contact ID. For this option to function correctly the (E) Event Filter option must also be enabled.

```
CT001   MLGPN...
Copts-> nnnnnnnn
```

This screen allows the Installer to specify a number of **Contact ID** reporting options.

M	**M**ult. Client Codes	If set to Yes, Multiple Area client codes may be sent via Contact ID.
L	**L**ook Ahead	Normally, all reportable events will be sent in the order in which they occurred; one at a time until no more reports are required. The Comms Task will guarantee the order will not alter, even if the dialler takes a long time to get through to the Central Station or if alarm reports are being generated faster than they can be sent. If this option is set to "Y", **Look Ahead** operation is selected. With Look Ahead selected, a sequence of multi-breaks on a single zone/input will be ignored **if a restore report has already been sent for that Zone/Input and there are new alarms from a different Zone/Input that have not been sent yet**. Open/Close reports do not follow this logic and are always reported. This option is useful to track intruder movement through a larger installation and ignore multi-breaking detectors.
G	**G**eneral Open/Close	This option selects General Open/Close reporting. Whenever all Areas are turned On, a general Area close is reported. As soon as the first Area is turned Off, a general Area open is reported. In Area Programming, some Areas can be nominated to be ignored in the general Area calculation. Open/Close will not be reported on these Areas in any Comms Task with this "General Open/Close" option set to YES.
P	**P**revents Restores	This option prevents restores being reported via this Comms Task.
N	**N**o 24Hr/Still Open	This option selects No Area Still Open or Area 24Hr Off reports. In Area Programming, it is possible to enable reporting of "Area Still Open" and "Area 24Hour Offs". Not all reporting formats can handle these reports. Setting this option to "Y" will disable these reports for this Comms Task. Both of these reports are sent without any loss of information in IRfast format.
.	**S**pare	Spare for future developments. This option must be set to "n".

```
CT001   Maximum
Attempts: 002
```

Maximum Attempts. (V3.5 to V4 only)
This screen allows the Installer to specify the number of CID dialling attempts to be made when sending Contact ID via this Comms Task. Leaving this screen set at 000 selects the default of 002 attempts.
This screen is not shown in V4.5 or later as the number of attempts is detemined by the FE3000.

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CT001 SMS Ack Time: 000 min/4

SMS Acknowledge Time. (V4.5 or later)
Note: This option not relevant to FE2000 operation.

This screen allows the Installer to define the period of time that the Controller will wait for an acknowledgement to an SMS Alarm message.
The period is programmed as a number of "Minutes divided by 4" i.e. 15 second increments from 15 Seconds to 63.75 Minutes.
(The timer may run slightly longer if a lot of SMS or Contact ID activity occurs)
If left at the "000" setting, the default value of 8 (2 minutes) will be used.

IMPORTANT NOTES:
This timer is only required if one of the "Tx SMS" options with an Acknowledge requirement is selected in Process Group programming. (MENU, 2, 4, 3)
e.g. "One # with Ack" or "List with Ack".
If the Acknowledge time expires without an Ack. being received from the phone that the message was sent to, a "No Ack" message will be saved to Review, and the "GSM Problem" System Input (C01:S30) is set to the Alarm state.
If the "List with Ack" option is selected, the Controller will wait for the specified SMS Ack time before trying the next Telephone number. All the numbers in the list will be tried before the "No Ack" message and System Input are triggered.

CT001 Backup Task: CT000

This screen allows the Installer to specify a backup Comms Task, to be used if Contact ID via GSM Data fails.

Note that the Backup Comms Task will not be triggered when SMS Alarms via GSM Data fail or are not Acknowledged. To report SMS Alarm report failure, program the system to report Alarms on the "GSM Problems" System Input (C01:S30) via another Comms Task format.

Pressing HELP "0" *twice* will take you back to the common options when you are finished with the Special options screens.

Advanced Options

Advanced options are reached by pressing HELP, "9" *three times* at the Active/ Idle screen, pressing HELP, "9" *twice* from any common options screen or HELP, "9" from any common options screen.

CT001 FE2000 Version: 0000

This screen allows the Installer to inspect the version number of the FE2000 GSM Modem. V3.5 to V4 only.
This screen is not available in V4.5 or later.

Pressing HELP "0" *three times* will take you back to the common options when you are finished with the Advanced options screen.

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Starting the Comms Task

```
CT001 Idle ->
GSM
```

To start the Comms Task, simply press the "9" key.

```
CT001 Active ->
GSM
```

The display will change to that of the screen on the left.

The GSM Modem is now operational using CT001. To stop the GSM Modem at any time, simply go to the above screen and press the "9" key to toggle the Comms Task back to idle.

Defaults

In V3 or later, Comms Task 1 (CT001) is defaulted to "PC Direct" format on Port 1 at 9600 Baud.
In V5 or later, Comms Task 1 (CT001) is defaulted to "Insight" format on Port 1 at 9600 Baud.

System Inputs

The GSM Comms Task manipulates the following system inputs:

Input	Alarms when	Restores when
UART Problem C01:S13 to 16.	3 consecutive communications with the FE2000 have failed.	The GSM Modem is operational and a successful poll has been received.
Comms Fail C01:S21	A backup task has failed OR a backup task has failed to be triggered.	After successful transmission of CID data via GSM.
Comms Backup C01:S20	Failure to send CID strings after maximum attempts OR GSM not registered and there is CID alarm data to send.	After successful transmission of CID data via GSM.

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"SpreadNet" Comms Task Format

The Model 3000 / Access 4000 can be connected directly to a C&K SpreadNet receiver via a simple three wire serial interface from a UART port.
This allows all zone information from C&K SpreadNet transmitters to be interpreted as Model 3000 / Access 4000 zones. The SpreadNet system is viewed by the 3000/4000 as a **virtual** LAN Module called a Wireless **N**etwork Module (**N**xx).
(Known as a Spread**N**et Module from V2 to V3.5x)
Each group of 16 zones is allocated a virtual Wireless Network Module number and can share 4 System Inputs. There can be a maximum of 13 of these virtual Wireless Network Modules, allowing up to 208 SpreadNet transmitters to be individually monitored (13x16=208 Zones).

The following events can be actioned via inputs allocated to areas:

- Each transmitter "zone" (Nxx:Z01 to Nxx:Z16) can report seal, alarm or tamper individually.
- Separate Low Battery system alarm for each group of 16 transmitters.
- Separate No Poll system alarm for each group of 16 transmitters

Optional review of the following items can aid in debugging:

- Review of individual transmitter no poll timeouts.
- Review of individual transmitter low battery.
- Review of individual transmitter signal and noise levels.
- Review of communication problems with SpreadNet receiver.

All zone transmitters can be named continuing the Model 3000/4000 tradition of "user friendly" operation.

Zone Mapping

Each Wireless Network Module handles 16 SpreadNet transmitters and uses the prefix "N". The SpreadNet Device # corresponds to a Wireless Network module number. e.g. A SpreadNet transmitter programmed to device #3, zone #12 would be referred to as "N03:Z12" within the 3000/4000 system. These inputs can now be used in any context where 3000/4000 inputs can be specified such as Areas, Function Zones etc.

There are 4 System Inputs per module:

S01	Timeout	This input is put into alarm whenever any one of the 16 zone transmitters for this module fails to report in the nominated time. The input will only be re-sealed at the low priority time check (every 40 minutes) if all modules have reported in, or by re-starting the Comms Task.
S02	Low Battery	This input is put into alarm whenever any one of the 16 zone transmitters for this module reports a low battery condition. The input can only be re-sealed by restarting the Comms Task.
S03	Spare	Spare for future development. Set to "n".
S04	Spare	Spare for future development. Set to "n".

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Some communication formats are unable to report individual SpreadNet Zones or are limited as to what they can report on each Zone. See the Tables section at the rear of this manual for Zone mapping details.

Poll Times

The Model 3000/4000 system allows either 30 second or 300 second polls to be programmed for each C&K SpreadNet transmitter. The high priority flag is set in Comms Task programming for any module that is set to 30 second polling. Every 4 minutes the 3000/4000 system will check that all high priority modules have reported in the last 4 minute period. Similarly, low priority modules are checked every 40 minutes. If a module has not reported in, the "Timeout" system input is set to the alarm condition for that virtual module containing 16 zones.

SpreadNet Options

```
CT001 Idle ->
SpreadNet
```

Options are reached by pressing HELP, "9" at the Active/Idle screen. Options are divided into common options and less common or Special options. For the SpreadNet Comms Task, both the Common and Special options will have to be programmed.

Special options are reached by pressing HELP, "9" *twice* at the Active/Idle screen.

```
CT001   Port  ->
to use:  0
```

This screen allows the Installer to define the UART Port to which the SpreadNet Receiver will be connected. Depending on the version of UART Expander fitted to the Control Module, a Port number from 1 to 4 may be used. The Port number is selected by scrolling through the available options using the right arrow key.

```
CT001  Baud   ->
Rate:  9600
```

This screen allows selection of the Baud Rate (Data speed) at which the UART will communicate with the SpreadNet receiver. The Baud Rate is selected by scrolling through the available options using the right arrow key. **A setting of 9600 Baud is mandatory for SpreadNet.**

See "Comms Task Baud Rates" in Comms Task Programming [MENU 7,3,1] for further details.

SpreadNet - Special Options

Special options are reached by pressing HELP, "9" *twice* at the Active/Idle screen or by pressing HELP, "9" from any common options screen. HELP "0" will take you back to the common options when special options is complete.

```
CT001   Property
Code :  00000
```

This screen sets the Property Code to be used for this SpreadNet installation. It may be set from 0001 to 4048. See the C&K SpreadNet literature for more information. If the Property Code is set to 0, transmitters will be received regardless of their programmed Property Code.

```
CT001   Channel
        No : 0
```

This screen sets the Channel Number to be used for this site. It may be set to 01 or 02. See C&K SpreadNet literature for more information.

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```
CT001   LTEC....
Opts -> nnnnnnnn
```

This screen allows review options to be selected:

L	**L**evels	This option allows all transmitter activity to be saved to review, including transmitter signal and noise level figures.
T	**T**imeouts	Timeouts allows all transmitters which exceed the poll timeout to be saved to review to allow individual transmitter identification.
E	**E**rrors	This option allows all error attempts with the receiver to be saved to review.
C	**C**hanges	This option allows transmitter activity to only be saved when a change in input status has occurred.
.	**S**pare	Spare for future development. Set to "n".

```
CT001   12345678
N01Poll nnnnnnnn
```

```
CT001   90123456
N01Poll nnnnnnnn
```

```
CT001   12345678
N13Poll nnnnnnnn
```

```
CT001   90123456
N13Poll nnnnnnnn
```

These screens allow the Installer to specify which transmitters will be checked to ensure that a poll has occurred within the correct time.

```
CT001   12345678
N01High nnnnnnnn
```

```
CT001   90123456
N01High nnnnnnnn
```

```
CT001   12345678
N13High nnnnnnnn
```

```
CT001   90123456
N13High nnnnnnnn
```

These screens allow the Installer to nominate from which transmitters a poll will be expected at the high priority rate of once every 4 minutes. If transmitters are not nominated as high priority, they will be checked every 40 minutes.

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Diagnostics

```
CT001     ..R.
Status -> nnnn
```

Pressing the ON Key whilst the Active/Idle screen is displayed will display the UART Port status screen. This screen can be cleared when desired by pressing the OFF Key. The following table explains the flags:

.	**S**pare	Spare for future development.
R	**R**etry	A "Y" under this flag means the receive fifo (16 bytes) has overflowed and at least one character has been lost. This will normally cause a retry of some kind.
.	**S**pare	Spare for future development.
.	**S**pare	Spare for future development.

The "R" flag may be monitored after communications via this port. In the event that the system places a "Y" flag under the "R", the Status screen should be reset and monitored further. Should a "Y" flag appear under the "R" with some regularity, a potential cause would be the baud rate at which the port is attempting to communicate.

Multiple Receivers

Although multiple receivers may be connected, only 13 groups of 16 Zones may ever be received. If multiple receivers are used, transmitters must be specific to one receiver only. If a transmitter reports to multiple receivers, multiple activations will occur for every transmission and a comms fail will be generated if the transmitter goes out of range of any one receiver.

eg. A separate property code must be used for each receiver and the transmitter must be programmed accordingly.

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"4+2 Pulse" Comms Task Format

The 4+2 Pulse format transmits 4 client code and 2 alarm digits to a Central Station using bursts of single frequency. Either 1800Hz or 1900Hz data tones can be used with either 1400Hz or 2300Hz acknowledge tones. Two speeds are available, 20pps or 40pps. Checksum or two round verification may be also specified and Hex compatibility is an option.

The two alarm digits used to report events are normally arranged so that the 1st digit represents the type of event (eg. open, close, alarm, restore etc.) and the 2nd digit represents the event detail (eg. user, zone number etc.). The digits allowed are the digits 0 to 9. (0 is actually sent as 10 pulses). If the Central Station can accept Hex digits, the Hex digits A, B, C, D, E, F are also allowed, with "A" being interpreted as "0". This provides 15 event codes (1st digit) and 15 event details (2nd digit) for a Hex compatible receiver.

Programming screens are very similar to those of the Contact ID format, with the addition of 2 extra screens.

4+2 Pulse Options

Options are reached by pressing HELP, "9" at the Active / Idle screen. Options are divided into common options and less common or Special options. Usually only the common options need to be programmed.

Special options are reached by pressing HELP, "9" twice at the Active / Idle screen.

```
CT001 Client
Code: 0000
```

This screen sets the client code to be used for this Comms Task. The client code is programmable in decimal from 0001 to 9999. (Client codes of 0000 and 9999 should be avoided). If the "Multiple Area Client Code" is set, it is possible for a different client code to be used.

```
CT001 PABX No.->
None
```

```
CT001 PABX No.->
TN000
```

These screens allow the installer to define an optional PABX access number. Telephone Numbers are chosen from a pre-programmed list of Telephone Numbers, selected alphabetically by name or by number. See Telephone Number programming.

```
CT001 1st No.->
None
```

```
CT001 2nd No.->
None
```

These screens allow the installer to define the main Telephone Number to be used to contact the Central Station. Attempts will begin with the 1st number which **must** be present.

If subsequent attempts are needed with different telephone numbers, numbers are tried in the order 2nd, 3rd, 1st and so on. If a number is not present, it is skipped and the next number in the above sequence is tried. Telephone Numbers are chosen from a pre-programmed list of Telephone Numbers, selected alphabetically be name or by number. See Telephone Number Programming.

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```
CT001 Dial PpDFTM.6
Options-> nnnnnnnn
```

This screen sets various 4+2 Pulse options:

P	**P**ulse Dial (Tel)	Selects Pulse ("decadic") dial when dialling the main Telephone Number.
p	**P**ulse Dial (PABX)	Selects Pulse ("decadic") dial when dialling the PABX phone number if present.
D	**D**umb Dialling	Selects Dumb dialling. If "n" then Smart dialling is selected (default). *See "Attempting Dialer Connections" at the end of this chapter.*
F	**F**orces 300 Baud	Forces all communications to 300 Baud instead of the default 1200 Baud. This need only be set if there are communication difficulties at 1200 Baud. (Relevant to IRfast format only).
T	**T**est Mode	This enables Test Mode which causes changes to the dial sequence to suit the Victorian Schools Tester. These changes are: -Do not dial the Telephone Number -Do not wait for initial handshake -Do not require an acknowledgement -Shorten inter-round time from 500ms to 300ms
M	**M**aximum Count	This enables the Maximum Count option. This option allows the maximum call time in 4+2 Pulse to be based on valid acknowledgements received, rather than time. If this option is set, the maximum call time is based upon the number of packets sent (1 to 255) programmed in the "Online Time" screen, under Special Options.
.	**S**pare	This option has been left spare for future development.
6	**6**0 sec Redial	This option forces the Comms Task to wait 60 seconds between any redial attempt. This option must be set to comply with **Singapore** Telecom regulations.

```
CT001    MLGPN...
Ropts -> nnnnnnnn
```

This screen sets various reporting options:

M	**M**ultiple Area Codes	If Multiple Area client codes are selected, whenever a report from an Area is performed (open/close/alarms/tampers/isolations/restores) the client code defined in Area Programming will be used if it is not "0000". If the Area Client code is "0000", the Comms Task client code will be used. If this option is set to "n" then the Comms Task client code will always be used. (See Area Programming for more details of this application)
L	**L**ook Ahead	Normally all reportable events will be sent in the order that they occur; one at a time until no more reports are required. The Comms Task will ensure the order will not alter, even if the dialer takes a long time to get through to the Central Station or if reports are being generated faster than they can be sent. If this option is set to "Y", **Look Ahead** operation is selected. With Look Ahead selected, a sequence of multi-breaks on a single Zone/Input will be ignored if a restore report has already been sent for that Zone/Input and there are new alarms from a different Zone/Input that have not been sent yet. Open/Close reports do not follow this logic and are always reported. This option is useful to track intruder movement through a larger installation and ignore multi-breaking detectors.

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G **G**eneral O/C — This option selects general open and close reporting. Whenever **all** Areas are turned ON a general Area close is reported. As soon as the **first** Area is turned OFF, a general Area open is reported.

In Area programming, some Areas can be nominated as "Not General Area" and are ignored in the general Area calculation. Open/Close will not be reported on these Areas in any Comms Task with this "General Open/Close" option set to YES. Another Comms Task with this option set to NO may be used to allow these Areas to trigger individual Open/Close reports. See Area Programming "Not General Area" option for details.

P **P**revents Restores — This option prevents restores being reported via this Comms Task.

N **N**o Area Still Open — In Area programming, it is possible to enable reporting of "Area Still Open" and "Area 24Hour Offs". Not all reporting formats can handle these reports. Setting this option to "Y" will disable these reports for this Comms Task. Both of these reports are sent without any loss of information in IRfast format.

```
CT001 Area List
Filter: AL002
```

This screen allows an **optional** Area List filter to be defined for this Comms Task. If a non-zero Area List is chosen, only information from Areas in the specified Area List will be sent using this Comms Task.

```
CT001   EOA.....
Efilt-> nnnnnnnn
```

The "Extra Filter" screen option allows a Comms Task to only respond to certain types of events.

E **E**xtra Filter — This option enables Extra Filter options. If left at "n", no extra filtering is used. ie. normal operation.

O **O**pens/Closes — This option enables Opens/Closes reports to be sent via this Comms Task.

A **A**larms — This option allows Alarms/Tampers/Isolations to be sent via this Comms Task.

. **S**pare — Spare options for future filters. Leave set to "n".

4+2 Pulse - Specific Options

These options are reached by pressing HELP, "9" twice at the Active/Idle screen, or by pressing HELP, "9" from any common options screen. HELP, "0" will take you back to the common options when programming of special options is complete.

```
CT001 Open/Close
Codes: 00
```

This screen allows the 1st alarm digit to be defined for opening events and separately for closing events. On the programming screen the 1st digit is the one that will be used for openings and the 2nd digit is the one that will be used for closings.

For example, if this screen is set to "56", openings will be reported as "5X" and closings as "6X", where "X" represents the event detail which, in this case, means the User who turned on/off the area.

See the section on mapping at the end of this section.

```
CT001   214HC..B
Format->nnnnnnnn
```

This screen allows the Installer to set some miscellaneous options.
These options allow the Comms Task to be configured for compatibility with most proprietary pulse formats.

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NOTE: The fastest operation is achieved at 40pps with Checksum verification. More unique events can be sent with a hex compatible format.

2	**2**300Hz Ack Tones	Normally 1400Hz acknowledge tones are used. This option allows 2300Hz acknowledge tones to be used instead.
1	**1**900Hz Data Tones	Normally 1800Hz data tones are used. This option allows 1900Hz data tones to be used.
4	**4**0 Pps	Normally the reporting speed is 20 pulses per second. This option allows 40 pulses per second to be used.
H	**H**ex Compatible	All pulse formats can use the digits 0 to 9. Selecting this option allows the Hex digits A, B, C, D, E, F to also be used. ("A" is the same as "0")
C	**C**hecksum	Normally the event is sent twice for dual round verification. This option allows a single checksum digit to be sent for verification.
.	**S**pare	Spare for future development. Leave set to "n".
B	**B**ackup Task	Setting this option causes this Comms Task to act as a backup Comms Task to another task.

4+2 Pulse - Special Options

Special options are reached by pressing HELP, "9" three times at the Active/Idle screen, by pressing HELP, "9" twice from any common options screen or pressing HELP, "9" from any specific options screen . Pressing HELP, "0" will take you back to the specific options and pressing HELP "0" twice will take you back to the common options screen when programming of special options is complete.

CT001 Maximum Attempts: 000

This screen sets the maximum dial attempts this task will use to attempt to contact the Central Station. If left at zero then the default of 8 attempts will be used. Telecommunication regulatory authorities may limit this number. (In Australia, Austel specify a maximum of 10 attempts).

CT001 Backup Attempts: 000

This screen sets the number of dial attempts before the backup input will be triggered (C01:S20). If left at 000 the default value of 4 will be used.

CT001 Backup Task: CT000

This screen allows an optional backup task to be specified that will be triggered if this Comms Task fails to communicate within its maximum attempts. Leaving the task at CT000 specifies no backup task will be triggered.

CT001 Seize Aux C01:X08

This screen allows an Auxiliary output to be specified. This Auxiliary will turn on whenever the dialer line is seized and will turn off whenever the dialer line is released.

CT001 Pass Aux C01:X08

This screen allows the installer to specify an Auxiliary output to turn on whenever the dialer successfully sends a report to the Central Station. It must be turned off by some other mechanism such as a timer.

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```
CT001 PABX Dial
Wait: 000/10 sec
```

This screen sets the time the task will wait to sense dial-tone before dialling the PABX number. The time is programmable from 1/10 sec to 255/10 sec (25.5 seconds). If this option is left at 000/10 then the default time of 3 seconds will be used.

```
CT001 Main Dial
Wait: 000/10 sec
```

This screen sets the time the task will wait to sense dial-tone before dialling the Main number. The time is programmable from 1/10 sec to 255/10 sec (25.5 seconds). If this option is left at 000/10 then the default time of 3 seconds will be used.

```
CT001 Handshake
Wait: 000
```

This screen sets the time the task will wait for an initial handshake after dialling the Central Station. The time is programmable from 1 second to 255 seconds. If this option is left at 000 then the default time of 30 seconds will be used.

```
CT001 Max.Online
Time: 000 min
```

This screen sets the maximum time the task will stay on-line before hanging up and re-dialling. The time is programmable from 1 minute to 255 minutes. If this option is left at 000 then the default time of 10 minutes will be used.

```
CT001 Line Test
Count: 000
```

This screen sets the parameters associated with line testing and should be left at 000 unless advised by the manufacturer.

Introduction to Dialer Formats

When activated, a Comms Task set to a Dialer format (Contact ID, IRfast, or SIA) will continually look for any reports to be sent. When a reportable event is found, the dialer line will be used to attempt a connection to the Central Station. If the dialer line is being used, the attempt will be deferred until whatever is using the dialer line is finished. When finished, this Comms Task will "take-over" the dialer line and will not release it until it is finished. The connection attempt works in one of two ways:

- Smart Dial This is the default setting. The task will monitor the line for line faults, dial-tone, busy etc. and make dialling decisions based on results of attempts to connect to the Central Station as quickly as possible. All activity will be recorded to review.

- Dumb Dial This setting does not make "smart" decisions based on sensed tones, although all tones sensed and dialer progress are recorded to review.

The operation of these two modes is described in more detail in the section headed "Attempting Dialer Connection".

Once connected, the task will report all alarms until either there are no more alarms, or the on-line timer expires (default is 10 minutes). Alternatively, if the "Look Ahead" option is set, old alarms will be skipped in favour of new alarms.

Attempting Dialer Connections

Most Comms Tasks formats which need to dial a number to report information follow the logic below. Either smart dial or dumb dial can be selected on a per Comms Task basis.

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Smart Dial

1. Seize Line and wait 3 seconds to see if phone is ringing. If phone is ringing wait till it stops ringing.

2. Test Line for DC voltage. If no line then unloop line, wait variable time then try again to same Telephone Number up to maximum attempts.

3. If got PABX number then loop line and wait for dial tone. If get dial tone then begin dialling. If get busy then unloop line, wait variable time then try again up to maximum attempts. If don't get dial tone then dial PABX number anyway.

4. Now wait for main dial tone. If get dial tone then begin dialling. If get busy or don't decode dial-tone then unloop line, wait variable time then try again to same Telephone Number up to maximum attempts.

5. Wait for Central Station required handshake for this format. If get dial tone or busy then unloop line, wait variable time then try again to a newTelephone Number up to maximum attempts. If get time out then unloop line, wait variable time then try again to a new Telephone Number up to maximum attempts. If get required handshake then start on-line timer.

6. Proceed with communications for this format. If redial is required due to errors then unloop line, wait minimum time then try again to the same Telephone Number up to maximum attempts.

Dumb Dial

1. Seize Line and wait 3 seconds to see if phone is ringing. If phone is ringing wait until it stops ringing.

2. Test Line for DC voltage. If no line, save review message and continue.

3. If got PABX number then loop line and wait for dial tone. If get dial tone, begin dialling. If get busy, save review message and continue. If do not get dial tone, dial PABX number anyway.

4. Wait for main dial tone. If get dial tone, begin dialling. If get time-out or any other tone, save to review and continue.

5. Wait for Central Station required handshake for this format. If get time-out, unloop line, wait variable time then try again to a new Telephone Number up to maximum attempts. If get required handshake, start on-line timer.

6. Proceed with communications for this format. If redial is required due to errors, unloop line, wait minimum time then try again to the same Telephone Number up to maximum attempts.

NOTE: Many telephone lines in Australia and New Zealand have a Message Bank or similar service connected. The differential dial tones used as indicators for such services can impede communication by the panel.

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To avoid possible communication problems either disable the connected service or set the (D)umb Dialling option in Comms Task Programming.

Mapping

A flexible mapping scheme has been devised. The 3000/4000 system follows the basic philosophy of the 1st digit representing the type of event and the 2nd digit representing the event detail.

Before selecting which digits to use for reports, the Installer must decide which reports will be sent. The Installer must ensure that, if a particular event type has not been catered for, the panel cannot generate an Xmit entry for this event type, thereby causing the wrong digit to be used in the report.

The client code is determined by Comms Task programming. However, if an Area Client Code is defined, it will be used instead.

Openings and Closings

The 1st digit for openings and closings is programmed in the Open/Close Codes screen. The 2nd digit represents the User or operation that operated the Area.

Entity that operated the Area	2nd Digit in non Hex mode	2nd Digit in Hex mode *
User manual open/close	Last digit of User code	Last digit of User code
Power on arm	0	B
TimeZone	0	C
Function Zone	0	D
IRfast Command	0	F
Calculated Auxiliary	0	E
Unidentified User	0	B
CommPass Command	0	F
DTMF Command	0	F
Timed On	0	B

* Requires Hex option to be set on option screen.

Alarms, Tampers, Isolates and Restores

The two report digits to be used for any particular event are determined from the "base" digits. The "base" digits are defined by the "4+2 Pulse Msg" option in the Process Group used to generate the Xmit entry. For example, if the Process Group "BURGLARY" has the 4+2 pulse message set to "28", then the "base" digits for any event with the Process Group "BURGLARY" will be "28".

For zones that have a programmable text description, the "base" digits determined by the Process Group can be optionally overridden by "base" digits programmed as part of the Zone description for that Zone only. If the text description contains a string in the form "<XY>" where XY are two Hex digits, then XY become the "base" digits for all events in this Zone.

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For system alarms which have fixed text description, the "base" digits are always defined from the Process Group.

Having determined what the "base" digits are, the actual report digits to be used are determined by the type of event. The table below explains:

Event with "*base*" digits "XY"	1st Report Digit	2nd Report Digit
Alarm	X	Y
Restore	X+1	Y
Tamper	X+2	Y
Isolate	X+3	Y

For example, if the "base" digits were "28" :

- Alarms reported as "28"
- Restores reported as "38"
- Tampers reported as "48"
- Isolates reported as "58"

Further Considerations

Having determined whether or not the format will use Hex digits (Hex gives greater flexibility), the programmer needs to decide which events are to be reported. For example, if a Process Group is programmed to send alarms, restores, tampers and isolates, 4 pairs of digits need be set aside for reports from that Process Group.(As per the previous table these would be 28, 38, 48 & 58.) Care must be taken to ensure that no other reports can inadvertently use the same digits.

If only alarms are to be reported, then ensure that:

- Process Group options are not programmed to send isolates, tampers or restores.
- The Comms Task has the (P)revent restore option set.

If no openings/closings are to be reported, ensure that:

- Area open/close report options are set to no.

NOTE:

You cannot send;

- An isolate without also mapping tampers and restores
- A tamper without also mapping a restore

By allowing individual Zones to have their own unique "base" digits, Zones can conveniently define unique 2nd digits when required. System Inputs are not quite as flexible, requiring different process groups if different 2nd digits are required for different system alarms.

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"8 Pin" Comms Task Format

IMPORTANT NOTES:

Hardware Compatability. The 8 Pin Comms Task can only be used in Type 2 (CE) Control Module Hardware.

Firmware Compatablility. This document refers to the operation of the 8 Pin Comms Task in V5.1 or later only. (The 8 Pin format was introduced in V4.5, however the operation has changed significantly and use of the 8 Pin Task in Versions prior to V5.1 is not recommended. Information on the operation of the 8 Pin Task in V4.50 to V4.9x can be found in V4.5 of the Programmers manual.)

INTRODUCTION.

This communication format allows the 3000/Access 4000 system to report 8 different types of alarms and provide intruder alarm confirmation (verification) logic. This type of alarm reporting logic may be required by a Central Monitoring Station, particularly when Police Response is provided for Intruder Alarms.
This Comms task is primarily designed to work with an 8 Pin STU (Subscriber Terminal Unit) interface, but can also be used with any 3rd party communicators that support at least 8 pin inputs for reporting.
e.g. Redcare STU, GSM STU, etc.
The 8 Pin Comms Task can also be used to apply alarm confirmation logic on industry standard Contact ID and proprietary IRfast dialer communication formats by using Calculated Auxiliaries to link the Pin Auxiliaries to Zone Inputs.

PROGRAMMING OVERVIEW.

The 8 Pin comms task utilises 8 consecutive Auxiliaries which can control relays for the purpose of triggering the inputs on a remote STU.
Alternatively, the 8 Auxiliaries can be used in Calculated Auxiliary programs to trigger Zone Inputs. These Zones can then be used for reporting the confirmation (verication) logic outcomes via any of the Comms Task formats used for reporting alarms to a Central Monitoring Station. e.g. Contact ID, IRfast or SIA.

The Confirmation (Verify) Logic for the 8 Pin Comms Task is applied to Zone Inputs according to the Comms, Pin Type and Verify Group options programmed in the Process Group assigned to the Zone. Confirmation logic will only apply when the Process Group is programmed to trigger comms events.

There are 8 Pin Output Types each of which has a defined function.
The Pins are defined as follows:

1 Fire	5 Isolate
2 PA	6 System
3 Intruder (Unconfirmed)	7 Confirmed Intruder (Verify)
4 Open/Close	8 Power

See the table on the following Page for full descriptions of each Pin Type.

Pins 4, 5 and 7 cannot be assigned via a Process Group as they are an automatic function of the 8 Pin Comms Task. If a different sequence is required for the 8 Pins, the Installer simply needs to alter the associated interface wiring, or system programming (e.g. Calculated Auxiliaries) accordingly.

Where multi-Area systems require the use of individual STU's for additional PIN reporting or for individual Area reporting, multiple 8 Pin Comms Tasks may be programmed provided separate Auxiliaries are used and an Area List filter applied to each Comms Task.

Once the Comms Task is set to "Active", the Pin Auxiliaries are now controlled by the Comms Task.
Note that no other function should be programmed to turn these Auxiliaries on, however, they may be turned off by another function or a timer if necessary. e.g. For Auto re-setting of Pin 1 (Fire) by the Central Station.
These Auxiliaries can also be used to trigger other functions such as Calculated Auxiliaries.

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PIN TYPES

Pin	Name	Monitors	Notes
1	Fire	-Zone Inputs connected to Smoke Detectors, Heat-rise Detectors, etc. -Zone Input connected to monitor a Relay output from a Fire alarm system.	These Zones should be assigned to an Area that is On 24Hrs. The Area must be included in the Area List assigned to the 8 Pin Comms Task "Area List Filter". This Pin will turn Off when the Area that the Input is assigned to, is turned Off.
2	PA	-Zone Inputs connected to Panic Buttons. -"Duress" and "Panic" System Inputs from an LCD Terminal. -Portable Personal Emergency transmitters via the RF Expander Module Zone Inputs.	These Inputs should be assigned to an Area that is On 24Hrs. The Area must be included in the Area List assigned to the 8 Pin Comms Task "Area List Filter". This Pin will turn Off when the Area that the Input is assigned to, is turned Off.
3	Intruder (Unconfirmed Intruder)	-Zone Inputs connected to PIRs, Door/Window Reeds and other Intruder detection devices. -"LAN Fail" System Inputs from Modules monitoring Intruder Zone Inputs. *See Notes 1 & 3.*	This Pin will turn Off when the Area that the Input is assigned to, is turned Off. OR If a confirmation Timer expires.
4	Open / Close	General Open / Close status for all Areas included in the Area List assigned to the 8 PIn Comms Task "Area List Filter".	Pin is turned On if any Area in the Area List is Disarmed (Off). Pin is turned Off when all Areas in the Area List are Armed (On).
5	Isolate	Isolate status for all Zones in all Areas included in the Area List assigned to the 8 PIn Comms Task "Area List Filter".	Pin is turned On if any Zone in any Area in the Area List is Isolated. Pin is turned Off when no Zones are Isolated in any Areas in the Area List, or when all Areas that generated an Isolate Pin are Disarmed (Turned Off). *See "Isolate Pin Logic" in this document for details.*
6	System	-"Low Battery", "Battery Test Fail" and "Battery Fuse" System Inputs. -Other relevant System Inputs. *See Notes 2 & 3.*	These Inputs should be assigned to a "System" Area that is On 24Hrs. The Area must be included in the Area List assigned to the 8 Pin Comms Task "Area List Filter". This Pin will turn Off when the Area that the Input is assigned to, is turned Off.
7	Verify (Confirmed Intruder)	Status of Intruder Alarm Confirmation logic. (Pin 7 is automatically generated by the system.) *See "Intruder Alarm Confirmation Logic" in this document for more details.*	This Pin will turn Off: When Pin 4 is On, AND One of the following occurs: Installer code is entered, OR A Coded Reset takes place, OR A Redcare Reset takes place.
8	Power	"AC Fail" System Inputs. *See Notes 2 & 3.*	These Inputs should be assigned to a "System" Area that is On 24Hrs. The Area must be included in the Area List assigned to the 8 Pin Comms Task "Area List Filter". This Pin will turn Off when the Area that the Input is assigned to, is turned Off.

NOTES:

1) Pin 3. Intruder. "LAN Comms Fail" System Inputs, on Modules that are monitoring Intruder Alarm Zone Inputs, should be assigned to the same Area as the Zone Inputs, using the "Burglary" Process Group. This allows an Intruder Pin to be generated if a LAN fail occurs on a Module, and that Module is monitoring Zone Inputs that are in an Area which is currently Armed.

2) Pin 6 & 8. System & Power. "Low Battery", "Battery Test Fail" and "AC Fail" System Inputs should be assigned to a "System with Comms" Area (with the appropriate Pin Type) that is monitored by the 8 Pin Comms Task.

3) 24Hr Local System Area. These LAN Comms, Battery and AC Fail System Inputs should also be assigned to a "24Hr System" Area for local alarm annunciation in the normal manner. i.e. A System Area that is not monitored by the 8 Pin Comms Task.

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CONNECTING TO A REMOTE STU.

The normal or sealed state for a Pin is Auxiliary Off. (With the exception of Pin 4 - See below)

When a Pin is triggered by an alarm, Area Open or Zone Isolate, the Auxiliary will turn on and the physical output will be switched to 0V. If a positive trigger output is required then a relay interface board must be fitted to the Auxiliaries, and the positive voltage switched via the relays.

For STU's that require an external pull-up resistor to keep the input high while inactive, a value of around 10K is recommended. (Check the STU's installation manual)

Always ensure that a common 0V (ground) connection is made between the STU and the 3000/4000 Module that the Auxiliaries belong to, especially if the STU is powered by a separate power supply.

INDIVIDUAL AREA OPEN/CLOSE.

To report individual Area Open/Close, additional STU Pin inputs are required. If the additional STU Pin inputs are available, additional Auxiliaries/Relays can be installed in the 3000/4000 System and assigned as "Close" Auxiliaries in the required Areas. Each Auxiliary/Relay can then be connected to a different STU Pin input to indicate Open/Close for that Area.

If General Open/Close reporting is not required, Pin 4 should not be connected.

PROGRAMMING AND OPERATION NOTES.

AREA AND AREA LIST PROGRAMMING

As Pin 4-Open/Close is used in the logic for resetting alarms on other Pins, any Area that is to transmit alarms via the 8 Pin Comms Task:

a) Must be included in the Area List assigned to the 8 Pin Comms Task.
b) Must be programmed to transmit Open and Close reports.
   i.e. The "O" and "C" options in the OCAN2S screen must be set to Yes in Area Programming; MENU, 7, 1.

AREA GENERAL OPEN/CLOSE REPORTING.

General Open/Close reporting logic is automatically applied to all the Areas in the Area List assigned to this Comms Task. i.e:
"Open" pin (Pin 4) will turn On if any Area in the Area List is turned Off.
"Open" pin (Pin 4) will turn Off when all Areas in the Area List are turned On.

ACTIVATING PINS

When the 8 Pin Comms Task is set to Active, the state of the Pin Auxiliaries will be set to "All Pins normal, 4 outstanding". i.e. All Pins will be set to Off, with the exception of Pin 4-Open/Close, which will be set to On.

When an alarm is generated and programmed to trigger one of these Pins, that Pin will not de-activate or turn off until the Area is turned Off.

Pin Types 1, 2, 6, 7 and 8. The 8 Pin Comms Task will generate 1 Pin activation per arming period, unless the Pin is turned Off by another mechanism, such as a Calculated Auxiliary or other function.
Pin 3. See "Intruder Alarm Confirmation (Verify) logic" following.
Pin 4. See "Area General Open/Close reporting above.
Pin 5. See "Isolate Pin Logic" following.

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INTRUDER ALARM CONFIRMATION (VERIFY) LOGIC

In accordance with the UK requirements of DD243, confirmation logic can be applied to all inputs that are programmed to communicate an intruder alarm.

Inputs affected.
The Confirmation (Verify) logic only applies to Zone Inputs or System Inputs that are assigned a Process Group that has the Pin type set to 3-Intruder. All other Pin types will report immediately (if Comms options are selected) and will not have Confirmation logic applied.

Confirmed Intruder (Verify) Pin.
For the Confirmed Intruder Pin to be triggered, the Verify Count must be met within the programmed Verify Time. The Verify Count will only be incremented by 1 for each Input. Note that for each Zone, an Alarm is counted as one hit, and a Tamper is counted as a second hit in accordance with DD243 requirements.
i.e. Alarms on any individual Input will only cause the Verify Count to increment once within the Verify Time, regardless of the number of "hits" or "breaks" on that Input.

Verify Groups.
The Confirmation (Verify) logic may be broken up into 16 individual groups.
By programming separate Process Groups that are all programmed to trigger Pin 3, but which all have a different Verify Group assigned, it is possible to have 16 Groups all with their own Confirmation logic that will not affect any of the other Groups. The number of Inputs that must alarm, and in what period, is governed by the values programmed in the 8 Pin Comms Task.

Verify Timers.
Although there is only one Verify time and Verify Count defined in the 8 Pin Comms Task there is a separate timer and counter that will run for each Verify Group.

Confirmation Logic.
The Confirmation Logic operates as follows:

- When a first "Intruder" Input alarm occurs on any Input in any Area monitored by the Comms Task:
    1) The Verify Count for the appropriate Verify Group will be set to 1.
    2) The Verify Timer will be started for the appropriate Verify Group.
    3) Pin 3 will be turned On.

- When another "Intruder" Input alarm occurs on the same Verify Group in any Area monitored by the Comms Task:
    1) The Verify Count for that Verify Group will be incremented by 1.
    2) If the alarm causes Pin 7 (Confirm) to turn on, the Verify Timer will be re-started for that Verify Group.

- If at any time, the confirmation timer expires, Pin 3 is turned Off, ready for the next "Intruder" alarm.

- When the Verify Count is reached on any Verify Group while the Verify Timer for that Group is running:
    1) Pin 7 (Confirmed Intruder) is turned On.
    2) The Verify Timer is re-started.

- Pin 7 (Confirmed intruder) is only turned Off if:
    1) Pin 4 is On (At least one Area monitored by the Comms Task is OFF)
    2) AND One of the following occurs:
        The Installer code is entered
        OR
        A Coded Reset takes place (Menu-3-9 while logged off)
        OR
        A Redcare Reset takes place (via the reset alarms Calculated Auxiliary)

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Example.
The 8 Pin Comms Task is programmed for a Verify Time of 30 minutes, and a Verify Count of 2.
Area 1 and 2 contain Inputs that are to report via the 8 Pin Comms Task.
All Inputs in Area 1 have Process Groups that have Verify Group 1 assigned and Pin 3 - Intruder selected.
All Inputs in Area 2 have Process Groups that have Verify Group 2 assigned and Pin 3 - Intruder selected.

An alarm in Area 1 will cause Pin 3 to be triggered.
A subsequent alarm in Area 2 will not cause the Confirmed Intruder (Verify) Pin to be triggered as Area 2 Inputs have a different Verify Group.
Should another Input be triggered in either Area 1 or Area 2 within 30 minutes of the initial alarm in those Areas, then Pin 7 - Confirmed Intruder (Verify) will be activated.

INDIVIDUAL ALARM REPORTING.

It is recommended that where practical, a second Comms Task such as Contact ID dialer, SIA dialer, IRfast dialer, GSM or IPfast be used to report individual alarm activations, especially on multi-area systems where only one STU will be utilized to report all Area alarms.

NOTE: Dialer Comms Tasks utilizing the Redcare telephone line. (UK)
Comms Tasks that utilize a Modem communications format (e.g. IRfast) should be set to "Force 300 Baud" by setting the "F" option to Yes in the "PpDFTMA6" screen. This will avoid a Comms Fail being reported to the Central Monitoring Station.

ISOLATE PIN LOGIC

In accordance with the DD243 (UK) Pin 5 - Isolate operates as follows:

- When the Verify Timer expires, the Comms Task performs a test on all Zones in all Areas (that are currently turned on) within the Area List Filter specified for the Comms Task. Any Zones which are in an Unsealed state at that time, are Isolated until the next Arming period.

- If any Zones are Isolated either by the above process, or by any other process, the Comms Task Pin turns On Pin 5. This Pin will remain On until the Area in which a Zone was isolated, is turned Off or until it is turned Off by some other function. e.g. Calculated Auxiliary, Auxiliary Timer, etc.

- DD243 states that at the expiry of the confirmation timer (Verify Timer), the IAS (Intruder Alarm System) must re-arm all Zones, except those which are unsealed at that time. Therefore, it is recommended that the Siren Lockout option, be turned OFF for any Zone programmed as Pin Type 3 - Intruder.

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```
CT002 Idle ->
None
```

Choose an unused Comms Task to program, and use the Right Arrow key to select the "8 Pin" Comms Task format.

IMPORTANT NOTE: Only Comms Tasks 001 to 008 can be used for 8 Pin.

```
CT002 Idle ->
8 Pin
```

Programming options are found by pressing HELP, "9" at this screen.

When programming is completed, you can return to this screen by pressing HELP, "0" and toggle the Comms task On and Off by pressing the "9" Key.

```
CT002   .ECP....
Sopts-> nnnnnnnn
```

This screen allows the Installer to select any special 8 Pin options required. Display for V5.1 or later.

E **E**xtended Verify Time.

If set to No, the Verify timer programmed below runs in seconds. This can be useful for programming short confirmation times for testing purposes.

If set to Yes, the Verify Time programmed below will run in Minutes, allowing confirmation times of up to 255 minutes to be used. DD243 (UK) currently recommends confirmation times of between 30 and 60 Minutes.

C No **C**onfirmation during entry V5.1 or later.

Provides additional logic to check if an Entry Delay Timer is running before turning on the Verify Pin.

If set to No, confirmation is processed irrespective of Entry.

If set to Yes, the confirm count is prevented from reaching its trigger value whenever an entry timer is running on any Area monitored by this Comms Task. This has been implemented to allow systems that do not have external Ancillary Control Equipment (ACE), for disarming the system, to legally generate confirmed alarms.

P **P**revent confirmation after entry. V5.1 or later.

If set to No, confirmation can be processed after an Entry timer has expired.

If set to Yes (And the "C" option is also set to Yes), Confirmed Intruder Alarms cannot be signalled after an Entry timer has expired. This has been implemented to allow systems without ACE's to legally generate confirmed alarms.
NOTE: Only used in conjunction with "No **C**onfirmation during entry" above.

```
CT002 Verify
Time: 000
```

This screen sets the Verify Timer period for the Intruder Pin (Pin 3).
A value of 0 means that no timer will operate.

The value of 1 to 255 will provide a timer of 1 to 255 seconds, or 1 to 255 minutes if the "E"xtended Verify Time option is selected above.

DD243 (UK) currently recommends confirmation times of between 30 and 60 Minutes.

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CT002 Verify Count: 000

This screen sets the number of alarms per Verify Group required to trigger the Verify Pin. (Pin 7)

Note that the Verify Count and Verify Pin are only reset by the Area Opening Report. (i.e. An "Xmit Area Open..." event)
For this reason, the "O" and "C" options in the Area Comms options screen (OCAN2S) must be set to Yes. (MENU, 7, 1)
If Open/Close reporting is not required, simply don't use Pin 4.

CT002 Pin1 Aux _ :X

This screen allows the Installer to specify the first Auxiliary to be used for the set of 8 Pin Auxiliaries.

The other Auxiliaries will be the next 7 Auxiliaries immediately following the specified Auxiliary. All Auxiliaires must be on the same Module.

e.g. If the Pin 1 Aux is C01:X03, then the Pin Auxiliaries will be as follows:

1	Fire	C01:X03	5	Isolate	C01:X07
2	PA	C01:X04	6	System	C01:X08
3	Intruder	C01:X05	7	Confirmed Intruder	C01:X09
4	Open/Close	C01:X06	8	Power	C01:X10

CT002 Area List Filter: AL000

This screen allows the Area List to be assigned to this Comms Task.
Only Inputs and Open/Close reports that are associated with the Areas in the specified Area List will be reported via this Comms Task.

An Area List must be assigned to this Comms Task. If you do not assign an Area List, this Comms Task cannot operate correctly.

If the Comms Task is only reporting on one Area, then an Area List with only that Area in it, must still be assigned.
General Open/Close reporting is now automatically applied to all Areas in the Area List.
See the introduction for details.

Note that all Areas included in the Area List assigned to an 8 Pin Comms Task must be programmed to report Open/Close. i.e. The "O" and "C" options in the "OCAN2S" screen must be set to Yes in Area Programming; MENU, 7, 1.

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"C-Bus" Comms Task Format

Note: The C-Bus Comms Task can only be used in Type 2 (CE) Control Module Hardware and V4.00 Firmware or later.

This communication format allows the 3000/Access 4000 system to connect to a Clipsal C-Bus PC interface via an RS232 Serial connection.

IMPORTANT NOTES:
V4.5 Firmware or later:
The Control Module provides Automation (C-Bus) Auxiliaries as follows:

512k (4MBit):	Up to 64 depending on memory configuration chosen.
128k (1MBit):	Up to 16 depending on memory configuration chosen.
32k	NO Automation Auxiliaries provided.

V4 Firmware: The Control Module must be fitted with 512k (4MBit) Memory expansion which currently allows up to 64 C-Bus Auxiliaries to be defined, depending on the memory configuration chosen.

C-Bus Networks.
The C-Bus Comms Task is designed to share data with a single C-Bus Network, and is not designed to operate across C-Bus Network bridges.
Additional C-Bus products are available that may allow data to be sent and received across Network bridges. Contact Clipsal for more information.

The connection between the UART Port and C-Bus PC interface is made using the C-Bus Interface Cable, Part Number 993013.
Communications integrity is monitored by the 3000/Access 4000 system. Once communications is established, the system sends a "turn on monitor mode" command to the C-Bus PC interface once every minute to check that the interface is operational, and able to report network activity.

Any C-Bus network activity detected will cause any relevant programmed actions to be carried out. Any time a C-Bus command needs to be sent, the 3000/Access 4000 system will send it within 200mS.

In addition to the Comms Task, C-Bus Auxiliaries must also be programmed to establish the association between 3000/4000 Auxiliaries and C-Bus Group Adresses, and the operations required. *See "C-Bus Auxiliaries", MENU, 7, 5, 9.*

C-Bus Auxiliaries can provide the following functions:-

1. Cause nominated C-Bus output devices to turn on, turn off, or ramp on/off to a specified level as defined 3000/Access 4000 Auxiliaries turn on or off.

2. Update the state of defined 3000/Access 4000 Auxiliaries as C-Bus functions turn C-Bus output devices on or off within the C-Bus network.

3. Save C-Bus activity to the 3000/Access 4000 Review Memory.

4. Allow two separate applications to be controlled simultaneously. e.g. Lighting and Heating.

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```
CT002 Idle ->
CBus
```

Programming options are found by pressing HELP, "9" at this screen.

```
CT002  Port   ->
to use: 1
```

This screen allows the Installer to define the UART Port which is to be connected to the C-Bus PC interface. Depending on the version of UART Expander fitted to the Control Module, a Port number from 1 to 4 may be used. The Port number is selected by scrolling through the available options using the right arrow key.

```
CT002  Baud   ->
Rate:  1200
```

This screen allows selection of the Baud Rate (Data speed) at which the UART will communicate. The Baud Rate is selected by scrolling through the available options using the right arrow key. A setting of 1200 Baud must be used for C-Bus.
See "Comms Task Baud Rates" in Comms Task Programming [MENU 7,3,1]

Note: When the C-Bus Comms Task is started , it will attempt to communicate with the PC interface at the programmed Baud rate. If the Baud rate is not 1200 Baud, the '3000 will send a Baud rate shift command (to 1200 Baud) to the PC interface and re-program the Comms Task Baud rate to 1200 Baud.

Program the C-Bus options by pressing HELP, "9" from the "Port to Use" screen or return to the first C-Bus screen by pressing HELP, "0" and toggle the Comms task On and Off by pressing the "9" Key.
(C-Bus options are found by pressing HELP, "9" *twice* at the first C-Bus screen.)

```
CT002 PC Unit
Address: 000
```

This screen sets the C-Bus unit address for the C-Bus PC Interface unit. It is programmed in decimal digits from 000 to 254 and must be set to the same as the C-Bus PC Interface address.

```
CT002 App #1
00
```

This screen sets the primary application ID for the C-Bus system that the 3000/ Access 4000 is communicating with. It is programmed in Hexadecimal characters and is normally set to $38. (Lighting)

```
CT002 App #2
00
```

This screen sets a secondary application ID for the C-Bus system that the 3000/ Access 4000 is communicating with. It is programmed in Hexadecimal characters. If a secondary application is not required, this screen is normally programmed to the same ID as Application #1.

```
CT002 CBus OK
Zone: C01:Z01
```

This screen allows any unused Zone Input in the 3000/Access 4000 system to be used to indicate changes in the status of the C-Bus communications.
This Zone Input can then be programmed in the same manner as a normal Zone Input to generate the type of message and/or alarm required.
Seal = C-Bus communications is considered operational.
Alarm = C-Bus communications is considered failed.
If a Zone Input is assigned, the "I"gnore Physical Zone option must be set to Yes in the programming options for that Zone Input.
See "Input programming". MENU 7, 0.

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```
CT002   R.......
Opts -> nnnnnnnn
```

This screen allows various C-Bus options to be selected:

R **R**eview

The Review option causes all C-Bus activity to be logged to the Review memory. This includes all On, Off and Ramp commands only.
This option must be set to Yes if the "Alarm Feedback" option in C-Bus Auxiliaries programming (MENU, 7, 5, 9) is set to Yes.

```
CT001     ..R.
Status -> nnnn
```

Diagnostics
Pressing the ON Key whilst the Active/Idle screen is displayed will display the UART Port status screen. This screen can be reset (cleared) when desired by pressing the OFF Key. The following table explains the flags:

. **S**pare

R **R**etry

A "Y" under this flag means the receive fifo (16 bytes) has overflowed and at least one character has been lost. This will normally cause a retry of some kind.

. **S**pare

. **S**pare

The "R" flag may be monitored after communications via this port. In the event that the system places a "Y" flag under the "R", the Status screen should be reset and monitored further. Should a "Y" flag appear under the "R" with some regularity, a potential cause would be the baud rate at which the port is attempting to communicate. In such a case the Installer should reduce the baud rate and monitor the effect via the status screen.

In the event that lower baud rates do not solve the problem, assistance should be sought from the manufacturer's Service Technician.

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"Inovonics" Comms Task Format

The Model 3000 / Access 4000 can be connected to the Inovonics Wireless receivers, FA400 and MF4232 via the IR400 Inovonics interface board. Part No: 995075.
Note: The Inovonics Comms Task can only be used in Type 2 (CE) Control Module Hardware and V4.50 Firmware or later.

The IR400 is connected between the Serial Port of the Inovonics Receivers and a UART Port on the Model 3000/ Access 4000 Control Module. Ensure that the UART Expander board fitted to the Control Module has a suitable number of Ports to provide connection to the IR400 Inovonics interface as well as any other devices required. e.g. PC, Securitel STU, GSM modem, Printer, etc. On sites where the range offered by the Wireless transmitters is not adequate, Inovonics offers Repeaters to extend the range.

The Inovonics Receiver and IR400 interface are both powered by a 12V supply that is best sourced from a separate battery-backed 12V Power Supply giving longer battery backup times and a high level of Power Supply integrity.
(The units may be powered from the Control Module "DET+" supply, however, if a short in the detector cabling, etc, causes the "DET" fuse to blow, power to the units will be lost)

This interface allows all zone information from Inovonics wireless transmitters to be interpreted as Model 3000 / Access 4000 Zone Inputs. The Inovonics system is viewed by the 3000/4000 as a **virtual** LAN Module called a Wireless **N**etwork Module (Nxx). Each group of 16 zones is allocated a virtual Wireless Network Module number and can share 4 System Inputs. There can be a maximum of 13 of these virtual Wireless Network Modules, allowing up to 208 Inovonics wireless transmitters to be individually monitored (13x16=208 Zone Inputs).

The following events can be actioned via inputs allocated to areas:
- Each transmitter "zone" (Nxx:Z01 to Nxx:Z16) can report seal, alarm or tamper individually.
- Separate Low Battery system alarm for each group of 16 transmitters.
- Separate No Poll system alarm for each group of 16 transmitters.
- The IR400 status can be monitored via an assigned Zone Input.
- The receiver status can be monitored via an assigned Zone Input.

Optional review of the following items can aid in commissioning and trouble-shooting:
- Review of individual transmitter "no poll" timeouts.
- Review of individual transmitter low battery.
- Review of individual transmitter signal and noise levels.
- Review of communication problems with the receiver, or IR400 interface board.

All zone transmitters can be named, continuing the Model 3000/4000 tradition of "user friendly" operation.

Options Micro Chips

Refer to the following table to detemine the correct Options Micro Chip and Memory requirements to support the number of Inovonics Zones you will need in your system.
See the "Memory Configurations" section for details of the number of Wireless Network Modules in each configuration..

No of Zones.	**Requirements.**
Up to 32	128k or 512k Memory must be fitted.
(2 Modules)	A Memory configuration must be selected that has up to 2 Wireless Network Modules.
33 to 96	If 128k Memory is Fitted:
(6 Modules)	A Memory configuration must be selected with more than 2 Wireless Network Modules. A special Options Micro Chip must be fitted; CEPIC_5 V1.15 or later. (Inner Range P/No: 995015P5)
33 to 208	If 512k Memory is Fitted:
(13 Modules)	A Memory configuration must be selected with more than 2 Wireless Network Modules. A special Options Micro Chip must be fitted; CEPIC_6 V1.15 or later. (Inner Range P/No: 995016P6)

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Zone Mapping.

A Wireless Network Module handles 16 Inovonics transmitters and uses the prefix "N". i.e. Wireless Network Zones are designated Nxx:Zxx. To enable the Inovonics transmitters to the used, the Transmitters must first be programmed or registered, so that each Transmitter is mapped to a specific Wireless Network Zone Input.

Once the Transmitters are mapped to Zones, these inputs can now be used in any context where 3000/4000 inputs can be specified such as Areas, Function zones, etc. Wireless Network Zones are programmed in exactly the same manner as normal physical Zone Inputs, thereby offering all the usual functionality offered by the system.

FA Series Transmitters.

NOTE: Inovonics FA series transmitters have programmable Transmitter ID, Application ID and System ID parameters that are used by the Model 3000/Access 4000 panel. Inovonics offers a number of options for programming these parameters into their transmitters, the values **must be known** to use the transmitters with the Model 3000/Access 4000.
Additional information on programming FA series Transmitters is available on the Website or your Inovonics supplier.

V4.5 or later.
The Inovonics Transmitter ID is programmed as a two digit Decimal number which maps to Wireless Network Module Zone Inputs with an offset of 1.
i.e. Tx ID "00" maps to N01:Z01. Tx ID "01" maps to N01:Z02, etc.

For example;
-An Inovonics Transmitter ID of "15" would map to Module 1, Zone 16. i.e. "N01:Z16" within the 3000/4000 system
-An Inovonics Transmitter ID of "16" would map to Module 2, Zone 1. i.e. "N02:Z01" within the 3000/4000 system
-An Inovonics Transmitter ID of "32" would map to Module 2, Zone 16. i.e. "N02:Z16, within the 3000/4000 system
-An Inovonics Transmitter ID of "33" would map to Module 3, Zone 1. i.e. "N03:Z01, within the 3000/4000 system
-An Inovonics Transmitter ID of "47" would map to Module 3, Zone 16. i.e. "N03:Z16, within the 3000/4000 system

V4.00 to V4.4x.
The Inovonics Transmitter ID is programmed as two Hexadecimal digits where:
-The 1st digit corresponds to a Wireless Network module no., with 0 mapping to Module 1, 1 mapping to Module 2, etc.
-The 2nd digit corresponds to the Zone Input no., with 0 mapping to Zone 1, 1 mapping to Zone 2, etc.
i.e. The mapping corresponds one-to-one with an offset of 1.

For example;
-An Inovonics Transmitter ID of $34 would map to Module 4, Zone 5. i.e. "N04:Z05" within the 3000/4000 system.
-An Inovonics Transmitter ID of $85 would map to Module 9, Zone 6. i.e. "N09:Z06" within the 3000/4000 system.
-An Inovonics Transmitter ID of $CA would map to Module 13, Zone 11. i.e. "N13:Z11, within the 3000/4000 system.

MF Series Transmitters.

The Inovonics MF series transmitters do not have programmable Transmitter ID and must be mapped to Zones by being registered into the Model 3000/Access 4000.
This process is explained in the Zone Registration section of this manual.

V4.5 to V5.0x:	MENU, 7, 2, 5
V5.1 or later:	MENU, 7, 2, 0, 0, 3

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System Inputs.

There are 4 System Inputs per Module:

S01 Timeout — This input is put into alarm whenever any one of the 16 zone transmitters for this module fails to report in the nominated poll time. The input will only be re-sealed at the low priority time check if all modules have reported in, or by re-starting the Comms Task. (The details of the actual transmitter with the timeout is saved to Review if the "T"imeout option is set to Yes in the Review options)

Poll Times. — Two poll rates, a high priority rate and a low priority rate can be programmed for the Inovonics Comms Task. The poll rates determine when the system will check that the transmitters have reported in. All transmitters are checked when the low priority poll timer expires. Only nominated "high priority" transmitters are checked when the high priority poll timer expires.
Note: Poll times should be set in accordance with the Inovonics equipment manufacturers recommendations.

S02 Low Battery — This input is put into alarm whenever any one of the 16 zone transmitters for this module reports a low battery condition. The input can only be re-sealed by restarting the Comms Task. (The details of the actual transmitter with the low battery condition is saved to Review)

S03 Spare — Spare for future development.

S04 Spare — Spare for future development.

Important Note: Some communication formats are unable to report individual Inovonics Zones or are limited as to what they can report on each Zone. See the Tables section at the rear of this manual for Zone mapping details.

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Inovonics Options

```
CT002 Idle ->
Inovonics
```

Options are reached by pressing HELP, "9" at the Active/Idle screen. Options are divided into common options and less common or Special options. For the Inovonics Comms Task, both Common and Special options will need to be programmed.

Special options are reached by pressing HELP, "9" *twice* at the Active/Idle screen.

```
CT002   Port  ->
to use:  1
```

This screen allows the Installer to define the UART Port to which the IR400 interface will be connected. Depending on the version of UART Expander fitted to the Control Module, a Port number from 1 to 4 may be used. The Port number is selected by scrolling through the available options using the right arrow key.

```
CT002  Baud   ->
Rate:  9600
```

This screen allows selection of the Baud Rate (Data speed) at which the UART will communicate with the Inovonics receiver. The Baud Rate is selected by scrolling through the available options using the right arrow key. **A setting of 9600 Baud is mandatory for Inovonics.**
See "Comms Task Baud Rates" in Comms Task Programming [MENU 7,3,1] for further details.

Inovonics - Special Options

Special options are reached by pressing HELP, "9" *twice* at the Active/Idle screen or by pressing HELP, "9" from any common options screen. HELP "0" will take you back to the common options when special options is complete.

```
CT002 App ID
000
```

This screen sets the **Application ID** to be used for this Inovonics installation. It may be set from 000 to 255. See the Inovonics literature for more information.
(Note that changes may take up to 1 minute to be recognised by the FA-400)

```
CT002 Sys ID
000
```

This screen sets the **System ID** to be used for this installation. It may be set from 000 to 255. See Inovonics literature for more information.

```
CT002 High Poll
Rate: 000min
```

This screen sets the High Priority Poll Rate. This is the rate at which all High Priority transmitters will be checked to see that they have reported in.
The rate is programmable from 1 to 255 minutes in 1 minute increments. Note values below 120 will increase the signal traffic significantly.

```
CT002 Low Poll
000 x HighPoll
```

This screen sets the Low Priority Poll Rate. This is the rate at which all Low Priority transmitters will be checked to see that they have reported in.
The rate is programmable from 1 to 255 as a multiple of the High Poll rate.
e.g. If the High Poll rate is set to 120 minutes, and the Low Poll count is 4, Low Priority transmitters will be polled every 8 hours. (120 x 4 = 480 minutes)
See Inovonics literature for more information regarding poll rates.

```
CT002 IR400 OK
Zone: C01:Z01
```

```
CT002 FA400 OK
Zone: C01:Z01
```

These screens allow any unused Zone Inputs in the 3000/Access 4000 system to be used to indicate changes in the status of the Inovonics communications.
-The IR400 OK Zone will go into alarm if communications to the IR400 fails and will restore when communications is re-established.
-The FA400 OK Zone will go into alarm if no supervisory messages are received from a Receiver for 90 seconds and will restore when a supervisory poll is received.
These Zone Inputs can then be programmed in the same manner as normal Zone Inputs to generate the type of messages and/or alarms required.

IMPORTANT NOTE: If a Zone Input is assigned, the "I"gnore Physical Zone option must be set to Yes in the programming options for that Zone Input.
See "Input programming". MENU 7, 0.

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```
CT002    ACTM...P
Opts  ->  nnnnnnnn
```

This screen allows Review options to be selected for this Comms Task:

A	**A**lways allow	This option allows all transmitter activity to be saved to Review, including transmitter signal and noise level figures, regardless of whether the Input is enabled. i.e. Whether the Area the Input is assigned to is On or Off.
C	**C**hanges	This option allows transmitter activity to only be saved when a change in input status for an enabled input has occurred. i.e. An Input in an Area that is On.
T	**T**imeouts	Timeouts allows all transmitters which exceed the poll timeout to be saved to review to allow individual transmitter identification.
M	**M**ismatch	This option allows any transmitter activity with an "Application ID" &/or "System ID" mismatch to be saved to Review.
.	**S**pare	Spare for future development. Set to "n".
P	Save **P**oll	This option causes poll type messages between the FA400 and the Control Module UART board to be saved to review. IMPORTANT NOTE: This option causes a large number of additional Review events to be generated and should only be enabled temporarily for debugging communications problems. When set to no, only comms errors are saved.

```
CT001    12345678
N01Poll  nnnnnnnn
```

```
CT001    90123456
N01Poll  nnnnnnnn
```

V
V

```
CT001    12345678
N13Poll  nnnnnnnn
```

```
CT001    90123456
N13Poll  nnnnnnnn
```

These screens allow the Installer to specify which transmitters will be checked to ensure that a poll has occurred within the correct time.

```
CT001    12345678
N01High  nnnnnnnn
```

```
CT001    90123456
N01High  nnnnnnnn
```

V
V

```
CT001    12345678
N13High  nnnnnnnn
```

```
CT001    90123456
N13High  nnnnnnnn
```

These screens allow the Installer to nominate from which transmitters a poll will be expected at the high priority rate as programmed earlier. If transmitters are not nominated as high priority, they will be checked at the low poll rate.

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```
CT001      ..R.
Status -> nnnn
```

Diagnostics

Pressing the ON Key whilst the Active/Idle screen is displayed will display the UART Port status screen. This screen can be cleared when desired by pressing the OFF Key. The following table explains the flags:

R	**R**etry	A "Y" under this flag means the receive fifo (16 bytes) has overflowed and at least one character has been lost. This will normally cause a retry of some kind.
.	**S**pare	Spare for future development.

The "R" flag may be monitored after communications via this port. In the event that the system places a "Y" flag under the "R", the Status screen should be reset and monitored further. Should a "Y" flag appear under the "R" with some regularity, a potential cause would be the baud rate at which the port is attempting to communicate.

Multiple Receivers

Although multiple receivers may be connected, only 13 groups of 16 Zones may ever be received. If multiple receivers are used, transmitters must be specific to one receiver only. If a transmitter reports to multiple receivers, multiple activations will occur for every transmission and a comms fail will be generated if the transmitter goes out of range of any one receiver.

e.g. A separate "Application ID" and "System ID" must be used for each receiver and the transmitter must be programmed accordingly.

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"PosData DVR" Comms Task Format

IMPORTANT NOTE: The PosData DVR Comms Task can only be used in Type 2 (CE) Control Module Hardware and V4.50 Firmware or later.

Introduction
This communication format allows the 3000/4000 system to communicate with a PosData 4 Channel Model BX DVR (Digital Video Recorder) via an RS232 Serial connection.

This interface then provides DVR Control from a standard 3000/4000 LCD Terminal in conjunction with a display monitor connected to the DVR.

Operation.
By selecting the specified MENU options while logged off, the LCD Terminal can be used to perform the following operations:

```
** DVR ACCESS **
MENU=Change Mode
```

MENU, 4 selects User Access Mode or User Search Mode.
The MENU key is used to toggle the selection between the two modes.

```
** DVR SEARCH **
MENU=Change Mode
```

When the required mode is displayed, press the <OFF> key. The DVR monitor will prompt for your User ID. "Enter User ID:"
When your User ID is entered, the monitor will prompt for your password. "Enter Password: _ _ _ _ _ _"
Note that this is your PosData DVR User ID and password, not your Model 3000/Access 4000 User number and PIN Code.

The User Access or Search Mode can now be used according to the key functions shown in the table below.

```
** DVR ADMIN  **
```

MENU, 5 selects Admin Mode.

The monitor will prompt for your password. "Enter Password: _ _ _ _ _ _"
Note that this is your PosData DVR Admin password, not your Model 3000/ Access 4000 PIN Code.

The Admin Mode can now be used according to the key functions shown in the table below.

Key	Access Mode	Search Mode	Admin Mode
<	Split	Play Reverse	Left
^	Record	Up	Up
v	Status	Down	Down
>	-	Play	Right
HELP	Context sensitive help	Context sensitive help	Context sensitive help
MENU	Select mode	Select mode	-
END	Exit	Exit	Exit
OK	Select	Select	Select
OFF	Escape	Escape	Escape
ON	Search	Search	Stop
Digit keys 0-9	ID / Password entry	*See below*	Password / Data entry
1		Fast Play Reverse	
2		Stop	
3		Fast Play	
4		Frame Back	
6		Frame Forward	

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```
CT002 Idle ->
PosData DVR
```

Programming options are found by pressing HELP, "9" at this screen.

```
CT002  Port   ->
to use: 1
```

This screen allows the Installer to define the UART Port which is to be connected to the PosData DVR. Depending on the version of UART Expander fitted to the Control Module, a Port number from 1 to 4 may be used. The Port number is selected by scrolling through the available options using the right arrow key.

```
CT002  Baud   ->
Rate:  9600
```

This screen allows selection of the Baud Rate (Data speed) at which the UART will communicate. The Baud Rate is selected by scrolling through the available options using the right arrow key.
A setting of 9600 Baud must be used for PosData DVR.
See "Comms Task Baud Rates" in Comms Task Programming [MENU 7,3,1]

Diagnostics

```
CT001     ..R.
Status -> nnnn
```

Pressing the ON Key whilst the Active/Idle screen is displayed will display the UART Port status screen. This screen can be cleared when desired by pressing the OFF Key. The following table explains the flags:

.	**S**pare
R	**R**etry
.	**S**pare
.	**S**pare

A "Y" under this flag means the receive fifo (16 bytes) has overflowed and at least one character has been lost. This will normally cause a retry of some kind.

The "R" flag may be monitored after communications via this port. In the event that the system places a "Y" flag under the "R", the Status screen should be reset and monitored further. Should a "Y" flag appear under the "R" with some regularity, a potential cause would be the baud rate at which the port is attempting to communicate. In such a case the Installer should reduce the baud rate and monitor the effect via the status screen.

In the event that lower baud rates do not solve the problem, assistance should be sought from the manufacturer's Service Technician.

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"Dynalite" Comms Task Format

IMPORTANT COMPATABILITY NOTES:
Hardware: The Dynalite Comms Task can only be used in Type 2 (CE) Control Module Hardware or later.
Firmware: V4.91 Firmware or later should be used.

This communication format allows the 3000/4000 system to connect to a Dynalite Lighting Controller via an RS232 Serial connection.

AUTOMATION (DYNALITE) AUXILIARIES:
1) V4.5 Firmware or later:
The Control Module supports Automation (Dynalite) Auxiliaries as follows:

512k (4MBit):	Up to 64 depending on memory configuration chosen.
128k (1MBit):	Up to 16 depending on memory configuration chosen.
32k	NO Automation Auxiliaries provided.

The connection between the UART Port and the Dynalite Lighting Controller is made using the Model 3000/Access 4000 Dynalite Interface; P/N: 993032.
(The interface consists of the Model 3000/Access 4000 Modem Cable and an RS232 - RS485 Converter cable)
The Rx, Tx, RTS and Gnd connections are utilized in the Modem Cable.
(RTS is used to control DE on the RS485)

Any time a Dynalite command needs to be sent, the 3000/Access 4000 system will send it within 200mS.

In addition to the Comms Task, Dynalite Auxiliaries must also be programmed to establish the association between 3000/4000 Auxiliaries and Dynalite Areas, and the operations required. *See "Dynalite Auxiliaries", MENU, 7, 5, 9,2.*

A Dynalite Auxiliary provides for a nominated Dynalite Area to turn on or off over a timed period as defined 3000/Access 4000 Auxiliaries turn on or off.

```
CT002 Idle ->
Dynalite
```

Programming options are found by pressing HELP, "9" at this screen.

```
CT002  Port   ->
to use: 1
```

This screen allows the Installer to define the UART Port which is to be connected to the Dynalite interface. Depending on the version of UART Expander fitted to the Control Module, a Port number from 1 to 4 may be used. The Port number is selected by scrolling through the available options using the right arrow key.

```
CT002  Baud   ->
Rate:  9600
```

This screen allows selection of the Baud Rate (Data speed) at which the UART will communicate. The Baud Rate is selected by scrolling through the available options using the right arrow key.
A setting of 9600 Baud must be used for Dynalite.
See "Comms Task Baud Rates" in Comms Task Programming [MENU 7,3,1]

Program the Dynalite options by pressing HELP, "9" from the "Port to Use" screen or return to the first Dynalite screen by pressing HELP, "0" and toggle the Comms task On and Off by pressing the "9" Key.
(Dynalite options are found by pressing HELP, "9" *twice* at the first Dynalite screen.)

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```
CT002 Dyna Panic
Zone: C01:Z01
```

This screen allows any unused Zone Input in the 3000/Access 4000 system to be used to indicate changes in the status of the Dynalite "Panic" mode.
This Zone Input can then be programmed in the same manner as a normal Zone Input to generate the type of message and/or alarm required.
Seal = Dynalite Panic mode is not activated.
Alarm = Dynalite Panic mode is activated.
If a Zone Input is assigned, the "I"gnore Physical Zone option must be set to Yes in the programming options for that Zone Input.
See "Input programming". MENU 7, 0.

```
CT002 Dyna Ok
Zone: C01:Z01
```

This screen allows any unused Zone Input in the 3000/Access 4000 system to be used to indicate changes in the status of the Dynalite communications.
This Zone Input can then be programmed in the same manner as a normal Zone Input to generate the type of message and/or alarm required.
Seal = Dynalite communications is considered operational.
Alarm = Dynalite communications is considered failed.
If a Zone Input is assigned, the "I"gnore Physical Zone option must be set to Yes in the programming options for that Zone Input.
See "Input programming". MENU 7, 0.

```
CT001     ..R.
Status -> nnnn
```

Diagnostics
Pressing the ON Key whilst the Active/Idle screen is displayed will display the UART Port status screen. This screen can be cleared when desired by pressing the OFF Key. The following table explains the flags:

.	**S**pare	
R	**R**etry	A "Y" under this flag means the receive fifo (16 bytes) has overflowed and at least one character has been lost. This will normally cause a retry of some kind.
.	**S**pare	
.	**S**pare	

The "R" flag may be monitored after communications via this port. In the event that the system places a "Y" flag under the "R", the Status screen should be reset and monitored further. Should a "Y" flag appear under the "R" with some regularity, a potential cause would be the baud rate at which the port is attempting to communicate. In such a case the Installer should reduce the baud rate and monitor the effect via the status screen.

In the event that lower baud rates do not solve the problem, assistance should be sought from the manufacturer's Service Technician.

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"Insight" Comms Task Format

This communication format allows the 3000/4000 system to connect to the "Insight" Upload / Download software.

IMPORTANT NOTE:
The Insight Comms Task must always be assigned to Comms Task 1.

```
CT001 Idle ->
Insight
```

Programming options are found by pressing HELP, "9" at this screen.

```
CT001 Panel
ID:   00000000
```

This screen sets the Panel ID to be used for this Comms Task.
INSIGHT: The Panel ID is programmable in Hexadecimal from 00000001 to 00FFFFFF and must match the Panel ID programmed for this panel in the Insight software.
Notes:
-The first 2 digits are not used for Insight and MUST be left at 00.
-The default value of 00000000 cannot be used, and at least one of the last 6 digits must be non-zero.
-All Panels enrolled in a single installation of Insight must have a different Panel ID.

IPfast: Not yet available.

```
CT001  Port   ->
to use: 1
```

This screen allows the Installer to define the UART Port to which the Insight Server will be connected if the "RS232" path is Enabled.
Depending on the version of UART Expander fitted to the Control Module, a Port number from 0 to 4 may be used. The Port number is selected by scrolling through the available options using the right arrow key.
Port "O" should only be used as a temporary connection as the on-board dialer is disabled whilst Port "O" is connected. Ports 1 to 4 are on the UART board and should be used for permanent or frequent connection.

```
CT001  Baud   ->
Rate:  9600
```

This screen allows selection of the Baud Rate (Data speed) at which the UART will communicate. The Baud Rate is selected by scrolling through the available options using the right arrow key. A setting of 9600 Baud is recommended.
See "Comms Task Baud Rates" in Comms Task Programming [MENU 7,3,1] for further details.

```
CT001   ....NUIP
Opts -> nnnnnnnn
```

This screen allows the programming of general Insight options.

. **S**pare

N **N**o Ping

-If set to Yes, the panel will discard TCP/IP Ping requests. This option should be selected when the Panel is installed on a non-secure TCP/IP network.
-If set to No, the panel will reply to pings so that it's reachability can be tested over the Internet without using Insight to connect.

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U **U**se DSR

-Setting this option to Yes, causes the Control Module to monitor the state of the "DSR" pin on the RS232 comms cable, which prevents phantom mouse detection. (In rare cases, older PC's can mistakenly identify the Panel as a Windows pointing device.)
NOTE: You can only enable this option if your Comms cable includes a DTR/DSR connection. If a legacy cable is used (without DTR/DSR connected), communications will fail!
-Setting this option to No means the Control Module ignores the DSR pin on the comms cable which, in rare cases, may lead to phantom mouse detection on older PC's and laptops.

I **I**P Fast

-Set this option to Yes if the IRIP Comms task is to communicate with a Central Monitoring Station Receiver, and not an Insight Server.
-This option must be left at No if the Insight comms task will be communicating with an Insight server.

P **P**ermanent

Permanent Insight Connection.
-If set to Yes the Control Module will attempt to keep a connection open with the Insight server at all times, on any configured communication path. (See the "....IACE" options screens following.)
Insight calls this mode "Panel is Master". i.e. The onus is on the Panel to connect and maintain connection. The Panel will never hang-up.

-If set to No, the Control Module won't attempt to keep a connection permanently open with the Insight server. Insight calls this mode "Panel is Slave".
The Control Module will only attempt temporary connections for emergency conditions according to the communication path settings below. (i.e. To report an alarm, or dump Review if Review data that has not been sent is about to be over-written)

```
CT001   ....IACE
EthNet->nnnnnnnn
```

```
CT001   ....IACE
RS232 ->nnnnnnnn
```

```
CT001   ....IACE
FE3000->nnnnnnnn
```

```
CT001   ....IACE
ExtMod->nnnnnnnn
```

```
CT001   ....IACE
IntMod->nnnnnnnn
```

The following screens allow options to be selected for the different communications paths that the Insight Comms Task can use.

If more than one path is enabled, the Control Module will attempt to connect via each enabled path in their listed order according to the setting of the (P)ermanent option described above.
e.g. If the "RS232" and "IntMod" paths are enabled, the Controller will attempt to connect via the RS232 path first, and if unsuccessful, will then attempt to connect using the "IntMod" (Internal Modem) path.

Ethernet: Connects to Insight Server via an Ethernet UART Port. V5.1 or later. The "Ethernet" path utilizes the "Panel IP", "Router IP", "Subnet Mask" and "Announce Port" settings programmed in this Comms Task.

RS232: Direct serial connection to Insight Server via UART Port. The "RS232" path utilizes the "Port to use" and "Baud Rate" settings programmed in this Comms Task.

FE3000 Uses FE3000 GSM modem.(Not yet implemented for Insight) The "GSM" Comms Task must also be programmed.

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External Modem: Uses an External Modem. (Not yet implemented for Insight)
The "External-Modem" Comms Task must also be programmed.

Internal Modem: Uses the Internal Dialer Modem.
The "Internal-Modem" Comms Task must also be programmed.

.	**S**pare	
I	**I**P Fast Call	This option allows IP Fast to initiate a connection with the Central Monitoring Station using this path.
A	**A**nswer Insight	This option allows the Control Module to answer an incoming connection request from an Insight server on this path.
C	**C**all Insight	This option allows the Comms Task to initiate a connection with the Insight Server using this path.
E	Path **E**xists	Set this option to Yes to allow this communications path to be used by IR-IP, subject to the settings of the other options listed above. If set to No, the path will not be used by the Insight Comms Task.

CT001 Insight IP
000.000.000.000

This screen allows the IP address of the Insight Server to be defined for Paths that require TCP/IP.
i.e. Ethernet or Dialup connection via an Internet Service Provider.

CT001 Insight A
0000000000000000

CT001 Insight B
0000000000000000

The next 2 screens allow for a 128-bit encrpytion key to be defined for communications between the Control Module and an Insight Server.

The encryption key is entered as 32 hex digits.
The first 16 digits are entered in the "Insight A" screen, and the remaining digits are entered in the "Insight B" screen.
This key must match the settings specified for this Panel at the Insight Server. (Panel Properies > Protocol > General Tab)

CT001 IPfast IP
000.000.000.000

This screen allows the IP address of the IPfast Server to be defined for Paths that require TCP/IP.
i.e. Ethernet or Dialup connection via an Internet Service Provider.

CT001 IPfast A
0000000000000000

CT001 IPfast B
0000000000000000

The next 2 screens allow for a 128-bit encrpytion key to be defined for communications between the Control Module and a Central Monitoring Station Receiver.
NOTE: The CMS Receiver must be capable of communication with the IPfast protocol.

The encryption key is entered as 32 hex digits.
The first 16 digits are entered in the "Insight A" screen, and the remaining digits are entered in the "Insight B" screen.

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Ethernet Path Settings.
The following four screens allow IP Address and Port number information to be entered for communicating with Insight software via the Ethernet Path.
The information for these screens is typically obtained from the System Administrator of the Ethernet LAN to which the Panel is connected.
NOTE: An Ethernet UART board must be fitted to the Control Module.

CT001 Panel IP
000.000.000.000

Panel IP Address. This screen allows the IP Address of the Panel (3000/4000 Control Module) to be defined.
Enter the Static IP Address provided by the System Administrator.
An Address of 000.000.000.000 must be programmed if the System Administrator has asked that the panel use DHCP to obtain its IP address automatically.

CT001 Router IP
000.000.000.000

Router IP Address: This screen allows the IP Address of the next-hop Router to be defined.
Enter the Static IP Address provided by the System Administrator.
An Address of 000.000.000.000 must be programmed if:
- The System Administrator has asked that the panel use DHCP to obtain its IP address automatically.
- If the Insight Server is on the same LAN as the Panel.

CT001 Subnet Msk
000.000.000.000

Subnet Mask of the IP Address: This screen allows the Subnet Mask, of the local Subnet to which the Panel is connected, to be defined.
Enter the Subnet Mask provided by the System Administrator.
An Address of 000.000.000.000 must be programmed if:
- The System Administrator has asked that the panel use DHCP to obtain its IP address automatically.
- If the Insight Server is on the same LAN as the Panel.

CT001 Announce
Port: 00000

UDP Announce Port: This option is only programmed when two or more Servers live behind the same gateway and share the same external address. (In this case, only one of the Servers may have the default Announce Port number of 17185.)
If the Panel is to communicate with a Server that has an alternative UDP Announce Port number, then enter the UDP Port number provided by the System Administrator.
In other cases, this should be left at the default value of 17185.

CT001 Maximum
Attempts: 000

This screen sets the maximum number of attempts this task will use to connect to the Insight Server or IPfast Receiver when using a Dialer path. (External-Modem or Internal-Modem)

This prevents excessive dial-up calls in circumstances when the Insight Comms Task cannot establish a dial-up connection.

If connection is still not achieved after the Maximum number of attempts, the Internal or External Modem Comms Task will give up trying to connect. When this occurs, the only ways to attempt to connect are via another path, by answering an incoming call, or by re-starting the Insight Comms Task.

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Once the Insight Comms Task establishes a connection via any communications path, the Maximum attempts counter is reset, allowing the specified number of attempts to be tried again.
If (P)ermanent mode has been selected, the Panel will not normally answer an incoming call on an I-modem or E-modem Comms Task. However, if the maximum number of attempts is reached an Insight Comms Task with the Permanent option enabled will allow incoming calls to be answered.
Incoming calls will be answered at any time if the Permanent option is not selected and the line is available.

If left at 000, the default of 10 attempts will be used.

Return to the first screen by pressing HELP, "0" and toggle the Comms task On and Off by pressing the "9" Key.


```
CT001     .R..
Status -> nnnn
```

Diagnostics
Pressing the ON Key whilst the Active/Idle screen is displayed will display the UART Port status screen. This screen can be Reset (cleared) when desired by pressing the OFF Key. The following table explains the flags:

.	**S**pare	Spare for future development.
R	**R**etry	A "Y" under this flag means the receive fifo (16 bytes) has overflowed and at least one character has been lost. This will normally cause a retry of some kind.

The "R" flag may be monitored after communications via this port. In the event that the system places a "Y" flag under the "R", the Status screen should be reset and monitored further. Should a "Y" flag appear under the "R" with some regularity, a potential cause would be the baud rate at which the port is attempting to communicate. In such a case the Installer should reduce the baud rate and monitor the effect via the status screen.

In the event that lower baud rates do not solve the problem, assistance should be sought from the distributor's Technical Support.

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Internal Modem Comms Task Format

Internal Modem (with Callback & Fax Bypass option)

The Internal Modem format is used if you wish the Model 3000 to be able to answer the dialer line (or call back the computer) and provide:
-A modem connection to Insight upload / download software.
-A modem connection to an IPfast Central Station Receiver.
-Panel remote control from any "touch-tone" (DTMF) telephone or mobile phone.

It can also be used to automatically monitor the status of the dialer line by periodically checking for DC voltage.

IMPORTANT NOTES:
1) You cannot have more than one Comms Task assigned to answer the phone. If more than one "Answer Call or "Internal Modem" Comms Task has been programmed in error, the Comms Task with the **lower** Comms Task number will answer the call (CT001 will take priority over CT002).
2) Insight connection. If the "Internal Modem" Comms Task is required to answer calls from Insight software, the appropriate "IACE" options must be programmed for the Internal Modem path in the "Insight" Comms Task.

OPERATION.
Normal operation.
The task will periodically test the dialer line for DC voltage and will alarm/restore the Control Module System Input "Phone" (C01:S22) as required.
In addition, the task will monitor the dialer line for a ringing phone and after the required amount of rings, will answer the dialer line and attempt a modem connection at the highest baud rate available (300 or 1200 Baud).
NOTE: If the "Insight" Comms Task has been programmed to Answer via Internal Modem:
- V5.00 to V5.03. This CT will ignore the "Number of Rings" specified, and answer the call as soon as possible.
- V5.04 or later. This CT will answer the call after the "Number of Rings" specified.

Callback.
The Callback feature is not supported in the current version of Insight Software.

Fax (Answering Machine) Bypass & DTMF Remote Control.
V5.00 to V5.03: "Fax Bypass" option only.
If Fax Bypass is programmed and rings are sensed but cease before the required number of rings is reached, the Comms Task will loop the line in parallel with whatever may have answered the dialer line and wait 5 seconds for a single pre-defined "Single DTMF tone". If the correct DTMF tone is sensed, the Comms Task will disconnect the line and wait for 60 seconds. If the Computer calls again within this 60 second period, the panel will now answer on the first ring, thereby gaining the line before the fax/answering machine can answer.
If DTMF tone is not sensed within the required time, the Comms Task will un-loop the line. This allows fax machines and the like to be bypassed by simply sending a specific DTMF tone when the fax machine answers.

If DTMF Remote Control is programmed, and the "Insight" Comms Task has not been programmed to Answer via Internal Modem, the Internal Modem Comms Task will answer the call after the required number of rings and wait 5 seconds for a single pre-defined DTMF tone. This tone is 1 digit above the programmed "Single DTMF tone".
e.g. If the "Single DTMF tone" is programmed to 5 for Fax Bypass, then DTMF tone 6 is used to initiate DTMF Remote Control. If the correct DTMF tone is sensed, the Comm Task will send the "Start tone" (3 short beeps) to indicate that the system is ready to receive DTMF Remote Control codes.

V5.04 or later: "Timed Bypass" option only.
If Timed Bypass is programmed and rings are sensed but cease within 5 rings, the Comms Task will start a timer running. If rings are sensed again after 60 seconds (but before 120 seconds) the panel will now answer on the first ring, thereby gaining the line before the fax/answering machine can answer.

If DTMF Remote Control is programmed, when the Internal Modem Comms Task answers a call, it will then wait 5 seconds for a single pre-defined DTMF tone. This tone is the programmed "Single DTMF tone".
If the correct DTMF tone is sensed, the Comm Task will send the "Start tone" (3 short beeps) to indicate that the system is ready to receive DTMF Remote Control codes.

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Internal Modem Options

Options are reached by pressing HELP, "9" at the Active / Idle screen. Options are divided into common options and less common or Special options. Usually only the common options need to be programmed, however, Special options are reached by pressing HELP, "9" twice at the Active / Idle screen.

```
CT002 Rings to
Answer: 000
```

This screen sets the number of rings before the Internal Modem Task answers the incoming call for communication with Insight software, an IPfast Central Station Receiver or DTMF Telephone Remote Control.
Legal values are between 001 and 019 rings.

```
CT002 Ans.F3CTSD..
Options-> nnnnnnnn
```

This screen allows some answer options to be programmed:

F	**F**ax bypass V5.00 to V5.02 only	NOTE: Not used in V5.04 or later. This option enables Fax Bypass by sensing if the phone stops ringing before the required amount of rings. If detected the Comms Task will then loop the line in parallel with whatever answered the phone and wait a pre-determined time for a DTMF tone to be sensed. This option allows the PC Operator to achieve Fax Bypass by dialling the panel, sending the required DTMF tone after the fax has answered and then dialling the panel again within 1 minute. The panel will now answer on the first ring, thereby gaining the line before the fax/ answering machine can answer.
3	**3**00 Baud	Not used in the Internal Modem Comms Task.
C	**C**all back	Not currently supported in the Internal Modem Comms Task.
T	**T**imed bypass V5.04 or later only.	This option enables Fax Bypass by sensing if the phone stops ringing within 5 rings. If detected, the Comms Task will start a timer running. If rings are sensed again <u>after</u> 60 seconds (but before 120 seconds) the panel will now answer on the first ring, thereby gaining the line before the fax/answering machine can answer.
S	**S**ingle DTMF	Not used in the Internal Modem Comms Task.
D	**D**TMF Control	This option enables DTMF Control, once the system has answered a call and the correct DTMF tone has been detected. The "Single DTMF Tone" must also be programmed in special options below. **Note: V5.00 to V5.02 only. DTMF cannot be used if the Insight Comms Task has been programmed to Answer via the Internal Modem**. *See "DTMF Control Programming" [MENU 7,3,3].*
.	**S**pare	This option has been left spare for future development.

```
CT002 Line Test
Time: 000 min
```

This screen sets the time between automatic dialer line tests. Dialer line tests are performed by detecting line voltage. If the line voltage is not detected then C01:S22 will be set to the alarm condition. Setting a time of 000 minutes disables line testing. The maximum time is 255 minutes (4 hours, 15 minutes).

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```
CT002 Insight #>
None
```

This screen is used to select the Telephone number of the Insight Server.
This number will be used if the Internal Modem Comms Task is required to establish a connection to Insight:
-To maintain connection if the (P)ermanent connection option is selected in the Insight Comms Task.
-Review data that has not been sent to Insight is about to be over-written.
-An Alarm exists and Insight is configured for Alarm Management.

Telephone numbers are selected from a pre-programmed list of Telephone Numbers, selected alphabetically by name or by number, if desired.

```
CT002 IPfast #->
None
```

This screen is used to select the Telephone number of the IPfast Server for IPfast Alarm reporting via Dialup connection.

Telephone numbers are selected from a pre-programmed list of Telephone Numbers, selected alphabetically by name or by number, if desired.

```
CT002 ISP Accnt
_
```

This screen allows the User name of the Dial-up ISP Account to be defined for TCP/IP connection via an Internet Service Provider.


```
CT002 ISP Passwd
_
```

This screen allows the Password of the Dial-up ISP Account to be defined for TCP/IP connection via an Internet Service Provider.

Internal Modem Special Options

Special options are reached by pressing HELP, "9" twice at the Active / Idle screen, or by pressing HELP, "9" from any common options screen. HELP, "0" will take you back to the common options, when programming of special options is complete.

```
CT002   PpDFTMA6
Dial -> nnnnnnnn
```

This screen sets various dialling options:

P	**P**ulse Dial (Tel)	Selects Pulse ("decadic") dial when dialling the main Telephone Number.
p	**P**ulse Dial (PABX)	Selects Pulse ("decadic") dial when dialling the PABX phone number if present.
D	**D**umb Dialling	Selects Dumb dialling. If "n" then Smart dialling is selected (default). *See the section on "Introduction to Dialer formats" at the end of this chapter for more details.*
F	**F**orce 300 Baud	Not used in "Internal Modem" Comms Task.
T	**T**est Mode	Not used in "Internal Modem" Comms Task.

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M	**M**ax Count	Not used in "Internal Modem" Comms Task.
A	**A**bort Pre-dial	When connection is attempted, if <u>any</u> Pre-dial error is detected, then the attempt will immediately be aborted and the Backup Task (if defined) will be invoked. e.g. If no Line is present the attempt will go straight to the Backup Task.
6	**6**0 sec Redial	Not used in "Internal Modem" Comms Task.

```
CT002 PABX No.->
None
```

```
CT002 PABX No.->
TN000
```

These screens allow the installer to define an optional PABX Access number and Call-back Telephone Number. When the Call-back number is defined, extra security is provided by forcing the task to ring back this number on a successful log-on sequence as an added precaution against "hacking".

Telephone numbers are selected from a pre-programmed list of Telephone Numbers, selected alphabetically by name or by number, if desired.

See Telephone Number Programming.

```
CT002 Back No.->
None
```

```
CT002 Back No.->
TN000
```

```
CT002 Cust No.->
None
```

```
CT002 Cust No.->
TN000
```

This screen allows the installer to specify the Telephone Number of the dialer line connected to the panel and is useful for reference purposes. It is not required for programming or panel functionality.

```
CT002 Seize Aux
C01:X08
```

This screen allows an Auxiliary output to be specified that will turn on whenever the dialer line is seized by this Comms Task and turn off whenever the dialer line is released.

```
CT002 Single
DTMF Tone: 000
```

This screen allows the Installer to specify the DTMF tone which will be used to initiate special functions:
V5.00 to V5.02. This tone initiates the modem answer sequence in Fax Bypass mode and also selects the tone that will be used to initiate DTMF Control Mode. The programmed tone is the one that will initiate the modem connect sequence. The programmed tone **plus one** is the tone that will initiate DTMF Control Mode.. e.g. if "005" is programmed, the DTMF digit 5 will be the Fax bypass tone in Insight software and DTMF tone 6 will initiate DTMF Control Mode.

V5.04 or later. This tone initiates DTMF Control Mode.

"(**D**)TMF Control" option must be set to "Yes" under "Answer Options" above.
See "DTMF Control Programming" [Menu 7,3,3] for more details.

```
CT002 Line Test
Count: 000
```

This screen sets parameters associated with line testing and should be left at 000 unless advised by the manufacturer.

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Introduction to Dialer Formats

When activated, a Comms Task set to a Dialer format (Contact ID, IRfast, or SIA) will continually look for any reports to be sent. When a reportable event is found, the dialer line will be used to attempt a connection to the Central Station. If the dialer line is being used, the attempt will be deferred until whatever is using the dialer line is finished. When finished, this Comms Task will "take-over" the dialer line and will not release it until it is finished. The connection attempt works in one of two ways:

- Smart Dial This is the default setting. The task will monitor the line for line faults, dial-tone, busy etc. and make dialling decisions based on results of attempts to connect to the Central Station as quickly as possible. All activity will be recorded to review.

- Dumb Dial This setting does not make "smart" decisions based on sensed tones, although all tones sensed and dialer progress are recorded to review.

The operation of these two modes is described in more detail in the section headed "Attempting Dialer Connection".

Once connected, the task will report all alarms until either there are no more alarms, or the on-line timer expires (default is 10 minutes). Alternatively, if the "Look Ahead" option is set, old alarms will be skipped in favour of new alarms.

Attempting Dialer Connections

Most Comms Tasks formats which need to dial a number to report information follow the logic below. Either smart dial or dumb dial can be selected on a per Comms Task basis.

Smart Dial

1. Seize Line and wait 3 seconds to see if phone is ringing. If phone is ringing wait till it stops ringing.

2. Test Line for DC voltage. If no line then unloop line, wait variable time then try again to same Telephone Number up to maximum attempts.

3. If got PABX number then loop line and wait for dial tone. If get dial tone then begin dialling. If get busy then unloop line, wait variable time then try again up to maximum attempts. If don't get dial tone then dial PABX number anyway.

4. Now wait for main dial tone. If get dial tone then begin dialling. If get busy or don't decode dial-tone then unloop line, wait variable time then try again to same Telephone Number up to maximum attempts.

5. Wait for Central Station required handshake for this format. If get dial tone or busy then unloop line, wait variable time then try again to a new Telephone Number up to maximum attempts. If get time out then unloop line, wait variable time then try again to a new Telephone Number up to maximum attempts. If get required handshake then start on-line timer.

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6. Proceed with communications for this format. If redial is required due to errors then unloop line, wait minimum time then try again to the same Telephone Number up to maximum attempts.

Dumb Dial

1. Seize Line and wait 3 seconds to see if phone is ringing. If phone is ringing wait until it stops ringing.

2. Test Line for DC voltage. If no line, save review message and continue.

3. If got PABX number then loop line and wait for dial tone. If get dial tone, begin dialling. If get busy, save review message and continue. If do not get dial tone, dial PABX number anyway.

4. Wait for main dial tone. If get dial tone, begin dialling. If get time-out or any other tone, save to review and continue.

5. Wait for Central Station required handshake for this format. If get time-out, unloop line, wait variable time then try again to a new Telephone Number up to maximum attempts. If get required handshake, start on-line timer.

6. Proceed with communications for this format. If redial is required due to errors, unloop line, wait minimum time then try again to the same Telephone Number up to maximum attempts.

NOTE:
Many telephone lines in Australia and New Zealand have a Message Bank or similar service connected. The differential dial tones used as indicators for such services can impede communication by the panel.

To avoid possible communication problems either disable the connected service or set the (D)umb Dialling option in Comms Task Programming.

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"SIA Dialer" Comms Task Format

Dialer Operation - SIA Dialer Format, Level 1. (V5 or later only)

SIA Dialer format is used to report Area opens/closes and Input alarms/tampers/isolates/restores to a Central Station Digital Alarm Receiver. The baud rate is fixed at 300 baud, and tonal acknowledgements are supported.
At present the SIA Comms Task cannot be used as a Backup Task.

The SIA format provides a number of advantages over Contact ID reporting:
- 6-digit Client Codes. (Compared to 4 digits in Contact ID)
- 4 digit Address field allowing up to 65,535 (Hex) or 10,000 (Decimal) Point IDs.
- Flexible "Modifiers", allow reporting of up to 250 Areas, All Module Types (1-12) & Numbers (1 to 99) and an optional Time stamp.
- Up to 9989 Users and 10 System Users can be uniquely identified.
- An ASCII block is also supported, allowing optional text names to be inserted after the Event Code & Address data.

If intending to utilize this format, check for compatibility with the Central Station service provider.

Account Codes. The 6-digit Client Code is sent to uniquely identify the Account, and multiple accounts (Client Codes) are allowed in one call.
To maintain compatibility with other programming options in the 3000/4000 product, (e.g. Area Programming) the Client Code is divided into a 2-digit "Account prefix" and a 4-digit "Client Code". The 2-digit Account Prefix remains fixed for all communications via this Comms Task. A 4-digit Client Code is also assigned to the Comms Task as the default, however if the "Multiple Area Client Codes" option is enabled, a unique Client Code may be programmed for each Area.

Address field. A 4-digit address field is used to uniquely identify the Module type/number and input number. The address field mapping is consistent no matter what block code is used, meaning that an automation system can rely on the address field alone to identify an input from a 3000/4000 system.
If Hexadecimal address fields are utilized, any input on any Module type/number in the 3000/4000 system can be uniquely identified.
If Decimal address fields are utilized ("Use Decimal" option selected), any input on any Module type up to Module number 32 can be uniquely identified.

Block Codes. Block Codes for Zone Inputs are detemined by the "SIA Type" assigned to the Input's Process Group. Appropriate Block Codes for System Inputs are predefined. Some Block Codes for System Inputs do not specify an address field. An option is available to disable address fields being appended to these Block Codes for automation systems that cannot process them.
More than one alarm event can be sent in a "New Event" data block and Data blocks are supported up to a 190 Byte packet resulting in considerable savings in on-line time.

Alarm Transmission.
-After the Account block is sent and acknowledged, the 3000/4000 system will build a data block as big as possible to send as many alarms as possible in one packet.
-A single 3000/4000 "Xmit" entry is represented as follows: N [<M><CA><A>]
Where: N New event Block Code "N"
<M> One or more Modifiers for that event.
<CA> One or more 2 letter data codes plus the 4-digit Address field.
<A> Optional ASCII text for this event.
-If more than one event needs to be sent and the packet size limit has not been reached, then that event may be appended in a new event block: N [<M><CA><A>] N [<M><CA><A>]
-If ASCII text was not sent, and the block size limit has not been reached, then that event may be appended in the same block: N [<M><CA>] [<M><CA>]
-The Modifiers will only be re-stated if they altered with the new event. If the block size limit (66 bytes) can be exceeded, then subsequent alarms are sent in a new block, with the Modifiers re-stated.

For details of Data Codes and Input Mapping refer to the tables section at the rear of this manual.

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SIA Options

SIA Options are reached by pressing HELP, "9" at the Active / Idle screen. Options are divided into SIA Options, Common Dialer options and less common or Special options. Usually only the SIA options and common options need to be programmed.

Special options are reached by pressing HELP, "9" twice at the Active / Idle screen.

```
CT001 Account
Prefix: 00
```

This screen sets the Account Prefix to be used for this Comms Task. The Account Prefix is programmable in decimal from 00 to 99. This prefix is appended to the beginning of the Client Code for all transmissions via this Comms Task to make up the 6-digit Account Code used in the SIA format.

```
CT001   DNATO...
SiaOpts nnnnnnnn
```

This screen sets various options unique to the SIA format:

D Use **D**ecimal

If set to Yes, Decimal digits will be used for the Address field.
Normally, Hex digits are used for the Address field.
Note that if this option is selected, the address mapping alters and the maximum number of Modules of any one type is limited to 32.
See the Tables section of the rear of this manual for SIA address mapping.

N **N**o Address

If set to Yes, the Address field will not be appended to Event Block Data Codes where an address field is not defined in the SIA Standard.
If set to No, the address field is appended to all Event Block Data Codes.

A Load **A**scii

If set to Yes, an ASCII text block is appended to the data to provide textual information from the 3000/4000 system.
NOTES:
1) This option may considerably slow down the rate of alarm transmission.
2) When this option is selected, the appropriate text for the first event will be sent in an ASCII block. Each subsequent event in the same phone call will only have ASCII text sent if it varies from the previous events. i.e. Only differences are sent to save on transmission time.
3) This option also has the effect of forcing one alarm event per packet.
4) With an opening/closing event, the following ASCII text may be appended if the related Area Communications options are selected.
"Sys still open" At least one nominated System Area is Open (Off).
"24Hr Partition" The 24 Hour (Tamper) part of the Area is Open (Off).

T Load R**T**C

If set to Yes, a time modifier (ti) prefixes every Event Data Code to provide the historical time stamp of the event.
Note that this option may considerably slow down the rate of alarm transmission.

O **O**ne Alarm

If set to Yes, this option forces only one alarm event to be sent per packet.
Note that each alarm event may need a number of Data Codes to represent it fully.

. Spare

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Dialer Options

Dialer Options are reached by pressing HELP, "9" twice at the Active / Idle screen.

Special options are reached by pressing HELP, "9" three times at the Active / Idle screen.

```
CT001 Client
Code: 0000
```

This screen sets the default client code to be used for this Comms Task.
The client code is programmable in decimal from 0001 to 9999. (Client codes of 0000 and 9999 should be avoided). If the "Multiple Area Client Code" is set, it is possible for different clients code to be used for different Areas.

```
CT001 PABX No.->
None
```

```
CT001 PABX No.->
TN000
```

These screens allow the installer to define an optional PABX access number. Telephone Numbers are chosen from a pre-programmed list of Telephone Numbers, selected alphabetically by name or by number. See Telephone Number programming.

```
CT001 1st No.->
None
```

This screen allows the Installer to define the main Telephone Number to be used to contact the Central Station. Attempts will begin with the 1st number which **must** be present, up to the maximum number of attempts specified. (Default is 8 attempts)

```
CT001 2nd No.->
None
```

etc.

If different telephone numbers are needed for subsequent attempts, the 2nd, 3rd and 4th telephone numbers may also be defined.
If a dial attempt on the 1st telephone number fails, the additional numbers are tried in the order 2nd, 3rd, 4th, 1st, 2nd and so on. If a number is not present, it is skipped and the next number in the above sequence is tried.

After an initial 4 attempts, the Holdoff time between attempts is then varied to enhance the chances of a successful call and help protect against blocking.
(The Holdoff time never exceeds 120 Seconds)

Telephone Numbers are chosen from a pre-programmed list of Telephone Numbers, selected alphabetically by name or by number.
See Telephone Number Programming.

```
CT001   PpDFTM.6
Dial -> nnnnnnnn
```

This screen sets various dialling options:

P	**P**ulse Dial (Tel)	Selects Pulse ("decadic") dial when dialling the main Telephone Number.
p	**P**ulse Dial (PABX)	Selects Pulse ("decadic") dial when dialling the PABX phone number if present.
D	**D**umb Dialling	Selects Dumb dialling. If "n" then Smart dialling is selected (default). *See "Introduction to Dialer Formats" at the end of this chapter.*
F	**F**orces 300 Baud	Not relevant to SIA format. (SIA Format fixed at 300 baud).
T	**T**est Mode	Not relevant to SIA format. (Contact ID only)

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M	**M**aximum Count	This enables the Maximum Count option. This allows the maximum call time to be based on valid acknowledgements received, rather than time. If this option is set, the maximum call time is based upon the number of packets sent (1 to 255) programmed in the "Online Time" screen, under Special Options.
A	**A**bort Pre-dial	When connection is attempted, if any Pre-dial error is detected, then the attempt will immediately be aborted and the Backup Task (if defined) will be invoked. e.g. If no Line is present the attempt will go straight to the Backup Task.
6	**6**0 sec Redial	This option forces the Comms Task to wait 60 seconds between any redial attempt. This option must be set to comply with **Singapore** Telecom regulations.

```
CT001    MLGPN...
Ropts -> nnnnnnnn
```

This screen sets various reporting options:

M	**M**ultiple Area Codes	If Multiple Area client codes are selected, whenever a report from an Area is performed (open/close/alarms/tampers/isolations/restores) the client code defined in Area Programming will be used if it is not "0000". If the Area Client code is "0000", the Comms Task client code will be used. If this option is set to "n" then the Comms Task client code will always be used. (See Area Programming for more details of this application)
L	**L**ook Ahead	Normally all reportable events will be sent in the order that they occur; one at a time until no more reports are required. The Comms Task will ensure the order will not alter, even if the dialer takes a long time to get through to the Central Station or if reports are being generated faster than they can be sent. If this option is set to "Y", **Look Ahead** operation is selected. With Look Ahead selected, a sequence of multi-breaks on a single Zone/Input will be ignored if a restore report has already been sent for that Zone/Input and there are new alarms from a different Zone/Input that have not been sent yet. Open/Close reports do not follow this logic and are always reported. This option is useful to track intruder movement through a larger installation and ignore multibreaking detectors.
G	**G**eneral O/C	This option selects general open and close reporting. Whenever **all** Areas programmed to report Open/Close are turned ON a general Area close is reported. As soon as the **first** Area is turned OFF, a general Area open is reported. In Area programming, some Areas can be nominated as "Not General Area" and are ignored in the general Area calculation. Open/Close will not be reported on these Areas in any Comms Task with this "General Open/Close" option set to YES. Another Comms Task with this option set to NO may be used to allow these Areas to trigger individual Open/Close reports. See Area Programming "Not General Area" option for details.
P	**P**revents Restores	This option prevents restores being reported via this Comms Task.
N	**N**o Area Still Open	In Area programming, it is possible to enable reporting of "Area Still Open" and "Area 24Hour Offs". Not all reporting formats can handle these reports. Setting this option to "Y" will disable these reports for this Comms Task. Both of these reports are sent without any loss of information in IRfast format.
D	**D**elay Reports (V5 or later)	This option enables Delayed Reporting (Dial Holdoff) for this Comms Task. *See "Delay Report" in Process Group Extra Options (RNED...L screen) for details.*

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```
CT001 Area List
Filter: AL002
```

This screen allows an optional Area List filter to be defined for this Comms Task. If a non-zero Area List is chosen, only information from Areas in the specified Area List will be sent using this Comms Task.

```
CT001   EOA.....
Efilt-> nnnnnnnn
```

The "Extra Filter" screen option allows a Comms Task to only respond to certain types of events.

E **E**xtra Filter — This option enables Extra Filter options. If left at "n", no extra filtering is used. ie. normal operation.

O **O**pens/Closes — This option enables Opens/Closes reports to be sent via this Comms Task.

A **A**larms — This option allows Alarms/Tampers/Isolations to be sent via this Comms Task.

. **S**pare — Spare options for future filters. Leave set to "n".

For example: To configure a Model 3000 system so that all openings and closings are sent via Securitel and all alarms/tampers/isolates go via SIA, set the Securitel Comms Task with the "E" and "O" Extra Filter options and the Contact ID Comms Task with the "E" and "A" Extra Filter options.

Dialer formats - Special Options

Special options are reached by pressing HELP, "9" three times at the Active/Idle screen, or by pressing HELP, "9" from any common Dialer options screen. HELP, "0" will take you back to the common options when programming of special options is complete.

NOTE: The values shown in the following 10 screen examples are the default values

```
CT001 Maximum
Attempts: 008
```

This screen sets the maximum dial attempts this task will use to attempt to contact the Central Station. If left at zero then the default of 8 attempts will be used. Telecommunication regulatory authorities may limit this number. (In Australia, the ACA specifies a maximum of 10 attempts).
In "UK" firmware, the value cannot be set to greater than 14.

```
CT001 Backup
Attempts: 004
```

This screen sets the number of dial attempts before the backup input will be triggered (C01:S20). If left at 000 the default value of 4 will be used.

```
CT001 Backup
Task: CT000
```

This screen allows an optional backup Comms Task to be specified that will be triggered if this Comms Task fails to communicate within its maximum attempts. Leaving the task at CT000 specifies no backup task will be triggered.
Backup Comms Tasks are available in IRFast, Contact ID and GSM modem formats. (GSM requires V3.5 or later)

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```
CT001 Seize Aux
   :X
```

This screen allows an Auxiliary output to be specified. This Auxiliary will turn on whenever the dialer line is seized and will turn off whenever the dialer line is released.

```
CT001 Pass Aux
   :X
```

This screen allows the installer to specify an Auxiliary output to turn on whenever the dialer successfully sends a report to the Central Station. It must be turned off by some other mechanism such as a timer.

```
CT001 PABX Dial
Wait: 030/10 sec
```

This screen sets the time the task will wait to sense dial-tone before dialling the PABX number. The time is programmable from 1/10 sec to 255/10 sec (25.5 seconds). If this option is left at 000/10 then the default time of 3 seconds will be used.

```
CT001 Main Dial
Wait: 030/10 sec
```

This screen sets the time the task will wait to sense dial-tone before dialling the Main number. The time is programmable from 1/10 sec to 255/10 sec (25.5 seconds). If this option is left at 000/10 then the default time of 3 seconds will be used.

```
CT001 Handshake
Wait: 030
```

This screen sets the time the task will wait for an initial handshake after dialling the Central Station. The time is programmable from 1 second to 255 seconds. If this option is left at 000 then the default time of 30 seconds will be used.

```
CT001 Max.Online
Time: 010 min
```

This screen sets the maximum time the task will stay on-line before hanging up and re-dialling. The time is programmable from 1 minute to 255 minutes. If this option is left at 000 then the default time of 10 minutes will be used.
If the timer expires, the Comms Task will hang up and "Call too long" will be logged to Review.

If the "Maximum Count" option in the Dial Options is set to Yes, this screen is used to program the maximum number of packets sent (1 to 255).

```
CT001 Line Test
Count: 000
```

This screen sets the parameters associated with line testing and should be left at 000 unless advised by the manufacturer.

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Introduction to Dialer Formats

When activated, a Comms Task set to a Dialer format (Contact ID, IRfast, or SIA) will continually look for any reports to be sent. When a reportable event is found, the dialer line will be used to attempt a connection to the Central Station. If the dialer line is being used, the attempt will be deferred until whatever is using the dialer line is finished. When finished, this Comms Task will "take-over" the dialer line and will not release it until it is finished. The connection attempt works in one of two ways:

- Smart Dial This is the default setting. The task will monitor the line for line faults, dial-tone, busy etc. and make dialling decisions based on results of attempts to connect to the Central Station as quickly as possible. All activity will be recorded to review.

- Dumb Dial This setting does not make "smart" decisions based on sensed tones, although all tones sensed and dialer progress are recorded to review.

The operation of these two modes is described in more detail in the section headed "Attempting Dialer Connection".

Once connected, the task will report all alarms until either there are no more alarms, or the on-line timer expires (default is 10 minutes). Alternatively, if the "Look Ahead" option is set, old alarms will be skipped in favour of new alarms.

Attempting Dialer Connections

Most Comms Tasks formats which need to dial a number to report information follow the logic below. Either smart dial or dumb dial can be selected on a per Comms Task basis.

Smart Dial

1. Seize Line and wait 3 seconds to see if phone is ringing. If phone is ringing wait till it stops ringing.

2. Test Line for DC voltage. If no line then unloop line, wait variable time then try again to same Telephone Number up to maximum attempts.

3. If got PABX number then loop line and wait for dial tone. If get dial tone then begin dialling. If get busy then unloop line, wait variable time then try again up to maximum attempts. If don't get dial tone then dial PABX number anyway.

4. Now wait for main dial tone. If get dial tone then begin dialling. If get busy or don't decode dial-tone then unloop line, wait variable time then try again to same Telephone Number up to maximum attempts.

5. Wait for Central Station required handshake for this format. If get dial tone or busy then unloop line, wait variable time then try again to a new Telephone Number up to maximum attempts. If get time out then unloop line, wait variable time then try again to a new Telephone Number up to maximum attempts. If get required handshake then start on-line timer.

6. Proceed with communications for this format. If redial is required due to errors then unloop line, wait minimum time then try again to the same Telephone Number up to maximum attempts.

Dumb Dial

1. Seize Line and wait 3 seconds to see if phone is ringing. If phone is ringing wait until it stops ringing.

2. Test Line for DC voltage. If no line, save review message and continue.

3. If got PABX number then loop line and wait for dial tone. If get dial tone, begin dialling. If get busy, save

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review message and continue. If do not get dial tone, dial PABX number anyway.

4. Wait for main dial tone. If get dial tone, begin dialling. If get time-out or any other tone, save to review and continue.

5. Wait for Central Station required handshake for this format. If get time -out, unloop line, wait variable time then try again to a new Telephone Number up to maximum attempts. If get required handshake, start on-line timer.

6. Proceed with communications for this format. If redial is required due to errors, unloop line, wait minimum time then try again to the same Telephone Number up to maximum attempts.

NOTE:
Many telephone lines in Australia and New Zealand have a Message Bank or similar service connected. The differential dial tones used as indicators for such services can impede communication by the panel.

To avoid possible communication problems either disable the connected service or set the (D)umb Dialling option in Comms Task Programming.

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Request Service

MENU 8, 1

This menu option allows a customer to have the ability to trigger a message to the Monitoring station to Request a Service call. (V3.0 or later only)
Important Note: You will need to check with the Monitoring Station whether or not this service is provided.

The following programming steps must be implemented to enable the feature:

1) Any User allowed to perform the function must have the 'S'ervice option set to Yes in the Menu Options screen in the Menu Group assigned to their User Type.

2) The System Input "Request for Service" (C01:S28) must be assigned to an Area that is turned On.
A suitable Process Group must be used when assigning the Input to the Area to provide the appropriate reporting options. The Process Group must also specify an appropriate Contact ID Event Code. e.g. 411.

3) When <MENU>, 8, 1 is selected by the User, an alarm will be generated on C01:S28 and will be reported to the Central Monitoring station.

Once enabled, activating the "Request Service" function is simply a matter of selecting the menu option by pressing the key sequence <MENU>, <8>, <1>.

Report Initiated

The screen will display "Report Initiated" to confirm the operation. (V4 or later)

Press the <END> key to exit the menu.

NOTE: This option is only valid if the Control Module is connected to a telephone line and the function has been enabled in the Installer programming options.

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Test Report

MENU 8, 2

This menu option allows a customer to have the ability to trigger a Test report to the Monitoring station. This may be required if work has been carried out on the system or the telephone line cabling and it is necessary to test that communications with the Monitoring station can still be established.
Important Note: You will need to check with the Monitoring Station whether or not this service is provided.

This function may also be used to restore a Comms Fail alarm after the conditions that caused the Alarm have been rectified.

The following programming steps must be implemented to enable the feature:

1) Any User allowed to perform the function must have the 'S'ervice option set to Yes in the Menu Options screen in the Menu Group assigned to their User Type.

2) The System Input "Manual Trigger" (C01:S19) must be assigned to an Area that is turned On.
A suitable Process Group must be used when assigning the Input to the Area to provide the appropriate reporting options. A Contact ID Event Code: 601 will automatically be used unless another Event Code is specified in the Process Group.

3) When <MENU>, 8, 2 is selected by the User, an alarm will be generated on C01:S19 and will be reported to the Central Monitoring station.

Once enabled, activating the "Test Report" function is simply a matter of selecting the menu option by pressing the key sequence <MENU>, <8>, <2>.

Report Initiated

The screen will display "Report Initiated" to confirm the operation. (V4 or later)

Press the <END> key to exit the menu.

NOTE: This option is only valid if the Control Module is connected to a telephone line and the function has been enabled in the Installer programming options.

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Secure Options Programming

MENU 8, 3

There are two special types of Users in the 3000 / Access 4000 system:

-The **Installer** code (User 00001) is used for most system programming and installation and is usually held by the installation company.

-The **Master** code (User 00002) is used for some system programming and is usually held by the owner of the system and/or the person responsible for security. User codes 00003 up to the maximum User code are used by others within the system for turning ON and OFF Areas and accessing Doors as required. These User codes may also be granted limited programming rights by the master or installer.

In general the installer code is the most powerful code within the system, being able to perform certain programming functions that even the Master code cannot perform. However the installer code operations can be curtailed in the following ways.

1. The Master code can be given permission to lock the Installer code out if desired, which will prevent installer code access, either on-site or remotely. However, the Master still cannot view the Installer code or access Installer code only programming.

2. The Installer code can be prevented from changing any codes except their own. (Usually a User code given code programming permission can program all codes above and including their own)

3. The system can be disabled from allowing installer code defaulting via the "Code" Pins on the Control Module.

The system uses a special programming screen called the "Security Options" to determine how overall security is to operate for this system. Security options are either set or clear and when manufactured, all security options are set to clear. The installer can elect to set any or all of the security options at any time, but *once they are set they cannot be cleared*, even by the installer. Security options can only be cleared by the Distributor.

It is possible for the Installer code to be locked out by incorrect programming or by the Master code. For example, if the Installer code User Type is set to "None" accidentally then every time the installer enters their code the screen will display, "Installer Cancelled" and deny access. This can be overcome by simply powering down and up the system. When the system is powered up, the first time the installer code is entered at any Terminal the User will be presented with the main programming menu even if the installer has been locked out. The installer can now go and rectify the programming fault which denied them access.

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```
Secure     NOL
Options -> nnn
```

This screen allows the Installer to programme a number of system Security related options. **Once set they cannot be cleared unless the Control Module or firmware chip is returned to the distributor.**

N **N**o Code Default

Normally, if the Installer forgets their code, they can default their code back to "01" by resetting the system whilst shorting out the "Code Reset" pins and then going into User Code programming and entering a new User Code. (See "Installer Code Default Procedure" below). If the No code default security option is set to "Y", the Installer code cannot be defaulted in this manner. If the Installer code is forgotten and the No code default security option is set to "Y", the panel must be returned to the manufacturer. Replacing or defaulting the options chip will not change the Installer code.

O **O**wn Code

Normally the Installer code allows programming access to all other User Codes, including the Master code. Other PIN codes cannot be inspected, but they can be replaced or cancelled, or the programming of the User Code can be altered. If the Own code security option is set to "Y", the Installer can only access their own code. This means the upload/download package cannot be used for User Code maintenance by the Installer code and, if the Master code is forgotten, the Installer cannot reprogramme it.

L **L**ockout Installer

Normally the Master code cannot lockout the Installer code, however, if this option is set to "Y", the Master code can lockout the Installer code.

Activation

When the Master code User (U002) logs on to the system with the "L" code set, the Master User is able to access the Security Options MENU 8, 3.

```
Lockout
Installer ?  n
```

This screen enables the Master code User to Lockout the Installer by entering a "Y" at the cursor position. The screen is saved and exited by pressing END.

To reinstate Installer access, the Master code User must go to MENU 8, 3 and change the "Y" flag to a "n".

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Installer Code Default Procedure

Under certain circumstances, the Installer may find that they cannot access the system with their PIN code. This may be due to one or more of the following conditions:

1. The PIN code has been forgotten
2. An expiry date/time has been programmed for the Installer and the code has expired.
3. The User Type and/or Menu Group assigned to the Installer has been changed.

If this occurs, the Installer can regain access to the system by using the following procedure **provided that the (N)o Code Default option is set to "no".**

1. Turn off the Area and 24Hr part of the Area that monitors Control Module Cabinet and Tamper, if possible.
2. Remove the Cover from the Control Module enclosure.
3. Power down the Control Module and disconnect the battery.
4. Place a short (Jumper Link) on LK3 (Code Reset)
5. Reapply power to the Control Module.
6. Wait until the "Rx" LED stops flashing, then remove the short on LK3. This resets the Installer PIN Code to "01" and expiry year to "88" (Expiry disabled).
7. Press "0", "1", "OK", "2", "1" at the LCD Terminal.
   (Do not press the Menu Key after "0", "1", "OK")
   This provides access directly to User Code Programming, giving the Installer the opportunity to rectify the programming problems.
8. Reprogramme U00001 (Installer) options as required:
   - Assign correct User Type and/or correct User Type options, if necessary.
   - Correct Menu Group options, if necessary.
   - Reprogramme a unique PIN Code.
   - Clear expiry date/time fields, if necessary.

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Answer Phone

MENU 8, 4

If remote access to the system is required for service purposes via the dialer phone line, the service technician may ask you to activate the "Answer phone" function, in order to establish the communications connection.

Activating the Answer Phone function is simply a matter of selecting the menu option by pressing the key sequence <MENU>, <8>, <4>.

DO NOT USE THIS OPTION UNLESS INSTRUCTED TO DO SO BY YOUR INSTALLER / SERVICE TECHNICIAN.

Answering Phone

The display will show a message to indicate the status and then return to the main menu.

Press the <END> key to exit the menu. This will not effect the remote connection.

NOTE: This option is only valid if the Control Module is connected to a telephone line and the function has been enabled in the Installer programming options.

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Control Menu

Users with the relevant options enabled in their Menu Group can use the Control Menu to control one or more of the following items:

- Home Auxiliaries
- Doors.
- Event Counters.
- Lifts.
- Area User Counters.

HOME AUXILIARIES

MENU 9 YZ 1 ABC

Home Auxiliaries are outputs in the system that can be turned On and Off by a User. Access to control of some Home Auxiliaries may be gained by simply pressing the <RIGHT> arrow key on the LCD Terminal. Other Home Auxiliaries need to be more secure and can only be controlled via access to this Control Menu option.

```
.Home Aux 001
is Off
```

The display shows the current status of the first Home Auxiliary.
(The example shown opposite is a default Home Auxiliary name. This type of name should only appear for Home Auxiliaries that are not used.)

^ v or ? ???

To select a Home Auxiliary, use the <UP> and <DOWN> Arrow keys to search through the list.

OR

```
PATIO SPEAKERS
is Off
```

Search for a Home Auxiliary by name by pressing the DIGIT key that represents the first letter of the name. (You may have to press the key 2 or 3 times, depending on the letter required and the Home Auxiliary names in the system.)

v

```
POOL PUMP
is Off
```

If the Home Auxiliary you want is not displayed because of other names beginning with the same letter, use the <DOWN> Arrow key to locate it.

Controlling the Home Auxiliary.

```
POOL PUMP
is Off
```

When the desired Home Auxiliary is displayed;

ON OFF

Press the ON key or OFF key to turn the Auxiliary On or Off as required.

OR

< or > , ? ??? , OK

Press the <LEFT> arrow key to enter a Home Auxiliary "On time" in Minutes or the <RIGHT> arrow key to enter an "On time" in Seconds.
(V2 or later only)

```
POOL PUMP
On Time: 045min
```

Use the <DIGIT> keys to enter the time period required, then <OK> to execute the action.

^ v or ? ???

Select another Home Auxiliary to control using the <UP> and <DOWN> arrow keys or <DIGIT> keys.

OR

END

Press the <END> key to exit to the normal display.

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DOOR CONTROL



The "Door Control" option allows a User with the appropriate authority to Un-lock and Lock individual Doors (V3 or later only) or all Doors in the Door List assigned to their User Type.

e.g. If Doors are programmed for "free access" during the day, it may be necessary to re-lock the doors if all the staff leave early to attend a company function at another location.
OR
It may be necessary to un-lock doors if free access is required outside normal working hours to allow staff to fulfil an urgent order.

NOTE: Only Doors included in the User's "Door List" (defined in their "User Type") can be controlled.

```
Door to
Control? 000
```

The display will allow you to enter the number of the Door to control.



Use the <DIGIT> keys to enter the three digit Door number then <OK>.
(Press <END> to abort)
A Door number of "000" will include all Doors in the User's Door List.

```
(L)ock or
(U)nlock ?
```

The display will now allow you to select the "Lock" or "Unlock" operation.



Press the <4> (L) key to Lock the Door.
Press the <7> (U) key to Unlock the Door.

```
Operation
Done
```

The display will briefly show the "Operation Done" message to indicate that the operation was successful and then return to the main menu.



Press the <END> key to exit to the normal display or select another Menu option.

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LIFT CONTROL

MENU 9 YZ 4 JKL

"Lift Control" allows a User with the appropriate authority to Access or Secure Floor/s in a specific Lift Car. If accessed, all Users may access the floors. If secured, only valid Users may access the floors.

e.g. If Floors are normally programmed for "free access" during the day, it may be necessary to Secure the floors to restrict access during a VIP visit.
OR
If access is required outside normal working hours for staff to complete an urgent project, it may be necessary to Access the Floors.

```
Lift
Car ? 01
```

The display will allow you to enter the number of the Lift Car to control.

? ??? ? ??? OK

Use the <DIGIT> keys to enter the two digit Lift Car number then <OK>. (Press <END> to abort)
A Lift Car number of "00" will include all Lifts.

```
Floor
to do ? 00
```

The display will allow you to enter the number of the Floor to control.
(V3 or later only)

? ??? ? ??? OK

Use the <DIGIT> keys to enter the two digit Floor number then <OK>. (Press <END> to abort)
A Floor number of "00" will include all Floors.

```
(A)ccess or
(S)ecure ?
```

The display will allow you to select the "Access (Free) Floor" or "Secure Floor" operation.

1 ABC 7 STU

Press the <1> (A) key to Access (Free) the Floor.
Press the <7> (S) key to Secure the Floor.

```
Operation
Done
```

The display will briefly show the "Operation Done" message to indicate that the operation was successful and then return to the main menu.

END

Press the <END> key to exit to the normal display or select another Menu option.

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ADJUST EVENT COUNTERS

MENU 9 YZ 6 PQR

Adjust Event Count allows a User with the appropriate authority to reset a Counter (to 0) or to set the count value to the required number.
(V3 or later only)

```
.Counter 001
SetCnt: 00000000
```

The display will show the first Counter and the current count value.

^ v

Use the <UP> and <DOWN> arrow keys to select the Counter to reset or adjust.

```
Camera 2 Film
SetCnt: 00000000
```

? ???, > or OFF then OK

Use the <DIGIT> keys and <RIGHT> Arrow key (if necessary) to enter in the count value then press <OK>.
The <OFF> key can be used to clear the field. (Reset to 0)

END

Press the <END> key to exit to the normal display or select another Menu option.

ADJUST AREA USER COUNTERS

MENU 9 YZ 7 STU

Adjust Area User Count allows a User with the appropriate authority to reset an Area User Counter (to 0) or to set the count value to the required number.
(V5 or later only)

```
A001 Number of
Users: 00000
```

The display will show the first Area User Counter and the current count value.

^ v

Use the <UP> and <DOWN> arrow keys to select the Area Counter to reset or adjust.

```
A002 Number of
Users: 00000
```

? ???, > or OFF then OK

Use the <DIGIT> keys and <RIGHT> Arrow key (if necessary) to enter in the count value then press <OK>.
The <OFF> key can be used to clear the field. (Reset to 0)

END

Press the <END> key to exit to the normal display or select another Menu option.

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TABLES

This section provides general system reference tables and communications report mapping details.

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T02 **Review Messages**

T03 **Contact ID Messages**
-Common Messages
-Event Types

Contact ID Maps
T04 Standard
T05 Map-1 ..... Refer to Website.
T06 School 30 ..... Refer to Website.
T07 School 19 ..... Refer to Website.
T07a School 19B ..... Refer to Website.
T08 SIMS-II ..... Refer to Website.
T09 Access -1 ..... Refer to Website.
Standard-2 ..... Refer to Website.

NOTE: A summary of the Contact ID Maps can be found in the introduction to "Comms Task Formats" in the Programming Reference section.

T10 **Securitel Serial Channel Maps**. ..... Refer to Website.
-Opening/Closing
-Alarm Reports

SIA Maps. ..... Refer to Website.
T11 SIA Messages
T12 SIA System Input Block Codes
T13 SIA HEX Address Mapping
T14 SIA Decimal Address Mapping

Website: Advanced Tech Support:
http://support.innerrange.com/restricted/index.phtml (Logon required)
http://support.innerrange.com/registration.phtml (To register)
Home Page:
http://www.innerrange.com

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T01. System Inputs

NOTES:
1) System Input Review Logging. All System Inputs, when activated, generate an Alarm state and a Tamper state allowing them to be processed as either an Alarm and/or Tamper condition depending on the Input Type options selected in the Process Group.

For this reason, changes in state on System Inputs will continue to be saved to Review, (and in some cases processed as Tamper alarms) even if all the Areas relevant to those Inputs are turned Off, because the 24 Hr (Tamper) part of the Area is still On. To disable the Review logging (and processing if relevant) of System Inputs, the 24Hr (Tamper) part of the Area must also be turned Off.
See "Area Programming", MENU, 7, 1 for more information.

2) Contact ID Event Codes. The Default CID Event Codes listed in these tables apply to all Contact ID Maps except for the SIMS II Map. For SIMS II CID Event Codes, see Table T08 "SIMS II Alarm Report Mapping".

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LCD Terminals (Tnn:Snn)

No:	Name	Description	Default CID Event Code	Default Process Group If "Add System Inputs" used
S01	Cabinet Tamper	Alarm when LCD Terminal Tamper Input un-sealed.	145	PG009 System Tamper
S02	Panic	<HELP> key pressed 3 times consecutively whilst logged out. *See User Manual for more details.*	120	PG009 System Tamper
S03	Door Forced	If Terminal used for Access Control. Alarm if Z01 unsealed without valid activation of Lock Aux. (X01)	420	PG014 Access Alarm
S04	Door Held	If Terminal used for Access Control. Alarm if Z01 unsealed for longer than the Lock Time + Max Door Open Time. Restore on Z01 Seal or next Valid Door Access.	420	PG015 Access Silent
S05	Operator Duress	Alarm when a User Duress PIN Code entered. *See User Manual for more details.*	122	PG006 Duress (V4.5 or later) PG010 System Silent (Prior to V4.5)
S06	Deadman	Not Used. (Spare for future applications)	102	PG010 System Silent
S07	Lockout.	Too many PIN tries	140	PG013 Access Local
S08	LAN Comms Problem	Alarm if Terminal fails to respond to a number of consecutive comms packets from the Controller.	143	PG011 System LAN

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Control Module (Cnn:Snn)

No	Name	Description	Default CID Event Code	Default Process Group -If "Add System I/Ps" used
S01	Cabinet Tamper	Alarm when Controller Tamper Input un-sealed.	145	PG009 System Tamper
S02	Internal Siren Tamper	Alarm when no speaker load on S1 Siren output.	145	PG009 System Tamper
S03	External Siren Tamper	Alarm when no speaker load on S2 Siren output.	145	PG009 System Tamper
S04	AC Fail - Mains Power	Alarm when no AC present.	301	PG010 System Silent
S05	Low Battery	Alarm when battery voltage below 11V. De-bounce prevents state chatter.	302	PG010 System Silent
S06	LAN Fuse Tamper	Alarm when LAN fuse blown.	140	PG010 System Silent
S07	Detector Fuse Tamper	Alarm when Detector fuse blown.	140	PG010 System Silent
S08	LAN Comms Status	Not Used. (Spare for future applications)	143	-
S09	Battery Test Fail	Alarm when Low Battery condition detected while a Battery Test is running.	309	PG010 System Silent
S10	Checksum Alteration	Program change. Not Used. (Spare for future applications)	306	PG012 System Local
S11	System Power on reset	Not Used. (Spare for future applications)	305	-
S12	Line Fault	Alarm if no Line detected before dialing.	351	PG012 System Local
S13	UART 1 Problems	Printer Comms Task: Alarm while CTS low. GSM Comms Task: Alarm on 3 consecutive failed comms with FE3000. Restore on successful poll of FE3000. (V4.5 or later)	330	PG012 System Local
S14	UART 2 Problems		330	PG012 System Local
S15	UART 3 Problems		330	PG012 System Local
S16	UART 4 Problems		330	PG012 System Local
S17	Zone self test fail	Alarm when a "Self Test" Zone fails the Zone Self Test routine. *See "Zone Input Testing" in the Applications section for details.*	307	PG012 System Local
S18	Time Report	Alarm when "Trigger Time Report" action triggered by a TimeZone program.	602	PG010 System Silent
S19	Manual Trigger	Alarm when Menu, 8, 2 (Test report) selected.	601	PG010 System Silent
S20	Comms Backup	Alarm when "Backup attempts" is reached. Restore on next acknowledged Xmit event.	350	PG012 System Local
S21	Comms Fail	Alarm at maximum attempts/buffer full. Restore on next acknowledged Xmit event or Comms Task set to Idle then Active.	354	PG012 System Local
S22	Phone	Alarm when Answer Call Comms Task detects no DC on phone line. Restores when DC detected. Hysteresis prevents state chatter.	351	PG012 System Local
S23	Module Substitution "New Module"	Alarm when a non-LAN secured Module is connected to a Secured LAN. Restores when Module removed or LAN Secure (MENU, 7, 8, 1) is performed.	140	PG010 System Silent
S24	Pre-arm 1 Test Start	Alarm while Pre-arm test running on an Odd Area.	140	-
S25	Pre-arm 1 Test Fail	Alarm when Pre-arm test failed on an Odd Area. Restore when Pre-arm test passed.	140	-
S26	Pre-arm 2 Test Start	Alarm while Pre-arm test running on an Even Area.	140	-
S27	Pre-arm 2 Test Fail	Alarm when Pre-arm test failed on an Even Area. Restore when Pre-arm test passed.	140	-
S28	Request for Service	Alarm when Menu, 8, 1 (Req. Serv.) selected.	140	-
S29	Intell. Reader Problem	Alarm when an Intell 4 Door Access Module fails checksum test after a database change. Restores when all IFDAMs pass the checksum test.	140	-
S30	GSM Problem	Alarm when no acknowledge received and no more numbers to try. Restore when Comms Task re-started or a valid "R" command received via SMS.	140	-
S31	Expander Power Test	Alarm while manual Expander Battery Test enabled. (MENU, 4, 8. Off key starts Test, On key ends test)	140	-
S32	(Spare)		140	-

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32 Zone Expanders (Bnn:Snn) and 16 Zone Expanders (Enn:Snn))

No:	Name	Description	Default CID Event Code	Default Process Group If "Add System Inputs" used
S01	Cabinet Tamper	Alarm when Expander Tamper Input un-sealed.	145	PG009 System Tamper
S02	Internal Siren Tamper	Alarm when no speaker load on S1 Siren output.	145	PG009 System Tamper
S03	External Siren Tamper	Alarm when no speaker load on S2 Siren output.	145	PG009 System Tamper
S04	AC Fail	Alarm when no AC present.	301	PG010 System Silent
S05	Low Battery	Alarm when battery voltage below 11V. De-bounce prevents state chatter.	302	PG010 System Silent
S06	LAN Fuse	Alarm when LAN fuse blown.	140	PG010 System Silent
S07	Detector Fuse	Alarm when Detector fuse blown.	140	PG010 System Silent
S08	LAN Comms Problem	Alarm if Terminal fails to respond to a number of consecutive comms packets from the Controller.	143	PG011 System LAN
S09	Battery Test	Alarm when Low Battery condition detected while a Battery Test is running.	309	PG010 System Silent
S10	Program Change	Not Used. (Spare for future applications)	306	-

1 Door / 2 Door Access Modules [Reader Modules] (Rnn:Snn)

***See "Reader Module programming" (MENU, 7, 2, 4) for details of Preconfigured Zone Inputs* (Rnn:Znn)**

No:	Name	Description	Default CID Event Code	Default Process Group If "Add System Inputs" used
S01	Cabinet Tamper	Alarm when Access Module Tamper I/P un-sealed.	145	PG009 System Tamper
S02	Low Volts	Alarm when supply voltage drops below 10.5V DC. Restore when supply voltage goes above 11V DC.	302	PG010 System Silent
S03	1st Door Forced	Alarm if Reed1 or Tongue1 (if used) unsealed without valid activation of Lock Aux. (X01) Restore when both Reed1 & Tongue1 sealed or next valid Door Access.	140	PG014 Access Alarm
S04	1st Door Held	Alarm if Reed1 or Tongue1 (if used) unsealed for longer than the Lock Time + Max Door Open Time. Restore when both Reed1 & Tongue1 sealed or next valid Door Access.	140	PG015 Access Silent
S05	2nd Door Forced	Alarm if Reed2 or Tongue2 (if used) unsealed without valid activation of Lock Aux. (X04) Restore when both Reed2 & Tongue2 sealed or next valid Door Access.	140	PG014 Access Alarm
S06	2nd Door Held	Alarm if Reed2 or Tongue2 (if used) unsealed for longer than the Lock Time + Max Door Open Time. Restore when both Reed2 & Tongue2 sealed or next valid Door Access.	140	PG015 Access Silent
S07	Illegal Card (Either Reader)	Alarm when an unrecognised Card is presented at either Reader Head.	140	PG013 Access Local
S08	LAN Comms Problem	Alarm if Module fails to respond to a number of consecutive comms packets from the Controller.	143	PG011 System LAN

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Wireless Network Module [formally "SpreadNet"] (Nnn:Snn)

No:	Name	Description	Default CID Event Code	Default Process Group If "Add System Inputs" used
S01	Timeout	Alarm when any one of the 16 Zone Transmitters for this Module fails to report in the specified poll time. Restore when all Transmitters have reported within the low priority poll time, or when the Comms Task is re-started.	353	PG001 Burglary
S02	Low Battery	Alarm when any one of the 16 Zone Transmitters for this Module reports a Low Battery condition. Restore when the Comms Task is re-started.	356	-
S03	Spare		140	-
S04	Spare		140	-

8 Zone Mini Expanders (Mnn:Snn)

No:	Name	Description	Default CID Event Code	Default Process Group If "Add System Inputs" used
S01	Low Volts	Alarm when supply voltage drops below 10.5V DC. Restore when supply voltage goes above 11V DC.	302	PG010 System Silent
S02	Zone1 Extra	Z01 defined as "Suspicion" or Holdup/Susp" Type: Alarm when Z01 is shorted. Restore when Z01 is Sealed, in Alarm or Open circuit. Z01 defined as "Counter" Type: Alarm when counter exceeds Trigger 2 value. Restore when counter goes below Trigger 2 value.	140	-
S03	Zone2 Extra	As per S02 "Zone1 Extra", but uses Z02.	140	-
S04	Zone3 Extra	As per S02 "Zone1 Extra", but uses Z03	140	-
S05	Zone4 Extra	As per S02 "Zone1 Extra", but uses Z04.	140	-
S06	Zone5 Extra	As per S02 "Zone1 Extra", but uses Z05.	140	-
S07	Zone6 Extra	As per S02 "Zone1 Extra", but uses Z06.	140	-
S08	Zone7 Extra	As per S02 "Zone1 Extra", but uses Z07.	140	-
S09	LAN Comms Problem	Alarm if Module fails to respond to a number of consecutive comms packets from the Controller.	143	PG011 System LAN

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Intelligent 4 Door Access Module (Inn:Snn)

***See "Intelligent 4 Door Access Module programming" (MENU, 7, 2, 8) for details of Preconfigured Zone Inputs* (Inn:Znn)**

No:	Name	Description	Default CID Event Code	Default Process Group If "Add System Inputs" used
S01	Lock Tamper. Door #1	Alarm while load (Lock coil) removed from output. *See installation manual for wiring configuration required for this feature.*	145	PG014 Access Alarm
S02	Lock Tamper. Door #2		145	PG014 Access Alarm
S03	Lock Tamper. Door #3		145	PG014 Access Alarm
S04	Lock Tamper. Door #4		145	PG014 Access Alarm
S05	Door Forced. Door #1	Alarm if Reed or Tongue Input (if used) unsealed without valid activation of Lock Aux. Restore when both Reed & Tongue Inputs sealed or on next valid Door Access.	140	PG014 Access Alarm
S06	Door Forced. Door #2		140	PG014 Access Alarm
S07	Door Forced. Door #3		140	PG014 Access Alarm
S08	Door Forced. Door #4		140	PG014 Access Alarm
S09	Door Open Too Long. D #1	Alarm if Reed or Tongue Input (if used) unsealed for longer than the Lock Time + Max Door Open Time. Restore when both Reed & Tongue Inputs sealed or next valid Door Access.	140	PG015 Access Silent
S10	Door Open Too Long. D #2		140	PG015 Access Silent
S11	Door Open Too Long. D #3		140	PG015 Access Silent
S12	Door Open Too Long. D #4		140	PG015 Access Silent
S13	Invalid Card. Door #1	Alarm when an unrecognised Card is presented at either Reader Head.	140	PG013 Access Local
S14	Invalid Card. Door #1		140	PG013 Access Local
S15	Invalid Card. Door #1		140	PG013 Access Local
S16	Invalid Card. Door #1		140	PG013 Access Local
S17	Cabinet Tamper.	Alarm when Module Tamper I/P un-sealed.	145	PG009 System Tamper
S18	General Lock Fault.	Not Used. (Spare for future applications)	140	PG014 Access Alarm
S19	Battery Test Fail.	Alarm when Low Battery condition detected while a Battery Test is running.	309	PG010 System Silent
S20	AC Fail - Mains Power.	Alarm when no AC present.	301	PG010 System Silent
S21	Low Battery.	Alarm when battery voltage below 10.5V DC.	302	PG010 System Silent
S22	LAN Fuse Tamper.	Alarm when LAN fuse blown.	140	PG010 System Silent
S23	Detector Fuse Tamper.	Alarm when Detector fuse blown.	140	PG010 System Silent
S24	LAN Comms Problem.	Alarm if Module fails to respond to a number of consecutive comms packets from the Controller.	143	PG011 System LAN

Analogue Module (Qnn:Snn)

No:	Name	Description	Default CID Event Code	Default Process Group If "Add System Inputs" used
S01	Cabinet Tamper	Alarm when Analogue Module Tamper I/P un-sealed.	145	PG009 System Tamper
S02	Low Volts	Alarm when supply voltage drops below 10.5V DC. Restore when supply voltage goes above 11V DC.	302	PG010 System Silent
S03	LAN Comms Problem	Alarm if Module fails to respond to a number of consecutive comms packets from the Controller.	143	PG011 System LAN

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LAN Power Supply Module (Pnn:Snn)

No:	Name	Description	Default CID Event Code	Default Process Group If "Add System Inputs" used
S01	Cabinet Tamper	Alarm while LAN PS Tamper Input un-sealed.	145	PG009 System Tamper
S02	AC Fail	Alarm while no AC present.	301	PG010 System Silent
S03	Low Battery	Alarm when battery voltage below 11V. De-bounce prevents state chatter.	302	PG010 System Silent
S04	Battery Fail	Alarm when Deep discharge protection is activated. (Battery volts below 10.5V) Restore when Battery volts >11.6V	140	PG010 System Silent
S05	Detector Fuse	Alarm while Detector fuse blown.	140	PG010 System Silent
S06	LAN Fuse	Alarm while LAN fuse blown.	140	PG010 System Silent
S07	Battery Fuse	Alarm while Battery fuse blown.	140	PG010 System Silent
S08	Aux 2 Fuse Fail	Alarm while Aux 2 (Satellite Siren) Fuse blown.	140	PG010 System Silent
S09	Aux 2 Tamper	Alarm while Load disconected from Aux 2 (Satellite Siren)	140	PG010 System Silent
S10	Detector Over-current	Alarm while Detector current exceeds the programmed value.	145	PG010 System Silent
S11	Battery Over-current	Alarm while Battery current exceeds the programmed value.	140	PG010 System Silent
S12	Over-volts	Alarm while Detector, Battery or LAN +ve volts exceeds 15.5V.	140	PG010 System Silent
S13	Low Volts	Alarm while Detector, Battery or LAN +ve volts drops below 12.5V.	140	PG010 System Silent
S14	Slave Fail	Alarm while Master Unit is unable to communicate with one or more Slaves.	330	PG010 System Silent
S15	Battery Test Fail	Alarm when Battery volts below 11.0V during Dynamic Battery Test.	309	PG010 System Silent
S16	LAN Comms Problem	Alarm if LAN PS fails to respond to a number of consecutive comms packets from the Controller.	143	PG011 System LAN

RF Expander Module (Fnn:Snn)

No:	Name	Description	Default CID Event Code	Default Process Group If "Add System Inputs" used
S01	Cabinet Tamper	Alarm while RF Module Cabinet Tamper Input un-sealed.	145	PG009 System Tamper
S02	Low Volts	Alarm while LAN +ve volts drops below 11V.	302	PG010 System Silent
S03	RF Transmitter Low Battery	Alarm while RF Module detects an RF Zone Transmitter with a Low Battery.	384	PG010 System Silent
S04	RF Transmitter Poll Fail	Alarm when any RF Zone Transmitter on the Module fails to report within the Transmitter Poll Time.	381	PG010 System Silent
S05	RF Transmitter Jam	Alarm while RF Expander Module Receiver is being jammed.	344	PG010 System Silent
S06	LAN Comms Problem	Alarm if RF Expander fails to respond to a number of consecutive comms packets from the Controller.	143	PG011 System LAN

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T02. Review Messages

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Message	Meaning
Air Conditioning	
Zone Damper	A zone damper auxiliary has been operated (On = damper closed)
A/C Unit	The compressor has been turned on/off
R/Cycle	Compressive heating (auxiliary on) or cooling (auxiliary off) selected
Fan	Fan has been turned on (auxiliary on) or in auto mode (auxiliary off)
Fresh	Fresh air damper has been opened (auxiliary on)
Bypass	Bypass damper has been closed (auxiliary on)
Exhaust	The exhaust output has been turned on.
Area On/Off Messages	
No Areas	Area on / off denied because there are no Areas
Too Big	Area on / off denied because it exceeds the maximum allowable Areas
Already On	Area on denied because it is already on
Already Off	Area off denied because it is already off
In Use	Area on / off denied because it is being used by another User
No Options	A card has been presented to arm an Area, but no Area has been defined for the other side of the door
Area On	A card has been presented to arm an Area, but the Area is already on
Not in List	A card has been presented to arm an Area, but the Area is not in the Area On List in the User's User Type.
Unseal	Area on denied because one or more Zones are Unsealed.
24Hr Off	Area's 24 hour tamper partition has been turned off
Defer timer started	A deferred Area has been turned off and the deferred timer has started
Warning timer started for 250 secs	Warning beeps are being emitted from the Terminal. They will continue for 250 seconds after which time, if no valid code has been re-entered, the deferred Areas will be turned on.
Area On by timer	The Area has been turned on by the timer.
Prune Enables	Inputs no longer required to be enabled for alarm/alarm restore states because all the Areas they are assigned to are now off, are now disabled.
Auxiliary Events Message	
Illegal Aux	Auxiliary definition is illegal
Module not present	Module is not on the network
Unnecessary	Auxiliary is already on/off
Over-ridden	Auxiliary action aborted due to an over-ride from another task
Refreshed	Auxiliary Timer has been restarted
(Code Entry)	Auxiliary on/off by a User valid code
(Door Lock)	Auxiliary on/off by a valid access at a Door
(Menu)	Auxiliary on/off by a User at a LCD Terminal
Exit Aux	Auxiliary on/off by an Area exit delay
Entry Aux	Auxiliary on/off by an Area entry delay
Siren Aux	Auxiliary on/off by an Area Siren
Close Aux	Auxiliary on/off by an Area close/open
Tamper Aux	Auxiliary on/off by an Area tamper
Alarm Aux	Auxiliary on/off by an Area alarm
Isolate Aux	Auxiliary on/off by an Area isolate
Aux Timer	Auxiliary on/off by an Auxiliary Timer
(Time-Zone)	Auxiliary on/off by a TimeZone
(Func. Zone)	Auxiliary on/off by a Function Zone

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Message	Meaning
(Calc. Aux)	Auxiliary on/off by a Calculated Auxiliary
Module Reset	Auxiliary on/off by a module reset
Exit Button	Auxiliary on/off by a REX button
Entry Button	Auxiliary on/off by a REN button
(Diary)	Auxiliary on/off by a Diary event
Seize Aux	Auxiliary on/off by a Comms Task seizing the line
Pass Aux	Auxiliary on/off by a Comms Task valid acknowledge
CmdBk Aux	Auxiliary on/off by a Comms Task Command back sequence
Terminal	Auxiliary on/off by Home Aux Right Arrow at a Terminal.

Comms Task Messages. General.

Aborted	A Comms Task has been aborted by the installer
Started	A Comms Task has been started by the Installer/Reset
Waiting for H/S	A Comms Task is waiting for a Hand Shake from the Central Station
Waiting for Ack	A Comms Task is waiting for an acknowledge signal
No Ack	A Comms Task has not had data acknowledged within the time required by this format
Held up	A Comms Task has been held up by resources being used by another Comms Task
Continue	A Comms Task which was waiting for resources can now use those resources and continue
Too Long	A Comms Task's maximum on-line time has been exceeded
Overflow !	A Comms Task has not been able to send information for so long that its send buffer has overflowed. Information will not be sent.
Triggered	A Comms Task has detected information that it needs to communicate
Resumed	A Comms Task has resumed after having passed control to a backup task.
Send Data	A Comms Task has just sent data in the required format
Rxed Ack	A transmitted data packet has been acknowledged by the Central Station.
Rxed Nak	A transmitted SIA packet has been not accepted by the CS. The C3000 will try up to 4 times in total.
No OK	The C3000 has timed out waiting for an Acknowledge or a Not Acknowledge from the Central Station.
Modem Connect	A Comms Task has just had a legal modem connect sequence
Lost Carrier	A modem based Comms Task has just lost modem carrier
Off-Line	An RS232 based Comms Task cannot send information because the peripheral device is off-line
On-Line	An RS232 based Comms Task can now send information because the peripheral device has just gone on-line
Defer Start	A "Delayed Reporting" Timer has been started for a Dialer Comms Task.
Format ?	A Comms Task has been aborted because the format is unknown
By User	A Comms Task has been aborted by the Installer
Port ?	A Comms Task has been aborted because the specified port is illegal
Not IR ?	A Comms Task has been aborted because a modem handshake was received for a non modem format

Comms Task Messages - Dialer

Waiting to Dial	A Comms Task is waiting for a dial tone
Dial	A Comms Task is dialling a number
Max Attempts !	A Comms Task has given up dialling - information will not be sent.

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Message	Meaning
Call too long	A Comms Task has exceeded the maximum on-line time and hung up.
Tone too long	A Comms Task has detected a continuous tone
Dial Hold off	A Comms Task is waiting an anti-jam time until re-attempting dialling. The line remains seized.
Hang up	A Comms Task has just hung up the line
No Line !	No DC line voltage has been detected prior to dialling
Delayed by Ring	A Comms Task is being delayed in making a call because the incoming line is ringing
Looped Line	A Comms Task has just looped the line
Answered	A Comms Task has just answered a ringing phone
No Phone #s	A Comms Task cannot dial because there are no programmed telephone numbers
Quiet	The telephone line has no signals present
Noise	The telephone has many frequencies present that cannot be decoded. They may be speech or noise.
Freq. ?	A single frequency has been detected which is not recognised
Dial	Dial tone has been detected
Busy	Busy tone has been detected
Ring	Ring cadence has been detected
STD	STD beeps have been detected
1400Hz	A 1400Hz slow format handshake has been detected
2300Hz	A 2300Hz slow format handshake has been detected
AdFast	An Ademco fast format handshake has been detected
Modem	A CCITT modem handshake has been detected
Timeout	The initial handshake from the central station (ARC) was not detected by the modem sub-system.

Comms Task Messages - SpreadNet

Aborted - No Structure	The current memory chip has not been configured to accommodate this module type.
Wrong Size	Contact Technical Support
Wrong Type	Contact Technical Support
Wrong Module N08:Z01	The Transmitter has been set to a device number that is higher than that which the memory has been configured to handle. (The maximum device number is equal to the maximum Wireless Network module number)
TxSealed N03:Z12 S/N:71/10 dB	Review has recorded a transmission from the nominated transmitter including its current state, signal and noise levels.
TxAlarm N03:Z11 S/N:69/09 dB	Review has recorded a transmission from the nominated transmitter including its current state, signal and noise levels.
TxTamper N01:Z07 S/N:55/15 dB	Review has recorded a transmission from the nominated transmitter including its current state, signal and noise levels.
TxLowBatt N02:Z04 S/N:45/13 dB	Review has recorded a transmission from the nominated transmitter including its current state, signal and noise levels.
TxNoPoll N05:Z16	This review entry records that the expected transmission from the nominated transmitter did not occur.
No Poll	This review entry is generated whenever an RS232 communication with the receiver fails and so long as the (E)rrors save option has been set.
Off Line	The UART problems system input has been put into alarm because there have been 5 consecutive failed communication attempts with the SpreadNet receiver
On Line	The UART problems system input has been restored because a successful communication has just taken place with the SpreadNet receiver.

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Message	Meaning
Comms Task Messages -Inovonics	
Aborted - No Structure	The current memory chip has not been configured to accommodate this module type.
Wrong Size	Contact Technical Support
Wrong Type (Detailed Review only)	Contact Technical Support
Wrong Module N08:Z01 (Detailed Review only)	The Transmitter has been set to a device number that is higher than that which the memory has been configured to handle. (The maximum device number is equal to the maximum Wireless Network module number)
Rx Cmd $0000 (Detailed Review only)	An Error has occured between the FA400 Receiver and the IR400 Interface.
Tx Sealed N03:Z12 S/N:71/10 dB	Review has recorded a transmission from the nominated transmitter including its current state, signal and noise levels.
Tx Alarm N03:Z11 S/N:69/09 dB	Review has recorded a transmission from the nominated transmitter including its current state, signal and noise levels.
Tx Tamper N01:Z07 S/N:55/15 dB	Review has recorded a transmission from the nominated transmitter including its current state, signal and noise levels.
Tx LowBatt N02:Z04 S/N:45/13 dB	Review has recorded a transmission from the nominated transmitter including its current state, signal and noise levels.
Tx No Poll N05:Z16	This review entry records that the expected transmission from the nominated transmitter did not occur.
Now Polling	Periodic polling between the FA400 Receiver and IR400 Interface has been restored (E)rrors save option must be set to Yes.
No Poll	Periodic polling between the FA400 Receiver and IR400 Interface has failed. (E)rrors save option must be set to Yes.
Rxed Activate	The IR400 interface has been Reset.
Off Line	The "UART problems" system input has gone into alarm because there have been 5 consecutive failed communication attempts with the IR400 Inovonics interface.
On Line	The "UART problems" system input has been restored because a successful communication has just taken place with the IR400 Inovonics interface.
Xmit Discarded	A transmitter report has been received with the wrong Application ID or wrong System ID. It may indicate that other transmitters not associated with this site are within range of the FA400 Receiver.
Comms Task Messages - Securitel	
STU Info	A Securitel Comms Task has just received a change in status from the STU
STU Data	A Securitel Comms Task has just sent serial data to the STU
FAULT	A Securitel Comms Task STU has invalid options for a STU fault
NO COMMS	A Securitel Comms Task STU cannot talk to the Scanner
FULL	A Securitel Comms Task STU send buffer is full
NO ACK	A Securitel Comms Task STU has unacknowledged alarms
POLL	A Securitel Comms Task STU has been polled by the network
NO ID	A Securitel Comms Task STU has not been loaded with a soft ID
AUX	A Securitel Comms Task STU has received an Auxiliary control command

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Message	Meaning
Comms Task Messages. GSM.	
GSM Status: Reg Rssi: nnn db GSM Status: Not Reg Rssi: nnn db	Indicates: a) Whether the GSM Modem is correctly registered with the network and able to send Contact ID / SMS. b) The current Signal strength. For resonable service, the RSSI should be better than -85dB. (i.e. The lower the number, the better) A value of -254 or -255 indicates that no measurement is possible.
Overflow	Some Alarm information has been lost! Alarms to be sent via either CID or SMS have banked up due to Comms Problems.
Discard Alarms	GSM Modem has failed sending CID Alarms. All alarms up to this point have been discarded.
CT Resumed	A Comms task that was suspended because control was transferred to a backup task has now resumed control again.
Send Msg back to sender / Send Msg to <phone number>	A text message has been sent to the SMS number either as the result of a valid review entry or in reply to a command received via the SMS.
Rxed Msg via <phone number> from <user> <problems>	An SMS command has been received. If the source Phone number and/or a valid User is recognised it is displayed. If the message is rejected due to security, the reason is displayed:
Wrong Phone	Not SMS1 or SMS2 number and "P"in option not enabled.
Need Pin	"P"in option enabled, but no PIN code received.
Wrong Pin	"P"in option enabled and PIN received, but PIN code not from User 1 to 32.
User Cancelled	User Type not assigned to User
Syntax	Problem with command syntax.
Proramming	Problem due to programming error.
Not Allowed	Operation not allowed.
Backup Problem	GSM Comms Task has been triggered as a Backup Task, but GSM Modem is currently unregistered. Alarms are discarded and control returned to the Primary Comms Task.
Backup Started	GSM Comms Task has been triggered as a Backup Task.
Offline	RS232 (UART) Comms with the FE3000 has failed.
Online	RS232 (UART) Comms with the FE3000 is operational AND the GSM Modem has been successfully initialized.
SMS Deferred	"Max messages per 5 min" limit has been reached and no more SMS messages will be sent until the SMS pace timer expires (5 mins). Messages will bank up unless the "R" command is received via SMS.
Rx Cmd $ccrr (Detailed Review)	Debug message where cc = command & rr = result. e.g. $00eo indicates timeout in response to an enquiry (RS232 disconnected)
Send Data (Detailed Review)	Contact ID strings (Up to 3) have been transferred to the FE3000 for transmission as CID Alarms.
Alarms Sent (Detailed review)	All alarms transferred to the FE3000 have been sent correctly.
Discard SMS	A "R"eset command has been received via SMS to cancel any pending SMS text alarm messages ready to be sent.
Rxed Standby	Control Module has initiated an FE2000 re-start because it discovered that the FE2000 modem sub-system had an error. (FE2000 IR-GSM only)
Comms Task Messages. 8 Pin.	
Timeout	The Verify Timer has expired
Wrong Module	The 8 Pin Comms Task is atttempting to use an Invalid Auxiliary. e.g. The Module does not exist, or there are not enough Auxiliaries on the Module.
No #	A Process Group has been assigned to an Input that has no Verify Group.

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Message	Meaning

Comms Task Messages. C-Bus.

Aborted - Structure	A C-Bus Comms Task has been aborted because no C-Bus structure is present.
CTxxx OffLine	C-Bus Comms Task is considered Offline.
CTxxx OnLine	C-Bus Comms Task is considered Online.
CTxxx Timeout (Detailed Review only)	A C-Bus data packet has failed to be received because it took too long to complete
CTxxx Rxed ERR $dddddd (Detailed Review only)	A C-Bus data packet has failed to be received because of an error.
CTxxx Cbus #ggg On	C-Bus activity has been detected for Group Address "ggg" (decimal).
CTxxx Cbus #ggg Off	Action is either "On", "Off", or "Ramp".
CTxxx Cbus #ggg to LLL	-If a "Ramp" command was detected, "LLL" = Final Ramp level.

Comms Trigger Messages

Last State or New State

S	Seal
A	Alarm
T	Tamper
I	Isolate

Edge

S	Restore edge
A	Alarm edge
T	Tamper edge
I	Isolate edge

Input Change Messages

Alarm	New alarm
Alm/Rest	Alarm restore
Tamper	New Tamper
Tamp/Rest	Tamper restore
Isolate	New Isolate
Iso/Rest	De-isolate

Door interlocking

IL Reason: No Door	Door not defined
IL Reason: No Struc.	No Door structure
IL Reason: IL Too Big	Specified Interlock group number exceeds number of interlock groups available for this configuration
IL Reason: Qual Aux	Qualify auxiliary is defined and is currently on
IL Reason: Qual Zone	Qualify option is set to "Y" and qualify zone is currently in alarm or tamper
IL Reason: Area On	An Area List is defined and an Area in the list is currently on
IL Reason: Illegal Aux	A Door in the defined Door List has an illegal Door Lock Auxiliary defined
IL Reason: Door Unlocked	A Door in the defined Door List is currently considered unlocked (Door Auxiliary is currently on)
IL Reason: Door Open	A Door in the defined Door List is currently considered open (Door Auxiliary is currently on)

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Message	Meaning
Lift Operations	
Illegal Card	Card not recognised by system
Cancelled	User Type is set to zero
No Door/Lift	No Lift Car assigned in reader module programming
No Access Group	No Access Group assigned in Lift Car programming
Not in List	No Lift Car List in User Type programming or no Lifts in Lift Car List
No Buttons	No Floor List in User Type programming or no Floors in Floor List or No Floors in Floor List in Lift Car programming (If non-zero).
Bad Options	A programming problem has occurred such as Lift Car number, Floors set to zero or illegal auxiliary
User xxxxx Card Access at LCxxx	At least one Floor button enabled in this Lift Car by this user.
LC01 User Floors YYYYnnnn Ynnnnnnn nnnnnnnn nnnnnnnn	Shows Floor buttons being enabled (auxiliary off) for this user at this time from floor 01 to floor 32. Does not include floors already in free access.
LC01 Free Floors nnnnnnYY nnnnnnnn nnnnnnnn nnnnnnnn	Shows Floor buttons enabled (auxiliaries off) from floor 01 to floor 32 after the button time has expired. These will be the floors currently in free access.
LC01 Floor 01 Access (Free Floor)	A button feedback system has just had a floor button pushed on a floor in free access.
LC01 Floor 01 Denied (Secure Floor)	A button feedback system has just had a floor button pushed on a secure floor with no user present
LC01 Floor 01 Access by FRANK BLOGGS	A button feedback system has just had a floor button pushed on a secure floor which is legal for user FRANK BLOGGS
LC01 Floor 01 Denied to FRANK BLOGGS	A button feedback system has just had a floor button pushed on a secure floor which is not allowed for user FRANK BLOGGS.
Lift Interface. EMS High level.	
Aborted, Port ?	Port is not in the range 0 to 4
Aborted, Format ?	The option chip is not present or the system Control module is not set up for high level lift interface.
Aborted, No Structure ?	This indicates a programming fault: • No lift structure - Config. Error • No Ancillary lift structure - Config. Error • Ancillary structure <> Main structure - Config. Error • More than 32 Lifts - Config. Error • No Legal EMS group/lifts exists for any lift • No. of EMS floors = 0
Timeout	The EMS system has detected a timeout and has set all floors to free access. The system will immediately download the current security mask for all floors.
On-Line	A legal packet has been received by the system after a fatal error.
Off-Line	Three receive errors have occurred in a row and the system has discarded the command it is trying to send. The system will still attempt to send commands to the EMS system. The UART system input will be alarmed.

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Message	Meaning
Rx Cmd $XYNN	This error only occurs in detail mode and represents a communication problem: X = 1 - Timeout waiting for reply X = 2 - Checksum error on received command X = 3 - Group mismatch in reply Y bit 0 set - Command had a checksum error Y bit 1 set - EMS system had a timeout Y bit 2 set - Command had a syntax problem Y bit 3 set - Spare NN = Number of bytes received for this packet
Module Messages.	
Module No. too big	The module DIPswitch settings are too big for this type and memory configuration
Unknown Type	This module type is not recognised by this version of software
Module Limit Reached	The network can accept no new modules with this memory configuration
Module already exists	Module of this type and No. already on the network
Module Found	A module has been found
Module Lost	A module has been lost. (Failed to respond to an acknowledge request)
Module Timeout	A module has failed to respond within the specified poll time.
Module not initialised	An attempt was made to update a module's programming and the module has failed on the network.
Module not present	An attempt was made to talk to a module that is not on the network
Keypad Lockout	The keypad has been locked out at a module
Illegal PIN at	An illegal PIN was detected at a module
Illegal PIN at RF Expxxx	An RF Fob has been detected that is Expired, Invalid UType or No Permissions.
Illegal Card at	An illegal card has been detected at a module
Module Secured	The module has been secured with a new encryption key
Module Power Up	The module has been powered up
Module Substitution	The module encryption key does not match
Module Recovered	A module has been recovered after being absent for a period of time
Wrong Format	A card has been presented at a module, the card format of which is not the expected format for that Reader
No Site Codes	A site code style card has been presented at a module but there are no site codes in this configuration
Wrong Site	A site code style card has been presented at a module but the card site code was not found in the allowable site codes
Too Big	A site code style card has been presented with the correct site code, but the card number, after allowing for the card offset, was too big for the memory configuration
Card 1st = 9846433729 Card 2nd = 67458	Whilst the Reader Module was in "Any Credit Card" mode, a Credit Card with the Account number of 984643372967458 was presented.
RF Zone Alarm/Tamper/Restore	Reported State of Zones on RF Expander Modules.
Fxx Sig: x	RF Expander Module Zone Signal Strength. 1=Lowest. 4=Highest.
Tx Low Batt	RF Expander Module Zone has Low Battery condition.
RF Fob Accepted	An RF Fob has been accepted, and button will be processed.
RF Fob Rejected	An RF Fob has been rejected and will not be processed. User is not known or RF Fob sync counter is out of range.
RF Fob Repeated	An RF Fob will not be processed because it is considered a repeated message. (i.e. Another button push has been received within 2 seconds of the previous button push from this Fob.) *Detail mode only.*
RF Fob Resynced	An RF Fob will not be processed because the sync count is an unexpected value. The Fob has been re-synchronized and the next button push should be accepted.
UnQualified Fob	The RF Fob "Qualify Aux" Button (If programmed) has not been pressed prior to an "Area On", "Area List On" or "Zone Alm (Q)" Button action.
Butt=x	RF Fob Button pressed. 1, 2, 3, or 4.

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Message	Meaning
Siren On/Off Messages	
Bell	Siren bell tone was turned on
Sweep	Siren sweep tone was turned on
Fire	Siren Fire tone was turned on
Evac.	Siren evacuation tone was turned on
Over-ridden	The current siren tone was over-ridden by a higher priority tone
No Change	No change was required to the current siren tone
Siren Holdoff	The Siren Holdoff Timer has started.
System Messages. General.	
LAN Secured	The network has been secured
LAN Initialised	The network has just been initialised
Exit Timer	Area Exit timer started/expired
Entry Timer	Area Entry timer started/expired
Pulse Timer	Area Pulse timer started/expired
Siren Timer	Area Siren timer started/expired
Defer Timer	Area Defer timer started/expired
AC Hold off Timer	AC Hold off timer started
Low Batt.	Control Module Low Battery
Prune Enables	System is no longer monitoring the status of the previously selected zones or auxiliaries. (This message only appears in detailed review and only usually when exiting a test mode or turning off an Area, etc.)
Batt Test "Module #nnn" Skipped	The next module to be tested is present but the battery test time for that module is set to "0"
Batt Test "Module #nnn" Started	The battery test for this module has started (where module is the type eg. Exp32 and #nnn is the module number eg. #001)
Batt Test "Module #nnn" Passed	The battery test was successfully completed
Batt Test "Module #nnn" Failed	The battery test for this module has failed
Batt Test "Module #nnn" Aborted	The test has been stopped for one of the following reasons: • A siren has activated on the module being tested • AC mains has failed on the module being tested • The LAN has failed on the module being tested • A Low Battery alarm has occurred on the module being tested • The Power Test menu was entered during a module battery test
Brown out	Supply voltage has dropped but A/C is present.
No Structure	A function is being performed that is not in RAM.
Alarms Reset	On Key Lockout function has been Reset.
Danger - Memory Fault	A problem has been detected with the main memory
Directory Error	Directory checksum failed whilst running
Fixed Directory	Directory was fixed
Start Mem Test	Memory Test Started
End Mem Test	Memory Test complete. Changes since last Mem Test are logged to Review.

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Message	Meaning
System Messages. Resets.	
System Reset	The Control Module has just been powered up. (Normal power-up Reset)
Review Reset	The review memory buffer has been cleared.
Directory Error	Directory checksum failed whilst running
Pin Default	PIN code used to default memory then reset panel
Menu Default.	Menu used to default memory then reset panel.
Brown-Out	Brownout caused reset
Power Up Reset	Normal power up reset
Watchdog Reset	Software has been restarted after error
User Reset	Panel reset via menu
Fixed Directory	Directory was fixed
User Access/Logon Messages	
Cancelled	Access/Logon denied because User Type = 0
Time Violation	Access/Logon denied because of invalid TimeZone
Dual User Violation	Access/Logon denied because need a Dual Code entered prior
Area on	Access denied because Area about to be entered is on
No options	Menu denied because there are no options in this Menu Group
Free Access	Access granted because this Door is in free access mode
User type Problem	Access/Logon denied because the system has an internal problem
Need Card	PIN Access denied because a Card is needed at this time
Not Qualified	Access denied because door not in qualified mode
Anti-Passback	Access denied because an anti-passback rule has been broken
No Door	Access denied because there is no door for this terminal/reader
No Door List	Access denied because there is no Door List for this User Type
Door Not in List	Access denied because Door is not in User Type's Door List at this time
Locked out	Access denied because Installer code has been locked out
No Menu Group	Access denied via LCD Terminal because no Menu Group for this Terminal.
No Access Group	Access denied because no Access Group for this door
Need PIN	Card Access denied because a PIN number is required
Wrong Issue	Card Access denied because Card is wrong issue
Not Site User	Card Access denied because User is not a site code type Card
Door Held	The nominated door has been held open for a period of time in excess of that specified as the Max. door open time in Door programming.
Dual Provider	The specified card user is a dual user provider, enabling them to grant access to other users through doors which allow dual user access only.
System User Origins.	
User 65521	Reset. ("System")
User 65522	TimeZone.
User 65523	Function Zone.
User 65524	IRfast / EarthNet Comms Task.
User 65525	Calculated Auxiliary
User 65526	GSM modem / Unidentified User (Home Auxiliary "Toggle from keypad") / "Any Card" card entry mode.
User 65527	ACCEPT Comms Task.
User 65528	DTMF control. (via Answer Call Comms Task)
User 65529	Timer. (Area Defer Timer)
User 65530	INSIGHT Comms Task.

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Message	Meaning	
User Menu Usage		
Review	User at MENU 1,1	
Find User	User at MENU 1,2	
User Code	User at MENU 2,1	
User Type	User at MENU 2,2	
Area List	User at MENU 2,3,1	
Door List	User at MENU 2,3,2	
Siren List	User at MENU 2,3,3	
Floor List	User at MENU 2,3,4	
Lift List	User at MENU 2,3,5	
Aux List	User at MENU 2,3,6	
Menu Group	User at MENU 2,4,1	
Access Group	User at MENU 2,4,2	
Process Group	User at MENU 2,4,3	
Testing	User at MENU 4	
Time/Date	User at MENU 5,1	
Time Zone	User at MENU 5,2	
Holiday	User at MENU 5,3	
Diary	User at MENU 5,4	
Aux Timer	User at MENU 5,5	
Zone	User at MENU 7,0	
Area	User at MENU 7,1	
Module	User at MENU 7,2	
Comms	User at MENU 7,3	
General	User at MENU 7,5,1	
Memory	User at MENU 7,5,2	
Function	User at MENU 7,5,3	
Calc. Aux	User at MENU 7,5,4	
Home Auxes	User at MENU 7,5,5	
Air Con.	User at MENU 7,5,6	
Home Zones	User at MENU 7,5,7	
Counters	User at MENU 7,5,8	
CBus	User at MENU 7, 5, 9, 1	User at MENU 7,5,9 (Prior to V4.5)
Dynalite	User at MENU 7, 5, 9, 2	
Door	User at MENU 7,6	
LAN	User at MENU 7,8	
Security	User at MENU 8,3	
Aux Control	User at MENU 9,1	
Door Control	User at MENU 9,2	
Lift Control	User at MENU 9,4	
Adj. Event Count	User at MENU 9,6	
Adj. Area User Count	User at MENU 9,7	

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T03. Contact ID Messages

Common Messages (Event Codes)

Contact ID messages for Zone Input and System Input alarms are defaulted according to the table below.
If the default Event Code is not suitable, a more appropriate Contact ID Event Code message can be programmed in Process Group programming.
Leaving the message at "000" in the Process Group forces the default message to be used.
Note that the Contact ID Event Code programmed in the Process Group will apply to all Inputs that the Process Group is assigned to. If special Event Codes are required for different types of alarms, it is better to create a new Process Group rather than modify one of the default Process Groups.

See "Contact ID Event Types" following.

Input Event Codes

3000/Access 4000 Input	CID message if Process Grp CID message = "000"	CID message if Process Grp CID message is not " 000"
Zone Alarms	140	Use programmed value
Zone Tampers	144	144
Zone Isolates	570	570
System Alarms	Use table below	Use programmed value
System Tampers	Use table below	Use programmed value
System Isolates	572	572

Default System Input Event Codes

3000/Access 4000 System Input	Message	3000/Access 4000 System Input	Message
AC Power	301	Manual test	601
Battery Test	309	Module Substitution	140
Cabinet Tamper	145	Over-current	140
Checksum Change	306	Over-volts	140
Comms Backup	350	Panic (Keypad)	120
Comms Fail	354	Power on Reset	305
Deadman	102	Phone Line Fault	351
Dialer Problems	350	Pre-Arm Test Started	140
Dialer Fail	354	Pre-Arm Test Fail	140
Door Forced (Terminal)	420	Request for Service	140
Door Forced (Access Module)	140	Siren Tampers	145
Door open too long (Terminal)	420	Slave Fail (LAN Pwr Supply)	140
Door open too long (Access Module)	140	Termnal Panic	120
Duress (Keypad)	122	Terminal Duress	122
Expander Power Test Started	140	Time report - Manual	601
Fuses	140	Time report - Periodic	602
GSM Problem	140	Too many Tries	421
Illegal/Invalid Card	140	Transmitter Jam	344
Intell. 4 Door Acc Mod Problem	140	Transmitter Low Battery (RF Expander)	381
Keypad Lockout	140	Transmitter Low Battery (S'net/Inov)	356
LAN Communications	143	Transmitter Poll Fail (RF Expander)	384
Line Fault	351	Transmitter Timeout (S'net/Inov)	353
Lock Tamper	145	UART Problem	330
Low Battery	302	Zone Self Test	307
Low Volts	302		

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User Point number and Event Codes

Contact ID Point	3000 / Access 4000 "User"	Event Code Message
001 to 900	User 00001 to User 00900	402
901	System (e.g. Power on arming)	403
902	TimeZone	403
903	Function Zone	409
904 to 998	Expansion	
999	Users > U00900	402

Open/Close Group Byte

Contact ID Group Byte	3000 / Access 4000 Area
00	General Open/Close
01 to 98	Area 001 to Area 098
99	Area 99 and above. (Areas 99 to 250)

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CONTACT ID EVENT TYPES

Contact ID Event Types are 4 digits of the form SXYZ. The "S" determines if the event is a new alarm or opening (S = "1" or "E") or if the event is a restore or closing. (S = "3" or "R"). The remaining part of the event type (XYZ) tells us what type of event it is.
The current Contact ID standard can be purchased on-line for a minimal cost from SIA. http://www.siaonline.org.
Follow the link to "SIA Store" from the SIA home page and select "SIA DC-05 (1999.09) DCS Ademco Contact ID Standard."

Code	Message
ALARMS	
Medical Alarms -100	
100	Medical Zone
101	Personal Emergency Zone
102	Fail to report in Zone
Fire Alarms -110	
110	Fire Zone
111	Smoke Zone
112	Combustion Zone
113	Water flow Zone
114	Heat Zone
115	Pull Station Zone
116	Duct Zone
117	Flame Zone
118	Near Alarm Zone
Panic Alarms -120	
120	Panic Zone
121	Duress User
122	Silent Zone
123	Audible Zone
124	Duress - Access granted Zone
125	Duress - Egress granted Zone
Burglar Alarms -130	
130	Burglary Zone
131	Perimeter Zone
132	Interior Zone
133	24 Hour (Safe) Zone
134	Entry/Exit Zone
135	Day/night Zone
136	Outdoor Zone
137	Tamper Zone
138	Near alarm Zone
139	Intrusion Verifier Zone
General Alarm - 140	
140	General Alarm Zone
141	Polling loop open Zone
142	Polling loop short Zone
143	Expansion module failure Zone
144	Sensor tamper Zone
145	Expansion module tamper Zone
146	Silent Burglary Zone
147	Sensor Supervision Failure Zone

Code	Message
24 Hour Non-Burglary - 150 and 160	
150	24 Hour Non-Burglary Zone
151	Gas detected Zone
152	Refrigeration Zone
153	Loss of heat Zone
154	Water Leakage Zone
155	Foil Break Zone
156	Day Trouble Zone
157	Low bottled gas level Zone
158	High temp Zone
159	Low temp Zone
161	Loss of air flow Zone
162	Carbon Monoxide detected Zone
163	Tank level Zone
SUPERVISORY	
Fire Supervisory - 200 and 210	
200	Fire Supervisory Zone
201	Low water pressure Zone
202	Low CO2 Zone
203	Gate valve sensor Zone
204	Low water level Zone
205	Pump activated Zone
206	Pump failure Zone
TROUBLES	
System Troubles -300 and 310	
300	System Trouble Zone
301	AC Loss Zone
302	Low system battery Zone
303	RAM Checksum bad Zone
304	ROM checksum bad Zone
305	System reset Zone
306	Panel programming changed Zone
307	Self- test failure Zone
308	System shutdown Zone
309	Battery test failure Zone
310	Ground fault Zone
311	Battery Missing/Dead Zone
312	Power Supply Overcurrent Zone
313	Engineer Reset User

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Code	Message
Sounder / Relay Troubles -320	
320	Sounder/Relay Zone
321	Bell 1 Zone
322	Bell 2 Zone
323	Alarm relay Zone
324	Trouble relay Zone
325	Reversing relay Zone
326	Notification Appliance Ckt. # 3 Zone
327	Notification Appliance Ckt. #4 Zone
System Peripheral Trouble -330 and 340	
330	System Peripheral trouble Zone
331	Polling loop open Zone
332	Polling loop short Zone
333	Expansion module failure Zone
334	Repeater failure Zone
335	Local printer out of paper Zone
336	Local printer failure Zone
337	Exp. Module DC Loss Zone
338	Exp. Module Low Batt. Zone
339	Exp. Module Reset Zone
341	Exp. Module Tamper Zone
342	Exp. Module AC Loss Zone
343	Exp. Module self-test fail Zone
344	RF Receiver Jam Detect Zone
Communication Troubles -350 and 360	
350	Communication trouble Zone
351	Telco 1 fault Zone
352	Telco 2 fault Zone
353	Long Range Radio xmitter fault Zone
354	Failure to communicate event Zone
355	Loss of Radio supervision Zone
356	Loss of central polling Zone
357	Long Range Radio VSWR problem Zone
Protection Loop -370	
370	Protection loop Zone
371	Protection loop open Zone
372	Protection loop short Zone
373	Fire trouble Zone
374	Exit error alarm (zone) Zone
375	Panic zone trouble Zone
376	Hold-up zone trouble Zone
377	Swinger Trouble Zone
378	Cross-zone Trouble Zone

Code	Message
Sensor Trouble -380	
380	Sensor trouble Zone
381	Loss of supervision - RF Zone
382	Loss of supervision - RPM Zone
383	Sensor tamper Zone
384	RF low battery Zone
385	Smoke detector Hi sensitivity Zone
386	Smoke detector Low sensitivity Zone
387	Intrusion detector Hi sensitivity Zone
388	Intrusion detector Low sensitivity Zone
389	Sensor self-test failure Zone
391	Sensor Watch trouble Zone
392	Drift Compensation Error Zone
393	Maintenance Alert Zone
OPEN/CLOSE/REMOTE ACCESS	
"Open/Close -400, 440,450"	
400	Open/Close User
401	O/C by user User
402	Group O/C User
403	Automatic O/C User
404	"Late to O/C (Note: use 453, 454 instead) User"
405	Deferred O/C (Obsolete- do not use) User
406	Cancel User
407	Remote arm/disarm User
408	Quick arm User
409	Keyswitch O/C User
441	Armed STAY User
442	Keyswitch Armed STAY User
450	Exception O/C User
451	Early O/C User
452	Late O/C User
453	Failed to Open User
454	Failed to Close User
455	Auto-arm Failed User
456	Partial Arm User
457	Exit Error (user) User
458	User on Premises User
459	Recent Close User
461	Wrong Code Entry Zone
462	Legal Code Entry User
463	Re-arm after Alarm User
464	Auto-arm Time Extended User
465	Panic Alarm Reset Zone
466	Service On/Off Premises User

*** NOTE:** For Open/Close Event Types:
"Alarm" = CLOSING
"Restore" = OPENING

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Code	Message
Remote Access -410	
411	Callback request made User
412	Successful download/access User
413	Unsuccessful access User
414	System shutdown command received User
415	Dialer shutdown command received User
416	Successful Upload Zone
"Access control -420,430"	
421	Access denied User
422	Access report by user User
423	Forced Access Zone
424	Egress Denied User
425	Egress Granted User
426	Access Door propped open Zone
427	Access point Door Status Monitor trouble Zone
428	Access point Request To Exit trouble Zone
429	Access program mode entry User
430	Access program mode exit User
431	Access threat level change User
432	Access relay/trigger fail Zone
433	Access RTE shunt Zone
434	Access DSM shunt Zone
BYPASSES / DISABLES	
System Disables -500 and 510	
501	Access reader disable Zone
Sounder / Relay Disables -520	
520	Sounder/Relay Disable Zone
521	Bell 1 disable Zone
522	Bell 2 disable Zone
523	Alarm relay disable Zone
524	Trouble relay disable Zone
525	Reversing relay disable Zone
526	Notification Appliance Ckt. # 3 disable Zone
527	Notification Appliance Ckt. # 4 disable Zone
System Peripheral Disables -530 and 540	
531	Module Added Zone
532	Module Removed Zone
Communication Disables -550 and 560	
551	Dialer disabled Zone
552	Radio transmitter disabled Zone
553	Remote Upload/Download disabled Zone
Bypasses -570	
570	Zone/Sensor bypass Zone
571	Fire bypass Zone
572	24 Hour zone bypass Zone
573	Burg. Bypass Zone
574	Group bypass User
575	Swinger bypass Zone
576	Access zone shunt Zone
577	Access point bypass Zone

Code	Message
TEST / MISC.	
"Test/Misc. -600, 610"	
601	Manual trigger test report Zone
602	Periodic test report Zone
603	Periodic RF transmission Zone
604	Fire test User
605	Status report to follow Zone
606	Listen- in to follow Zone
607	Walk test mode User
608	Periodic test - System Trouble Present Zone
609	Video Xmitter active Zone
611	Point tested OK Zone
612	Point not tested Zone
613	Intrusion Zone Walk Tested Zone
614	Fire Zone Walk Tested Zone
615	Panic Zone Walk Tested Zone
616	Service Request Zone
Event Log -620	
621	Event Log reset Zone
622	Event Log 50% full Zone
623	Event Log 90% full Zone
624	Event Log overflow Zone
625	Time/Date reset User
626	Time/Date inaccurate Zone
627	Program mode entry Zone
628	Program mode exit Zone
629	32 Hour Event log marker Zone
Scheduling -630	
630	Schedule change Zone
631	Exception schedule change Zone
632	Access schedule change Zone
Personnel Monitoring -640	
641	Senior Watch Trouble Zone
642	Latch-key Supervision User
Misc. -650	
654	System Inactivity Zone

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3000 / ACCESS 4000 V5.1

T04. Contact ID Standard Mapping Tables

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CONTACT ID STANDARD MAPPING					
Account No.	**Event Code**	**Area No.**	**Zone/Input**	**Description**	**Panel Input**
	140	nn	1	Controller zone 1	C01:Z01
	140	nn	2	Controller zone 2	C01:Z02
			to	to	"
	140	nn	16	Controller zone 16	C01:Z16
	145	nn	17	Controller cabinet tamper	C01:S01
	145	nn	18	Controller internal siren tamper	C01:S02
	145	nn	19	Controller external siren tamper	C01:S03
	301	nn	20	Controller AC fail	C01:S04
	302	nn	21	Contoller Low Battery	C01:S05
	140	nn	22	Controller Lan fuse tamper	C01:S06
	140	nn	23	Controller Detector fuse tamper	C01:S07
	143	nn	24	Controller Lan comms	C01:S08
	309	nn	25	Controller Battery test fail	C01:S09
	306	nn	26	Controller Checksum alteration	C01:S10
	305	nn	27	Controller system power on reset	C01:S11
	351	nn	28	Controller Phone line fault	C01:S12
	330	nn	29	Uart 1 fault	C01:S13
	330	nn	30	Uart 2 fault	C01:S14
	330	nn	31	Uart 3 fault	C01:S15
	330	nn	32	Uart 4 fault	C01:S16
	307	nn	33	Controller Self test fail	C01:S17
	602	nn	34	Controller Time report	C01:S18
	601	nn	35	Controller manual test report	C01:S19
	350	nn	36	Controller Comms backup	C01:S20
	354	nn	37	Controller Comms fail	C01:S21
	351	nn	38	Controller Phone	C01:S22
	140	nn	39	Controller Module substitution	C01:S23
	140	nn	40	Controller System input 24	C01:S24
	140	nn	41	Controller System input 25	C01:S25
	140	nn	42	Controller System input 26	C01:S26
	140	nn	43	Controller System input 27	C01:S27
	140	nn	44	Controller System input 28	C01:S28
	140	nn	45	Controller System input 29	C01:S29
	140	nn	46	Controller System input 30	C01:S30
	140	nn	47	Controller System input 31	C01:S31
	140	nn	48	Controller System input 32	C01:S32
	140	nn	101	LCD Terminal 1 Zone 1	T01:Z01
	140	nn	102	LCD Terminal 1 Zone 2	T01:Z02
	145	nn	103	LCD Terminal 1 Cabinet tamper	T01:S01
	120	nn	104	LCD Terminal 1 Panic	T01:S02
	420	nn	105	LCD Terminal 1 Door forced	T01:S03
	420	nn	106	LCD Terminal 1 Door open too long	T01:S04
	122	nn	107	LCD Terminal 1 Operator duress	T01:S05
	102	nn	108	LCD Terminal 1 Deadman	T01:S06
	140	nn	109	LCD Terminal 1 Too many tries	T01:S07
	143	nn	110	LCD Terminal 1 Lan comms status	T01:S08
				V	
				From LCD Terminal Number 1 to 9	
				V	
	140	nn	901	LCD Terminal 9 Zone 1	T09:Z01
	140	nn	902	LCD Terminal 9 Zone 2	T09:Z02
	145	nn	903	LCD Terminal 9 Cabinet tamper	T09:S01
	120	nn	904	LCD Terminal 9 Panic	T09:S02
	420	nn	905	LCD Terminal 9 Door forced	T09:S03

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	420	nn	906	LCD Terminal 9 Door open too long	T09:S04
	122	nn	907	LCD Terminal 9 Operator duress	T09:S05
	102	nn	908	LCD Terminal 9 Deadman	T09:S06
	421	nn	909	LCD Terminal 9 Too many tries	T09:S07
	143	nn	910	LCD Terminal 9 Lan comms status	T09:S08
	140	nn	121	Big Expander 1 Zone 1	B01:Z01
	140	nn	122	Big Expander 1 Zone 2	B01:Z02
			to	to	to
	140	nn	152	Big Expander 1 Zone 32	B01:Z32
	145	nn	153	Big Expander 1 cabinet tamper	B01:S01
	145	nn	154	Big Expander 1 internal siren tamper	B01:S02
	145	nn	155	Big Expander 1 external siren tamper	B01:S03
	301	nn	156	Big Expander 1 AC fail	B01:S04
	302	nn	157	Big Expander 1 Battery Low	B01:S05
	140	nn	158	Big Expander 1 Lan fuse tamper	B01:S06
	140	nn	159	Big Expander 1 Detector fuse tamper	B01:S07
	143	nn	160	Big Expander 1 Lan comms status	B01:S08
	309	nn	161	Big Expander 1 Battery test fail	B01:S09
	306	nn	162	Big Expander 1 spare	B01:S10
				V	
				From Big Expander 1 to 9	
				V	
	140	nn	921	Big Expander 9 Zone 1	B09:Z01
	140	nn	922	Big Expander 9 Zone 2	B09:Z02
			to	to	to
	140	nn	952	Big Expander 9 Zone 32	B09:Z32
	145	nn	953	Big Expander 9 cabinet tamper	B09:S01
	145	nn	954	Big Expander 9 internal siren tampers	B09:S02
	145	nn	955	Big Expander 9 external siren tampers	B09:S03
	301	nn	956	Big Expander 9 AC fail	B09:S04
	302	nn	957	Big Expander 9 Battery Low	B09:S05
	140	nn	958	Big Expander 9 Lan fuse tamper	B09:S06
	140	nn	959	Big Expander 9 Detector fuse tamper	B09:S07
	143	nn	960	Big Expander 9 Lan comms status	B09:S08
	309	nn	961	Big Expander 9 Battery test fail	B09:S09
	306	nn	962	Big Expander 9 spare	B09:S10
	140	nn	121	Expander 1 Zone 1	E01:Z01
	140	nn	122	Expander 1 Zone 2	E01:Z02
			to	to	to
	140	nn	136	Expander 1 Zone 16	E01:Z16
	145	nn	137	Expander 1 cabinet tamper	E01:S01
	145	nn	138	Expander 1 internal siren tampers	E01:S02
	145	nn	139	Expander 1 external siren tampers	E01:S03
	301	nn	140	Expander 1 AC fail	E01:S04
	302	nn	141	Expander 1 Battery Low	E01:S05
	140	nn	142	Expander 1 Lan fuse tamper	E01:S06
	140	nn	143	Expander 1 Detector fuse tamper	E01:S07
	143	nn	144	Expander 1 Lan comms status	E01:S08
	309	nn	145	Expander 1 Battery test fail	E01:S09
	306	nn	146	Expander 1 spare	E01:S10
				V	
				From Zone Expander 1 to 9	
				V	

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	140	nn	921	Expander 9 Zone 1	E09:Z01
	140	nn	922	Expander 9 Zone 2	E09:Z02
			to	to	to
	140	nn	936	Expander 9 Zone 16	E09:Z32
	145	nn	937	Expander 9 cabinet tamper	E09:S01
	145	nn	938	Expander 9 internal siren tampers	E09:S02
	145	nn	939	Expander 9 external siren tampers	E09:S03
	301	nn	940	Expander 9 AC fail	E09:S04
	302	nn	941	Expander 9 Battery Low	E09:S05
	140	nn	942	Expander 9 Lan fuse tamper	E09:S06
	140	nn	943	Expander 9 Detector fuse tamper	E09:S07
	143	nn	944	Expander 9 Lan comms status	E09:S08
	309	nn	945	Expander 9 Battery test fail	E09:S09
	306	nn	946	Expander 9 spare	E09:S10
	140	nn	121	Mini Expander 1 Zone 1	M01:Z01
	140	nn	122	Mini Expander 1 Zone 2	M01:Z02
			to	to	to
	140	nn	128	Mini Expander 1 Zone 8	M01:Z08
	302	nn	129	Mini Expander 1 Low Battery	M01:S01
	140	nn	130	Mini Expander 1 Zn1 Extra	M01:S02
	140	nn	131	Mini Expander 1 Zn2 Extra	M01:S03
	140	nn	132	Mini Expander 1 Zn3 Extra	M01:S04
	140	nn	133	Mini Expander 1 Zn4 Extra	M01:S05
	140	nn	134	Mini Expander 1 Zn5 Extra	M01:S06
	140	nn	135	Mini Expander 1 Zn6 Extra	M01:S07
	140	nn	136	Mini Expander 1 Zn7 Extra	M01:S08
	143	nn	137	Mini Expander 1 LAN Comms	M01:S09
				V	
				From Mini Expander 1 to 9	
				V	
	140	nn	921	Mini Expander 9 Zone 1	M09:Z01
	140	nn	922	Mini Expander 9 Zone 2	M09:Z02
			to	to	to
	140	nn	928	Mini Expander 9 Zone 8	M09:Z08
	302	nn	929	Mini Expander 9 Low Battery	M09:S01
	140	nn	930	Mini Expander 9 Zn1 Extra	M09:S02
	140	nn	931	Mini Expander 9 Zn2 Extra	M09:S03
	140	nn	932	Mini Expander 9 Zn3 Extra	M09:S04
	140	nn	933	Mini Expander 9 Zn4 Extra	M09:S05
	140	nn	934	Mini Expander 9 Zn5 Extra	M09:S06
	140	nn	935	Mini Expander 9 Zn6 Extra	M09:S07
	140	nn	936	Mini Expander 9 Zn7 Extra	M09:S08
	143	nn	937	Mini Expander 9 LAN Comms	M09:S09
	140	nn	163	Reader Module 1 Zone 1 Door 1	R01:Z01
	140	nn	164	Reader Module 1 Zone 2 REX button	R01:Z02
	140	nn	165	Reader Module 1 Zone 3 REN button	R01:Z03
	140	nn	166	Reader Module 1 Zone 4 spare	R01:Z04
	140	nn	167	Reader Module 1 Zone 5	R01:Z05
	140	nn	168	Reader Module 1 Zone 6	R01:Z06
	140	nn	169	Reader Module 1 Zone 7	R01:Z07
	140	nn	170	Reader Module 1 Zone 8	R01:Z08
	145	nn	171	Reader Module 1 Cabinet tamper	R01:S01
	302	nn	172	Reader Module 1 Low voltage	R01:S02
	140	nn	173	Reader Module 1 Door 1 forced	R01:S03
	140	nn	174	Reader Module 1 Door 1 open too long	R01:S04
	140	nn	175	Reader Module 1 Door 2 forced	R01:S05

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	140	nn	176	Reader Module 1 Door 2 open too long	R01:S06
	140	nn	177	Reader Module 1 Illegal card either	R01:S07
	143	nn	178	Reader Module 1 Lan comms status	R01:S08
				V	
				From Reader module 1 to 9	
				V	
	140	nn	963	Reader Module 9 Zone 1 Door 1	R09:Z01
	140	nn	964	Reader Module 9 Zone 2 REX button	R09:Z02
	140	nn	965	Reader Module 9 Zone 3 REN button	R09:Z03
	140	nn	966	Reader Module 9 Zone 4 spare	R09:Z04
	140	nn	967	Reader Module 9 Zone 5	R09:Z05
	140	nn	968	Reader Module 9 Zone 6	R09:Z06
	140	nn	969	Reader Module 9 Zone 7	R09:Z07
	140	nn	970	Reader Module 9 Zone 8	R09:Z08
	145	nn	971	Reader Module 9 Cabinet tamper	R09:S01
	302	nn	972	Reader Module 9 Low voltage	R09:S02
	140	nn	973	Reader Module 9 Door 1 forced	R09:S03
	140	nn	974	Reader Module 9 Door 1 open too long	R09:S04
	140	nn	975	Reader Module 9 Door 2 forced	R09:S05
	140	nn	976	Reader Module 9 Door 2 open too long	R09:S06
	140	nn	977	Reader Module 9 Illegal card either	R09:S07
	143	nn	978	Reader Module 9 Lan comms status	R09:S08
	140	nn	179	SpreadNet 1 Zone 1	N01:Z01
	140	nn	180	SpreadNet 1 Zone 2	N01:Z02
			to	to	to
	140	nn	194	SpreadNet 1 Zone 16	N01:Z16
	353	nn	195	SpreadNet 1 Timeout	N01:S01
	356	nn	196	SpreadNet 1 Low Battery	N01:S02
	140	nn	197	SpreadNet 1 Spare	N01:S03
	140	nn	198	SpreadNet 1 Spare	N01:S04
				V	
				From SpreadNet Module 1 to 9	
				V	
	140	nn	979	SpreadNet 9 Zone 1	N09:Z01
	140	nn	980	SpreadNet 9 Zone 2	N09:Z02
			to	to	to
	140	nn	994	SpreadNet 9 Zone 16	N09:Z16
	353	nn	995	SpreadNet 9 Timeout	N09:S01
	356	nn	996	SpreadNet 9 Low Battery	N09:S02
	140	nn	997	SpreadNet 9 Spare	N09:S03
	140	nn	998	SpreadNet 9 Spare	N09:S04
	140	nn	121	Intell 4 Dr Access Mod Zone 1	I01:Z01
	140	nn	122	Intell 4 Dr Access Mod Zone 2	I01:Z02
				to	
	140	nn	136	Intell 4 Dr Acc Mod Zone 16	I01:Z16
	145	nn	137	Intell 4 Dr Acc Mod Lock Tamper D1	I01:S01
	145	nn	138	Intell 4 Dr Acc Mod Lock Tamper D2	I01:S02
	145	nn	139	Intell 4 Dr Acc Mod Lock Tamper D3	I01:S03
	145	nn	140	Intell 4 Dr Acc Mod Lock Tamper D4	I01:S04
	140	nn	141	Intell 4 Dr Acc Mod Door Forced D1	I01:S05
	140	nn	142	Intell 4 Dr Acc Mod Door Forced D2	I01:S06
	140	nn	143	Intell 4 Dr Acc Mod Door Forced D3	I01:S07
	140	nn	144	Intell 4 Dr Acc Mod Door Forced D4	I01:S08
	140	nn	145	Intell 4 Dr Acc Mod DOTL Door 1	I01:S09
	140	nn	146	Intell 4 Dr Acc Mod DOTL Door 2	I01:S10
	140	nn	147	Intell 4 Dr Acc Mod DOTL Door 3	I01:S11

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	140	nn	148	Intell 4 Dr Acc Mod DOTL Door 4	I01:S12
	140	nn	149	Intell 4 Dr Acc Mod Invalid Card Door 1	I01:S13
	140	nn	150	Intell 4 Dr Acc Mod Invalid Card Door 2	I01:S14
	140	nn	151	Intell 4 Dr Acc Mod Invalid Card Door 3	I01:S15
	140	nn	152	Intell 4 Dr Acc Mod Invalid Card Door 4	I01:S16
	145	nn	153	Intell 4 Dr Acc Mod Cabinet Tamper	I01:S17
	140	nn	154	Intell 4 Dr Acc Mod Gen Lock Fault	I01:S18
	309	nn	155	Intell 4 Dr Acc Mod Battery Test Fail	I01:S19
	301	nn	156	Intell 4 Dr Acc Mod AC Fail	I01:S20
	302	nn	157	Intell 4 Dr Acc Mod Low Battery	I01:S21
	140	nn	158	Intell 4 Dr Acc Mod LAN Fuse	I01:S22
	140	nn	159	Intell 4 Dr Acc Mod Detector Fuse	I01:S23
	143	nn	160	Intell 4 Dr Acc Mod LAN Comms Fail	I01:S24
				V	
				From Intell 4Dr Acc Module 1 to 9	
				V	
	140	nn	921	Intell 4 Dr Access Mod Zone 1	I09:Z01
	140	nn	922	Intell 4 Dr Access Mod Zone 2	I09:Z02
				to	
	140	nn	936	Intell 4 Dr Acc Mod Zone 16	I09:Z16
	145	nn	937	Intell 4 Dr Acc Mod Lock Tamper D1	I09:S01
	145	nn	938	Intell 4 Dr Acc Mod Lock Tamper D2	I09:S02
	145	nn	939	Intell 4 Dr Acc Mod Lock Tamper D3	I09:S03
	145	nn	940	Intell 4 Dr Acc Mod Lock Tamper D4	I09:S04
	140	nn	941	Intell 4 Dr Acc Mod Door Forced D1	I09:S05
	140	nn	942	Intell 4 Dr Acc Mod Door Forced D2	I09:S06
	140	nn	943	Intell 4 Dr Acc Mod Door Forced D3	I09:S07
	140	nn	944	Intell 4 Dr Acc Mod Door Forced D4	I09:S08
	140	nn	945	Intell 4 Dr Acc Mod DOTL Door 1	I09:S09
	140	nn	946	Intell 4 Dr Acc Mod DOTL Door 2	I09:S10
	140	nn	947	Intell 4 Dr Acc Mod DOTL Door 3	I09:S11
	140	nn	948	Intell 4 Dr Acc Mod DOTL Door 4	I09:S12
	140	nn	949	Intell 4 Dr Acc Mod Invalid Card Door 1	I09:S13
	140	nn	950	Intell 4 Dr Acc Mod Invalid Card Door 2	I09:S14
	140	nn	951	Intell 4 Dr Acc Mod Invalid Card Door 3	I09:S15
	140	nn	952	Intell 4 Dr Acc Mod Invalid Card Door 4	I09:S16
	145	nn	953	Intell 4 Dr Acc Mod Cabinet Tamper	I09:S17
	140	nn	954	Intell 4 Dr Acc Mod Gen Lock Fault	I09:S18
	309	nn	955	Intell 4 Dr Acc Mod Battery Test Fail	I09:S19
	301	nn	956	Intell 4 Dr Acc Mod AC Fail	I09:S20
	302	nn	957	Intell 4 Dr Acc Mod Low Battery	I09:S21
	140	nn	958	Intell 4 Dr Acc Mod LAN Fuse	I09:S22
	140	nn	959	Intell 4 Dr Acc Mod Detector Fuse	I09:S23
	143	nn	960	Intell 4 Dr Acc Mod LAN Comms Fail	I09:S24
	140	nn	99	All Analogue Module Zone Inputs	Qnn:Znn
	145	nn	99	All Analogue Module Cabinet Tamper	Qnn:S01
	302	nn	99	All Analogue Module Low Volts	Qnn:S02
	143	nn	99	All Analogue Module LAN Comms	Qnn:S03
	140	nn	99	All LAN Pwr Supp Module Zone Inputs	Pnn:Znn
	145	nn	99	All LAN PS Module Cabinet Tamper	Pnn:S01
	301	nn	99	All LAN PS Module AC Fail	Pnn:S02
	302	nn	99	All LAN PS Module Low Batt	Pnn:S03
	140	nn	99	All LAN PS Module Batt Fail	Pnn:S04
	140	nn	99	All LAN PS Module Detector Fuse	Pnn:S05
	140	nn	99	All LAN PS Module LAN Fuse	Pnn:S06
	140	nn	99	All LAN PS Module Batt Fuse	Pnn:S07

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	140	nn	99	All LAN PS Module Aux 2 Fuse	Pnn:S08
	145	nn	99	All LAN PS Module Aux 2 Tamper	Pnn:S09
	140	nn	99	All LAN PS Module Det Over-current	Pnn:S10
	140	nn	99	All LAN PS Module Batt Over-current	Pnn:S11
	140	nn	99	All LAN PS Module Over Volts	Pnn:S12
	140	nn	99	All LAN PS Module Low Volts	Pnn:S13
	330	nn	99	All LAN PS Module Slave Fail	Pnn:S14
	309	nn	99	All LAN PS Module Batt Test Fail	Pnn:S15
	143	nn	99	All LAN PS Module LAN Comms	Pnn:S16
	140	nn	179	RF Expander Module Zone 1	F01:Z01
	140	nn	180	RF Expander Module Zone 2	F01:Z02
			to	to	to
	140	nn	194	RF Expander Module Zone 16	F01:Z16
	140	nn	99	RF Expander Module Zone 17 to 32	F01:Znn
	145	nn	195	RF Exp Module Cabinet Tamper	F01:S01
	302	nn	196	RF Exp Module Low Volts	F01:S02
	384	nn	197	RF Exp Module Tx Low Batt	F01:S03
	381	nn	198	RF Exp Module Tx Poll Fail	F01:S04
	344	nn	199	RF Exp Module Tx Jam	F01:S05
	143	nn	200	RF Exp Module LAN Comms	F01:S06
				V	
				From RF Exp Module 1 to 9	
				V	
	140	nn	179	RF Expander Module Zone 1	F09:Z01
	140	nn	180	RF Expander Module Zone 2	F09:Z02
			to	to	to
	140	nn	194	RF Expander Module Zone 16	F09:Z16
	140	nn	99	RF Expander Module Zone 17 to 32	F09:Znn
	145	nn	195	RF Exp Module Cabinet Tamper	F09:S01
	302	nn	196	RF Exp Module Low Volts	F09:S02
	384	nn	197	RF Exp Module Tx Low Batt	F09:S03
	381	nn	198	RF Exp Module Tx Poll Fail	F09:S04
	344	nn	199	RF Exp Module Tx Jam	F09:S05
	143	nn	200	RF Exp Module LAN Comms	F09:S06
				OPEN / CLOSE	
	402	nn	001	Open/Close for Area nn - User 00001	na
			to	to	
	402	nn	900	Open/Close for Area nn - User 00900	na
	403	nn	901	Open/Close by System	na
	403	nn	902	Open/Close by Time Zone	na
	409	nn	903	Open/Close by Function Zone	na
	402	nn	999	Open/Close by Users > 00900	na
			00	General Area Open/Close	na
		01 - 98	01 to 98	Area 001-098 Open/Close	na
		99 - 250	99	Areas > 99 (99 to 250)	na
"nn" = Area Number					

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3000 / ACCESS 4000
V5.1

T05. Contact ID
Map-1 Mapping Tables

CONTACT ID Map 1 MAPPING					
Account No.	**Event Code**	**Area No.**	**POINT**	**Description**	**Panel Input**
	140	nn	001	Controller zone 1	C01:Z01
	140	nn	002	Controller zone 2	C01:Z02
			to	to	"
	140	nn	016	Controller zone 16	C01:Z16
	145	nn	017	Controller cabinet tamper	C01:S01
	145	nn	018	Controller internal siren tamper	C01:S02
	145	nn	019	Controller external siren tamper	C01:S03
	301	nn	020	Controller AC fail	C01:S04
	302	nn	021	Contoller Low Battery	C01:S05
	140	nn	022	Controller Lan fuse tamper	C01:S06
	140	nn	023	Controller Detector fuse tamper	C01:S07
	143	nn	024	Controller Lan comms	C01:S08
	309	nn	025	Controller Battery test fail	C01:S09
	306	nn	026	Controller Checksum alteration	C01:S10
	305	nn	027	Controller system power on reset	C01:S11
	351	nn	028	Controller Phone line fault	C01:S12
	330	nn	029	Uart 1 fault	C01:S13
	330	nn	030	Uart 2 fault	C01:S14
	330	nn	031	Uart 3 fault	C01:S15
	330	nn	032	Uart 4 fault	C01:S16
	307	nn	033	Controller Self test fail	C01:S17
	602	nn	034	Controller Time report	C01:S18
	601	nn	035	Controller manual test report	C01:S19
	350	nn	036	Controller Comms backup	C01:S20
	354	nn	037	Controller Comms fail	C01:S21
	351	nn	038	Controller Phone	C01:S22
	140	nn	039	Controller Module substitution	C01:S23
	140	nn	040	PreArm1 Test Pass	C01:S24
	140	nn	041	PreArm1 Test Fail	C01:S25
	140	nn	042	PreArm2 Test Pass	C01:S26
	140	nn	043	PreArm2 Test Fail	C01:S27
	140	nn	044	Controller Request Service	C01:S28
	140	nn	045	Controller Intelligent Reader Problem	C01:S29
	140	nn	046	Controller System input 46	C01:S30
	140	nn	047	Controller System input 47	C01:S31
	140	nn	048	Controller System input 48	C01:S32
		nn	99	Unmappable event	
	140	nn	101	LCD Terminal 1 Zone 1	T01:Z01
	140	nn	102	LCD Terminal 1 Zone 2	T01:Z02
	145	nn	103	LCD Terminal 1 Cabinet tamper	T01:S01
	120	nn	104	LCD Terminal 1 Panic	T01:S02
	420	nn	105	LCD Terminal 1 Door forced	T01:S03
	420	nn	106	LCD Terminal 1 Door Held	T01:S04
	122	nn	107	LCD Terminal 1 Operator duress	T01:S05
	102	nn	108	LCD Terminal 1 Deadman	T01:S06
	421	nn	109	LCD Terminal 1 Too many tries	T01:S07
	143	nn	110	LCD Terminal 1 Lan comms status	T01:S08
				V	
				From LCD Terminal Number 1 to 9	
				V	
	140	nn	901	LCD Terminal 9 Zone 1	T09:Z01
	140	nn	902	LCD Terminal 9 Zone 2	T09:Z02
	145	nn	903	LCD Terminal 9 Cabinet tamper	T09:S01

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	120	nn	904	LCD Terminal 9 Panic	T09:S02
	420	nn	905	LCD Terminal 9 Door forced	T09:S03
	420	nn	906	LCD Terminal 9 Door Held	T09:S04
	122	nn	907	LCD Terminal 9 Operator duress	T09:S05
	102	nn	908	LCD Terminal 9 Deadman	T09:S06
	421	nn	909	LCD Terminal 9 Too many tries	T09:S07
	143	nn	910	LCD Terminal 9 Lan comms status	T09:S08
	140	nn	111	Expander 1 Zone 1	B01:Z01
	140	nn	112	Expander 1 Zone 2	B01:Z02
			to	to	to
	140	nn	126	Expander 1 Zone 16	B01:Z16
	140	nn	99	Expander 1 Zone 17	B01:Z17
			to	to	to
	140	nn	99	Expander 1 Zone 32	B01:Z32
	145	nn	127	Expander 1 cabinet tamper	B01:S01
	145	nn	128	Expander 1 internal siren tampers	B01:S02
	145	nn	129	Expander 1 external siren tampers	B01:S03
	301	nn	130	Expander 1 AC fail	B01:S04
	302	nn	131	Expander 1 Battery Low	B01:S05
	140	nn	132	Expander 1 Lan fuse tamper	B01:S06
	140	nn	133	Expander 1 Detector fuse tamper	B01:S07
	143	nn	134	Expander 1 Lan comms status	B01:S08
	309	nn	135	Expander 1 Battery test fail	B01:S09
	306	nn	136	Expander 1 spare	B01:S10
				V	
	140	nn	137	Expander 2 Zone 1	B02:Z01
	140	nn	138	Expander 2 Zone 2	B02:Z02
			to	to	to
	140	nn	152	Expander 2 Zone 16	B02:Z16
	140	nn	99	Expander 2 Zone 17	B02:Z17
			to	to	to
	140	nn	99	Expander 2 Zone 32	B02:Z32
	145	nn	153	Expander 2 cabinet tamper	B02:S01
	145	nn	154	Expander 2 internal siren tampers	B02:S02
	145	nn	155	Expander 2 external siren tampers	B02:S03
	301	nn	156	Expander 2 AC fail	B02:S04
	302	nn	157	Expander 2 Battery Low	B02:S05
	140	nn	158	Expander 2 Lan fuse tamper	B02:S06
	140	nn	159	Expander 2 Detector fuse tamper	B02:S07
	143	nn	160	Expander 2 Lan comms status	B02:S08
	309	nn	161	Expander 2 Battery test fail	B02:S09
	306	nn	162	Expander 2 spare	B02:S10
				V	
				From Zone Expander 1 to 18	
				V	
	140	nn	911	Expander 17 Zone 1	B17:Z01
	140	nn	912	Expander 17 Zone 2	B17:Z02
			to	to	to
	140	nn	926	Expander 17 Zone 16	B17:Z16
	140	nn	99	Expander 17 Zone 17	B17:Z17
			to	to	to
	140	nn	99	Expander 17 Zone 32	B17:Z32
	145	nn	927	Expander 17 cabinet tamper	B17:S01
	145	nn	928	Expander 17 internal siren tampers	B17:S02
	145	nn	929	Expander 17 external siren tampers	B17:S03
	301	nn	930	Expander 17 AC fail	B17:S04
	302	nn	931	Expander 17 Battery Low	B17:S05

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	140	nn	932	Expander 17 Lan fuse tamper	B17:S06
	140	nn	933	Expander 17 Detector fuse tamper	B17:S07
	143	nn	934	Expander 17 Lan comms status	B17:S08
	309	nn	935	Expander 17 Battery test fail	B17:S09
	306	nn	936	Expander 17 spare	B17:S10
				V	
	140	nn	937	Expander 18 Zone 1	B18:Z01
	140	nn	938	Expander 18 Zone 2	B18:Z02
			to	to	to
	140	nn	952	Expander 18 Zone 16	B18:Z16
	140	nn	99	Expander 18 Zone 17	B18:Z17
			to	to	to
	140	nn	99	Expander 18 Zone 32	B18:Z32
	145	nn	953	Expander 18 cabinet tamper	B18:S01
	145	nn	954	Expander 18 internal siren tampers	B18:S02
	145	nn	955	Expander 18 external siren tampers	B18:S03
	301	nn	956	Expander 18 AC fail	B18:S04
	302	nn	957	Expander 18 Battery Low	B18:S05
	140	nn	958	Expander 18 Lan fuse tamper	B18:S06
	140	nn	959	Expander 18 Detector fuse tamper	B18:S07
	143	nn	960	Expander 18 Lan comms status	B18:S08
	309	nn	961	Expander 18 Battery test fail	B18:S09
	306	nn	962	Expander 18 spare	B18:S10
	140	nn	111	Expander 1 Zone 1	E01:Z01
	140	nn	112	Expander 1 Zone 2	E01:Z02
			to	to	to
	140	nn	126	Expander 1 Zone 16	E01:Z16
	145	nn	127	Expander 1 cabinet tamper	E01:S01
	145	nn	128	Expander 1 internal siren tampers	E01:S02
	145	nn	129	Expander 1 external siren tampers	E01:S03
	301	nn	130	Expander 1 AC fail	E01:S04
	302	nn	131	Expander 1 Battery Low	E01:S05
	140	nn	132	Expander 1 Lan fuse tamper	E01:S06
	140	nn	133	Expander 1 Detector fuse tamper	E01:S07
	143	nn	134	Expander 1 Lan comms status	E01:S08
	309	nn	135	Expander 1 Battery test fail	E01:S09
	306	nn	136	Expander 1 spare	E01:S10
				V	
				From Zone Expander 1 to 9	
				V	
	140	nn	911	Expander 9 Zone 1	E09:Z01
	140	nn	912	Expander 9 Zone 2	E09:Z02
			to	to	to
	140	nn	926	Expander 9 Zone 16	E09:Z16
	145	nn	927	Expander 9 cabinet tamper	E09:S01
	145	nn	928	Expander 9 internal siren tampers	E09:S02
	145	nn	929	Expander 9 external siren tampers	E09:S03
	301	nn	930	Expander 9 AC fail	E09:S04
	302	nn	931	Expander 9 Battery Low	E09:S05
	140	nn	932	Expander 9 Lan fuse tamper	E09:S06
	140	nn	933	Expander 9 Detector fuse tamper	E09:S07
	143	nn	934	Expander 9 Lan comms status	E09:S08
	309	nn	935	Expander 9 Battery test fail	E09:S09
	306	nn	936	Expander 9 Spare	E09:S10
			99	From Expander 10 to 18 zones 1 to 16	Enn:Znn

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	140	nn	111	Mini Expander 1 Zone 1	M01:Z01
	140	nn	112	Mini Expander 1 Zone 2	M01:Z02
			to	to	to
	140	nn	118	Mini Expander 1 Zone 8	M01:Z08
	302	nn	127	Mini Expander 1 Low Battery	M01:S01
	140	nn	128	Mini Expander 1 Zn1 Extra	M01:S02
	140	nn	129	Mini Expander 1 Zn2 Extra	M01:S03
	140	nn	130	Mini Expander 1 Zn3 Extra	M01:S04
	140	nn	131	Mini Expander 1 Zn4 Extra	M01:S05
	140	nn	132	Mini Expander 1 Zn5 Extra	M01:S06
	140	nn	133	Mini Expander 1 Zn6 Extra	M01:S07
	140	nn	134	Mini Expander 1 Zn7 Extra	M01:S08
	143	nn	135	Mini Expander 1 LAN Comms	M01:S09
				V	
				From Zone Expander 1 to 9	
				V	
	140	nn	911	Mini Expander 9 Zone 1	M09:Z01
	140	nn	912	Mini Expander 9 Zone 2	M09:Z02
			to	to	to
	140	nn	918	Mini Expander 9 Zone 8	M09:Z08
	302	nn	927	Mini Expander 9 Low Battery	M09:S01
	140	nn	928	Mini Expander 9 Zn1 Extra	M09:S02
	140	nn	929	Mini Expander 9 Zn2 Extra	M09:S03
	140	nn	930	Mini Expander 9 Zn3 Extra	M09:S04
	140	nn	931	Mini Expander 9 Zn4 Extra	M09:S05
	140	nn	932	Mini Expander 9 Zn5 Extra	M09:S06
	140	nn	933	Mini Expander 9 Zn6 Extra	M09:S07
	140	nn	934	Mini Expander 9 Zn7 Extra	M09:S08
	143	nn	935	Mini Expander 9 LAN Comms	M09:S09
			99	Mini Expander 10 to 18 zones 1 to 8	Mnn:Znn
	140	nn	163	Reader Module 1 Zone 1 Door 1	R01:Z01
	140	nn	164	Reader Module 1 Zone 2 REX Button	R01:Z02
	140	nn	165	Reader Module 1 Zone 3 REX Button	R01:Z03
	140	nn	166	Reader Module 1 Zone 4 Spare	R01:Z04
	140	nn	167	Reader Module 1 Zone 5	R01:Z05
	140	nn	168	Reader Module 1 Zone 6	R01:Z06
	140	nn	169	Reader Module 1 Zone 7	R01:Z07
	140	nn	170	Reader Module 1 Zone 8	R01:Z08
	145	nn	171	Reader Module 1 Cabinet Tamper	R01:S01
	302	nn	172	Reader Module 1 Low Battery	R01:S02
	140	nn	173	Reader Module 1 Door 1 Force	R01:S03
	140	nn	174	Reader Module 1 Door 1 Held	R01:S04
	140	nn	175	Reader Module 1 Door 2 Force	R01:S05
	140	nn	176	Reader Module 1 Door 2 Held	R01:S06
	140	nn	177	Reader Module 1 Illegal Card	R01:S07
	143	nn	178	Reader Module 1 Lan Comms Fail	R01:S08
				V	
				From Reader 1 to Reader 9	
				V	
	140	nn	963	Reader Module 9 Zone 1 Door 1	R09:Z01
	140	nn	964	Reader Module 9 Zone 2 REX Button	R09:Z02
	140	nn	965	Reader Module 9 Zone 3 REX Button	R09:Z03
	140	nn	966	Reader Module 9 Zone 4 Spare	R09:Z04
	140	nn	967	Reader Module 9 Zone 5	R09:Z05

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	140	nn	968	Reader Module 9 Zone 6	R09:Z06
	140	nn	969	Reader Module 9 Zone 7	R09:Z07
	140	nn	970	Reader Module 9 Zone 8	R09:Z08
	145	nn	971	Reader Module 9 Cabinet Tamper	R09:S01
	302	nn	972	Reader Module 9 Low Battery	R09:S02
	140	nn	973	Reader Module 9 Door 1 Force	R09:S03
	140	nn	974	Reader Module 9 Door 1 Held	R09:S04
	140	nn	975	Reader Module 9 Door 2 Force	R09:S05
	140	nn	976	Reader Module 9 Door 2 Held	R09:S06
	140	nn	977	Reader Module 9 Illegal Card	R09:S07
	143	nn	978	Reader Module 9 Lan Comms Fail	R09:S08
	140	nn	179	SpreadNet 1 Zone 1	N01:Z01
	140	nn	180	SpreadNet 1 Zone 2	N01:Z02
			to	to	to
	140	nn	194	SpreadNet 1 Zone 16	N01:Z16
	353	nn	195	SpreadNet 1 Timeout	N01:S01
	356	nn	196	SpreadNet 1 Low Battery	N01:S02
	140	nn	197	SpreadNet 1 Spare	N01:S03
	140	nn	198	SpreadNet 1 Spare	N01:S04
				V	
				From SpreadNet Module 1 to 9	
				V	
	140	nn	979	SpreadNet 9 Zone 1	N9:Z01
	140	nn	980	SpreadNet 9 Zone 2	N9:Z02
			to	to	to
	140	nn	994	SpreadNet 9 Zone 16	N13:Z16
	353	nn	995	SpreadNet 9 Timeout	N13:S01
	356	nn	996	SpreadNet 9 Low Battery	N13:S02
	140	nn	997	SpreadNet 9 Spare	N13:S03
	140	nn	998	SpreadNet 9 Spare	N13:S04
	140	nn	111	Intell 4 Dr Access Mod Zone 1	I01:Z01
	140	nn	112	Intell 4 Dr Access Mod Zone 2	I01:Z02
				to	
	140	nn	126	Intell 4 Dr Acc Mod Zone 16	I01:Z16
	145	nn	127	Intell 4 Dr Acc Mod Lock Tamper D1	I01:S01
	145	nn	128	Intell 4 Dr Acc Mod Lock Tamper D2	I01:S02
	145	nn	129	Intell 4 Dr Acc Mod Lock Tamper D3	I01:S03
	145	nn	130	Intell 4 Dr Acc Mod Lock Tamper D4	I01:S04
	140	nn	131	Intell 4 Dr Acc Mod Door Forced D1	I01:S05
	140	nn	132	Intell 4 Dr Acc Mod Door Forced D2	I01:S06
	140	nn	133	Intell 4 Dr Acc Mod Door Forced D3	I01:S07
	140	nn	134	Intell 4 Dr Acc Mod Door Forced D4	I01:S08
	140	nn	135	Intell 4 Dr Acc Mod DOTL Door 1	I01:S09
	140	nn	136	Intell 4 Dr Acc Mod DOTL Door 2	I01:S10
	140	nn	137	Intell 4 Dr Acc Mod DOTL Door 3	I01:S11
	140	nn	138	Intell 4 Dr Acc Mod DOTL Door 4	I01:S12
	140	nn	139	Intell 4 Dr Acc Mod Invalid Card Door 1	I01:S13
	140	nn	140	Intell 4 Dr Acc Mod Invalid Card Door 2	I01:S14
	140	nn	141	Intell 4 Dr Acc Mod Invalid Card Door 3	I01:S15
	140	nn	142	Intell 4 Dr Acc Mod Invalid Card Door 4	I01:S16
	145	nn	143	Intell 4 Dr Acc Mod Cabinet Tamper	I01:S17
	140	nn	144	Intell 4 Dr Acc Mod Gen Lock Fault	I01:S18
	309	nn	145	Intell 4 Dr Acc Mod Battery Test Fail	I01:S19
	301	nn	146	Intell 4 Dr Acc Mod AC Fail	I01:S20
	302	nn	147	Intell 4 Dr Acc Mod Low Battery	I01:S21

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	140	nn	148	Intell 4 Dr Acc Mod LAN Fuse	I01:S22
	140	nn	149	Intell 4 Dr Acc Mod Detector Fuse	I01:S23
	143	nn	150	Intell 4 Dr Acc Mod LAN Comms Fail	I01:S24
				V	
				From Intell 4Dr Acc Module 1 to 9	
				V	
	140	nn	911	Intell 4 Dr Access Mod Zone 1	I09:Z01
	140	nn	912	Intell 4 Dr Access Mod Zone 2	I09:Z02
				to	
	140	nn	926	Intell 4 Dr Acc Mod Zone 16	I09:Z16
	145	nn	927	Intell 4 Dr Acc Mod Lock Tamper D1	I09:S01
	145	nn	928	Intell 4 Dr Acc Mod Lock Tamper D2	I09:S02
	145	nn	929	Intell 4 Dr Acc Mod Lock Tamper D3	I09:S03
	145	nn	930	Intell 4 Dr Acc Mod Lock Tamper D4	I09:S04
	140	nn	931	Intell 4 Dr Acc Mod Door Forced D1	I09:S05
	140	nn	932	Intell 4 Dr Acc Mod Door Forced D2	I09:S06
	140	nn	933	Intell 4 Dr Acc Mod Door Forced D3	I09:S07
	140	nn	934	Intell 4 Dr Acc Mod Door Forced D4	I09:S08
	140	nn	935	Intell 4 Dr Acc Mod DOTL Door 1	I09:S09
	140	nn	936	Intell 4 Dr Acc Mod DOTL Door 2	I09:S10
	140	nn	937	Intell 4 Dr Acc Mod DOTL Door 3	I09:S11
	140	nn	938	Intell 4 Dr Acc Mod DOTL Door 4	I09:S12
	140	nn	939	Intell 4 Dr Acc Mod Invalid Card Door 1	I09:S13
	140	nn	940	Intell 4 Dr Acc Mod Invalid Card Door 2	I09:S14
	140	nn	941	Intell 4 Dr Acc Mod Invalid Card Door 3	I09:S15
	140	nn	942	Intell 4 Dr Acc Mod Invalid Card Door 4	I09:S16
	145	nn	943	Intell 4 Dr Acc Mod Cabinet Tamper	I09:S17
	140	nn	944	Intell 4 Dr Acc Mod Gen Lock Fault	I09:S18
	309	nn	945	Intell 4 Dr Acc Mod Battery Test Fail	I09:S19
	301	nn	946	Intell 4 Dr Acc Mod AC Fail	I09:S20
	302	nn	947	Intell 4 Dr Acc Mod Low Battery	I09:S21
	140	nn	948	Intell 4 Dr Acc Mod LAN Fuse	I09:S22
	140	nn	949	Intell 4 Dr Acc Mod Detector Fuse	I09:S23
	143	nn	950	Intell 4 Dr Acc Mod LAN Comms Fail	I09:S24
	140	nn	99	All Analogue Module Zone Inputs	Qnn:Znn
	145	nn	99	All Analogue Module Cabinet Tamper	Qnn:S01
	302	nn	99	All Analogue Module Low Volts	Qnn:S02
	143	nn	99	All Analogue Module LAN Comms	Qnn:S03
	140	nn	99	All LAN Pwr Supp Module Zone Inputs	Pnn:Znn
	145	nn	99	All LAN PS Module Cabinet Tamper	Pnn:S01
	301	nn	99	All LAN PS Module AC Fail	Pnn:S02
	302	nn	99	All LAN PS Module Low Batt	Pnn:S03
	140	nn	99	All LAN PS Module Batt Fail	Pnn:S04
	140	nn	99	All LAN PS Module Detector Fuse	Pnn:S05
	140	nn	99	All LAN PS Module LAN Fuse	Pnn:S06
	140	nn	99	All LAN PS Module Batt Fuse	Pnn:S07
	140	nn	99	All LAN PS Module Aux 2 Fuse	Pnn:S08
	145	nn	99	All LAN PS Module Aux 2 Tamper	Pnn:S09
	140	nn	99	All LAN PS Module Det Over-current	Pnn:S10
	140	nn	99	All LAN PS Module Batt Over-current	Pnn:S11
	140	nn	99	All LAN PS Module Over Volts	Pnn:S12
	140	nn	99	All LAN PS Module Low Volts	Pnn:S13
	330	nn	99	All LAN PS Module Slave Fail	Pnn:S14
	309	nn	99	All LAN PS Module Batt Test Fail	Pnn:S15
	143	nn	99	All LAN PS Module LAN Comms	Pnn:S16

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	140	nn	179	RF Expander Module Zone 1	F01:Z01
	140	nn	180	RF Expander Module Zone 2	F01:Z02
			to	to	to
	140	nn	194	RF Expander Module Zone 16	F01:Z16
	140	nn	99	RF Expander Module Zone 17 to 32	F01:Znn
	145	nn	195	RF Exp Module Cabinet Tamper	F01:S01
	302	nn	196	RF Exp Module Low Volts	F01:S02
	384	nn	197	RF Exp Module Tx Low Batt	F01:S03
	381	nn	198	RF Exp Module Tx Poll Fail	F01:S04
	344	nn	199	RF Exp Module Tx Jam	F01:S05
	143	nn	200	RF Exp Module LAN Comms	F01:S06
				V	
				From RF Exp Module 1 to 9	
				V	
	140	nn	179	RF Expander Module Zone 1	F09:Z01
	140	nn	180	RF Expander Module Zone 2	F09:Z02
			to	to	to
	140	nn	194	RF Expander Module Zone 16	F09:Z16
	140	nn	99	RF Expander Module Zone 17 to 32	F09:Znn
	145	nn	195	RF Exp Module Cabinet Tamper	F09:S01
	302	nn	196	RF Exp Module Low Volts	F09:S02
	384	nn	197	RF Exp Module Tx Low Batt	F09:S03
	381	nn	198	RF Exp Module Tx Poll Fail	F09:S04
	344	nn	199	RF Exp Module Tx Jam	F09:S05
	143	nn	200	RF Exp Module LAN Comms	F09:S06
				OPEN / CLOSE	
	402	nn	001	Open/Close for Area nn - User 00001	na
			to	to	
	402	nn	900	Open/Close for Area nn - User 00900	na
	403	nn	901	Open/Close for System	na
	403	nn	902	Open/Close for Time Zone	na
	409	nn	903	Open/Close for Function Zone	na
	402	nn	999	Open/Close for Users > 00900	na
			00	General Area Open/Close	na
		01 - 98	01 to 98	Area 001-098 Open/Close	na
		99 - 250	99	Areas > 99 (99 to 250)	na
				"nn" = Area Number, "na"=not applicable	

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3000 / ACCESS 4000
V5.1

T06. Contact ID
School 30 Mapping Tables

CONTACT ID SCHOOL 30 MAPPING					
Account No.	**Event Code**	**Area No.**	**POINT**	**Description**	**Panel Input**
	140	nn	001	Controller zone 1	C01:Z01
	140	nn	002	Controller zone 2	C01:Z02
			to	to	"
	140	nn	016	Controller zone 16	C01:Z16
	145	nn	017	Controller cabinet tamper	C01:S01
	145	nn	018	Controller internal siren tamper	C01:S02
	145	nn	019	Controller external siren tamper	C01:S03
	301	nn	020	Controller AC fail	C01:S04
	302	nn	021	Contoller Low Battery	C01:S05
	140	nn	022	Controller Lan fuse tamper	C01:S06
	140	nn	023	Controller Detector fuse tamper	C01:S07
	143	nn	024	Controller Lan comms	C01:S08
	309	nn	025	Controller Battery test fail	C01:S09
	306	nn	026	Controller Checksum alteration	C01:S10
	305	nn	027	Controller system power on reset	C01:S11
	351	nn	028	Controller Phone line fault	C01:S12
	330	nn	029	Uart 1 fault	C01:S13
	330	nn	030	Uart 2 fault	C01:S14
	330	nn	031	Uart 3 fault	C01:S15
	330	nn	032	Uart 4 fault	C01:S16
	307	nn	033	Controller Self test fail	C01:S17
	602	nn	034	Controller Time report	C01:S18
	601	nn	035	Controller manual test report	C01:S19
	350	nn	036	Controller Comms backup	C01:S20
	354	nn	037	Controller Comms fail	C01:S21
	351	nn	038	Controller Phone	C01:S22
	140	nn	039	Controller Module substitution	C01:S23
	140	nn	040	PreArm1 Test Pass	C01:S24
	140	nn	041	PreArm1 Test Fail	C01:S25
	140	nn	042	PreArm2 Test Pass	C01:S26
	140	nn	043	PreArm2 Test Fail	C01:S27
	140	nn	044	Controller Request Service	C01:S28
	140	nn	045	Controller Intelligent Reader Problem	C01:S29
	140	nn	046	Controller System input 46	C01:S30
	140	nn	047	Controller System input 47	C01:S31
	140	nn	048	Controller System input 48	C01:S32
		nn	99	Unmappable event	
	140	nn	100	LCD Terminal 1 Zone 1	T01:Z01
	140	nn	101	LCD Terminal 1 Zone 2	T01:Z02
	145	nn	102	LCD Terminal 1 Cabinet tamper	T01:S01
	120	nn	103	LCD Terminal 1 Panic	T01:S02
	420	nn	104	LCD Terminal 1 Door forced	T01:S03
	420	nn	105	LCD Terminal 1 Door Held	T01:S04
	122	nn	106	LCD Terminal 1 Operator duress	T01:S05
	102	nn	107	LCD Terminal 1 Deadman	T01:S06
	421	nn	108	LCD Terminal 1 Too many tries	T01:S07
	143	nn	109	LCD Terminal 1 Lan comms status	T01:S08
				V	
				From LCD Terminal Number 1 to 10	
				V	
	140	nn	190	LCD Terminal 10 Zone 1	T10:Z01
	140	nn	191	LCD Terminal 10 Zone 2	T10:Z01
	145	nn	192	LCD Terminal 10 Cabinet tamper	T10:S01

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	120	nn	193	LCD Terminal 10 Panic	T10:S02
	420	nn	194	LCD Terminal 10 Door forced	T10:S03
	420	nn	195	LCD Terminal 10 Door Held	T10:S04
	122	nn	196	LCD Terminal 10 Operator duress	T10:S05
	102	nn	197	LCD Terminal 10 Deadman	T10:S06
	421	nn	198	LCD Terminal 10 Too many tries	T10:S07
	143	nn	199	LCD Terminal 10 Lan comms status	T10:S08
	140	nn	200	Expander 1 Zone 1	B01:Z01
	140	nn	201	Expander 1 Zone 2	B01:Z02
			to	to	to
	140	nn	215	Expander 1 Zone 16	B01:Z16
	140	nn	99	Expander 1 Zone 17	B01:Z17
			to	to	to
	140	nn	99	Expander 1 Zone 32	B01:Z32
	145	nn	216	Expander 1 cabinet tamper	B01:S01
	145	nn	217	Expander 1 internal siren tampers	B01:S02
	145	nn	218	Expander 1 external siren tampers	B01:S03
	301	nn	219	Expander 1 AC fail	B01:S04
	302	nn	220	Expander 1 Battery Low	B01:S05
	140	nn	221	Expander 1 Lan fuse tamper	B01:S06
	140	nn	222	Expander 1 Detector fuse tamper	B01:S07
	143	nn	223	Expander 1 Lan comms status	B01:S08
	309	nn	224	Expander 1 Battery test fail	B01:S09
	306	nn	225	Expander 1 spare	B01:S10
				V	
				From Zone Expander 1 to 30	
				V	
	140	nn	954	Expander 30 Zone 1	B30:Z01
	140	nn	955	Expander 30 Zone 2	B30:Z02
			to	to	to
	140	nn	969	Expander 30 Zone 16	B30:Z16
	140	nn	99	Expander 30 Zone 17	B30:Z17
			to	to	to
	140	nn	99	Expander 30 Zone 32	B30:Z32
	145	nn	970	Expander 30 cabinet tamper	B30:S01
	145	nn	971	Expander 30 internal siren tampers	B30:S02
	145	nn	972	Expander 30 external siren tampers	B30:S03
	301	nn	973	Expander 30 AC fail	B30:S04
	302	nn	974	Expander 30 Battery Low	B30:S05
	140	nn	975	Expander 30 Lan fuse tamper	B30:S06
	140	nn	976	Expander 30 Detector fuse tamper	B30:S07
	143	nn	977	Expander 30 Lan comms status	B30:S08
	309	nn	978	Expander 30 Battery test fail	B30:S09
	306	nn	979	Expander 30 spare	B30:S10
	140	nn	200	Expander 1 Zone 1	E01:Z01
	140	nn	201	Expander 1 Zone 2	E01:Z02
			to	to	to
	140	nn	215	Expander 1 Zone 16	E01:Z16
	145	nn	216	Expander 1 cabinet tamper	E01:S01
	145	nn	217	Expander 1 internal siren tampers	E01:S02
	145	nn	218	Expander 1 external siren tampers	E01:S03
	301	nn	219	Expander 1 AC fail	E01:S04
	302	nn	220	Expander 1 Battery Low	E01:S05
	140	nn	221	Expander 1 Lan fuse tamper	E01:S06
	140	nn	222	Expander 1 Detector fuse tamper	E01:S07
	143	nn	223	Expander 1 Lan comms status	E01:S08

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	309	nn	224	Expander 1 Battery test fail	E01:S09
	306	nn	225	Expander 1 spare	E01:S10
				V	
				From Zone Expander 1 to 30	
				V	
	140	nn	954	Expander 30 Zone 1	E30:Z01
	140	nn	955	Expander 30 Zone 2	E30:Z02
			to	to	to
	140	nn	969	Expander 30 Zone 16	E30:Z32
	145	nn	970	Expander 30 cabinet tamper	E30:S01
	145	nn	971	Expander 30 internal siren tampers	E30:S02
	145	nn	972	Expander 30 external siren tampers	E30:S03
	301	nn	973	Expander 30 AC fail	E30:S04
	302	nn	974	Expander 30 Battery Low	E30:S05
	140	nn	975	Expander 30 Lan fuse tamper	E30:S06
	140	nn	976	Expander 30 Detector fuse tamper	E30:S07
	143	nn	977	Expander 30 Lan comms status	E30:S08
	309	nn	978	Expander 30 Battery test fail	E30:S09
	306	nn	979	Expander 30 Spare	E30:S10
	140	nn	200	Mini Expander 1 Zone 1	M01:Z01
	140	nn	201	Mini Expander 1 Zone 2	M01:Z02
			to	to	to
	140	nn	207	Mini Expander 1 Zone 8	M01:Z08
	302	nn	208	Mini Expander 1 Low Battery	M01:S01
	140	nn	209	Mini Expander 1 Zn1 Extra	M01:S02
	140	nn	210	Mini Expander 1 Zn2 Extra	M01:S03
	140	nn	211	Mini Expander 1 Zn3 Extra	M01:S04
	140	nn	212	Mini Expander 1 Zn4 Extra	M01:S05
	140	nn	213	Mini Expander 1 Zn5 Extra	M01:S06
	140	nn	214	Mini Expander 1 Zn6 Extra	M01:S07
	140	nn	215	Mini Expander 1 Zn7 Extra	M01:S08
	143	nn	216	Mini Expander 1 LAN Comms	M01:S09
				V	
				From Mini Expander 1 to 30	
				V	
	140	nn	954	Mini Expander 30 Zone 1	M30:Z01
	140	nn	955	Mini Expander 30 Zone 2	M30:Z02
			to	to	to
	140	nn	961	Mini Expander 30 Zone 8	M30:Z08
	302	nn	962	Mini Expander 30 Low Battery	M30:S01
	140	nn	963	Mini Expander 30 Zn1 Extra	M30:S02
	140	nn	964	Mini Expander 30 Zn2 Extra	M30:S03
	140	nn	965	Mini Expander 30 Zn3 Extra	M30:S04
	140	nn	966	Mini Expander 30 Zn4 Extra	M30:S05
	140	nn	967	Mini Expander 30 Zn5 Extra	M30:S06
	140	nn	968	Mini Expander 30 Zn6 Extra	M30:S07
	140	nn	969	Mini Expander 30 Zn7 Extra	M30:S08
	143	nn	970	Mini Expander 30 LAN Comms	M30:S09
	140	nn	99	All Reader Module Inputs	Rnn:Znn
	140	nn	200	SpreadNet 1 Zone 1	N01:Z01
	140	nn	201	SpreadNet 1 Zone 2	N01:Z02
			to	to	to
	140	nn	215	SpreadNet 1 Zone 16	N01:Z16
	353	nn	216	SpreadNet 1 Timeout	N01:S01
	356	nn	217	SpreadNet 1 Low Battery	N01:S02

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	140	nn	218	SpreadNet 1 Spare	N01:S03
	140	nn	219	SpreadNet 1 Spare	N01:S04
				V	
				From SpreadNet Module 1 to 13	
				V	
	140	nn	512	SpreadNet 13 Zone 1	N13:Z01
	140	nn	513	SpreadNet 13 Zone 2	N13:Z02
			to	to	to
	140	nn	527	SpreadNet 13 Zone 16	N13:Z16
	353	nn	528	SpreadNet 13 Timeout	N13:S01
	356	nn	529	SpreadNet 13 Low Battery	N13:S02
	140	nn	530	SpreadNet 13 Spare	N13:S03
	140	nn	531	SpreadNet 13 Spare	N13:S04
	140	nn	99	All Intell 4 Dr Access Mod Zones	Inn:Znn
	145	nn	99	Intell 4 Dr Acc Mod Lock Tamper D1	Inn:S01
	145	nn	99	Intell 4 Dr Acc Mod Lock Tamper D2	Inn:S02
	145	nn	99	Intell 4 Dr Acc Mod Lock Tamper D3	Inn:S03
	145	nn	99	Intell 4 Dr Acc Mod Lock Tamper D4	Inn:S04
	140	nn	99	Intell 4 Dr Acc Mod Door Forced D1	Inn:S05
	140	nn	99	Intell 4 Dr Acc Mod Door Forced D2	Inn:S06
	140	nn	99	Intell 4 Dr Acc Mod Door Forced D3	Inn:S07
	140	nn	99	Intell 4 Dr Acc Mod Door Forced D4	Inn:S08
	140	nn	99	Intell 4 Dr Acc Mod DOTL Door 1	Inn:S09
	140	nn	99	Intell 4 Dr Acc Mod DOTL Door 2	Inn:S10
	140	nn	99	Intell 4 Dr Acc Mod DOTL Door 3	Inn:S11
	140	nn	99	Intell 4 Dr Acc Mod DOTL Door 4	Inn:S12
	140	nn	99	Intell 4 Dr Acc Mod Invalid Card Door 1	Inn:S13
	140	nn	99	Intell 4 Dr Acc Mod Invalid Card Door 2	Inn:S14
	140	nn	99	Intell 4 Dr Acc Mod Invalid Card Door 3	Inn:S15
	140	nn	99	Intell 4 Dr Acc Mod Invalid Card Door 4	Inn:S16
	145	nn	99	Intell 4 Dr Acc Mod Cabinet Tamper	Inn:S17
	140	nn	99	Intell 4 Dr Acc Mod Gen Lock Fault	Inn:S18
	309	nn	99	Intell 4 Dr Acc Mod Battery Test Fail	Inn:S19
	301	nn	99	Intell 4 Dr Acc Mod AC Fail	Inn:S20
	302	nn	99	Intell 4 Dr Acc Mod Low Battery	Inn:S21
	140	nn	99	Intell 4 Dr Acc Mod LAN Fuse	Inn:S22
	140	nn	99	Intell 4 Dr Acc Mod Detector Fuse	Inn:S23
	143	nn	99	Intell 4 Dr Acc Mod LAN Comms Fail	Inn:S24
	140	nn	99	All Analogue Module Inputs	Qnn:Znn
	145	nn	99	All Analogue Module Cabinet Tamper	Qnn:S01
	302	nn	99	All Analogue Module Low Volts	Qnn:S02
	143	nn	99	All Analogue Module LAN Comms	Qnn:S03
	140	nn	99	All LAN Pwr Supp Module Zone Inputs	Pnn:Znn
	145	nn	99	All LAN PS Module Cabinet Tamper	Pnn:S01
	301	nn	99	All LAN PS Module AC Fail	Pnn:S02
	302	nn	99	All LAN PS Module Low Batt	Pnn:S03
	140	nn	99	All LAN PS Module Batt Fail	Pnn:S04
	140	nn	99	All LAN PS Module Detector Fuse	Pnn:S05
	140	nn	99	All LAN PS Module LAN Fuse	Pnn:S06
	140	nn	99	All LAN PS Module Batt Fuse	Pnn:S07
	140	nn	99	All LAN PS Module Aux 2 Fuse	Pnn:S08
	145	nn	99	All LAN PS Module Aux 2 Tamper	Pnn:S09
	140	nn	99	All LAN PS Module Det Over-current	Pnn:S10
	140	nn	99	All LAN PS Module Batt Over-current	Pnn:S11
	140	nn	99	All LAN PS Module Over Volts	Pnn:S12

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	140	nn	99	All LAN PS Module Low Volts	Pnn:S13
	330	nn	99	All LAN PS Module Slave Fail	Pnn:S14
	309	nn	99	All LAN PS Module Batt Test Fail	Pnn:S15
	143	nn	99	All LAN PS Module LAN Comms	Pnn:S16
	140	nn	200	RF Expander Module Zone 1	F01:Z01
	140	nn	201	RF Expander Module Zone 2	F01:Z02
			to	to	to
	140	nn	215	RF Expander Module Zone 16	F01:Z16
	140	nn	99	RF Expander Module Zone 17 to 32	F01:Znn
	145	nn	216	RF Exp Module Cabinet Tamper	F01:S01
	302	nn	217	RF Exp Module Low Volts	F01:S02
	384	nn	218	RF Exp Module Tx Low Batt	F01:S03
	381	nn	219	RF Exp Module Tx Poll Fail	F01:S04
	344	nn	220	RF Exp Module Tx Jam	F01:S05
	143	nn	221	RF Exp Module LAN Comms	F01:S06
				V	
				From RF Exp Module 1 to 30	
				V	
	140	nn	954	RF Expander Module Zone 1	F30:Z01
	140	nn	955	RF Expander Module Zone 2	F30:Z02
			to	to	to
	140	nn	969	RF Expander Module Zone 16	F30:Z16
	140	nn	99	RF Expander Module Zone 17 to 32	F30:Znn
	145	nn	970	RF Exp Module Cabinet Tamper	F30:S01
	302	nn	971	RF Exp Module Low Volts	F30:S02
	384	nn	972	RF Exp Module Tx Low Batt	F30:S03
	381	nn	973	RF Exp Module Tx Poll Fail	F30:S04
	344	nn	974	RF Exp Module Tx Jam	F30:S05
	143	nn	975	RF Exp Module LAN Comms	F30:S06
				OPEN / CLOSE	
	402	nn	001	Open/Close for Area nn - User 00001	na
			to	to	
	402	nn	900	Open/Close for Area nn - User 00900	na
	403	nn	901	Open/Close for System	na
	403	nn	902	Open/Close for Time Zone	na
	409	nn	903	Open/Close for Function Zone	na
	402	nn	999	Open/Close for Users > 00900	na
			00	General Area Open/Close	na
		01 - 98	01 to 98	Area 001-098 Open/Close	na
		99 - 250	99	Areas > 99 (99 to 250)	na
				"nn" = Area Number, "na"=not applicable	

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T07. Contact ID
School 19 Mapping Tables

CONTACT ID SCHOOL 19 MAPPING					
Account No.	**Event Code**	**Area No.**	**POINT**	**Description**	**Panel Input**
	140	nn	001	Controller zone 1	C01:Z01
	140	nn	002	Controller zone 2	C01:Z02
			to	to	"
	140	nn	016	Controller zone 16	C01:Z16
	145	nn	017	Controller cabinet tamper	C01:S01
	145	nn	018	Controller internal siren tamper	C01:S02
	145	nn	019	Controller external siren tamper	C01:S03
	301	nn	020	Controller AC fail	C01:S04
	302	nn	021	Contoller Low Battery	C01:S05
	140	nn	022	Controller Lan fuse tamper	C01:S06
	140	nn	023	Controller Detector fuse tamper	C01:S07
	143	nn	024	Controller Lan comms	C01:S08
	309	nn	025	Controller Battery test fail	C01:S09
	306	nn	026	Controller Checksum alteration	C01:S10
	305	nn	027	Controller system power on reset	C01:S11
	351	nn	028	Controller Phone line fault	C01:S12
	330	nn	029	Uart 1 fault	C01:S13
	330	nn	030	Uart 2 fault	C01:S14
	330	nn	031	Uart 3 fault	C01:S15
	330	nn	032	Uart 4 fault	C01:S16
	307	nn	033	Controller Self test fail	C01:S17
	602	nn	034	Controller Time report	C01:S18
	601	nn	035	Controller manual test report	C01:S19
	350	nn	036	Controller Comms backup	C01:S20
	354	nn	037	Controller Comms fail	C01:S21
	351	nn	038	Controller Phone	C01:S22
	140	nn	039	Controller Module substitution	C01:S23
	140	nn	040	PreArm1 Test Pass	C01:S24
	140	nn	041	PreArm1 Test Fail	C01:S25
	140	nn	042	PreArm2 Test Pass	C01:S26
	140	nn	043	PreArm2 Test Fail	C01:S27
	140	nn	044	Controller Request Service	C01:S28
	140	nn	045	Controller Intelligent Reader Problem	C01:S29
	140	nn	046	Controller System input 46	C01:S30
	140	nn	047	Controller System input 47	C01:S31
	140	nn	048	Controller System input 48	C01:S32
		nn	99	Unmappable event	
	140	nn	100	LCD Terminal 1 Zone 1	T01:Z01
	140	nn	101	LCD Terminal 1 Zone 2	T01:Z02
	145	nn	102	LCD Terminal 1 Cabinet tamper	T01:S01
	120	nn	103	LCD Terminal 1 Panic	T01:S02
	420	nn	104	LCD Terminal 1 Door forced	T01:S03
	420	nn	105	LCD Terminal 1 Door Held	T01:S04
	122	nn	106	LCD Terminal 1 Operator duress	T01:S05
	102	nn	107	LCD Terminal 1 Deadman	T01:S06
	421	nn	108	LCD Terminal 1 Too many tries	T01:S07
	143	nn	109	LCD Terminal 1 Lan comms status	T01:S08
				V	
				From LCD Terminal Number 1 to 10	
				V	
	140	nn	190	LCD Terminal 10 Zone 1	T10:Z01
	140	nn	191	LCD Terminal 10 Zone 2	T10:Z01
	145	nn	192	LCD Terminal 10 Cabinet tamper	T10:S01

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	120	nn	193	LCD Terminal 10 Panic	T10:S02
	420	nn	194	LCD Terminal 10 Door forced	T10:S03
	420	nn	195	LCD Terminal 10 Door Held	T10:S04
	122	nn	196	LCD Terminal 10 Operator duress	T10:S05
	102	nn	197	LCD Terminal 10 Deadman	T10:S06
	421	nn	198	LCD Terminal 10 Too many tries	T10:S07
	143	nn	199	LCD Terminal 10 Lan comms status	T10:S08
	140	nn	200	Expander 1 Zone 1	B01:Z01
	140	nn	201	Expander 1 Zone 2	B01:Z02
			to	to	to
	140	nn	231	Expander 1 Zone 32	B01:Z32
	145	nn	232	Expander 1 cabinet tamper	B01:S01
	145	nn	233	Expander 1 internal siren tampers	B01:S02
	145	nn	234	Expander 1 external siren tampers	B01:S03
	301	nn	235	Expander 1 AC fail	B01:S04
	302	nn	236	Expander 1 Battery Low	B01:S05
	140	nn	237	Expander 1 Lan fuse tamper	B01:S06
	140	nn	238	Expander 1 Detector fuse tamper	B01:S07
	143	nn	239	Expander 1 Lan comms status	B01:S08
	309	nn	240	Expander 1 Battery test fail	B01:S09
	306	nn	241	Expander 1 Spare	B01:S10
				V	
				From Zone Expander 1 to 19	
				V	
	140	nn	956	Expander 19 Zone 1	B19:Z01
	140	nn	957	Expander 19 Zone 2	B19:Z02
			to	to	to
	140	nn	987	Expander 19 Zone 32	B19:Z32
	145	nn	988	Expander 19 cabinet tamper	B19:S01
	145	nn	989	Expander 19 internal siren tampers	B19:S02
	145	nn	990	Expander 19 external siren tampers	B19:S03
	301	nn	991	Expander 19 AC fail	B19:S04
	302	nn	992	Expander 19 Battery Low	B19:S05
	140	nn	993	Expander 19 Lan fuse tamper	B19:S06
	140	nn	994	Expander 19 Detector fuse tamper	B19:S07
	143	nn	995	Expander 19 Lan comms status	B19:S08
	309	nn	996	Expander 19 Battery test fail	B19:S09
	306	nn	997	Expander 19 Spare	B19:S10
	140	nn	200	Expander 1 Zone 1	E01:Z01
	140	nn	201	Expander 1 Zone 2	E01:Z02
			to	to	to
	140	nn	215	Expander 1 Zone 16	E01:Z16
	145	nn	232	Expander 1 cabinet tamper	E01:S01
	145	nn	233	Expander 1 internal siren tampers	E01:S02
	145	nn	234	Expander 1 external siren tampers	E01:S03
	301	nn	235	Expander 1 AC fail	E01:S04
	302	nn	236	Expander 1 Battery Low	E01:S05
	140	nn	237	Expander 1 Lan fuse tamper	E01:S06
	140	nn	238	Expander 1 Detector fuse tamper	E01:S07
	143	nn	239	Expander 1 Lan comms status	E01:S08
	309	nn	240	Expander 1 Battery test fail	E01:S09
	306	nn	241	Expander 1 spare	E01:S10
				V	
				From Zone Expander 1 to 19	
				V	
	140	nn	956	Expander 19 Zone 1	E19:Z01

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	140	nn	957	Expander 19 Zone 2	E19:Z02
			to	to	to
	140	nn	971	Expander 19 Zone 16	E19:Z32
	145	nn	988	Expander 19 cabinet tamper	E19:S01
	145	nn	989	Expander 19 internal siren tampers	E19:S02
	145	nn	990	Expander 19 external siren tampers	E19:S03
	301	nn	991	Expander 19 AC fail	E19:S04
	302	nn	992	Expander 19 Battery Low	E19:S05
	140	nn	993	Expander 19 Lan fuse tamper	E19:S06
	140	nn	994	Expander 19 Detector fuse tamper	E19:S07
	143	nn	995	Expander 19 Lan comms status	E19:S08
	309	nn	996	Expander 19 Battery test fail	E19:S09
	306	nn	997	Expander 19 spare	E19:S10
	140	nn	200	Mini Expander 1 Zone 1	M01:Z01
	140	nn	201	Mini Expander 1 Zone 2	M01:Z02
			to	to	to
	140	nn	207	Mini Expander 1 Zone 8	M01:Z08
	302	nn	208	Mini Expander 1 Low Battery	M01:S01
	140	nn	209	Mini Expander 1 Zn1 Extra	M01:S02
	140	nn	210	Mini Expander 1 Zn2 Extra	M01:S03
	140	nn	211	Mini Expander 1 Zn3 Extra	M01:S04
	140	nn	212	Mini Expander 1 Zn4 Extra	M01:S05
	140	nn	213	Mini Expander 1 Zn5 Extra	M01:S06
	140	nn	214	Mini Expander 1 Zn6 Extra	M01:S07
	140	nn	215	Mini Expander 1 Zn7 Extra	M01:S08
	143	nn	216	Mini Expander 1 LAN Comms	M01:S09
				V	
				From Mini Expander 1 to 19	
				V	
	140	nn	956	Mini Expander 19 Zone 1	M19:Z01
	140	nn	957	Mini Expander 19 Zone 2	M19:Z02
			to	to	to
	140	nn	963	Mini Expander 19 Zone 8	M19:Z08
	302	nn	964	Mini Expander 19 Low Battery	M19:S01
	140	nn	965	Mini Expander 19 Zn1 Extra	M19:S02
	140	nn	966	Mini Expander 19 Zn2 Extra	M19:S03
	140	nn	967	Mini Expander 19 Zn3 Extra	M19:S04
	140	nn	968	Mini Expander 19 Zn4 Extra	M19:S05
	140	nn	969	Mini Expander 19 Zn5 Extra	M19:S06
	140	nn	970	Mini Expander 19 Zn6 Extra	M19:S07
	140	nn	971	Mini Expander 19 Zn7 Extra	M19:S08
	143	nn	972	Mini Expander 19 LAN Comms	M19:S09
	140	nn	99	All Reader Module Inputs	R01:Z01
	140	nn	200	SpreadNet 1 Zone 1	N01:Z01
	140	nn	201	SpreadNet 1 Zone 2	N01:Z02
			to	to	to
	140	nn	215	SpreadNet 1 Zone 16	N01:Z16
	353	nn	216	SpreadNet 1 Timeout	N01:S01
	356	nn	217	SpreadNet 1 Low Battery	N01:S02
	140	nn	218	SpreadNet 1 Spare	N01:S03
	140	nn	219	SpreadNet 1 Spare	N01:S04
				V	
				From SpreadNet Module 1 to 13	
				V	
	140	nn	704	SpreadNet 13 Zone 1	N13:Z01

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	140	nn	705	SpreadNet 13 Zone 2	N13:Z02
			to	to	to
	140	nn	719	SpreadNet 13 Zone 16	N13:Z16
	353	nn	720	SpreadNet 13 Timeout	N13:S01
	356	nn	721	SpreadNet 13 Low Battery	N13:S02
	140	nn	722	SpreadNet 13 Spare	N13:S03
	140	nn	723	SpreadNet 13 Spare	N13:S04
	140	nn	99	All Intell 4 Dr Access Mod Zones	Inn:Z01
	145	nn	99	Intell 4 Dr Acc Mod Lock Tamper D1	Inn:S01
	145	nn	99	Intell 4 Dr Acc Mod Lock Tamper D2	Inn:S02
	145	nn	99	Intell 4 Dr Acc Mod Lock Tamper D3	Inn:S03
	145	nn	99	Intell 4 Dr Acc Mod Lock Tamper D4	Inn:S04
	140	nn	99	Intell 4 Dr Acc Mod Door Forced D1	Inn:S05
	140	nn	99	Intell 4 Dr Acc Mod Door Forced D2	Inn:S06
	140	nn	99	Intell 4 Dr Acc Mod Door Forced D3	Inn:S07
	140	nn	99	Intell 4 Dr Acc Mod Door Forced D4	Inn:S08
	140	nn	99	Intell 4 Dr Acc Mod DOTL Door 1	Inn:S09
	140	nn	99	Intell 4 Dr Acc Mod DOTL Door 2	Inn:S10
	140	nn	99	Intell 4 Dr Acc Mod DOTL Door 3	Inn:S11
	140	nn	99	Intell 4 Dr Acc Mod DOTL Door 4	Inn:S12
	140	nn	99	Intell 4 Dr Acc Mod Invalid Card Door 1	Inn:S13
	140	nn	99	Intell 4 Dr Acc Mod Invalid Card Door 2	Inn:S14
	140	nn	99	Intell 4 Dr Acc Mod Invalid Card Door 3	Inn:S15
	140	nn	99	Intell 4 Dr Acc Mod Invalid Card Door 4	Inn:S16
	145	nn	99	Intell 4 Dr Acc Mod Cabinet Tamper	Inn:S17
	140	nn	99	Intell 4 Dr Acc Mod Gen Lock Fault	Inn:S18
	309	nn	99	Intell 4 Dr Acc Mod Battery Test Fail	Inn:S19
	301	nn	99	Intell 4 Dr Acc Mod AC Fail	Inn:S20
	302	nn	99	Intell 4 Dr Acc Mod Low Battery	Inn:S21
	140	nn	99	Intell 4 Dr Acc Mod LAN Fuse	Inn:S22
	140	nn	99	Intell 4 Dr Acc Mod Detector Fuse	Inn:S23
	143	nn	99	Intell 4 Dr Acc Mod LAN Comms Fail	Inn:S24
	140	nn	99	All Analogue Module Zone Inputs	Qnn:Znn
	145	nn	99	All Analogue Module Cabinet Tamper	Qnn:S01
	302	nn	99	All Analogue Module Low Volts	Qnn:S02
	143	nn	99	All Analogue Module LAN Comms	Qnn:S03
	140	nn	99	All LAN Pwr Supp Module Zone Inputs	Pnn:Znn
	145	nn	99	All LAN PS Module Cabinet Tamper	Pnn:S01
	301	nn	99	All LAN PS Module AC Fail	Pnn:S02
	302	nn	99	All LAN PS Module Low Batt	Pnn:S03
	140	nn	99	All LAN PS Module Batt Fail	Pnn:S04
	140	nn	99	All LAN PS Module Detector Fuse	Pnn:S05
	140	nn	99	All LAN PS Module LAN Fuse	Pnn:S06
	140	nn	99	All LAN PS Module Batt Fuse	Pnn:S07
	140	nn	99	All LAN PS Module Aux 2 Fuse	Pnn:S08
	145	nn	99	All LAN PS Module Aux 2 Tamper	Pnn:S09
	140	nn	99	All LAN PS Module Det Over-current	Pnn:S10
	140	nn	99	All LAN PS Module Batt Over-current	Pnn:S11
	140	nn	99	All LAN PS Module Over Volts	Pnn:S12
	140	nn	99	All LAN PS Module Low Volts	Pnn:S13
	330	nn	99	All LAN PS Module Slave Fail	Pnn:S14
	309	nn	99	All LAN PS Module Batt Test Fail	Pnn:S15
	143	nn	99	All LAN PS Module LAN Comms	Pnn:S16
	140	nn	200	RF Expander Module Zone 1	F01:Z01

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	140	nn	201	RF Expander Module Zone 2	F01:Z02
			to	to	to
	140	nn	231	RF Expander Module Zone 32	F01:Z32
	145	nn	232	RF Exp Module Cabinet Tamper	F01:S01
	302	nn	233	RF Exp Module Low Volts	F01:S02
	384	nn	234	RF Exp Module Tx Low Batt	F01:S03
	381	nn	235	RF Exp Module Tx Poll Fail	F01:S04
	344	nn	236	RF Exp Module Tx Jam	F01:S05
	143	nn	237	RF Exp Module LAN Comms	F01:S06
				V	
				From RF Exp Module 1 to 9	
				V	
	140	nn	956	RF Expander Module Zone 1	F19:Z01
	140	nn	957	RF Expander Module Zone 2	F19:Z02
			to	to	to
	140	nn	987	RF Expander Module Zone 32	F19:Z32
	145	nn	988	RF Exp Module Cabinet Tamper	F19:S01
	302	nn	989	RF Exp Module Low Volts	F19:S02
	384	nn	990	RF Exp Module Tx Low Batt	F19:S03
	381	nn	991	RF Exp Module Tx Poll Fail	F19:S04
	344	nn	992	RF Exp Module Tx Jam	F19:S05
	143	nn	993	RF Exp Module LAN Comms	F19:S06
				OPEN / CLOSE	
	402	nn	001	Open/Close for Area nn - User 00001	na
			to	to	
	402	nn	900	Open/Close for Area nn - User 00900	na
	403	nn	901	Open/Close for System	na
	403	nn	902	Open/Close for Time Zone	na
	409	nn	903	Open/Close for Function Zone	na
	402	nn	999	Open/Close for Users > 00900	na
			00	General Area Open/Close	na
		01 - 98	01 to 98	Area 001-098 Open/Close	na
		99 - 250	99	Areas > 99 (99 to 250)	na
				"nn" = Area Number, "na"=not applicable	

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T07a. Contact ID School 19B Mapping Tables

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CONTACT ID SCHOOL 19B MAPPING					
Account No.	**Event Code**	**Area No.**	**POINT**	**Description**	**Panel Input**
	140	nn	001	Controller zone 1	C01:Z01
	140	nn	002	Controller zone 2	C01:Z02
			to	to	"
	140	nn	016	Controller zone 16	C01:Z16
	145	nn	017	Controller cabinet tamper	C01:S01
	145	nn	018	Controller internal siren tamper	C01:S02
	145	nn	019	Controller external siren tamper	C01:S03
	301	nn	020	Controller AC fail	C01:S04
	302	nn	021	Contoller Low Battery	C01:S05
	140	nn	022	Controller Lan fuse tamper	C01:S06
	140	nn	023	Controller Detector fuse tamper	C01:S07
	143	nn	024	Controller Lan comms	C01:S08
	309	nn	025	Controller Battery test fail	C01:S09
	306	nn	026	Controller Checksum alteration	C01:S10
	305	nn	027	Controller system power on reset	C01:S11
	351	nn	028	Controller Phone line fault	C01:S12
	330	nn	029	Uart 1 fault	C01:S13
	330	nn	030	Uart 2 fault	C01:S14
	330	nn	031	Uart 3 fault	C01:S15
	330	nn	032	Uart 4 fault	C01:S16
	307	nn	033	Controller Self test fail	C01:S17
	602	nn	034	Controller Time report	C01:S18
	601	nn	035	Controller manual test report	C01:S19
	350	nn	036	Controller Comms backup	C01:S20
	354	nn	037	Controller Comms fail	C01:S21
	351	nn	038	Controller Phone	C01:S22
	140	nn	039	Controller Module substitution	C01:S23
	140	nn	040	PreArm1 Test Pass	C01:S24
	140	nn	041	PreArm1 Test Fail	C01:S25
	140	nn	042	PreArm2 Test Pass	C01:S26
	140	nn	043	PreArm2 Test Fail	C01:S27
	140	nn	044	Controller Request Service	C01:S28
	140	nn	045	Controller Intelligent Reader Problem	C01:S29
	140	nn	046	Controller System input 46	C01:S30
	140	nn	047	Controller System input 47	C01:S31
	140	nn	048	Controller System input 48	C01:S32
		nn	99	Unmappable event	
	140	nn	100	LCD Terminal 1 Zone 1	T01:Z01
	140	nn	101	LCD Terminal 1 Zone 2	T01:Z02
	145	nn	102	LCD Terminal 1 Cabinet tamper	T01:S01
	120	nn	103	LCD Terminal 1 Panic	T01:S02
	420	nn	104	LCD Terminal 1 Door forced	T01:S03
	420	nn	105	LCD Terminal 1 Door Held	T01:S04
	122	nn	106	LCD Terminal 1 Operator duress	T01:S05
	102	nn	107	LCD Terminal 1 Deadman	T01:S06
	421	nn	108	LCD Terminal 1 Too many tries	T01:S07
	143	nn	109	LCD Terminal 1 Lan comms status	T01:S08
				V	
				From LCD Terminal Number 1 to 10	
				V	
	140	nn	190	LCD Terminal 10 Zone 1	T10:Z01
	140	nn	191	LCD Terminal 10 Zone 2	T10:Z01
	145	nn	192	LCD Terminal 10 Cabinet tamper	T10:S01

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	120	nn	193	LCD Terminal 10 Panic	T10:S02
	420	nn	194	LCD Terminal 10 Door forced	T10:S03
	420	nn	195	LCD Terminal 10 Door Held	T10:S04
	122	nn	196	LCD Terminal 10 Operator duress	T10:S05
	102	nn	197	LCD Terminal 10 Deadman	T10:S06
	421	nn	198	LCD Terminal 10 Too many tries	T10:S07
	143	nn	199	LCD Terminal 10 Lan comms status	T10:S08
	140	nn	200	Expander 1 Zone 1	B01:Z01
	140	nn	201	Expander 1 Zone 2	B01:Z02
			to	to	to
	140	nn	231	Expander 1 Zone 32	B01:Z32
	145	nn	232	Expander 1 cabinet tamper	B01:S01
	145	nn	233	Expander 1 internal siren tampers	B01:S02
	145	nn	234	Expander 1 external siren tampers	B01:S03
	301	nn	235	Expander 1 AC fail	B01:S04
	302	nn	236	Expander 1 Battery Low	B01:S05
	140	nn	237	Expander 1 Lan fuse tamper	B01:S06
	140	nn	238	Expander 1 Detector fuse tamper	B01:S07
	143	nn	239	Expander 1 Lan comms status	B01:S08
	309	nn	240	Expander 1 Battery test fail	B01:S09
	306	nn	241	Expander 1 Spare	B01:S10
				V	
				From Zone Expander 1 to 19	
				V	
	140	nn	956	Expander 19 Zone 1	B19:Z01
	140	nn	957	Expander 19 Zone 2	B19:Z02
			to	to	to
	140	nn	987	Expander 19 Zone 32	B19:Z32
	145	nn	988	Expander 19 cabinet tamper	B19:S01
	145	nn	989	Expander 19 internal siren tampers	B19:S02
	145	nn	990	Expander 19 external siren tampers	B19:S03
	301	nn	991	Expander 19 AC fail	B19:S04
	302	nn	992	Expander 19 Battery Low	B19:S05
	140	nn	993	Expander 19 Lan fuse tamper	B19:S06
	140	nn	994	Expander 19 Detector fuse tamper	B19:S07
	143	nn	995	Expander 19 Lan comms status	B19:S08
	309	nn	996	Expander 19 Battery test fail	B19:S09
	306	nn	997	Expander 19 Spare	B19:S10
	140	nn	200	Expander 1 Zone 1	E01:Z01
	140	nn	201	Expander 1 Zone 2	E01:Z02
			to	to	to
	140	nn	215	Expander 1 Zone 16	E01:Z16
	145	nn	232	Expander 1 cabinet tamper	E01:S01
	145	nn	233	Expander 1 internal siren tampers	E01:S02
	145	nn	234	Expander 1 external siren tampers	E01:S03
	301	nn	235	Expander 1 AC fail	E01:S04
	302	nn	236	Expander 1 Battery Low	E01:S05
	140	nn	237	Expander 1 Lan fuse tamper	E01:S06
	140	nn	238	Expander 1 Detector fuse tamper	E01:S07
	143	nn	239	Expander 1 Lan comms status	E01:S08
	309	nn	240	Expander 1 Battery test fail	E01:S09
	306	nn	241	Expander 1 spare	E01:S10
				V	
				From Zone Expander 1 to 19	
				V	
	140	nn	956	Expander 19 Zone 1	E19:Z01

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	140	nn	957	Expander 19 Zone 2	E19:Z02
			to	to	to
	140	nn	971	Expander 19 Zone 16	E19:Z32
	145	nn	988	Expander 19 cabinet tamper	E19:S01
	145	nn	989	Expander 19 internal siren tampers	E19:S02
	145	nn	990	Expander 19 external siren tampers	E19:S03
	301	nn	991	Expander 19 AC fail	E19:S04
	302	nn	992	Expander 19 Battery Low	E19:S05
	140	nn	993	Expander 19 Lan fuse tamper	E19:S06
	140	nn	994	Expander 19 Detector fuse tamper	E19:S07
	143	nn	995	Expander 19 Lan comms status	E19:S08
	309	nn	996	Expander 19 Battery test fail	E19:S09
	306	nn	997	Expander 19 spare	E19:S10
	140	nn	200	Mini Expander 1 Zone 1	M01:Z01
	140	nn	201	Mini Expander 1 Zone 2	M01:Z02
			to	to	to
	140	nn	207	Mini Expander 1 Zone 8	M01:Z08
	302	nn	232	Mini Expander 1 Low Battery	M01:S01
	140	nn	233	Mini Expander 1 Zn1 Extra	M01:S02
	140	nn	234	Mini Expander 1 Zn2 Extra	M01:S03
	140	nn	235	Mini Expander 1 Zn3 Extra	M01:S04
	140	nn	236	Mini Expander 1 Zn4 Extra	M01:S05
	140	nn	237	Mini Expander 1 Zn5 Extra	M01:S06
	140	nn	238	Mini Expander 1 Zn6 Extra	M01:S07
	140	nn	239	Mini Expander 1 Zn7 Extra	M01:S08
	143	nn	240	Mini Expander 1 LAN Comms	M01:S09
				V	
				From Mini Expander 1 to 19	
				V	
	140	nn	956	Mini Expander 19 Zone 1	M19:Z01
	140	nn	957	Mini Expander 19 Zone 2	M19:Z02
			to	to	to
	140	nn	963	Mini Expander 19 Zone 8	M19:Z08
	302	nn	988	Mini Expander 19 Low Battery	M19:S01
	140	nn	989	Mini Expander 19 Zn1 Extra	M19:S02
	140	nn	990	Mini Expander 19 Zn2 Extra	M19:S03
	140	nn	991	Mini Expander 19 Zn3 Extra	M19:S04
	140	nn	992	Mini Expander 19 Zn4 Extra	M19:S05
	140	nn	993	Mini Expander 19 Zn5 Extra	M19:S06
	140	nn	994	Mini Expander 19 Zn6 Extra	M19:S07
	140	nn	995	Mini Expander 19 Zn7 Extra	M19:S08
	143	nn	996	Mini Expander 19 LAN Comms	M19:S09
	140	nn	99	All Reader Module Inputs	R01:Znn
	140	nn	200	SpreadNet 1 Zone 1	N01:Z01
	140	nn	201	SpreadNet 1 Zone 2	N01:Z02
			to	to	to
	140	nn	215	SpreadNet 1 Zone 16	N01:Z16
	353	nn	232	SpreadNet 1 Timeout	N01:S01
	356	nn	233	SpreadNet 1 Low Battery	N01:S02
	140	nn	234	SpreadNet 1 Spare	N01:S03
	140	nn	235	SpreadNet 1 Spare	N01:S04
				V	
				From SpreadNet Module 1 to 13	
				V	
	140	nn	704	SpreadNet 13 Zone 1	N13:Z01

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	140	nn	705	SpreadNet 13 Zone 2	N13:Z02
			to	to	to
	140	nn	719	SpreadNet 13 Zone 16	N13:Z16
	353	nn	736	SpreadNet 13 Timeout	N13:S01
	356	nn	737	SpreadNet 13 Low Battery	N13:S02
	140	nn	738	SpreadNet 13 Spare	N13:S03
	140	nn	739	SpreadNet 13 Spare	N13:S04
	140	nn	99	All Intell 4 Dr Access Mod Zones	Inn:Z01
	145	nn	99	Intell 4 Dr Acc Mod Lock Tamper D1	Inn:S01
	145	nn	99	Intell 4 Dr Acc Mod Lock Tamper D2	Inn:S02
	145	nn	99	Intell 4 Dr Acc Mod Lock Tamper D3	Inn:S03
	145	nn	99	Intell 4 Dr Acc Mod Lock Tamper D4	Inn:S04
	140	nn	99	Intell 4 Dr Acc Mod Door Forced D1	Inn:S05
	140	nn	99	Intell 4 Dr Acc Mod Door Forced D2	Inn:S06
	140	nn	99	Intell 4 Dr Acc Mod Door Forced D3	Inn:S07
	140	nn	99	Intell 4 Dr Acc Mod Door Forced D4	Inn:S08
	140	nn	99	Intell 4 Dr Acc Mod DOTL Door 1	Inn:S09
	140	nn	99	Intell 4 Dr Acc Mod DOTL Door 2	Inn:S10
	140	nn	99	Intell 4 Dr Acc Mod DOTL Door 3	Inn:S11
	140	nn	99	Intell 4 Dr Acc Mod DOTL Door 4	Inn:S12
	140	nn	99	Intell 4 Dr Acc Mod Invalid Card Door 1	Inn:S13
	140	nn	99	Intell 4 Dr Acc Mod Invalid Card Door 2	Inn:S14
	140	nn	99	Intell 4 Dr Acc Mod Invalid Card Door 3	Inn:S15
	140	nn	99	Intell 4 Dr Acc Mod Invalid Card Door 4	Inn:S16
	145	nn	99	Intell 4 Dr Acc Mod Cabinet Tamper	Inn:S17
	140	nn	99	Intell 4 Dr Acc Mod Gen Lock Fault	Inn:S18
	309	nn	99	Intell 4 Dr Acc Mod Battery Test Fail	Inn:S19
	301	nn	99	Intell 4 Dr Acc Mod AC Fail	Inn:S20
	302	nn	99	Intell 4 Dr Acc Mod Low Battery	Inn:S21
	140	nn	99	Intell 4 Dr Acc Mod LAN Fuse	Inn:S22
	140	nn	99	Intell 4 Dr Acc Mod Detector Fuse	Inn:S23
	143	nn	99	Intell 4 Dr Acc Mod LAN Comms Fail	Inn:S24
	140	nn	99	All Analogue Module Zone Inputs	Qnn:Znn
	145	nn	99	All Analogue Module Cabinet Tamper	Qnn:S01
	302	nn	99	All Analogue Module Low Volts	Qnn:S02
	143	nn	99	All Analogue Module LAN Comms	Qnn:S03
	140	nn	99	All LAN Pwr Supp Module Zone Inputs	Pnn:Znn
	145	nn	99	All LAN PS Module Cabinet Tamper	Pnn:S01
	301	nn	99	All LAN PS Module AC Fail	Pnn:S02
	302	nn	99	All LAN PS Module Low Batt	Pnn:S03
	140	nn	99	All LAN PS Module Batt Fail	Pnn:S04
	140	nn	99	All LAN PS Module Detector Fuse	Pnn:S05
	140	nn	99	All LAN PS Module LAN Fuse	Pnn:S06
	140	nn	99	All LAN PS Module Batt Fuse	Pnn:S07
	140	nn	99	All LAN PS Module Aux 2 Fuse	Pnn:S08
	145	nn	99	All LAN PS Module Aux 2 Tamper	Pnn:S09
	140	nn	99	All LAN PS Module Det Over-current	Pnn:S10
	140	nn	99	All LAN PS Module Batt Over-current	Pnn:S11
	140	nn	99	All LAN PS Module Over Volts	Pnn:S12
	140	nn	99	All LAN PS Module Low Volts	Pnn:S13
	330	nn	99	All LAN PS Module Slave Fail	Pnn:S14
	309	nn	99	All LAN PS Module Batt Test Fail	Pnn:S15
	143	nn	99	All LAN PS Module LAN Comms	Pnn:S16
	140	nn	200	RF Expander Module Zone 1	F01:Z01

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	140	nn	201	RF Expander Module Zone 2	F01:Z02
			to	to	to
	140	nn	231	RF Expander Module Zone 32	F01:Z32
	145	nn	232	RF Exp Module Cabinet Tamper	F01:S01
	302	nn	233	RF Exp Module Low Volts	F01:S02
	384	nn	234	RF Exp Module Tx Low Batt	F01:S03
	381	nn	235	RF Exp Module Tx Poll Fail	F01:S04
	344	nn	236	RF Exp Module Tx Jam	F01:S05
	143	nn	237	RF Exp Module LAN Comms	F01:S06
				V	
				From RF Exp Module 1 to 9	
				V	
	140	nn	956	RF Expander Module Zone 1	F19:Z01
	140	nn	957	RF Expander Module Zone 2	F19:Z02
			to	to	to
	140	nn	987	RF Expander Module Zone 32	F19:Z32
	145	nn	988	RF Exp Module Cabinet Tamper	F19:S01
	302	nn	989	RF Exp Module Low Volts	F19:S02
	384	nn	990	RF Exp Module Tx Low Batt	F19:S03
	381	nn	991	RF Exp Module Tx Poll Fail	F19:S04
	344	nn	992	RF Exp Module Tx Jam	F19:S05
	143	nn	993	RF Exp Module LAN Comms	F19:S06
				OPEN / CLOSE	
	402	nn	001	Open/Close for Area nn - User 00001	na
			to	to	
	402	nn	900	Open/Close for Area nn - User 00900	na
	403	nn	901	Open/Close for System	na
	403	nn	902	Open/Close for Time Zone	na
	409	nn	903	Open/Close for Function Zone	na
	402	nn	999	Open/Close for Users > 00900	na
			00	General Area Open/Close	na
		01 - 98	01 to 98	Area 001-098 Open/Close	na
		99 - 250	99	Areas > 99 (99 to 250)	na
				"nn" = Area Number, "na"=not applicable	

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3000 / ACCESS 4000
V5.1

T08. SIMS II Alarm Report Mapping

The Contact ID message

XYZ NN TPP	Message String
XYZ	Event Code. Identifies the type of alarm or event.
NN	Group Byte. Used for module number when reporting zones.
TPP	Point or Zone Number:
T	Module Type. (Expander, Terminal, Reader, etc.)
PP	Zone number (point number)

SIMSII 7 Digit Account Maintenance Zones

XYZNTPP	7 digit message string
XYZ	Event Code. Identifies the type of alarm or event.
N	**Group Byte. Used for module no. when reporting zones. Numeric-alpha sequence represents decimal values 1 - 35 i.e. 1 to 9 = 1 to 9, A to Z = 10 to 35**
TPP	Point or Zone Number:
T	Module Type. (Expander, Terminal, Reader, etc. See below)
PP	Zone number (point number)

Common Event Codes (XYZ) for ZONE ALARMS

Event (XYZ)	Message	Description
130	BUR	Burglary
137	TAM	Tamper
573	ISO	Isolate
110	FIR	Fire
373	TAM	Fire Zone Tamper
571	ISO	Fire Zone Isolate
140	ALR	General Zone Alarm
144	TAM	General Zone Tamper
570	ISO	General Zone Isolate

e.g. 130 NN TPP	Burglary Alarm on Module type "T", No: "NN", Zone "PP"
570 NN TPP	General Isolate on Module type "T", No: "NN", Zone "PP"
NN	Module number
T	Module Type
PP	Zone number (point number)

Module Types

Type 0	Control Module	C
Type 1	LCD Terminal	T
Type 2	LED Keypad	Not yet available. Type 2 used for reporting LAN Pwr Supply.
Type 3	Big Expander	B
Type 4	Reader Module	R
Type 5	Wireless Network	N (SpreadNet / Inovonics)
Type 6	Mini Expander	M
Type 7	16zone Expander	E
Type 8	Int 4 Door Contr	I
Type 9	Analog Mod	Q
Type 10	Geoquip	Not yet available
Type 11	LAN Power Supply	P (Reports as Module Type 2)

Message	SIMSII Accnt Maint. Zones		Description
XYZ 01 001	XYZ1001		Control Module Zone Input 1
XYZ 01 002	XYZ1002		Control Module Zone Input 2
XYZ 01 003	XYZ1003		Control Module Zone Input 3
XYZ 01 004	XYZ1004		Control Module Zone Input 4
XYZ 01 005	XYZ1005		Control Module Zone Input 5
XYZ 01 006	XYZ1006		Control Module Zone Input 6
XYZ 01 007	XYZ1007		Control Module Zone Input 7
XYZ 01 008	XYZ1008		Control Module Zone Input 8
XYZ 01 009	XYZ1009		Control Module Zone Input 9
XYZ 01 010	XYZ1010		Control Module Zone Input 10
XYZ 01 011	XYZ1011		Control Module Zone Input 11
XYZ 01 012	XYZ1012		Control Module Zone Input 12
XYZ 01 013	XYZ1013		Control Module Zone Input 13
XYZ 01 014	XYZ1014		Control Module Zone Input 14
XYZ 01 015	XYZ1015		Control Module Zone Input 15
XYZ 01 016	XYZ1016		Control Module Zone Input 16
572 01 0PP		ISO	Control Module System Zone Isolate. PP = Zone number

Control Module System Input Alarms

145 01 001	1451001	TAM	Cabinet tamper.
145 01 002	1451002	TAM	Internal siren tamper.
145 01 003	1451003	TAM	External siren tamper.
301 01 004	3011004	LPT	AC fail.
302 01 005	3021005	LBT	Low battery.
150 01 006	1501006	FUS	LAN fuse tamper
150 01 007	1501007	FUS	Detector fuse tamper
143 01 008	1431008	COM	Lan Comms status
309 01 009	3091009	LBT	Battery test fail
306 01 010	3061010	TRB	Checksum alteration
305 01 011	3051011	TRB	System power on reset.
351 01 012	3511012	LFT	Phone Line Fail when required
330 01 013	3301013	COM	Uart 1 problems
330 01 014	3301014	COM	Uart 2 problems
330 01 015	3301015	COM	Uart 3 problems
330 01 016	3301016	COM	Uart 4 problems
307 01 017	3071017	TRB	Zone self test fail
601 01 019	6011019	TST	Manual trigger
350 01 020	3501020	COM	Comms Backup.
354 01 021	3541021	COM	Comms Fail.
351 01 022	3511022	LFT	Phone Line Fail when idle
150 01 023	1501023	ALR	Module Substitution

XYZ 01 TPP		Message String
XYZ		Event Code
01	1	Module number. (A system has only one Control Module)
T		Module Type. Type 0 = Control Module.
PP		Zone number (point number)

Message	SIMSII Accnt Maint. Zones		Description
XYZ NN 101	XYZN101		LCD Terminal No: "NN" Zone Input 1
XYZ NN 102	XYZN102		LCD Terminal No: "NN" Zone Input 2
572 NN 1PP	572N1PP	ISO	LCD Terminal No: "NN" System Zone Isolate PP = Zone number

Common Event Codes (XYZ) for Zone Alarms

130	BUR	Burglary
137	TAM	Tamper
573	ISO	Isolate
110	FIR	Fire
373	TAM	Fire Zone Tamper
571	ISO	Fire Zone Isolate
140	ALR	General Zone Alarm
144	TAM	General Zone Tamper

e.g. 140 02 102 1402102 General Zone Alarm on LCD Terminal No: 2, Zone 2.

LCD Terminal System Input Alarms

145 NN 101	145N101	TAM	LCD Terminal No: "NN" Cabinet tamper.
120 NN 102	120N102	PAN	LCD Terminal No: "NN" Panic
420 NN 103	420N103	TAM	LCD Terminal No: "NN" Door Forced
420 NN 104	420N104	TAM	LCD Terminal No: "NN" Door Held Open
122 NN 105	122N105	DUR	LCD Terminal No: "NN" Duress
102 NN 106	102N106	ALR	LCD Terminal No: "NN" Deadman
421 NN 107	421N107	ALR	LCD Terminal No: "NN" Too many tries
143 NN 108	143N108	COM	LCD Terminal No: "NN" LAN fail.

XYZ NN TPP		Message String
XYZ		Event Code
NN	N	Module number. (A system can have up to 99 LCD Terminals) SIMSII uses 1-9 then A-Z. (Representing decimal 1 to 35)
T		Module Type. Type 1 = LCD Terminal.
PP		Zone number (point number)

Message	SIMSII Accnt Maint. Zones		Description
XYZ NN 201	XYZN201		LAN Power Supply No: "NN" Zone Input 1
XYZ NN 202	XYZN202		LAN Power Supply No: "NN" Zone Input 2
572 NN 2??	572N2??	ISO	LAN Power Supply No: "NN" System Zone Isolate ?? = Zone number

Common Event Codes (XYZ) for Zone Alarms

130	BUR	Burglary
137	TAM	Tamper
573	ISO	Isolate
110	FIR	Fire
373	TAM	Fire Zone Tamper
571	ISO	Fire Zone Isolate
140	ALR	General Zone Alarm
144	TAM	General Zone Tamper

e.g. 140 03 201 1403201 General Zone Alarm on LAN Power Supply No: 3, Zone 1.

LAN Power Supply Module System Input Alarms

145 NN 201	145N201	TAM	LAN Power Supply No: "NN" Cabinet tamper.
301 NN 202	301N202	LPT	LAN Power Supply No: "NN" AC Fail
302 NN 203	302N203	LBT	LAN Power Supply No: "NN" Low Battery
150 NN 204	150N204	ALR	LAN Power Supply No: "NN" Battery Fail
150 NN 205	150N205	ALR	LAN Power Supply No: "NN" Detector Fuse
150 NN 206	150N206	ALR	LAN Power Supply No: "NN" LAN Fuse
150 NN 207	150N207	ALR	LAN Power Supply No: "NN" Battery Fuse
150 NN 208	150N208	ALR	LAN Power Supply No: "NN" Aux 2 Fuse Fail
145 NN 209	145N209	ALR	LAN Power Supply No: "NN" Aux 2 Tamper
150 NN 210	150N210	ALR	LAN Power Supply No: "NN" Detector Over-current
150 NN 211	150N211	ALR	LAN Power Supply No: "NN" Battery Over-current
150 NN 212	150N212	ALR	LAN Power Supply No: "NN" Over-volts
150 NN 213	150N213	ALR	LAN Power Supply No: "NN" Low Volts
330 NN 214	330N214	ALR	LAN Power Supply No: "NN" Slave Fail
309 NN 215	309N215	LBT	LAN Power Supply No: "NN" Battery Test Fail
143 NN 216	143N216	COM	LAN Power Supply No: "NN" LAN Comms Problem

XYZ NN TPP		Message String
XYZ		Event Code
NN	N	Module number. (Up to 99) SIMSII uses 1-9 then A-Z. (Representing decimal 1 to 35)
T		Module Type. Type 2 = LAN Power Supply.
PP		Zone number (point number)

NOTE:
In the 3000/Access 4000 system, the LAN Power Supply is actually Type 11, but reports as Type 2 in SIMSII mapping. (Module Type 2 is the LED Terminal, which has never been implemented.)

Message	SIMSII Accnt Maint. Zones		Description
XYZ NN 301	XYZN301		Big Expander Module No: "NN" Zone Input 1
XYZ NN 302	XYZN302		Big Expander Module No: "NN" Zone Input 2
XYZ NN 303	XYZN303		Big Expander Module No: "NN" Zone Input 3
XYZ NN 304	XYZN304		Big Expander Module No: "NN" Zone Input 4
XYZ NN 305	XYZN305		Big Expander Module No: "NN" Zone Input 5
XYZ NN 306	XYZN306		Big Expander Module No: "NN" Zone Input 6
XYZ NN 307	XYZN307		Big Expander Module No: "NN" Zone Input 7
XYZ NN 308	XYZN308		Big Expander Module No: "NN" Zone Input 8
XYZ NN 309	XYZN309		Big Expander Module No: "NN" Zone Input 9
XYZ NN 310	XYZN310		Big Expander Module No: "NN" Zone Input 10
XYZ NN 311	XYZN311		Big Expander Module No: "NN" Zone Input 11
XYZ NN 312	XYZN312		Big Expander Module No: "NN" Zone Input 12
XYZ NN 313	XYZN313		Big Expander Module No: "NN" Zone Input 13
XYZ NN 314	XYZN314		Big Expander Module No: "NN" Zone Input 14
XYZ NN 315	XYZN315		Big Expander Module No: "NN" Zone Input 15
XYZ NN 316	XYZN316		Big Expander Module No: "NN" Zone Input 16
XYZ NN 317	XYZN317		Big Expander Module No: "NN" Zone Input 17
XYZ NN 318	XYZN318		Big Expander Module No: "NN" Zone Input 18
XYZ NN 319	XYZN319		Big Expander Module No: "NN" Zone Input 19
XYZ NN 320	XYZN320		Big Expander Module No: "NN" Zone Input 20
XYZ NN 321	XYZN321		Big Expander Module No: "NN" Zone Input 21
XYZ NN 322	XYZN322		Big Expander Module No: "NN" Zone Input 22
XYZ NN 323	XYZN323		Big Expander Module No: "NN" Zone Input 23
XYZ NN 324	XYZN324		Big Expander Module No: "NN" Zone Input 24
XYZ NN 325	XYZN325		Big Expander Module No: "NN" Zone Input 25
XYZ NN 326	XYZN326		Big Expander Module No: "NN" Zone Input 26
XYZ NN 327	XYZN327		Big Expander Module No: "NN" Zone Input 27
XYZ NN 328	XYZN328		Big Expander Module No: "NN" Zone Input 28
XYZ NN 329	XYZN329		Big Expander Module No: "NN" Zone Input 29
XYZ NN 330	XYZN330		Big Expander Module No: "NN" Zone Input 30
XYZ NN 331	XYZN331		Big Expander Module No: "NN" Zone Input 31
XYZ NN 332	XYZN332		Big Expander Module No: "NN" Zone Input 32
572 NN 3PP	572N3PP	ISO	Big Expander Module No: "NN" System Zone Isolate PP = Zone Number

Common Event Codes (XYZ) for Zone Alarms

130	BUR	Burglary
137	TAM	Tamper
573	ISO	Isolate
110	FIR	Fire
373	TAM	Fire Zone Tamper
571	ISO	Fire Zone Isolate
140	ALR	General Zone Alarm
144	TAM	General Zone Tamper
570	ISO	General Zone Isolate

e.g. 130 01 314 1301314 Burglary Alarm on Big Expander Module No: 1, Zone 14.

Big Expander Module System Input Alarms

145 NN 301	145N301	TAM	Big Expander Module No: "NN" Cabinet tamper.
145 NN 302	145N302	TAM	Big Expander Module No: "NN" Internal siren tamper
145 NN 303	145N303	TAM	Big Expander Module No: "NN" Ext. siren tamper.
301 NN 304	301N304	LPT	Big Expander Module No: "NN" AC fail.
302 NN 305	302N305	LBT	Big Expander Module No: "NN" Low battery.
150 NN 306	150N306	FUS	Big Expander Module No: "NN" LAN fuse
150 NN 307	150N307	FUS	Big Expander Module No: "NN" Detector fuse
143 NN 308	143N308	COM	Big Expander Module No: "NN" Lan fail
309 NN 309	309N309	LBT	Big Expander Module No: "NN" Battery test fail
e.g. 302 04 305	3024305		Low Battery Alarm on Big Expander Module No: 4.

XYZ NN TPP		Message String
XYZ		Event Code
NN	N	Module number. (A system can have up to 99 Big Expanders) SIMSII uses 1-9 then A-Z. (Representing decimal 1 to 35)
T		Module Type. Type 3 = Big Expander Module.
PP		Zone number (point number)

Message	SIMSII Accnt Maint. Zones		Description
XYZ NN 401	XYZN401		Reader Module No: "NN" Zone Input 1
XYZ NN 402	XYZN402		Reader Module No: "NN" Zone Input 2
XYZ NN 403	XYZN403		Reader Module No: "NN" Zone Input 3
XYZ NN 404	XYZN404		Reader Module No: "NN" Zone Input 4
XYZ NN 405	XYZN405		Reader Module No: "NN" Zone Input 5
XYZ NN 406	XYZN406		Reader Module No: "NN" Zone Input 6
XYZ NN 407	XYZN407		Reader Module No: "NN" Zone Input 7
XYZ NN 408	XYZN408		Reader Module No: "NN" Zone Input 8
572 NN 4PP	572N4PP	ISO	Reader Module No: "NN" System Zone Isolate PP = Zone number

Common Event Codes (XYZ) for Zone Alarms

130	BUR	Burglary
137	TAM	Tamper
573	ISO	Isolate
373	TAM	Fire Zone Tamper
571	ISO	Fire Zone Isolate
140	ALR	General Zone Alarm
144	TAM	General Zone Tamper
570	ISO	General Zone Isolate

e.g. 137 04 405 1374405 Tamper Burglary Zone on Reader module No: 4, Zone 5.

Reader Module System Input Alarms

145 NN 401	145N401	TAM	Reader Module No: "NN" Cabinet tamper.
302 NN 402	302N402	LBT	Reader Module No: "NN" Low Voltage
420 NN 403	420N403	TAM	Reader Module No: "NN" Door 1 Forced
420 NN 404	420N404	TAM	Reader Module No: "NN" Door 1 Held Open
420 NN 405	420N405	TAM	Reader Module No: "NN" Door 2 Forced
420 NN 406	420N406	TAM	Reader Module No: "NN" Door 2 Held Open
421 NN 407	421N407	ALR	Reader Module No: "NN" Illegal Card
143 NN 408	143N408	COM	Reader Module No: "NN" LAN fail.

XYZ NN TPP		Message String
XYZ		Event Code
NN	N	Module number. (A system can have up to 99 Reader Modules) SIMSII uses 1-9 then A-Z. (Representing decimal 1 to 35)
T		Module Type. Type 4 = Reader Module.
PP		Zone number (point number)

Message	SIMSII Accnt Maint. Zones		Description
XYZ NN 501	XYZN501		Wireless Network Module No: "NN" Zone Input 1
XYZ NN 502	XYZN502		Wireless Network Module No: "NN" Zone Input 2
XYZ NN 503	XYZN503		Wireless Network Module No: "NN" Zone Input 3
XYZ NN 504	XYZN504		Wireless Network Module No: "NN" Zone Input 4
XYZ NN 505	XYZN505		Wireless Network Module No: "NN" Zone Input 5
XYZ NN 506	XYZN506		Wireless Network Module No: "NN" Zone Input 6
XYZ NN 507	XYZN507		Wireless Network Module No: "NN" Zone Input 7
XYZ NN 508	XYZN508		Wireless Network Module No: "NN" Zone Input 8
XYZ NN 509	XYZN509		Wireless Network Module No: "NN" Zone Input 9
XYZ NN 510	XYZN510		Wireless Network Module No: "NN" Zone Input 10
XYZ NN 511	XYZN511		Wireless Network Module No: "NN" Zone Input 11
XYZ NN 512	XYZN512		Wireless Network Module No: "NN" Zone Input 12
XYZ NN 513	XYZN513		Wireless Network Module No: "NN" Zone Input 13
XYZ NN 514	XYZN514		Wireless Network Module No: "NN" Zone Input 14
XYZ NN 515	XYZN515		Wireless Network Module No: "NN" Zone Input 15
XYZ NN 516	XYZN516		Wireless Network Module No: "NN" Zone Input 16
572 NN 5PP	572N5PP	ISO	Wireless Network Module No: "NN" System Zone Isolate PP = Zone number

Common Event Codes (XYZ) for Zone Alarms

130		BUR	Burglary
137		TAM	Tamper
573		ISO	Isolate
373		TAM	Fire Zone Tamper
571		ISO	Fire Zone Isolate
140		ALR	General Zone Alarm
144		TAM	General Zone Tamper
570		ISO	General Zone Isolate
e.g. 130 02 506	1302506		Alarm Burglary Zone on Wireless N'work module No: 2, Zone 6.

Wireless Network Module System Input Alarms

145 NN 501	145N501	TAM	Wireless Network Module No: "NN" Transmitter Timeout
302 NN 502	302N502	LBT	Wireless Network Module No: "NN" Low Battery

XYZ NN TPP		Message String
XYZ		Event Code
NN	N	Module number. (A system can have up to 13 Wireless Modules) SIMSII uses 1-9 then A-Z. (Representing decimal 1 to 35)
T		Module Type. Type 5 = Wireless Network Module. (SpreadNet or Inovonics)
PP		Zone number (point number)

Message	SIMSII Accnt Maint. Zones		Description
XYZ NN 601	XYZN601		Mini Expander Module No: "NN" Zone Input 1
XYZ NN 602	XYZN602		Mini Expander Module No: "NN" Zone Input 2
XYZ NN 603	XYZN603		Mini Expander Module No: "NN" Zone Input 3
XYZ NN 604	XYZN604		Mini Expander Module No: "NN" Zone Input 4
XYZ NN 605	XYZN605		Mini Expander Module No: "NN" Zone Input 5
XYZ NN 606	XYZN606		Mini Expander Module No: "NN" Zone Input 6
XYZ NN 607	XYZN607		Mini Expander Module No: "NN" Zone Input 7
XYZ NN 608	XYZN608		Mini Expander Module No: "NN" Zone Input 8
572 NN 6PP	572N6PP	ISO	Mini Expander Module No: "NN" System Zone Isolate PP = Zone Number

Common Event Codes (XYZ) for Zone Alarms

130	BUR	Burglary
137	TAM	Tamper
573	ISO	Isolate
110	FIR	Fire
373	TAM	Fire Zone Tamper
571	ISO	Fire Zone Isolate
140	ALR	General Zone Alarm
144	TAM	General Zone Tamper
570	ISO	General Zone Isolate

e.g. 130 12 607	130C607	Burglary Alarm on Mini Expander Module No: 12, Zone 7.

Mini Expander Module System Input Alarms

302 NN 601	302N601	LBT	Mini Expander Module No: "NN" Low Volts.
143 NN 608	143N608	COM	Mini Expander Module No: "NN" Lan fail
e.g. 302 04 601	3024601		Low Volts Alarm on Mini Expander Module No: 4.

XYZ NN TPP		Message String
XYZ		Event Code
NN	N	Module number. (A system can have up to 99 Mini Expanders) SIMSII uses 1-9 then A-Z. (Representing decimal 1 to 35)
T		Module Type. Type 6 = Mini Expander Module.
PP		Zone number (point number)

Message	SIMSII Accnt Maint. Zones		Description
XYZ NN 701	XYZN701		Expander Module No: "NN" Zone Input 1
XYZ NN 702	XYZN702		Expander Module No: "NN" Zone Input 2
XYZ NN 703	XYZN703		Expander Module No: "NN" Zone Input 3
XYZ NN 704	XYZN704		Expander Module No: "NN" Zone Input 4
XYZ NN 705	XYZN705		Expander Module No: "NN" Zone Input 5
XYZ NN 706	XYZN706		Expander Module No: "NN" Zone Input 6
XYZ NN 707	XYZN707		Expander Module No: "NN" Zone Input 7
XYZ NN 708	XYZN708		Expander Module No: "NN" Zone Input 8
XYZ NN 709	XYZN709		Expander Module No: "NN" Zone Input 9
XYZ NN 710	XYZN710		Expander Module No: "NN" Zone Input 10
XYZ NN 711	XYZN711		Expander Module No: "NN" Zone Input 11
XYZ NN 712	XYZN712		Expander Module No: "NN" Zone Input 12
XYZ NN 713	XYZN713		Expander Module No: "NN" Zone Input 13
XYZ NN 714	XYZN714		Expander Module No: "NN" Zone Input 14
XYZ NN 715	XYZN715		Expander Module No: "NN" Zone Input 15
XYZ NN 716	XYZN716		Expander Module No: "NN" Zone Input 16
572 NN 7PP	572N7PP	ISO	Expander Module No: "NN" System Zone Isolate PP = Zone Number

Common Event Codes (XYZ) for Zone Alarms

130	BUR	Burglary
137	TAM	Tamper
573	ISO	Isolate
110	FIR	Fire
373	TAM	Fire Zone Tamper
571	ISO	Fire Zone Isolate
140	ALR	General Zone Alarm
144	TAM	General Zone Tamper
570	ISO	General Zone Isolate

e.g. 130 01 714 1301714 Burglary Alarm on Expander Module No: 1, Zone 14.

Expander Module System Input Alarms

145 NN 701	145N701	TAM	Expander Module No: "NN" Cabinet tamper.
145 NN 702	145N702	TAM	Expander Module No: "NN" Internal siren tamper
145 NN 703	145N703	TAM	Expander Module No: "NN" Ext. siren tamper.
301 NN 704	301N704	LPT	Expander Module No: "NN" AC fail.
302 NN 705	302N705	LBT	Expander Module No: "NN" Low battery.
150 NN 706	150N706	FUS	Expander Module No: "NN" LAN fuse
150 NN 707	150N707	FUS	Expander Module No: "NN" Detector fuse
143 NN 708	143N708	COM	Expander Module No: "NN" Lan fail
309 NN 709	309N709	LBT	Expander Module No: "NN" Battery test fail
e.g. 302 04 705	3024705		Low Battery Alarm on Expander Module No: 4.

XYZ NN TPP		Message String
XYZ		Event Code
NN	N	Module number. (A system can have up to 99 Expanders) SIMSII uses 1-9 then A-Z. (Representing decimal 1 to 35)
T		Module Type. Type 3 = Expander Module.
PP		Zone number (point number)

Message	SIMSII Accnt Maint. Zones		Description
XYZ NN 801	XYZN801		Intelligent 4Dr Access Module No: "NN" Zone Input 1
XYZ NN 802	XYZN802		Intelligent 4Dr Access Module No: "NN" Zone Input 2
XYZ NN 803	XYZN803		Intelligent 4Dr Access Module No: "NN" Zone Input 3
XYZ NN 804	XYZN804		Intelligent 4Dr Access Module No: "NN" Zone Input 4
XYZ NN 805	XYZN805		Intelligent 4Dr Access Module No: "NN" Zone Input 5
XYZ NN 806	XYZN806		Intelligent 4Dr Access Module No: "NN" Zone Input 6
XYZ NN 807	XYZN807		Intelligent 4Dr Access Module No: "NN" Zone Input 7
XYZ NN 808	XYZN808		Intelligent 4Dr Access Module No: "NN" Zone Input 8
XYZ NN 809	XYZN809		Intelligent 4Dr Access Module No: "NN" Reed Input Door #1
XYZ NN 810	XYZN810		Intelligent 4Dr Access Module No: "NN" Reed Input Door #2
XYZ NN 811	XYZN811		Intelligent 4Dr Access Module No: "NN" Reed Input Door #3
XYZ NN 812	XYZN812		Intelligent 4Dr Access Module No: "NN" Reed Input Door #4
XYZ NN 813	XYZN813		Intelligent 4Dr Access Module No: "NN" Tongue Sense Dr #1
XYZ NN 814	XYZN814		Intelligent 4Dr Access Module No: "NN" Tongue Sense Dr #2
XYZ NN 815	XYZN815		Intelligent 4Dr Access Module No: "NN" Tongue Sense Dr #3
XYZ NN 816	XYZN816		Intelligent 4Dr Access Module No: "NN" Tongue Sense Dr #4
572 NN 8PP	572N8PP	ISO	Reader Module No: "NN" System Zone Isolate PP = Zone number

Common Event Codes (XYZ) for Zone Alarms

130	BUR	Burglary
137	TAM	Tamper
573	ISO	Isolate
373	TAM	Fire Zone Tamper
571	ISO	Fire Zone Isolate
140	ALR	General Zone Alarm
144	TAM	General Zone Tamper
570	ISO	General Zone Isolate

e.g. 137 04 805 1374805 Tamper Burglary Zone on Int. Access module No: 4, Zone 5.

Intelligent 4 Door Access Module System Input Alarms

145 NN 801	145N801	TAM	Intell. Access Module No: "NN" Lock tamper Door #1
145 NN 802	145N802	TAM	Intell. Access Module No: "NN" Lock tamper Door #2
145 NN 803	145N803	TAM	Intell. Access Module No: "NN" Lock tamper Door #3
145 NN 804	145N804	TAM	Intell. Access Module No: "NN" Lock tamper Door #4
420 NN 805	420N805	TAM	Intell. Access Module No: "NN" Door Forced. Door #1
420 NN 806	420N806	TAM	Intell. Access Module No: "NN" Door Forced. Door #2
420 NN 807	420N807	TAM	Intell. Access Module No: "NN" Door Forced. Door #3
420 NN 808	420N808	TAM	Intell. Access Module No: "NN" Door Forced. Door #4
420 NN 809	420N809	TAM	Intell. Access Module No: "NN" Door Held Open. Door #1
420 NN 810	420N810	TAM	Intell. Access Module No: "NN" Door Held Open. Door #2
420 NN 811	420N811	TAM	Intell. Access Module No: "NN" Door Held Open. Door #3
420 NN 812	420N812	TAM	Intell. Access Module No: "NN" Door Held Open. Door #4
421 NN 813	421N813	ALR	Intell. Access Module No: "NN" Illegal Card. Door #1
421 NN 814	421N814	ALR	Intell. Access Module No: "NN" Illegal Card. Door #2
421 NN 815	421N815	ALR	Intell. Access Module No: "NN" Illegal Card. Door #3
421 NN 816	421N816	ALR	Intell. Access Module No: "NN" Illegal Card. Door #4
145 NN 817	145N817	TAM	Intell. Access Module No: "NN" Cabinet tamper.
145 NN 818	145N818	TAM	Intell. Access Module No: "NN" General Lock Fault
309 NN 819	309N819	LBT	Intell. Access Module No: "NN" Battery test fail.
301 NN 820	301N820	LPT	Intell. Access Module No: "NN" AC fail.
302 NN 821	302N821	LBT	Intell. Access Module No: "NN" Low Battery
150 NN 822	150N822	FUS	Intell. Access Module No: "NN" LAN fuse
150 NN 823	150N823	FUS	Intell. Access Module No: "NN" Detector fuse
143 NN 824	143N824	COM	Intell. Access Module No: "NN" LAN fail.

XYZ NN TPP		Message String
XYZ		Event Code
NN	N	Module number. SIMSII uses 1-9 then A-Z. (Representing decimal 1 to 35)
T		Module Type. Type 8 = Intelligent 4Dr Access Module.
PP		Zone number (point number)

Message	SIMSII Accnt Maint. Zones		Description
XYZ NN 901	XYZN901		Analogue Module No: "NN" Zone Input 1
XYZ NN 902	XYZN902		Analogue Module No: "NN" Zone Input 2
XYZ NN 903	XYZN903		Analogue Module No: "NN" Zone Input 3
XYZ NN 904	XYZN904		Analogue Module No: "NN" Zone Input 4
XYZ NN 905	XYZN905		Analogue Module No: "NN" Zone Input 5
XYZ NN 906	XYZN906		Analogue Module No: "NN" Zone Input 6
572 NN 9PP	572N9PP	ISO	Expander Module No: "NN" System Zone Isolate PP = Zone Number

Common Event Codes (XYZ) for Zone Alarms

130	BUR	Burglary
137	TAM	Tamper
573	ISO	Isolate
110	FIR	Fire
373	TAM	Fire Zone Tamper
571	ISO	Fire Zone Isolate
140	ALR	General Zone Alarm
144	TAM	General Zone Tamper
570	ISO	General Zone Isolate

e.g. 140 01 903 1301714 General Alarm on Analogue Module No: 1, Zone 3.

Analogue Module System Input Alarms

145 NN 901	145N901	TAM	Analogue Module No: "NN" Cabinet tamper.
302 NN 901	302N902	LBT	Analogue Module No: "NN" Low Volts.
143 NN 901	143N903	COM	Analogue Module No: "NN" LAN Comms.

e.g. 143 01 903 1431903 LAN Comms Problem on Analogue Module No: 1.

XYZ NN TPP	Message String
XYZ	Event Code
NN	Module number. (Up to 99) SIMSII uses 1-9 then A-Z. (Representing decimal 1 to 35)
T	Module Type. Type 9 = Analogue Module.
PP	Zone number (point number)

Message	SIMSII Accnt Maint. Zones		Description
XYZ NN 501	XYZN501		RF Expander No: "NN" Zone Input 1
XYZ NN 502	XYZN502		RF Expander No: "NN" Zone Input 2
XYZ NN 503	XYZN503		RF Expander No: "NN" Zone Input 3
XYZ NN 504	XYZN504		RF Expander No: "NN" Zone Input 4
XYZ NN 505	XYZN505		RF Expander No: "NN" Zone Input 5
XYZ NN 506	XYZN506		RF Expander No: "NN" Zone Input 6
XYZ NN 507	XYZN507		RF Expander No: "NN" Zone Input 7
XYZ NN 508	XYZN508		RF Expander No: "NN" Zone Input 8
XYZ NN 509	XYZN509		RF Expander No: "NN" Zone Input 9
XYZ NN 510	XYZN510		RF Expander No: "NN" Zone Input 10
XYZ NN 511	XYZN511		RF Expander No: "NN" Zone Input 11
XYZ NN 512	XYZN512		RF Expander No: "NN" Zone Input 12
XYZ NN 513	XYZN513		RF Expander No: "NN" Zone Input 13
XYZ NN 514	XYZN514		RF Expander No: "NN" Zone Input 14
XYZ NN 515	XYZN515		RF Expander No: "NN" Zone Input 15
XYZ NN 516	XYZN516		RF Expander No: "NN" Zone Input 16
XYZ NN 517	XYZN517		RF Expander No: "NN" Zone Input 17
XYZ NN 518	XYZN518		RF Expander No: "NN" Zone Input 18
XYZ NN 519	XYZN519		RF Expander No: "NN" Zone Input 19
XYZ NN 520	XYZN520		RF Expander No: "NN" Zone Input 20
XYZ NN 521	XYZN521		RF Expander No: "NN" Zone Input 21
XYZ NN 522	XYZN522		RF Expander No: "NN" Zone Input 22
XYZ NN 523	XYZN523		RF Expander No: "NN" Zone Input 23
XYZ NN 524	XYZN524		RF Expander No: "NN" Zone Input 24
XYZ NN 525	XYZN525		RF Expander No: "NN" Zone Input 25
XYZ NN 526	XYZN526		RF Expander No: "NN" Zone Input 26
XYZ NN 527	XYZN527		RF Expander No: "NN" Zone Input 27
XYZ NN 528	XYZN528		RF Expander No: "NN" Zone Input 28
XYZ NN 529	XYZN529		RF Expander No: "NN" Zone Input 29
XYZ NN 530	XYZN530		RF Expander No: "NN" Zone Input 30
XYZ NN 531	XYZN531		RF Expander No: "NN" Zone Input 31
XYZ NN 532	XYZN532		RF Expander No: "NN" Zone Input 32
572 NN 5??	572N5??	ISO	RF Expander Module No: "NN" System Zone Isolate ?? = Zone number

Common Event Codes (XYZ) for Zone Alarms

130	BUR	Burglary
137	TAM	Tamper
573	ISO	Isolate
110	FIR	Fire
373	TAM	Fire Zone Tamper
571	ISO	Fire Zone Isolate
140	ALR	General Zone Alarm
144	TAM	General Zone Tamper

e.g. 140 03 501 1403501 General Zone Alarm on RF Expander No: 3, Zone 1.

RF Expander Module System Input Alarms

145 NN 501	145N501	TAM	RF Expander No: "NN" Cabinet tamper.
302 NN 502	302N502	LBT	RF Expander No: "NN" Low Volts
384 NN 503	384N503	ALR	RF Expander No: "NN" Transmitter Low Battery
381 NN 504	381N504	ALR	RF Expander No: "NN" Transmitter Poll Fail
344 NN 505	344N505	ALR	RF Expander No: "NN" Transmitter Jam
143 NN 506	143N506	COM	RF Expander No: "NN" LAN Comms Problem

XYZ NN TPP		Message String
XYZ		Event Code
NN	N	Module number. (Up to 99) SIMSII uses 1-9 then A-Z. (Representing decimal 1 to 35)
T		Module Type. Type 5 = RF Expander Module.
PP		Zone number (point number)

NOTE:
In the 3000/Access 4000 system, the RF Expander Module is actually Type 12, but reports as Type 5 in SIMSII mapping. (Module Type 5 is the Wireless Network Module. It is extremely unlikely that RF Expanders and Wireless Network Modules would be used in the same system.)

3000 / ACCESS 4000
V5.1

T09. Contact ID
Access-1 Mapping Tables

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CONTACT ID ACCESS-1 MAPPING					
Account No.	**Event Code**	**Area No.**	**POINT**	**Description**	**Panel Input**
	140	nn	1	Controller zone 1	C01:Z01
	140	nn	2	Controller zone 2	C01:Z02
			to	to	"
	140	nn	16	Controller zone 16	C01:Z16
	145	nn	17	Controller cabinet tamper	C01:S01
	145	nn	18	Controller internal siren tamper	C01:S02
	145	nn	19	Controller external siren tamper	C01:S03
	301	nn	20	Controller AC fail	C01:S04
	302	nn	21	Contoller Low Battery	C01:S05
	140	nn	22	Controller Lan fuse tamper	C01:S06
	140	nn	23	Controller Detector fuse tamper	C01:S07
	143	nn	24	Controller Lan comms	C01:S08
	309	nn	25	Controller Battery test fail	C01:S09
	306	nn	26	Controller Checksum alteration	C01:S10
	305	nn	27	Controller system power on reset	C01:S11
	351	nn	28	Controller Phone line fault	C01:S12
	330	nn	29	Uart 1 fault	C01:S13
	330	nn	30	Uart 2 fault	C01:S14
	330	nn	31	Uart 3 fault	C01:S15
	330	nn	32	Uart 4 fault	C01:S16
	307	nn	33	Controller Self test fail	C01:S17
	602	nn	34	Controller Time report	C01:S18
	601	nn	35	Controller manual test report	C01:S19
	350	nn	36	Controller Comms backup	C01:S20
	354	nn	37	Controller Comms fail	C01:S21
	351	nn	38	Controller Phone	C01:S22
	140	nn	39	Controller Module substitution	C01:S23
	140	nn	40	PreArm1 Test Pass	C01:S24
	140	nn	41	PreArm1 Test Fail	C01:S25
	140	nn	42	PreArm2 Test Pass	C01:S26
	140	nn	43	PreArm2 Test Fail	C01:S27
	140	nn	44	Controller Request Service	C01:S28
	140	nn	45	Controller Intelligent Reader Problem	C01:S29
	140	nn	46	Controller System input 46	C01:S30
	140	nn	47	Controller System input 47	C01:S31
	140	nn	48	Controller System input 48	C01:S32
		nn	99	Unmappable event	
	140	nn	100	LCD Terminal 1 Zone 1	T01:Z01
	140	nn	101	LCD Terminal 1 Zone 2	T01:Z02
	145	nn	102	LCD Terminal 1 Cabinet tamper	T01:S01
	120	nn	103	LCD Terminal 1 Panic	T01:S02
	420	nn	104	LCD Terminal 1 Door forced	T01:S03
	420	nn	105	LCD Terminal 1 Door open too long	T01:S04
	122	nn	106	LCD Terminal 1 Operator duress	T01:S05
	102	nn	107	LCD Terminal 1 Deadman	T01:S06
	421	nn	108	LCD Terminal 1 Too many tries	T01:S07
	143	nn	109	LCD Terminal 1 Lan comms status	T01:S08
				V	
				From LCD Terminal Number 1 to 9	
				V	
	140	nn	180	LCD Terminal 9 Zone 1	T09:Z01
	140	nn	181	LCD Terminal 9 Zone 2	T09:Z02
	145	nn	182	LCD Terminal 9 Cabinet tamper	T09:S01

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	120	nn	183	LCD Terminal 9 Panic	T09:S02
	420	nn	184	LCD Terminal 9 Door forced	T09:S03
	420	nn	185	LCD Terminal 9 Door open too long	T09:S04
	122	nn	186	LCD Terminal 9 Operator duress	T09:S05
	102	nn	187	LCD Terminal 9 Deadman	T09:S06
	421	nn	188	LCD Terminal 9 Too many tries	T09:S07
	143	nn	189	LCD Terminal 9 Lan comms status	T09:S08
	140	nn	190	Expander 1 Zone 1	B01:Z01
	140	nn	191	Expander 1 Zone 2	B01:Z02
			to	to	to
	140	nn	205	Expander 1 Zone 16	B01:Z16
	140	nn	99	Expander 1 Zone 17	B01:Z17
				to	to
	140	nn	99	Expander 1 Zone 32	B01:Z32
	145	nn	206	Expander 1 cabinet tamper	B01:S01
	145	nn	207	Expander 1 internal siren tampers	B01:S02
	145	nn	208	Expander 1 external siren tampers	B01:S03
	301	nn	209	Expander 1 AC fail	B01:S04
	302	nn	210	Expander 1 Battery Low	B01:S05
	140	nn	211	Expander 1 Lan fuse tamper	B01:S06
	140	nn	212	Expander 1 Detector fuse tamper	B01:S07
	143	nn	213	Expander 1 Lan comms status	B01:S08
	309	nn	214	Expander 1 Battery test fail	B01:S09
	306	nn	215	Expander 1 spare	B01:S10
				V	
				From Zone Expander 1 to 9	
				V	
	140	nn	398	Expander 9 Zone 1	B09:Z01
	140	nn	399	Expander 9 Zone 2	B09:Z02
			to	to	to
	140	nn	413	Expander 9 Zone 16	B09:Z16
	140	nn	99	Expander 9 Zone 17	B01:Z17
			to	to	to
	140	nn	99	Expander 9 Zone 32	B01:Z32
	145	nn	414	Expander 9 cabinet tamper	B09:S01
	145	nn	415	Expander 9 internal siren tampers	B09:S02
	145	nn	416	Expander 9 external siren tampers	B09:S03
	301	nn	417	Expander 9 AC fail	B09:S04
	302	nn	418	Expander 9 Battery Low	B09:S05
	140	nn	419	Expander 9 Lan fuse tamper	B09:S06
	140	nn	420	Expander 9 Detector fuse tamper	B09:S07
	143	nn	421	Expander 9 Lan comms status	B09:S08
	309	nn	422	Expander 9 Battery test fail	B09:S09
	306	nn	423	Expander 9 spare	B09:S10
	140	nn	190	Expander 1 Zone 1	E01:Z01
	140	nn	191	Expander 1 Zone 2	E01:Z02
			to	to	to
	140	nn	205	Expander 1 Zone 16	E01:Z16
	145	nn	206	Expander 1 cabinet tamper	E01:S01
	145	nn	208	Expander 1 internal siren tampers	E01:S02
	145	nn	209	Expander 1 external siren tampers	E01:S03
	301	nn	210	Expander 1 AC fail	E01:S04
	302	nn	211	Expander 1 Battery Low	E01:S05
	140	nn	212	Expander 1 Lan fuse tamper	E01:S06
	140	nn	213	Expander 1 Detector fuse tamper	E01:S07
	143	nn	214	Expander 1 Lan comms status	E01:S08

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	309	nn	215	Expander 1 Battery test fail	E01:S09
	306	nn	216	Expander 1 spare	E01:S10
				V	
				From Zone Expander 1 to 9	
				V	
	140	nn	398	Expander 9 Zone 1	E09:Z01
	140	nn	399	Expander 9 Zone 2	E09:Z02
			to	to	to
	140	nn	413	Expander 9 Zone 16	E09:Z32
	145	nn	414	Expander 9 cabinet tamper	E09:S01
	145	nn	415	Expander 9 internal siren tampers	E09:S02
	145	nn	416	Expander 9 external siren tampers	E09:S03
	301	nn	417	Expander 9 AC fail	E09:S04
	302	nn	418	Expander 9 Battery Low	E09:S05
	140	nn	419	Expander 9 Lan fuse tamper	E09:S06
	140	nn	420	Expander 9 Detector fuse tamper	E09:S07
	143	nn	421	Expander 9 Lan comms status	E09:S08
	309	nn	422	Expander 9 Battery test fail	E09:S09
	306	nn	423	Expander 9 spare	E09:S10
	140	nn	190	Mini Expander 1 Zone 1	M01:Z01
	140	nn	191	Mini Expander 1 Zone 2	M01:Z02
			to	to	to
	140	nn	197	Mini Expander 1 Zone 8	M01:Z08
	302	nn	198	Mini Expander 1 Low Battery	M01:S01
	140	nn	199	Mini Expander 1 Zn1 Extra	M01:S02
	140	nn	200	Mini Expander 1 Zn2 Extra	M01:S03
	140	nn	201	Mini Expander 1 Zn3 Extra	M01:S04
	140	nn	202	Mini Expander 1 Zn4 Extra	M01:S05
	140	nn	203	Mini Expander 1 Zn5 Extra	M01:S06
	140	nn	204	Mini Expander 1 Zn6 Extra	M01:S07
	140	nn	205	Mini Expander 1 Zn7 Extra	M01:S08
	143	nn	206	Mini Expander 1 LAN Comms	M01:S09
				V	
				From Zone Expander 1 to 9	
				V	
	140	nn	398	Mini Expander 9 Zone 1	M09:Z01
	140	nn	399	Mini Expander 9 Zone 2	M09:Z02
			to	to	to
	140	nn	405	Mini Expander 9 Zone 8	M09:Z08
	302	nn	406	Mini Expander 9 Low Battery	M09:S01
	140	nn	407	Mini Expander 9 Zn1 Extra	M09:S02
	140	nn	408	Mini Expander 9 Zn2 Extra	M09:S03
	140	nn	409	Mini Expander 9 Zn3 Extra	M09:S04
	140	nn	410	Mini Expander 9 Zn4 Extra	M09:S05
	140	nn	411	Mini Expander 9 Zn5 Extra	M09:S06
	140	nn	412	Mini Expander 9 Zn6 Extra	M09:S07
	140	nn	413	Mini Expander 9 Zn7 Extra	M09:S08
	143	nn	414	Mini Expander 9 LAN Comms	M09:S09
	140	nn	424	Reader Module 1 Zone 1 Door 1	R01:Z01
	140	nn	425	Reader Module 1 Zone 2 REX button	R01:Z02
	140	nn	426	Reader Module 1 Zone 3 REN button	R01:Z03
	140	nn	427	Reader Module 1 Zone 4 spare	R01:Z04
	140	nn	428	Reader Module 1 Zone 5	R01:Z05
	140	nn	429	Reader Module 1 Zone 6	R01:Z06
	140	nn	430	Reader Module 1 Zone 7	R01:Z07
	140	nn	431	Reader Module 1 Zone 8	R01:Z08

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	145	nn	432	Reader Module 1 Cabinet tamper	R01:S01
	302	nn	433	Reader Module 1 Low voltage	R01:S02
	140	nn	434	Reader Module 1 Door 1 forced	R01:S03
	140	nn	435	Reader Module 1 Door 1 open too long	R01:S04
	140	nn	436	Reader Module 1 Door 2 forced	R01:S05
	140	nn	437	Reader Module 1 Door 2 open too long	R01:S06
	140	nn	438	Reader Module 1 Illegal card either	R01:S07
	143	nn	439	Reader Module 1 Lan comms status	R01:S08
				V	
				From Reader module 1 to 36	
				V	
	140	nn	983	Reader Module 36 Zone 1 Door 1	R36:Z01
	140	nn	984	Reader Module 36 Zone 2 REX button	R36:Z02
	140	nn	985	Reader Module 36 Zone 3 REN button	R36:Z03
	140	nn	986	Reader Module 36 Zone 4 spare	R36:Z04
	140	nn	987	Reader Module 36 Zone 5	R36:Z05
	140	nn	989	Reader Module 36 Zone 6	R36:Z06
	140	nn	990	Reader Module 36 Zone 7	R36:Z07
	140	nn	991	Reader Module 36 Zone 8	R36:Z08
	145	nn	992	Reader Module 36 Cabinet tamper	R36:S01
	302	nn	993	Reader Module 36 Low voltage	R36:S02
	140	nn	994	Reader Module 36 Door 1 forced	R36:S03
	140	nn	995	Reader Module 36 Door 1 open too long	R36:S04
	140	nn	996	Reader Module 36 Door 2 forced	R36:S05
	140	nn	997	Reader Module 36 Door 2 open too long	R36:S06
	140	nn	998	Reader Module 36 Illegal card either	R36:S07
	143	nn	999	Reader Module 36 Lan comms status	R36:S08
	140	nn	190	SpreadNet 1 Zone 1	N01:Z01
	140	nn	191	SpreadNet 1 Zone 2	N01:Z02
			to	to	to
	140	nn	205	SpreadNet 1 Zone 16	N01:Z16
	353	nn	206	SpreadNet 1 Timeout	N01:S01
	356	nn	207	SpreadNet 1 Low Battery	N01:S02
	140	nn	208	SpreadNet 1 Spare	N01:S03
	140	nn	209	SpreadNet 1 Spare	N01:S04
				V	
				From SpreadNet Module 1 to 9	
				V	
	140	nn	398	SpreadNet 9 Zone 1	N01:Z01
	140	nn	399	SpreadNet 9 Zone 2	N01:Z02
			to	to	to
	140	nn	413	SpreadNet 9 Zone 16	N01:Z16
	353	nn	414	SpreadNet 9 Timeout	N01:S01
	356	nn	415	SpreadNet 9 Low Battery	N01:S02
	140	nn	416	SpreadNet 9 Spare	N01:S03
	140	nn	417	SpreadNet 9 Spare	N01:S04
	140	nn	99	All Intell 4 Dr Access Mod Zones	Inn:Znn
	145	nn	99	Intell 4 Dr Acc Mod Lock Tamper D1	Inn:S01
	145	nn	99	Intell 4 Dr Acc Mod Lock Tamper D2	Inn:S02
	145	nn	99	Intell 4 Dr Acc Mod Lock Tamper D3	Inn:S03
	145	nn	99	Intell 4 Dr Acc Mod Lock Tamper D4	Inn:S04
	140	nn	99	Intell 4 Dr Acc Mod Door Forced D1	Inn:S05
	140	nn	99	Intell 4 Dr Acc Mod Door Forced D2	Inn:S06
	140	nn	99	Intell 4 Dr Acc Mod Door Forced D3	Inn:S07
	140	nn	99	Intell 4 Dr Acc Mod Door Forced D4	Inn:S08
	140	nn	99	Intell 4 Dr Acc Mod DOTL Door 1	Inn:S09

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	140	nn	99	Intell 4 Dr Acc Mod DOTL Door 2	Inn:S10
	140	nn	99	Intell 4 Dr Acc Mod DOTL Door 3	Inn:S11
	140	nn	99	Intell 4 Dr Acc Mod DOTL Door 4	Inn:S12
	140	nn	99	Intell 4 Dr Acc Mod Invalid Card Door 1	Inn:S13
	140	nn	99	Intell 4 Dr Acc Mod Invalid Card Door 2	Inn:S14
	140	nn	99	Intell 4 Dr Acc Mod Invalid Card Door 3	Inn:S15
	140	nn	99	Intell 4 Dr Acc Mod Invalid Card Door 4	Inn:S16
	145	nn	99	Intell 4 Dr Acc Mod Cabinet Tamper	Inn:S17
	140	nn	99	Intell 4 Dr Acc Mod Gen Lock Fault	Inn:S18
	309	nn	99	Intell 4 Dr Acc Mod Battery Test Fail	Inn:S19
	301	nn	99	Intell 4 Dr Acc Mod AC Fail	Inn:S20
	302	nn	99	Intell 4 Dr Acc Mod Low Battery	Inn:S21
	140	nn	99	Intell 4 Dr Acc Mod LAN Fuse	Inn:S22
	140	nn	99	Intell 4 Dr Acc Mod Detector Fuse	Inn:S23
	143	nn	99	Intell 4 Dr Acc Mod LAN Comms Fail	Inn:S24
	140	nn	99	All Analogue Module Inputs	Qnn:Znn
	145	nn	99	All Analogue Module Cabinet Tamper	Qnn:S01
	302	nn	99	All Analogue Module Low Volts	Qnn:S02
	143	nn	99	All Analogue Module LAN Comms	Qnn:S03
	140	nn	99	All LAN Pwr Supp Module Zone Inputs	Pnn:Znn
	145	nn	99	All LAN PS Module Cabinet Tamper	Pnn:S01
	301	nn	99	All LAN PS Module AC Fail	Pnn:S02
	302	nn	99	All LAN PS Module Low Batt	Pnn:S03
	140	nn	99	All LAN PS Module Batt Fail	Pnn:S04
	140	nn	99	All LAN PS Module Detector Fuse	Pnn:S05
	140	nn	99	All LAN PS Module LAN Fuse	Pnn:S06
	140	nn	99	All LAN PS Module Batt Fuse	Pnn:S07
	140	nn	99	All LAN PS Module Aux 2 Fuse	Pnn:S08
	145	nn	99	All LAN PS Module Aux 2 Tamper	Pnn:S09
	140	nn	99	All LAN PS Module Det Over-current	Pnn:S10
	140	nn	99	All LAN PS Module Batt Over-current	Pnn:S11
	140	nn	99	All LAN PS Module Over Volts	Pnn:S12
	140	nn	99	All LAN PS Module Low Volts	Pnn:S13
	330	nn	99	All LAN PS Module Slave Fail	Pnn:S14
	309	nn	99	All LAN PS Module Batt Test Fail	Pnn:S15
	143	nn	99	All LAN PS Module LAN Comms	Pnn:S16
	140	nn	190	RF Expander Module Zone 1	F01:Z01
	140	nn	191	RF Expander Module Zone 2	F01:Z02
			to	to	to
	140	nn	205	RF Expander Module Zone 16	F01:Z16
	140	nn	99	RF Expander Module Zone 17 to 32	F01:Znn
	145	nn	206	RF Exp Module Cabinet Tamper	F01:S01
	302	nn	207	RF Exp Module Low Volts	F01:S02
	384	nn	208	RF Exp Module Tx Low Batt	F01:S03
	381	nn	209	RF Exp Module Tx Poll Fail	F01:S04
	344	nn	210	RF Exp Module Tx Jam	F01:S05
	143	nn	211	RF Exp Module LAN Comms	F01:S06
				V	
				From RF Exp Module 1 to 30	
				V	
	140	nn	398	RF Expander Module Zone 1	F09:Z01
	140	nn	399	RF Expander Module Zone 2	F09:Z02
			to	to	to
	140	nn	413	RF Expander Module Zone 16	F09:Z16
	140	nn	99	RF Expander Module Zone 17 to 32	F09:Znn

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	145	nn	414	RF Exp Module Cabinet Tamper	F09:S01
	302	nn	415	RF Exp Module Low Volts	F09:S02
	384	nn	416	RF Exp Module Tx Low Batt	F09:S03
	381	nn	417	RF Exp Module Tx Poll Fail	F09:S04
	344	nn	418	RF Exp Module Tx Jam	F09:S05
	143	nn	419	RF Exp Module LAN Comms	F09:S06
				OPEN / CLOSE	
	402	nn	001	Open/Close for Area nn - User 00001	na
			to	to	
	402	nn	900	Open/Close for Area nn - User 00900	na
	403	nn	901	Open/Close for System	na
	403	nn	902	Open/Close for Time Zone	na
	409	nn	903	Open/Close for Function Zone	na
	402	nn	999	Open/Close for Users > 00900	na
			00	General Area Open/Close	na
		01 - 98	01 to 98	Area 001-098 Open/Close	na
		99 - 250	99	Areas > 99 (99 to 250)	na
"nn" = Area Number					

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T10. Securitel Serial Channel Maps

SERIAL CHANNEL MAPS

All reports are sent as 2 digit pairs, up to 4 per poll. The tables below explain how these 2 bytes are used:

Opening/Closing Report First Digits

The 1st digit is used to report what Area is being opened or closed:

Decimal	Hex	Meaning
49	$31	General Opening.
50 to 79	$32 to $4f	Opening of an Area between 01 and 30 inclusive.
80	$50	Opening of an Area between 31 and 250 inclusive.
81	$51	General Closing.
82	$52 to $6f	Closing of an Area between 01 and 30 inclusive.
112	$70	Closing of an Area between 31 and 250 inclusive.

The general O/C Input will be used if the Securitel option "[G]eneral Open/Close" flag is set. A general opening will occur whenever an Area programmed for openings is turned off. A general closing will occur if all Areas that are programmed for closings and do not have the "[N]ot a general Area" flag set are on.

Opening/Closing Report Second Digits

The 2nd digit is used to report User ID information:

Decimal	Hex	Meaning
000	$00	Poll response (Not implemented yet)
001 to 238	$01 to $ee	Users 001 to 238
239	$ef	Users > 239
240	$f0	System Reset
241	$f1	TimeZone
242	$f2	Function Zone
243 to 255	$f3 to $ff	Expansion

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Alarm Report First Digits

Decimal	Hex	Meaning
006	$06	New Alarm
008	$08	Alarm Restore
014	$0e	New Tamper
016	$10	Tamper Restore
022	$16	New Isolate
024	$18	Isolate Restore

Control Module Alarm Report Second Digits

Decimal	Hex	Meaning
001 - 016	$01 to $10	Control Zones
017	$11	Cabinet tamper
018	$12	Internal siren tamper.
019	$13	External siren tamper.
020	$14	AC fail
021	$15	Low battery.
022	$16	LAN fuse tamper
023	$17	Detector fuse tamper
024	$18	LAN Comms status
025	$19	Battery test fail
026	$1a	Checksum alteration
027	$1b	System power on reset.
028	$1c	Phone Line Fail when required
029	$1d	UART 1 problems
030	$1e	UART 2 problems
031	$1f	UART 3 problems
032	$20	UART 4 problems
033	$21	Zone self test fail
034	$22	Time report
035	$23	Manual trigger
036	$24	Comms Backup
037	$25	Comms Fail
038	$26	Phone Line Fail when idle
039	$27	Module Substitution
040	$28	Pre-Arm 1 Test Start (on Odd Area)
041	$29	Pre-Arm 1 Test Fail (on Odd Area)
042	$30	Pre-Arm 2 Test Start (on Even Area)

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General Alarm Report Second Digits

Decimal	Hex	Meaning
049	$31	General LCD Cabinet tamper
050	$32	General LCD Panic
051	$33	General LCD Door Forced
052	$34	General LCD Door Open
053	$35	General LCD Duress
054	$36	General LCD Deadman
055	$37	General LCD PIN Attempts
056	$38	General LCD LAN Fail
057	$39	General LED Cabinet tamper
058	$3a	General LED Panic
059	$3b	General LED Door Forced
060	$3c	General LED Door Open
061	$3d	General LED Duress
062	$3e	General LED Deadman
063	$3f	General LED PIN Attempts
064	$40	General LED LAN Fail
065	$41	General Expander Cabinet tamper
066	$42	General Expander Int. Siren Tamper
067	$43	General Expander Ext. Siren Tamper
068	$44	General Expander AC Fail
069	$45	General Expander Low Battery
070	$46	General Expander LAN Fuse Failure
071	$47	General Expander Detector. Fuse Failure
072	$48	General Expander LAN Fail
073	$49	General Expander Battery test
074	$4a	Not Used
075	$4b	General Reader Cabinet tamper
076	$4c	General Reader Low Volts
077	$4d	General Reader Door Forced
078	$4e	General Reader Door Open
079	$4f	General Reader Spare
080	$50	General Reader1 Card Attempts
081	$51	General Raeder2 Card Attempts
082	$52	General Reader LAN Fail
083 - 100	$53 to $64	Not Used

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External Module Zone Alarm Second Digits

Decimal	Hex	Meaning
101 - 116	$65 to $74	Big Expander #1 first 16 Zones
117 - 132	$75 to $84	Big Expander #2 first 16 Zones
133 - 148	$85 to $94	Big Expander #3 first 16 Zones
149 - 164	$95 to $a4	Big Expander #4 first 16 Zones
165 - 180	$a5 to $b4	Big Expander #5 first 16 Zones
181 - 196	$b5 to $c4	Big Expander #6 first 16 Zones
197 - 204	$c5 to $cc	Terminal #001 to #008, Zone #1s
205 - 212	$cd to $d4	Reader #001 to #008, Zone #1s
213 - 223	$d5 to $df	Not Used
224 - 253	$e0 to $fd	General Area Zone Alarm, Areas 1 to 30 (No Restores)
254	$fe	General Zone Alarm, Area > 30 (No Restores)
255	$ff	Event unable to be mapped

NOTES:

1) Big Expander (32 Zone Expander) is Module Type 3.
2) Zones on the following Modules will only be reported as General Area Zone Alarms:

LCD Terminals	-Zone 2 on all LCD Terminals
	-All Zones on LCD Terminals #9 and above.
Big Expanders	-Zones 17 to 32 on all Big Expanders.
	-All Zones on Big Expanders #7 and above.
Reader Modules	-Zones 2 to 8 on all Reader Modules.
	-All Zones on Reader Modules #9 and above.
Wireless Network	-All Zones
Mini Expander	-All Zones
16Z Expander	-All Zones
Intelligent Reader	-All Zones
Analogue Modules	-All Zones
LAN Pwr Supply	-All Zones
RF Expander	-All Zones

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T11. SIA Messages

Block Types

The Block Types used by the Model 3000/Access 4000 are as follows:

Block Type	Sent by TX	Sent by RX	Block Code	Description
System	Yes	Yes	0	End of data
Information	Yes		N	Event (New)
Special	Yes	Yes	#	Account ID
Special	Yes	Yes	A	ASCII text

Modifiers

The Modifiers used by the Model 3000/Access 4000 are as follows:

Modifier	Syntax	Description	Use
ri	riAAA	Area number	Display Area associated with event.
ai	aiQ	Automated ID	Mechanism causing Open/Close.
pi	piNNNN	Peripheral ID	Module Type and Number.
ti	tiHH:MM:SS	Time	RTC stamp from Review log.

Event Data

The following table provides a summary of the Data Codes, Modifiers and ASCII text used for various events in the Model 3000/Access 4000:

Event Type	"N" Event Block Data Code	Modifier	ASCII Block
Account	# <prefix> <client code>		
Opening by User	OP <user>	ri <area>	A=Area name U=User name
Closing by User	CL <user>	ri <area>	A=Area name U=User name
Automatic Opening	OA <area>	ai <reason>	A=Area name U=User name
Automatic Closing	CA <area>	ai <reason>	A=Area name U=User name
Zone Alarm	<type> <address>	ri <area>	A=Area name I=Input name
Zone Alarm Restore	<type> <address>	ri <area>	A=Area name I=Input name
Zone Tamper	TA <address>	ri <area>	A=Area name I=Input name
Zone Tamper Restore	TR <address>	ri <area>	A=Area name I=Input name
Zone Isolate	<type> <address>	ri <area>	A=Area name I=Input name
Zone Isolate Restore	<type> <address>	ri <area>	A=Area name I=Input name
System Input Alarm	<system> OR <system> <address>	pi <module>	A=Area name I=Input name
System Input Restore	<system> OR <system> <address>	pi <module>	A=Area name I=Input name
System Isolate	<system> OR <system> <address>	pi <module>	A=Area name I=Input name
System Isolate Restore	<system> OR <system> <address>	pi <module>	A=Area name I=Input name

See the following tables for details.

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Users

This table shows the User mapping used by the Model 3000/Access 4000 in the <user> field:

User Number	User
0001 to 9989	User 1 to User 9989
9990 to 9997	Automatic
9998	Unknown Automatic
9999	User number >9989. i.e. User 9990 and above.

Open/Close Mechanism

This table describes the "Mechanism" for Open Close used by the Model 3000/Access 4000 in the <reason> field:

Reason	Mechanism
1	System
2	Time Zone
3	Function Zone (e.g. Keyswitch Zone)
4	Comms Task (Remote)
5 to 9	Spare for expansion.

Module

The <module> field identifies the Module Type and Module Number as follows:
-The first 2 digits identify the Module Type according to the table below.
-The second 2 digits identify the Module number, 01 to 99.
e.g. 0812 represents an Event from Intelligent Reader Module No. 12.

Module Type		Module	Module Type		Module
0	C	Control Module	8	I	Intelligent 4 Door Access Module
1	T	LCD Terminal	9	Q	Analogue Module
2	K	LED Terminal	10		Spare
3	B	Expander 32 Zone	11	P	LAN Power Supply Module
4	R	Reader Module (1 or 2 Door)	12	F	RF Expander Module
5	N	Wireless	13		Spare
6	M	Expander 8 Zone	14		Spare
7	E	Expander 16 Zone	15		Spare

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Zone Input Block Codes

The table below shows the Block Codes used for Zone Input Events.
The Block Code will be detemined by the SIA Type programmed in the Process Group that is assigned to the Zone Input. All default Process Groups have an appropriate SIA Type assigned. The default setting can be changed if required and additional Process Groups can be programmed to cater for SIA Types that are not included in the defaults.

SIA		Block Code					
Type	Description	Alarm	Alarm Restore	Tamper	Tamper Restore	Isolate	Isolate Restore
0	Untyped	UA	UR	TA	TR	UB	UU
1	Burlary	BA	BR	TA	TR	BB	BU
2	Fire	FA	FR	TA	TR	FB	FU
3	Gas	GA	GR	TA	TR	GB	GU
4	Holdup	HA	HR	TA	TR	HB	HU
5	Heat	KA	KR	TA	TR	KB	KU
6	Medical	MA	MR	TA	TR	MB	MU
7	Panic	PA	PR	TA	TR	PB	PU
8	Emergency	QA	QR	TA	TR	QB	QU
9	Sprinkler	SA	SR	TA	TR	SB	SU
10	Water	WA	WR	TA	TR	WB	WU
11	Freezer	ZA	ZR	TA	TR	ZB	ZU

System Input Block Codes & Address Field mapping

Details of System Input Block Codes and Address Field mapping for HEX and Decimal Address fields are provided in the following separate documents:

-SIA System I/P Block Codes.
-SIA HEX Address Field Mapping.
-SIA Decimal Address Field Mapping.

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T12 - SIA SYSTEM INPUT BLOCK CODES						
		Alarm Code	**Alarm Restore**	**Isolate Code**	**Isolate Restore**	**Address Field**
Control Module	**C**					
Cabinet tamp	S01	TA	TR	TB	TU	Y
Int siren tamp	S02	YA	YH	TB	TU	
Ext siren tamp	S03	YA	YH	TB	TU	
AC fail.	S04	AT	AR	UB	UU	
Low batt.	S05	YT	YR	UB	UU	
LAN fuse	S06	YP	YQ	UB	UU	
Det fuse	S07	YP	YQ	UB	UU	
Lan Comms	S08			UB	UU	
Batt test fail	S09	IA	IR	UB	UU	Y
Checksum	S10	YF		UB	UU	
Reset.	S11	RR		UB	UU	
Line Fail	S12	LT	LR	UB	UU	Y
Uart 1 problem	S13	NT	NR	UB	UU	Y
Uart 2 problem	S14	NT	NR	UB	UU	Y
Uart 3 problem	S15	NT	NR	UB	UU	Y
Uart 4 problem	S16	NT	NR	UB	UU	Y
Zone Self Test fail	S17	NA	NS	UB	UU	Y
Time Report	S18	RP		UB	UU	
Manual trigger	S19	RX		UB	UU	
Comms Backup	S20	NC	NR	UB	UU	Y
Comms Fail.	S21	NT	NR	UB	UU	Y
Phone Fault	S22	LT	LR	UB	UU	Y
Module Substitution	S23	UA	UH	UB	UU	Y
PreArm 1 start	S24	UA	UH	UB	UU	Y
PreArm 1 fail	S25	UA	UH	UB	UU	Y
PreArm 2 start	S26	UA	UH	UB	UU	Y
PreArm 2 fail	S27	UA	UH	UB	UU	Y
Request service	S28	YX		UB	UU	
IRDR problem	S29	YF		UB	UU	
GSM problem	S30	UA	UR	UB	UU	Y
Expander pwr test	S31	UA	UR	UB	UU	Y
Spare	S32	UA	UR	UB	UU	Y
LCD	**T**					
Cabinet tamper	S01	TA	TR	TB	TU	Y
Panic	S02	PA	PR	PB	PU	Y
Door Forced	S03	DF	DR	UB	UU	Y
Door Held	S04	DL	DH	UB	UU	Y
Duress	S05	HA	HH	HB	HU	Y
Deadman	S06					Y
Too many tries	S07	JA		UB	UU	Y
LAN fail.	S08	EM	EN	UB	UU	Y

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		Alarm Code	Alarm Restore	Isolate Code	Isolate Restore	Address Field
Exp 32 Zone	**B**					
Cabinet tamper	S01	TA	TR	TB	TU	Y
Int siren tamper	S02	YA	YH	TB	TU	
Ext siren tamper	S03	YA	YH	TB	TU	
AC fail.	S04	AT	AR	UB	UU	
Low battery.	S05	YT	YR	UB	UU	
LAN fuse	S06	YP	YQ	UB	UU	
Detector fuse	S07	YP	YQ	UB	UU	
LAN fail	S08	EM	EN	UB	UU	Y
Batt test fail	S09	IA	IR	UB	UU	Y
Spare	S10					
Reader	**R**					
Cabinet tamper	S01	TA	TR	TB	TU	Y
Low Voltage	S02	YT	YR	UB	UU	
Door 1 Forced	S03	DF	DR	UB	UU	Y
Door 1 Held	S04	DL	DH	UB	UU	Y
Door 2 Forced	S05	DF	DR	UB	UU	Y
Door 2 Held	S06	DL	DH	UB	UU	Y
Illegal Card	S07	DD	DR	UB	UU	Y
LAN fail.	S08	EM	EN	UB	UU	Y
Wireless	**N**					
Transmitter Timeout	S01	NA	NS	UB	UU	Y
Low Battery	S02	XT	XR	UB	UU	
Spare	S03					
Spare	S04					
Exp 8 Zone	**M**					
Low Volts.	S01	YT	YR	UB	UU	
Zone 1 Extra	S02	UA	UR	UB	UU	Y
Zone 2 Extra	S03	UA	UR	UB	UU	Y
Zone 3 Extra	S04	UA	UR	UB	UU	Y
Zone 4 Extra	S05	UA	UR	UB	UU	Y
Zone 5 Extra	S06	UA	UR	UB	UU	Y
Zone 6 Extra	S07	UA	UR	UB	UU	Y
Zone 7 Extra	S08	UA	UR	UB	UU	Y
LAN fail	S09	EM	EN	UB	UU	Y
Exp 16 Zone	**E**					
Cabinet tamper	S01	TA	TR	TB	TU	Y
Int siren tamper	S02	YA	YH	TB	TU	
Ext siren tamper	S03	YA	YH	TB	TU	
AC fail.	S04	AT	AR	UB	UU	
Low battery.	S05	YT	YR	UB	UU	
LAN fuse	S06	YP	YQ	UB	UU	
Detector fuse	S07	YP	YQ	UB	UU	
LAN fail	S08	EM	EN	UB	UU	Y
Batt test fail	S09	IA	IR	UB	UU	Y
Spare	S10					

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		Alarm Code	Alarm Restore	Isolate Code	Isolate Restore	Address Field
Int. Reader	**I**					
Lock tamer D1	S01	IA	IR	UB	UU	Y
Lock tamper D2	S02	IA	IR	UB	UU	Y
Lock tamper D3	S03	IA	IR	UB	UU	Y
Lock tamper D4	S04	IA	IR	UB	UU	Y
Door Forced D1	S05	DF	DR	UB	UU	Y
Door Forced D2	S06	DF	DR	UB	UU	Y
Door Forced D3	S07	DF	DR	UB	UU	Y
Door Forced D4	S08	DF	DR	UB	UU	Y
Door Held D1	S09	DL	DH	UB	UU	Y
Door Held D2	S10	DL	DH	UB	UU	Y
Door Held D3	S11	DL	DH	UB	UU	Y
Door Held D4	S12	DL	DH	UB	UU	Y
Illegal Card D1	S13	DD	DR	UB	UU	Y
Illegal Card D2	S14	DD	DR	UB	UU	Y
Illegal Card D3	S15	DD	DR	UB	UU	Y
Illegal Card D4	S16	DD	DR	UB	UU	Y
Cabinet tamper	S17	TA	TR	TB	TU	Y
General lock fault	S18	IA	IR	UB	UU	Y
Batt test fail	S19	IA	IR	UB	UU	Y
AC fail.	S20	AT	AR	UB	UU	
Low battery.	S21	YT	YR	UB	UU	
LAN fuse	S22	YP	YQ	UB	UU	
Detector fuse	S23	YP	YQ	UB	UU	
LAN fail	S24	EM	EN	UB	UU	Y
Analogue	**Q**					
Cabinet tamper	S01	TA	TR	TB	TU	Y
Low Volts	S02	YT	YR	UB	UU	
LAN fail	S03	EM	EN	UB	UU	Y
LAN Pwr Sup	**P**					
Cabinet tamper	S01	TA	TR	TB	TU	Y
AC fail.	S02	AT	AR	UB	UU	
Low battery.	S03	YT	YR	UB	UU	
Battery Fail	S04	YP	YQ	UB	UU	
Detector fuse	S05	YP	YQ	UB	UU	
LAN fuse	S06	YP	YQ	UB	UU	
Battery Fuse	S07	YP	YQ	UB	UU	
Aux 2 Fuse	S08	YP	YQ	UB	UU	
Aux 2 Tamper	S09	TA	TR	TB	TU	Y
Det Over Current	S10	YI	YJ	UB	UU	
Batt Over Current	S11	YI	YJ	UB	UU	
Over Volts	S12	YP	YQ	UB	UU	
Low Volts	S13	YP	YQ	UB	UU	
Slave Fail	S14	YP	YQ	UB	UU	
Batt test fail	S15	IA	IR	UB	UU	
LAN fail	S16	EM	EN	UB	UU	Y

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		Alarm Code	Alarm Restore	Isolate Code	Isolate Restore	Address Field
RF Expander	**F**					
Cabinet Tamper	S01	TA	TR	TB	TU	Y
Low Volts	S02	YT	YR	UB	UU	
Transmitter Low Batt	S03	XT	XR	UB	UU	
Transmitter Timeout	S04	NA	NS	UB	UU	Y
Transmitter Jam	S05	NA	NS	UB	UU	Y
LAN fail	S06	EM	EN	UB	UU	Y

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Model 3000 / Access 4000

TABLE 13
SIA HEXADECIMAL MAPPING
V5.10

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Control	**C**																															
Z01		0001																														
~		~																														
Z16		0010																														
Cab tamp	**S01**	0011																														
Int sir tamp	**S02**	0012																														
Ext sir tamp	**S03**	0013																														
AC fail.	**S04**	0014																														
Low batt.	**S05**	0015																														
LAN fuse	**S06**	0016																														
Det fuse	**S07**	0017																														
Lan Com	**S08**	0018																														
Batt test fail	**S09**	0019																														
Checksum	**S10**	001A																														
Reset.	**S11**	001B																														
Line Fail	**S12**	001C																														
Uart 1	**S13**	001D																														
Uart 2	**S14**	001E																														
Uart 3	**S15**	001F																														
Uart 4	**S16**	0020																														
Zone SelfTest	**S17**	0021																														
Time Report	**S18**	0022																														
Manual trigger	**S19**	0023																														
Comms B'up	**S20**	0024																														
Comms Fail.	**S21**	0025																														
Phone Fault	**S22**	0026																														
Module Subst	**S23**	0027																														
PreArm 1 start	**S24**	0028																														
PreArm 1 fail	**S25**	0029																														
PreArm 2 start	**S26**	002A																														
PreArm 2 fail	**S27**	002B																														
Req service	**S28**	002C																														
IRDR problem	**S29**	002D																														
GSM problem	**S30**	002E																														
Exp pwr test	**S31**	002F																														
Spare	**S32**	0030																														
LCD	**T**																															
Z01		0031	003B	0045	004F	0059	0063	006D	0077	0081	008B	0095	009F	00A9	00B3	00BD	00C7	00D1	00DB	00E5	00EF	00F9	0103	010D	0117	0121	012B	0135	013F	0149	0153	015D
Z02		0032	003C	0046	0050	005A	0064	006E	0078	0082	008C	0096	00A0	00AA	00B4	00BE	00C8	00D2	00DC	00E6	00F0	00FA	0104	010E	0118	0122	012C	0136	0140	014A	0154	015E
Cabinet tamp	**S01**	0033	003D	0047	0051	005B	0065	006F	0079	0083	008D	0097	00A1	00AB	00B5	00BF	00C9	00D3	00DD	00E7	00F1	00FB	0105	010F	0119	0123	012D	0137	0141	014B	0155	015F
Panic	**S02**	0034	003E	0048	0052	005C	0066	0070	007A	0084	008E	0098	00A2	00AC	00B6	00C0	00CA	00D4	00DE	00E8	00F2	00FC	0106	0110	011A	0124	012E	0138	0142	014C	0156	0160
Door Forced	**S03**	0035	003F	0049	0053	005D	0067	0071	007B	0085	008F	0099	00A3	00AD	00B7	00C1	00CB	00D5	00DF	00E9	00F3	00FD	0107	0111	011B	0125	012F	0139	0143	014D	0157	0161
Door Held	**S04**	0036	0040	004A	0054	005E	0068	0072	007C	0086	0090	009A	00A4	00AE	00B8	00C2	00CC	00D6	00E0	00EA	00F4	00FE	0108	0112	011C	0126	0130	013A	0144	014E	0158	0162
Duress	**S05**	0037	0041	004B	0055	005F	0069	0073	007D	0087	0091	009B	00A5	00AF	00B9	00C3	00CD	00D7	00E1	00EB	00F5	00FF	0109	0113	011D	0127	0131	013B	0145	014F	0159	0163
Deadman	**S06**	0038	0042	004C	0056	0060	006A	0074	007E	0088	0092	009C	00A6	00B0	00BA	00C4	00CE	00D8	00E2	00EC	00F6	0100	010A	0114	011E	0128	0132	013C	0146	0150	015A	0164
Too many tries	**S07**	0039	0043	004D	0057	0061	006B	0075	007F	0089	0093	009D	00A7	00B1	00BB	00C5	00CF	00D9	00E3	00ED	00F7	0101	010B	0115	011F	0129	0133	013D	0147	0151	015B	0165
LAN fail.	**S08**	003A	0044	004E	0058	0062	006C	0076	0080	008A	0094	009E	00A8	00B2	00BC	00C6	00D0	00DA	00E4	00EE	00F8	0102	010C	0116	0120	012A	0134	013E	0148	0152	015C	0166

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	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65
C																																		
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Z01	0167	0171	017B	0185	018F	0199	01A3	01AD	01B7	01C1	01CB	01D5	01DF	01E9	01F3	01FD	0207	0211	021B	0225	022F	0239	0243	024D	0257	0261	026B	0275	027F	0289	0293	029D	02A7	02B1
Z02	0168	0172	017C	0186	0190	019A	01A4	01AE	01B8	01C2	01CC	01D6	01E0	01EA	01F4	01FE	0208	0212	021C	0226	0230	023A	0244	024E	0258	0262	026C	0276	0280	028A	0294	029E	02A8	02B2
S01	0169	0173	017D	0187	0191	019B	01A5	01AF	01B9	01C3	01CD	01D7	01E1	01EB	01F5	01FF	0209	0213	021D	0227	0231	023B	0245	024F	0259	0263	026D	0277	0281	028B	0295	029F	02A9	02B3
S02	016A	0174	017E	0188	0192	019C	01A6	01B0	01BA	01C4	01CE	01D8	01E2	01EC	01F6	0200	020A	0214	021E	0228	0232	023C	0246	0250	025A	0264	026E	0278	0282	028C	0296	02A0	02AA	02B4
S03	016B	0175	017F	0189	0193	019D	01A7	01B1	01BB	01C5	01CF	01D9	01E3	01ED	01F7	0201	020B	0215	021F	0229	0233	023D	0247	0251	025B	0265	026F	0279	0283	028D	0297	02A1	02AB	02B5
S04	016C	0176	0180	018A	0194	019E	01A8	01B2	01BC	01C6	01D0	01DA	01E4	01EE	01F8	0202	020C	0216	0220	022A	0234	023E	0248	0252	025C	0266	0270	027A	0284	028E	0298	02A2	02AC	02B6
S05	016D	0177	0181	018B	0195	019F	01A9	01B3	01BD	01C7	01D1	01DB	01E5	01EF	01F9	0203	020D	0217	0221	022B	0235	023F	0249	0253	025D	0267	0271	027B	0285	028F	0299	02A3	02AD	02B7
S06	016E	0178	0182	018C	0196	01A0	01AA	01B4	01BE	01C8	01D2	01DC	01E6	01F0	01FA	0204	020E	0218	0222	022C	0236	0240	024A	0254	025E	0268	0272	027C	0286	0290	029A	02A4	02AE	02B8
S07	016F	0179	0183	018D	0197	01A1	01AB	01B5	01BF	01C9	01D3	01DD	01E7	01F1	01FB	0205	020F	0219	0223	022D	0237	0241	024B	0255	025F	0269	0273	027D	0287	0291	029B	02A5	02AF	02B9
S08	0170	017A	0184	018E	0198	01A2	01AC	01B6	01C0	01CA	01D4	01DE	01E8	01F2	01FC	0206	0210	021A	0224	022E	0238	0242	024C	0256	0260	026A	0274	027E	0288	0292	029C	02A6	02B0	02BA

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Z01	02BB	02C5	02CF	02D9	02E3	02ED	02F7	0301	030B	0315	031F	0329	0333	033D	0347	0351	035B	0365	036F	0379	0383	038D	0397	03A1	03AB	03B5	03BF	03C9	03D3	03DD	03E7	03F1	03FB	0405
Z02	02BC	02C6	02D0	02DA	02E4	02EE	02F8	0302	030C	0316	0320	032A	0334	033E	0348	0352	035C	0366	0370	037A	0384	038E	0398	03A2	03AC	03B6	03C0	03CA	03D4	03DE	03E8	03F2	03FC	0406
S01	02BD	02C7	02D1	02DB	02E5	02EF	02F9	0303	030D	0317	0321	032B	0335	033F	0349	0353	035D	0367	0371	037B	0385	038F	0399	03A3	03AD	03B7	03C1	03CB	03D5	03DF	03E9	03F3	03FD	0407
S02	02BE	02C8	02D2	02DC	02E6	02F0	02FA	0304	030E	0318	0322	032C	0336	0340	034A	0354	035E	0368	0372	037C	0386	0390	039A	03A4	03AE	03B8	03C2	03CC	03D6	03E0	03EA	03F4	03FE	0408
S03	02BF	02C9	02D3	02DD	02E7	02F1	02FB	0305	030F	0319	0323	032D	0337	0341	034B	0355	035F	0369	0373	037D	0387	0391	039B	03A5	03AF	03B9	03C3	03CD	03D7	03E1	03EB	03F5	03FF	0409
S04	02C0	02CA	02D4	02DE	02E8	02F2	02FC	0306	0310	031A	0324	032E	0338	0342	034C	0356	0360	036A	0374	037E	0388	0392	039C	03A6	03B0	03BA	03C4	03CE	03D8	03E2	03EC	03F6	0400	040A
S05	02C1	02CB	02D5	02DF	02E9	02F3	02FD	0307	0311	031B	0325	032F	0339	0343	034D	0357	0361	036B	0375	037F	0389	0393	039D	03A7	03B1	03BB	03C5	03CF	03D9	03E3	03ED	03F7	0401	040B
S06	02C2	02CC	02D6	02E0	02EA	02F4	02FE	0308	0312	031C	0326	0330	033A	0344	034E	0358	0362	036C	0376	0380	038A	0394	039E	03A8	03B2	03BC	03C6	03D0	03DA	03E4	03EE	03F8	0402	040C
S07	02C3	02CD	02D7	02E1	02EB	02F5	02FF	0309	0313	031D	0327	0331	033B	0345	034F	0359	0363	036D	0377	0381	038B	0395	039F	03A9	03B3	03BD	03C7	03D1	03DB	03E5	03EF	03F9	0403	040D
S08	02C4	02CE	02D8	02E2	02EC	02F6	0300	030A	0314	031E	0328	0332	033C	0346	0350	035A	0364	036E	0378	0382	038C	0396	03A0	03AA	03B4	03BE	03C8	03D2	03DC	03E6	03F0	03FA	0404	040E

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Exp 32 Zone	**B**																															
Z01		07ED	0817	0841	086B	0895	08BF	08E9	0913	093D	0967	0991	09BB	09E5	0A0F	0A39	0A63	0A8D	0AB7	0AE1	0B0B	0B35	0B5F	0B89	0BB3	0BDD	0C07	0C31	0C5B	0C85	0CAF	0CD9
Z02		07EE	0818	0842	086C	0896	08C0	08EA	0914	093E	0968	0992	09BC	09E6	0A10	0A3A	0A64	0A8E	0AB8	0AE2	0B0C	0B36	0B60	0B8A	0BB4	0BDE	0C08	0C32	0C5C	0C86	0CB0	0CDA
Z03		07EF	0819	0843	086D	0897	08C1	08EB	0915	093F	0969	0993	09BD	09E7	0A11	0A3B	0A65	0A8F	0AB9	0AE3	0B0D	0B37	0B61	0B8B	0BB5	0BDF	0C09	0C33	0C5D	0C87	0CB1	0CDB
Z04		07F0	081A	0844	086E	0898	08C2	08EC	0916	0940	096A	0994	09BE	09E8	0A12	0A3C	0A66	0A90	0ABA	0AE4	0B0E	0B38	0B62	0B8C	0BB6	0BE0	0C0A	0C34	0C5E	0C88	0CB2	0CDC
Z05		07F1	081B	0845	086F	0899	08C3	08ED	0917	0941	096B	0995	09BF	09E9	0A13	0A3D	0A67	0A91	0ABB	0AE5	0B0F	0B39	0B63	0B8D	0BB7	0BE1	0C0B	0C35	0C5F	0C89	0CB3	0CDD
Z06		07F2	081C	0846	0870	089A	08C4	08EE	0918	0942	096C	0996	09C0	09EA	0A14	0A3E	0A68	0A92	0ABC	0AE6	0B10	0B3A	0B64	0B8E	0BB8	0BE2	0C0C	0C36	0C60	0C8A	0CB4	0CDE
Z07		07F3	081D	0847	0871	089B	08C5	08EF	0919	0943	096D	0997	09C1	09EB	0A15	0A3F	0A69	0A93	0ABD	0AE7	0B11	0B3B	0B65	0B8F	0BB9	0BE3	0C0D	0C37	0C61	0C8B	0CB5	0CDF
Z08		07F4	081E	0848	0872	089C	08C6	08F0	091A	0944	096E	0998	09C2	09EC	0A16	0A40	0A6A	0A94	0ABE	0AE8	0B12	0B3C	0B66	0B90	0BBA	0BE4	0C0E	0C38	0C62	0C8C	0CB6	0CE0
Z09		07F5	081F	0849	0873	089D	08C7	08F1	091B	0945	096F	0999	09C3	09ED	0A17	0A41	0A6B	0A95	0ABF	0AE9	0B13	0B3D	0B67	0B91	0BBB	0BE5	0C0F	0C39	0C63	0C8D	0CB7	0CE1
Z10		07F6	0820	084A	0874	089E	08C8	08F2	091C	0946	0970	099A	09C4	09EE	0A18	0A42	0A6C	0A96	0AC0	0AEA	0B14	0B3E	0B68	0B92	0BBC	0BE6	0C10	0C3A	0C64	0C8E	0CB8	0CE2
Z11		07F7	0821	084B	0875	089F	08C9	08F3	091D	0947	0971	099B	09C5	09EF	0A19	0A43	0A6D	0A97	0AC1	0AEB	0B15	0B3F	0B69	0B93	0BBD	0BE7	0C11	0C3B	0C65	0C8F	0CB9	0CE3
Z12		07F8	0822	084C	0876	08A0	08CA	08F4	091E	0948	0972	099C	09C6	09F0	0A1A	0A44	0A6E	0A98	0AC2	0AEC	0B16	0B40	0B6A	0B94	0BBE	0BE8	0C12	0C3C	0C66	0C90	0CBA	0CE4
Z13		07F9	0823	084D	0877	08A1	08CB	08F5	091F	0949	0973	099D	09C7	09F1	0A1B	0A45	0A6F	0A99	0AC3	0AED	0B17	0B41	0B6B	0B95	0BBF	0BE9	0C13	0C3D	0C67	0C91	0CBB	0CE5
Z14		07FA	0824	084E	0878	08A2	08CC	08F6	0920	094A	0974	099E	09C8	09F2	0A1C	0A46	0A70	0A9A	0AC4	0AEE	0B18	0B42	0B6C	0B96	0BC0	0BEA	0C14	0C3E	0C68	0C92	0CBC	0CE6
Z15		07FB	0825	084F	0879	08A3	08CD	08F7	0921	094B	0975	099F	09C9	09F3	0A1D	0A47	0A71	0A9B	0AC5	0AEF	0B19	0B43	0B6D	0B97	0BC1	0BEB	0C15	0C3F	0C69	0C93	0CBD	0CE7
Z16		07FC	0826	0850	087A	08A4	08CE	08F8	0922	094C	0976	09A0	09CA	09F4	0A1E	0A48	0A72	0A9C	0AC6	0AF0	0B1A	0B44	0B6E	0B98	0BC2	0BEC	0C16	0C40	0C6A	0C94	0CBE	0CE8
Z17		07FD	0827	0851	087B	08A5	08CF	08F9	0923	094D	0977	09A1	09CB	09F5	0A1F	0A49	0A73	0A9D	0AC7	0AF1	0B1B	0B45	0B6F	0B99	0BC3	0BED	0C17	0C41	0C6B	0C95	0CBF	0CE9
Z18		07FE	0828	0852	087C	08A6	08D0	08FA	0924	094E	0978	09A2	09CC	09F6	0A20	0A4A	0A74	0A9E	0AC8	0AF2	0B1C	0B46	0B70	0B9A	0BC4	0BEE	0C18	0C42	0C6C	0C96	0CC0	0CEA
Z19		07FF	0829	0853	087D	08A7	08D1	08FB	0925	094F	0979	09A3	09CD	09F7	0A21	0A4B	0A75	0A9F	0AC9	0AF3	0B1D	0B47	0B71	0B9B	0BC5	0BEF	0C19	0C43	0C6D	0C97	0CC1	0CEB
Z20		0800	082A	0854	087E	08A8	08D2	08FC	0926	0950	097A	09A4	09CE	09F8	0A22	0A4C	0A76	0AA0	0ACA	0AF4	0B1E	0B48	0B72	0B9C	0BC6	0BF0	0C1A	0C44	0C6E	0C98	0CC2	0CEC
Z21		0801	082B	0855	087F	08A9	08D3	08FD	0927	0951	097B	09A5	09CF	09F9	0A23	0A4D	0A77	0AA1	0ACB	0AF5	0B1F	0B49	0B73	0B9D	0BC7	0BF1	0C1B	0C45	0C6F	0C99	0CC3	0CED
Z22		0802	082C	0856	0880	08AA	08D4	08FE	0928	0952	097C	09A6	09D0	09FA	0A24	0A4E	0A78	0AA2	0ACC	0AF6	0B20	0B4A	0B74	0B9E	0BC8	0BF2	0C1C	0C46	0C70	0C9A	0CC4	0CEE
Z23		0803	082D	0857	0881	08AB	08D5	08FF	0929	0953	097D	09A7	09D1	09FB	0A25	0A4F	0A79	0AA3	0ACD	0AF7	0B21	0B4B	0B75	0B9F	0BC9	0BF3	0C1D	0C47	0C71	0C9B	0CC5	0CEF
Z24		0804	082E	0858	0882	08AC	08D6	0900	092A	0954	097E	09A8	09D2	09FC	0A26	0A50	0A7A	0AA4	0ACE	0AF8	0B22	0B4C	0B76	0BA0	0BCA	0BF4	0C1E	0C48	0C72	0C9C	0CC6	0CF0
Z25		0805	082F	0859	0883	08AD	08D7	0901	092B	0955	097F	09A9	09D3	09FD	0A27	0A51	0A7B	0AA5	0ACF	0AF9	0B23	0B4D	0B77	0BA1	0BCB	0BF5	0C1F	0C49	0C73	0C9D	0CC7	0CF1
Z26		0806	0830	085A	0884	08AE	08D8	0902	092C	0956	0980	09AA	09D4	09FE	0A28	0A52	0A7C	0AA6	0AD0	0AFA	0B24	0B4E	0B78	0BA2	0BCC	0BF6	0C20	0C4A	0C74	0C9E	0CC8	0CF2
Z27		0807	0831	085B	0885	08AF	08D9	0903	092D	0957	0981	09AB	09D5	09FF	0A29	0A53	0A7D	0AA7	0AD1	0AFB	0B25	0B4F	0B79	0BA3	0BCD	0BF7	0C21	0C4B	0C75	0C9F	0CC9	0CF3
Z28		0808	0832	085C	0886	08B0	08DA	0904	092E	0958	0982	09AC	09D6	0A00	0A2A	0A54	0A7E	0AA8	0AD2	0AFC	0B26	0B50	0B7A	0BA4	0BCE	0BF8	0C22	0C4C	0C76	0CA0	0CCA	0CF4
Z29		0809	0833	085D	0887	08B1	08DB	0905	092F	0959	0983	09AD	09D7	0A01	0A2B	0A55	0A7F	0AA9	0AD3	0AFD	0B27	0B51	0B7B	0BA5	0BCF	0BF9	0C23	0C4D	0C77	0CA1	0CCB	0CF5
Z30		080A	0834	085E	0888	08B2	08DC	0906	0930	095A	0984	09AE	09D8	0A02	0A2C	0A56	0A80	0AAA	0AD4	0AFE	0B28	0B52	0B7C	0BA6	0BD0	0BFA	0C24	0C4E	0C78	0CA2	0CCC	0CF6
Z31		080B	0835	085F	0889	08B3	08DD	0907	0931	095B	0985	09AF	09D9	0A03	0A2D	0A57	0A81	0AAB	0AD5	0AFF	0B29	0B53	0B7D	0BA7	0BD1	0BFB	0C25	0C4F	0C79	0CA3	0CCD	0CF7
Z32		080C	0836	0860	088A	08B4	08DE	0908	0932	095C	0986	09B0	09DA	0A04	0A2E	0A58	0A82	0AAC	0AD6	0B00	0B2A	0B54	0B7E	0BA8	0BD2	0BFC	0C26	0C50	0C7A	0CA4	0CCE	0CF8
Cabinet tamp	**S01**	080D	0837	0861	088B	08B5	08DF	0909	0933	095D	0987	09B1	09DB	0A05	0A2F	0A59	0A83	0AAD	0AD7	0B01	0B2B	0B55	0B7F	0BA9	0BD3	0BFD	0C27	0C51	0C7B	0CA5	0CCF	0CF9
Int siren tamp	**S02**	080E	0838	0862	088C	08B6	08E0	090A	0934	095E	0988	09B2	09DC	0A06	0A30	0A5A	0A84	0AAE	0AD8	0B02	0B2C	0B56	0B80	0BAA	0BD4	0BFE	0C28	0C52	0C7C	0CA6	0CD0	0CFA
Ext siren tamp	**S03**	080F	0839	0863	088D	08B7	08E1	090B	0935	095F	0989	09B3	09DD	0A07	0A31	0A5B	0A85	0AAF	0AD9	0B03	0B2D	0B57	0B81	0BAB	0BD5	0BFF	0C29	0C53	0C7D	0CA7	0CD1	0CFB
AC fail.	**S04**	0810	083A	0864	088E	08B8	08E2	090C	0936	0960	098A	09B4	09DE	0A08	0A32	0A5C	0A86	0AB0	0ADA	0B04	0B2E	0B58	0B82	0BAC	0BD6	0C00	0C2A	0C54	0C7E	0CA8	0CD2	0CFC
Low battery.	**S05**	0811	083B	0865	088F	08B9	08E3	090D	0937	0961	098B	09B5	09DF	0A09	0A33	0A5D	0A87	0AB1	0ADB	0B05	0B2F	0B59	0B83	0BAD	0BD7	0C01	0C2B	0C55	0C7F	0CA9	0CD3	0CFD
LAN fuse	**S06**	0812	083C	0866	0890	08BA	08E4	090E	0938	0962	098C	09B6	09E0	0A0A	0A34	0A5E	0A88	0AB2	0ADC	0B06	0B30	0B5A	0B84	0BAE	0BD8	0C02	0C2C	0C56	0C80	0CAA	0CD4	0CFE
Detector fuse	**S07**	0813	083D	0867	0891	08BB	08E5	090F	0939	0963	098D	09B7	09E1	0A0B	0A35	0A5F	0A89	0AB3	0ADD	0B07	0B31	0B5B	0B85	0BAF	0BD9	0C03	0C2D	0C57	0C81	0CAB	0CD5	0CFF
LAN fail	**S08**	0814	083E	0868	0892	08BC	08E6	0910	093A	0964	098E	09B8	09E2	0A0C	0A36	0A60	0A8A	0AB4	0ADE	0B08	0B32	0B5C	0B86	0BB0	0BDA	0C04	0C2E	0C58	0C82	0CAC	0CD6	0D00
Batt test fail	**S09**	0815	083F	0869	0893	08BD	08E7	0911	093B	0965	098F	09B9	09E3	0A0D	0A37	0A61	0A8B	0AB5	0ADF	0B09	0B33	0B5D	0B87	0BB1	0BDB	0C05	0C2F	0C59	0C83	0CAD	0CD7	0D01
Spare	**S10**	0816	0840	086A	0894	08BE	08E8	0912	093C	0966	0990	09BA	09E4	0A0E	0A38	0A62	0A8C	0AB6	0AE0	0B0A	0B34	0B5E	0B88	0BB2	0BDC	0C06	0C30	0C5A	0C84	0CAE	0CD8	0D02

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	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65
B																																		
Z01	0D03	0D2D	0D57	0D81	0DAB	0DD5	0DFF	0E29	0E53	0E7D	0EA7	0ED1	0EFB	0F25	0F4F	0F79	0FA3	0FCD	0FF7	1021	104B	1075	109F	10C9	10F3	111D	1147	1171	119B	11C5	11EF	1219	1243	
Z02	0D04	0D2E	0D58	0D82	0DAC	0DD6	0E00	0E2A	0E54	0E7E	0EA8	0ED2	0EFC	0F26	0F50	0F7A	0FA4	0FCE	0FF8	1022	104C	1076	10A0	10CA	10F4	111E	1148	1172	119C	11C6	11F0	121A	1244	
Z03	0D05	0D2F	0D59	0D83	0DAD	0DD7	0E01	0E2B	0E55	0E7F	0EA9	0ED3	0EFD	0F27	0F51	0F7B	0FA5	0FCF	0FF9	1023	104D	1077	10A1	10CB	10F5	111F	1149	1173	119D	11C7	11F1	121B	1245	
Z04	0D06	0D30	0D5A	0D84	0DAE	0DD8	0E02	0E2C	0E56	0E80	0EAA	0ED4	0EFE	0F28	0F52	0F7C	0FA6	0FD0	0FFA	1024	104E	1078	10A2	10CC	10F6	1120	114A	1174	119E	11C8	11F2	121C	1246	
Z05	0D07	0D31	0D5B	0D85	0DAF	0DD9	0E03	0E2D	0E57	0E81	0EAB	0ED5	0EFF	0F29	0F53	0F7D	0FA7	0FD1	0FFB	1025	104F	1079	10A3	10CD	10F7	1121	114B	1175	119F	11C9	11F3	121D	1247	
Z06	0D08	0D32	0D5C	0D86	0DB0	0DDA	0E04	0E2E	0E58	0E82	0EAC	0ED6	0F00	0F2A	0F54	0F7E	0FA8	0FD2	0FFC	1026	1050	107A	10A4	10CE	10F8	1122	114C	1176	11A0	11CA	11F4	121E	1248	
Z07	0D09	0D33	0D5D	0D87	0DB1	0DDB	0E05	0E2F	0E59	0E83	0EAD	0ED7	0F01	0F2B	0F55	0F7F	0FA9	0FD3	0FFD	1027	1051	107B	10A5	10CF	10F9	1123	114D	1177	11A1	11CB	11F5	121F	1249	
Z08	0D0A	0D34	0D5E	0D88	0DB2	0DDC	0E06	0E30	0E5A	0E84	0EAE	0ED8	0F02	0F2C	0F56	0F80	0FAA	0FD4	0FFE	1028	1052	107C	10A6	10D0	10FA	1124	114E	1178	11A2	11CC	11F6	1220	124A	
Z09	0D0B	0D35	0D5F	0D89	0DB3	0DDD	0E07	0E31	0E5B	0E85	0EAF	0ED9	0F03	0F2D	0F57	0F81	0FAB	0FD5	0FFF	1029	1053	107D	10A7	10D1	10FB	1125	114F	1179	11A3	11CD	11F7	1221	124B	
Z10	0D0C	0D36	0D60	0D8A	0DB4	0DDE	0E08	0E32	0E5C	0E86	0EB0	0EDA	0F04	0F2E	0F58	0F82	0FAC	0FD6	1000	102A	1054	107E	10A8	10D2	10FC	1126	1150	117A	11A4	11CE	11F8	1222	124C	
Z11	0D0D	0D37	0D61	0D8B	0DB5	0DDF	0E09	0E33	0E5D	0E87	0EB1	0EDB	0F05	0F2F	0F59	0F83	0FAD	0FD7	1001	102B	1055	107F	10A9	10D3	10FD	1127	1151	117B	11A5	11CF	11F9	1223	124D	
Z12	0D0E	0D38	0D62	0D8C	0DB6	0DE0	0E0A	0E34	0E5E	0E88	0EB2	0EDC	0F06	0F30	0F5A	0F84	0FAE	0FD8	1002	102C	1056	1080	10AA	10D4	10FE	1128	1152	117C	11A6	11D0	11FA	1224	124E	
Z13	0D0F	0D39	0D63	0D8D	0DB7	0DE1	0E0B	0E35	0E5F	0E89	0EB3	0EDD	0F07	0F31	0F5B	0F85	0FAF	0FD9	1003	102D	1057	1081	10AB	10D5	10FF	1129	1153	117D	11A7	11D1	11FB	1225	124F	
Z14	0D10	0D3A	0D64	0D8E	0DB8	0DE2	0E0C	0E36	0E60	0E8A	0EB4	0EDE	0F08	0F32	0F5C	0F86	0FB0	0FDA	1004	102E	1058	1082	10AC	10D6	1100	112A	1154	117E	11A8	11D2	11FC	1226	1250	
Z15	0D11	0D3B	0D65	0D8F	0DB9	0DE3	0E0D	0E37	0E61	0E8B	0EB5	0EDF	0F09	0F33	0F5D	0F87	0FB1	0FDB	1005	102F	1059	1083	10AD	10D7	1101	112B	1155	117F	11A9	11D3	11FD	1227	1251	
Z16	0D12	0D3C	0D66	0D90	0DBA	0DE4	0E0E	0E38	0E62	0E8C	0EB6	0EE0	0F0A	0F34	0F5E	0F88	0FB2	0FDC	1006	1030	105A	1084	10AE	10D8	1102	112C	1156	1180	11AA	11D4	11FE	1228	1252	
Z17	0D13	0D3D	0D67	0D91	0DBB	0DE5	0E0F	0E39	0E63	0E8D	0EB7	0EE1	0F0B	0F35	0F5F	0F89	0FB3	0FDD	1007	1031	105B	1085	10AF	10D9	1103	112D	1157	1181	11AB	11D5	11FF	1229	1253	
Z18	0D14	0D3E	0D68	0D92	0DBC	0DE6	0E10	0E3A	0E64	0E8E	0EB8	0EE2	0F0C	0F36	0F60	0F8A	0FB4	0FDE	1008	1032	105C	1086	10B0	10DA	1104	112E	1158	1182	11AC	11D6	1200	122A	1254	
Z19	0D15	0D3F	0D69	0D93	0DBD	0DE7	0E11	0E3B	0E65	0E8F	0EB9	0EE3	0F0D	0F37	0F61	0F8B	0FB5	0FDF	1009	1033	105D	1087	10B1	10DB	1105	112F	1159	1183	11AD	11D7	1201	122B	1255	
Z20	0D16	0D40	0D6A	0D94	0DBE	0DE8	0E12	0E3C	0E66	0E90	0EBA	0EE4	0F0E	0F38	0F62	0F8C	0FB6	0FE0	100A	1034	105E	1088	10B2	10DC	1106	1130	115A	1184	11AE	11D8	1202	122C	1256	
Z21	0D17	0D41	0D6B	0D95	0DBF	0DE9	0E13	0E3D	0E67	0E91	0EBB	0EE5	0F0F	0F39	0F63	0F8D	0FB7	0FE1	100B	1035	105F	1089	10B3	10DD	1107	1131	115B	1185	11AF	11D9	1203	122D	1257	
Z22	0D18	0D42	0D6C	0D96	0DC0	0DEA	0E14	0E3E	0E68	0E92	0EBC	0EE6	0F10	0F3A	0F64	0F8E	0FB8	0FE2	100C	1036	1060	108A	10B4	10DE	1108	1132	115C	1186	11B0	11DA	1204	122E	1258	
Z23	0D19	0D43	0D6D	0D97	0DC1	0DEB	0E15	0E3F	0E69	0E93	0EBD	0EE7	0F11	0F3B	0F65	0F8F	0FB9	0FE3	100D	1037	1061	108B	10B5	10DF	1109	1133	115D	1187	11B1	11DB	1205	122F	1259	
Z24	0D1A	0D44	0D6E	0D98	0DC2	0DEC	0E16	0E40	0E6A	0E94	0EBE	0EE8	0F12	0F3C	0F66	0F90	0FBA	0FE4	100E	1038	1062	108C	10B6	10E0	110A	1134	115E	1188	11B2	11DC	1206	1230	125A	
Z25	0D1B	0D45	0D6F	0D99	0DC3	0DED	0E17	0E41	0E6B	0E95	0EBF	0EE9	0F13	0F3D	0F67	0F91	0FBB	0FE5	100F	1039	1063	108D	10B7	10E1	110B	1135	115F	1189	11B3	11DD	1207	1231	125B	
Z26	0D1C	0D46	0D70	0D9A	0DC4	0DEE	0E18	0E42	0E6C	0E96	0EC0	0EEA	0F14	0F3E	0F68	0F92	0FBC	0FE6	1010	103A	1064	108E	10B8	10E2	110C	1136	1160	118A	11B4	11DE	1208	1232	125C	
Z27	0D1D	0D47	0D71	0D9B	0DC5	0DEF	0E19	0E43	0E6D	0E97	0EC1	0EEB	0F15	0F3F	0F69	0F93	0FBD	0FE7	1011	103B	1065	108F	10B9	10E3	110D	1137	1161	118B	11B5	11DF	1209	1233	125D	
Z28	0D1E	0D48	0D72	0D9C	0DC6	0DF0	0E1A	0E44	0E6E	0E98	0EC2	0EEC	0F16	0F40	0F6A	0F94	0FBE	0FE8	1012	103C	1066	1090	10BA	10E4	110E	1138	1162	118C	11B6	11E0	120A	1234	125E	
Z29	0D1F	0D49	0D73	0D9D	0DC7	0DF1	0E1B	0E45	0E6F	0E99	0EC3	0EED	0F17	0F41	0F6B	0F95	0FBF	0FE9	1013	103D	1067	1091	10BB	10E5	110F	1139	1163	118D	11B7	11E1	120B	1235	125F	
Z30	0D20	0D4A	0D74	0D9E	0DC8	0DF2	0E1C	0E46	0E70	0E9A	0EC4	0EEE	0F18	0F42	0F6C	0F96	0FC0	0FEA	1014	103E	1068	1092	10BC	10E6	1110	113A	1164	118E	11B8	11E2	120C	1236	1260	
Z31	0D21	0D4B	0D75	0D9F	0DC9	0DF3	0E1D	0E47	0E71	0E9B	0EC5	0EEF	0F19	0F43	0F6D	0F97	0FC1	0FEB	1015	103F	1069	1093	10BD	10E7	1111	113B	1165	118F	11B9	11E3	120D	1237	1261	
Z32	0D22	0D4C	0D76	0DA0	0DCA	0DF4	0E1E	0E48	0E72	0E9C	0EC6	0EF0	0F1A	0F44	0F6E	0F98	0FC2	0FEC	1016	1040	106A	1094	10BE	10E8	1112	113C	1166	1190	11BA	11E4	120E	1238	1262	
S01	0D23	0D4D	0D77	0DA1	0DCB	0DF5	0E1F	0E49	0E73	0E9D	0EC7	0EF1	0F1B	0F45	0F6F	0F99	0FC3	0FED	1017	1041	106B	1095	10BF	10E9	1113	113D	1167	1191	11BB	11E5	120F	1239	1263	
S02	0D24	0D4E	0D78	0DA2	0DCC	0DF6	0E20	0E4A	0E74	0E9E	0EC8	0EF2	0F1C	0F46	0F70	0F9A	0FC4	0FEE	1018	1042	106C	1096	10C0	10EA	1114	113E	1168	1192	11BC	11E6	1210	123A	1264	
S03	0D25	0D4F	0D79	0DA3	0DCD	0DF7	0E21	0E4B	0E75	0E9F	0EC9	0EF3	0F1D	0F47	0F71	0F9B	0FC5	0FEF	1019	1043	106D	1097	10C1	10EB	1115	113F	1169	1193	11BD	11E7	1211	123B	1265	
S04	0D26	0D50	0D7A	0DA4	0DCE	0DF8	0E22	0E4C	0E76	0EA0	0ECA	0EF4	0F1E	0F48	0F72	0F9C	0FC6	0FF0	101A	1044	106E	1098	10C2	10EC	1116	1140	116A	1194	11BE	11E8	1212	123C	1266	
S05	0D27	0D51	0D7B	0DA5	0DCF	0DF9	0E23	0E4D	0E77	0EA1	0ECB	0EF5	0F1F	0F49	0F73	0F9D	0FC7	0FF1	101B	1045	106F	1099	10C3	10ED	1117	1141	116B	1195	11BF	11E9	1213	123D	1267	
S06	0D28	0D52	0D7C	0DA6	0DD0	0DFA	0E24	0E4E	0E78	0EA2	0ECC	0EF6	0F20	0F4A	0F74	0F9E	0FC8	0FF2	101C	1046	1070	109A	10C4	10EE	1118	1142	116C	1196	11C0	11EA	1214	123E	1268	
S07	0D29	0D53	0D7D	0DA7	0DD1	0DFB	0E25	0E4F	0E79	0EA3	0ECD	0EF7	0F21	0F4B	0F75	0F9F	0FC9	0FF3	101D	1047	1071	109B	10C5	10EF	1119	1143	116D	1197	11C1	11EB	1215	123F	1269	
S08	0D2A	0D54	0D7E	0DA8	0DD2	0DFC	0E26	0E50	0E7A	0EA4	0ECE	0EF8	0F22	0F4C	0F76	0FA0	0FCA	0FF4	101E	1048	1072	109C	10C6	10F0	111A	1144	116E	1198	11C2	11EC	1216	1240	126A	
S09	0D2B	0D55	0D7F	0DA9	0DD3	0DFD	0E27	0E51	0E7B	0EA5	0ECF	0EF9	0F23	0F4D	0F77	0FA1	0FCB	0FF5	101F	1049	1073	109D	10C7	10F1	111B	1145	116F	1199	11C3	11ED	1217	1241	126B	
S10	0D2C	0D56	0D80	0DAA	0DD4	0DFE	0E28	0E52	0E7C	0EA6	0ED0	0EFA	0F24	0F4E	0F78	0FA2	0FCC	0FF6	1020	104A	1074	109E	10C8	10F2	111C	1146	1170	119A	11C4	11EE	1218	1242	126C	

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Reader	**R**																															
Z01		126D	127D	128D	129D	12AD	12BD	12CD	12DD	12ED	12FD	130D	131D	132D	133D	134D	135D	136D	137D	138D	139D	13AD	13BD	13CD	13DD	13ED	13FD	140D	141D	142D	143D	144D
Z02		126E	127E	128E	129E	12AE	12BE	12CE	12DE	12EE	12FE	130E	131E	132E	133E	134E	135E	136E	137E	138E	139E	13AE	13BE	13CE	13DE	13EE	13FE	140E	141E	142E	143E	144E
Z03		126F	127F	128F	129F	12AF	12BF	12CF	12DF	12EF	12FF	130F	131F	132F	133F	134F	135F	136F	137F	138F	139F	13AF	13BF	13CF	13DF	13EF	13FF	140F	141F	142F	143F	144F
Z04		1270	1280	1290	12A0	12B0	12C0	12D0	12E0	12F0	1300	1310	1320	1330	1340	1350	1360	1370	1380	1390	13A0	13B0	13C0	13D0	13E0	13F0	1400	1410	1420	1430	1440	1450
Z05		1271	1281	1291	12A1	12B1	12C1	12D1	12E1	12F1	1301	1311	1321	1331	1341	1351	1361	1371	1381	1391	13A1	13B1	13C1	13D1	13E1	13F1	1401	1411	1421	1431	1441	1451
Z06		1272	1282	1292	12A2	12B2	12C2	12D2	12E2	12F2	1302	1312	1322	1332	1342	1352	1362	1372	1382	1392	13A2	13B2	13C2	13D2	13E2	13F2	1402	1412	1422	1432	1442	1452
Z07		1273	1283	1293	12A3	12B3	12C3	12D3	12E3	12F3	1303	1313	1323	1333	1343	1353	1363	1373	1383	1393	13A3	13B3	13C3	13D3	13E3	13F3	1403	1413	1423	1433	1443	1453
Z08		1274	1284	1294	12A4	12B4	12C4	12D4	12E4	12F4	1304	1314	1324	1334	1344	1354	1364	1374	1384	1394	13A4	13B4	13C4	13D4	13E4	13F4	1404	1414	1424	1434	1444	1454
Cabinet tamp	**S01**	1275	1285	1295	12A5	12B5	12C5	12D5	12E5	12F5	1305	1315	1325	1335	1345	1355	1365	1375	1385	1395	13A5	13B5	13C5	13D5	13E5	13F5	1405	1415	1425	1435	1445	1455
Low Voltage	**S02**	1276	1286	1296	12A6	12B6	12C6	12D6	12E6	12F6	1306	1316	1326	1336	1346	1356	1366	1376	1386	1396	13A6	13B6	13C6	13D6	13E6	13F6	1406	1416	1426	1436	1446	1456
Door 1 Forced	**S03**	1277	1287	1297	12A7	12B7	12C7	12D7	12E7	12F7	1307	1317	1327	1337	1347	1357	1367	1377	1387	1397	13A7	13B7	13C7	13D7	13E7	13F7	1407	1417	1427	1437	1447	1457
Door 1 Held	**S04**	1278	1288	1298	12A8	12B8	12C8	12D8	12E8	12F8	1308	1318	1328	1338	1348	1358	1368	1378	1388	1398	13A8	13B8	13C8	13D8	13E8	13F8	1408	1418	1428	1438	1448	1458
Door 2 Forced	**S05**	1279	1289	1299	12A9	12B9	12C9	12D9	12E9	12F9	1309	1319	1329	1339	1349	1359	1369	1379	1389	1399	13A9	13B9	13C9	13D9	13E9	13F9	1409	1419	1429	1439	1449	1459
Door 2 Held	**S06**	127A	128A	129A	12AA	12BA	12CA	12DA	12EA	12FA	130A	131A	132A	133A	134A	135A	136A	137A	138A	139A	13AA	13BA	13CA	13DA	13EA	13FA	140A	141A	142A	143A	144A	145A
Illegal Card	**S07**	127B	128B	129B	12AB	12BB	12CB	12DB	12EB	12FB	130B	131B	132B	133B	134B	135B	136B	137B	138B	139B	13AB	13BB	13CB	13DB	13EB	13FB	140B	141B	142B	143B	144B	145B
LAN fail.	**S08**	127C	128C	129C	12AC	12BC	12CC	12DC	12EC	12FC	130C	131C	132C	133C	134C	135C	136C	137C	138C	139C	13AC	13BC	13CC	13DC	13EC	13FC	140C	141C	142C	143C	144C	145C
Wireless	**N**																															
Z01		189D	18B1	18C5	18D9	18ED	1901	1915	1929	193D	1951	1965	1979	198D	19A1	19B5	19C9	19DD	19F1	1A05	1A19	1A2D	1A41	1A55	1A69	1A7D	1A91	1AA5	1AB9	1ACD	1AE1	1AF5
Z02		189E	18B2	18C6	18DA	18EE	1902	1916	192A	193E	1952	1966	197A	198E	19A2	19B6	19CA	19DE	19F2	1A06	1A1A	1A2E	1A42	1A56	1A6A	1A7E	1A92	1AA6	1ABA	1ACE	1AE2	1AF6
Z03		189F	18B3	18C7	18DB	18EF	1903	1917	192B	193F	1953	1967	197B	198F	19A3	19B7	19CB	19DF	19F3	1A07	1A1B	1A2F	1A43	1A57	1A6B	1A7F	1A93	1AA7	1ABB	1ACF	1AE3	1AF7
Z04		18A0	18B4	18C8	18DC	18F0	1904	1918	192C	1940	1954	1968	197C	1990	19A4	19B8	19CC	19E0	19F4	1A08	1A1C	1A30	1A44	1A58	1A6C	1A80	1A94	1AA8	1ABC	1AD0	1AE4	1AF8
Z05		18A1	18B5	18C9	18DD	18F1	1905	1919	192D	1941	1955	1969	197D	1991	19A5	19B9	19CD	19E1	19F5	1A09	1A1D	1A31	1A45	1A59	1A6D	1A81	1A95	1AA9	1ABD	1AD1	1AE5	1AF9
Z06		18A2	18B6	18CA	18DE	18F2	1906	191A	192E	1942	1956	196A	197E	1992	19A6	19BA	19CE	19E2	19F6	1A0A	1A1E	1A32	1A46	1A5A	1A6E	1A82	1A96	1AAA	1ABE	1AD2	1AE6	1AFA
Z07		18A3	18B7	18CB	18DF	18F3	1907	191B	192F	1943	1957	196B	197F	1993	19A7	19BB	19CF	19E3	19F7	1A0B	1A1F	1A33	1A47	1A5B	1A6F	1A83	1A97	1AAB	1ABF	1AD3	1AE7	1AFB
Z08		18A4	18B8	18CC	18E0	18F4	1908	191C	1930	1944	1958	196C	1980	1994	19A8	19BC	19D0	19E4	19F8	1A0C	1A20	1A34	1A48	1A5C	1A70	1A84	1A98	1AAC	1AC0	1AD4	1AE8	1AFC
Z09		18A5	18B9	18CD	18E1	18F5	1909	191D	1931	1945	1959	196D	1981	1995	19A9	19BD	19D1	19E5	19F9	1A0D	1A21	1A35	1A49	1A5D	1A71	1A85	1A99	1AAD	1AC1	1AD5	1AE9	1AFD
Z10		18A6	18BA	18CE	18E2	18F6	190A	191E	1932	1946	195A	196E	1982	1996	19AA	19BE	19D2	19E6	19FA	1A0E	1A22	1A36	1A4A	1A5E	1A72	1A86	1A9A	1AAE	1AC2	1AD6	1AEA	1AFE
Z11		18A7	18BB	18CF	18E3	18F7	190B	191F	1933	1947	195B	196F	1983	1997	19AB	19BF	19D3	19E7	19FB	1A0F	1A23	1A37	1A4B	1A5F	1A73	1A87	1A9B	1AAF	1AC3	1AD7	1AEB	1AFF
Z12		18A8	18BC	18D0	18E4	18F8	190C	1920	1934	1948	195C	1970	1984	1998	19AC	19C0	19D4	19E8	19FC	1A10	1A24	1A38	1A4C	1A60	1A74	1A88	1A9C	1AB0	1AC4	1AD8	1AEC	1B00
Z13		18A9	18BD	18D1	18E5	18F9	190D	1921	1935	1949	195D	1971	1985	1999	19AD	19C1	19D5	19E9	19FD	1A11	1A25	1A39	1A4D	1A61	1A75	1A89	1A9D	1AB1	1AC5	1AD9	1AED	1B01
Z14		18AA	18BE	18D2	18E6	18FA	190E	1922	1936	194A	195E	1972	1986	199A	19AE	19C2	19D6	19EA	19FE	1A12	1A26	1A3A	1A4E	1A62	1A76	1A8A	1A9E	1AB2	1AC6	1ADA	1AEE	1B02
Z15		18AB	18BF	18D3	18E7	18FB	190F	1923	1937	194B	195F	1973	1987	199B	19AF	19C3	19D7	19EB	19FF	1A13	1A27	1A3B	1A4F	1A63	1A77	1A8B	1A9F	1AB3	1AC7	1ADB	1AEF	1B03
Z16		18AC	18C0	18D4	18E8	18FC	1910	1924	1938	194C	1960	1974	1988	199C	19B0	19C4	19D8	19EC	1A00	1A14	1A28	1A3C	1A50	1A64	1A78	1A8C	1AA0	1AB4	1AC8	1ADC	1AF0	1B04
Trans Timeout	**S01**	18AD	18C1	18D5	18E9	18FD	1911	1925	1939	194D	1961	1975	1989	199D	19B1	19C5	19D9	19ED	1A01	1A15	1A29	1A3D	1A51	1A65	1A79	1A8D	1AA1	1AB5	1AC9	1ADD	1AF1	1B05
Low Battery	**S02**	18AE	18C2	18D6	18EA	18FE	1912	1926	193A	194E	1962	1976	198A	199E	19B2	19C6	19DA	19EE	1A02	1A16	1A2A	1A3E	1A52	1A66	1A7A	1A8E	1AA2	1AB6	1ACA	1ADE	1AF2	1B06
Spare	**S03**	18AF	18C3	18D7	18EB	18FF	1913	1927	193B	194F	1963	1977	198B	199F	19B3	19C7	19DB	19EF	1A03	1A17	1A2B	1A3F	1A53	1A67	1A7B	1A8F	1AA3	1AB7	1ACB	1ADF	1AF3	1B07
Spare	**S04**	18B0	18C4	18D8	18EC	1900	1914	1928	193C	1950	1964	1978	198C	19A0	19B4	19C8	19DC	19F0	1A04	1A18	1A2C	1A40	1A54	1A68	1A7C	1A90	1AA4	1AB8	1ACC	1AE0	1AF4	1B08
Exp 8 Zone	**M**																															
Z01		2059	206A	207B	208C	209D	20AE	20BF	20D0	20E1	20F2	2103	2114	2125	2136	2147	2158	2169	217A	218B	219C	21AD	21BE	21CF	21E0	21F1	2202	2213	2224	2235	2246	2257
Z02		205A	206B	207C	208D	209E	20AF	20C0	20D1	20E2	20F3	2104	2115	2126	2137	2148	2159	216A	217B	218C	219D	21AE	21BF	21D0	21E1	21F2	2203	2214	2225	2236	2247	2258
Z03		205B	206C	207D	208E	209F	20B0	20C1	20D2	20E3	20F4	2105	2116	2127	2138	2149	215A	216B	217C	218D	219E	21AF	21C0	21D1	21E2	21F3	2204	2215	2226	2237	2248	2259
Z04		205C	206D	207E	208F	20A0	20B1	20C2	20D3	20E4	20F5	2106	2117	2128	2139	214A	215B	216C	217D	218E	219F	21B0	21C1	21D2	21E3	21F4	2205	2216	2227	2238	2249	225A
Z05		205D	206E	207F	2090	20A1	20B2	20C3	20D4	20E5	20F6	2107	2118	2129	213A	214B	215C	216D	217E	218F	21A0	21B1	21C2	21D3	21E4	21F5	2206	2217	2228	2239	224A	225B
Z06		205E	206F	2080	2091	20A2	20B3	20C4	20D5	20E6	20F7	2108	2119	212A	213B	214C	215D	216E	217F	2190	21A1	21B2	21C3	21D4	21E5	21F6	2207	2218	2229	223A	224B	225C
Z07		205F	2070	2081	2092	20A3	20B4	20C5	20D6	20E7	20F8	2109	211A	212B	213C	214D	215E	216F	2180	2191	21A2	21B3	21C4	21D5	21E6	21F7	2208	2219	222A	223B	224C	225D
Z08		2060	2071	2082	2093	20A4	20B5	20C6	20D7	20E8	20F9	210A	211B	212C	213D	214E	215F	2170	2181	2192	21A3	21B4	21C5	21D6	21E7	21F8	2209	221A	222B	223C	224D	225E

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R																																		
Z01	145D	146D	147D	148D	149D	14AD	14BD	14CD	14DD	14ED	14FD	150D	151D	152D	153D	154D	155D	156D	157D	158D	159D	15AD	15BD	15CD	15DD	15ED	15FD	160D	161D	162D	163D	164D	165D	166D
Z02	145E	146E	147E	148E	149E	14AE	14BE	14CE	14DE	14EE	14FE	150E	151E	152E	153E	154E	155E	156E	157E	158E	159E	15AE	15BE	15CE	15DE	15EE	15FE	160E	161E	162E	163E	164E	165E	166E
Z03	145F	146F	147F	148F	149F	14AF	14BF	14CF	14DF	14EF	14FF	150F	151F	152F	153F	154F	155F	156F	157F	158F	159F	15AF	15BF	15CF	15DF	15EF	15FF	160F	161F	162F	163F	164F	165F	166F
Z04	1460	1470	1480	1490	14A0	14B0	14C0	14D0	14E0	14F0	1500	1510	1520	1530	1540	1550	1560	1570	1580	1590	15A0	15B0	15C0	15D0	15E0	15F0	1600	1610	1620	1630	1640	1650	1660	1670
Z05	1461	1471	1481	1491	14A1	14B1	14C1	14D1	14E1	14F1	1501	1511	1521	1531	1541	1551	1561	1571	1581	1591	15A1	15B1	15C1	15D1	15E1	15F1	1601	1611	1621	1631	1641	1651	1661	1671
Z06	1462	1472	1482	1492	14A2	14B2	14C2	14D2	14E2	14F2	1502	1512	1522	1532	1542	1552	1562	1572	1582	1592	15A2	15B2	15C2	15D2	15E2	15F2	1602	1612	1622	1632	1642	1652	1662	1672
Z07	1463	1473	1483	1493	14A3	14B3	14C3	14D3	14E3	14F3	1503	1513	1523	1533	1543	1553	1563	1573	1583	1593	15A3	15B3	15C3	15D3	15E3	15F3	1603	1613	1623	1633	1643	1653	1663	1673
Z08	1464	1474	1484	1494	14A4	14B4	14C4	14D4	14E4	14F4	1504	1514	1524	1534	1544	1554	1564	1574	1584	1594	15A4	15B4	15C4	15D4	15E4	15F4	1604	1614	1624	1634	1644	1654	1664	1674
S01	1465	1475	1485	1495	14A5	14B5	14C5	14D5	14E5	14F5	1505	1515	1525	1535	1545	1555	1565	1575	1585	1595	15A5	15B5	15C5	15D5	15E5	15F5	1605	1615	1625	1635	1645	1655	1665	1675
S02	1466	1476	1486	1496	14A6	14B6	14C6	14D6	14E6	14F6	1506	1516	1526	1536	1546	1556	1566	1576	1586	1596	15A6	15B6	15C6	15D6	15E6	15F6	1606	1616	1626	1636	1646	1656	1666	1676
S03	1467	1477	1487	1497	14A7	14B7	14C7	14D7	14E7	14F7	1507	1517	1527	1537	1547	1557	1567	1577	1587	1597	15A7	15B7	15C7	15D7	15E7	15F7	1607	1617	1627	1637	1647	1657	1667	1677
S04	1468	1478	1488	1498	14A8	14B8	14C8	14D8	14E8	14F8	1508	1518	1528	1538	1548	1558	1568	1578	1588	1598	15A8	15B8	15C8	15D8	15E8	15F8	1608	1618	1628	1638	1648	1658	1668	1678
S05	1469	1479	1489	1499	14A9	14B9	14C9	14D9	14E9	14F9	1509	1519	1529	1539	1549	1559	1569	1579	1589	1599	15A9	15B9	15C9	15D9	15E9	15F9	1609	1619	1629	1639	1649	1659	1669	1679
S06	146A	147A	148A	149A	14AA	14BA	14CA	14DA	14EA	14FA	150A	151A	152A	153A	154A	155A	156A	157A	158A	159A	15AA	15BA	15CA	15DA	15EA	15FA	160A	161A	162A	163A	164A	165A	166A	167A
S07	146B	147B	148B	149B	14AB	14BB	14CB	14DB	14EB	14FB	150B	151B	152B	153B	154B	155B	156B	157B	158B	159B	15AB	15BB	15CB	15DB	15EB	15FB	160B	161B	162B	163B	164B	165B	166B	167B
S08	146C	147C	148C	149C	14AC	14BC	14CC	14DC	14EC	14FC	150C	151C	152C	153C	154C	155C	156C	157C	158C	159C	15AC	15BC	15CC	15DC	15EC	15FC	160C	161C	162C	163C	164C	165C	166C	167C
N																																		
Z01	1B09	1B1D	1B31	1B45	1B59	1B6D	1B81	1B95	1BA9	1BBD	1BD1	1BE5	1BF9	1C0D	1C21	1C35	1C49	1C5D	1C71	1C85	1C99	1CAD	1CC1	1CD5	1CE9	1CFD	1D11	1D25	1D39	1D4D	1D61	1D75	1D89	1D9D
Z02	1B0A	1B1E	1B32	1B46	1B5A	1B6E	1B82	1B96	1BAA	1BBE	1BD2	1BE6	1BFA	1C0E	1C22	1C36	1C4A	1C5E	1C72	1C86	1C9A	1CAE	1CC2	1CD6	1CEA	1CFE	1D12	1D26	1D3A	1D4E	1D62	1D76	1D8A	1D9E
Z03	1B0B	1B1F	1B33	1B47	1B5B	1B6F	1B83	1B97	1BAB	1BBF	1BD3	1BE7	1BFB	1C0F	1C23	1C37	1C4B	1C5F	1C73	1C87	1C9B	1CAF	1CC3	1CD7	1CEB	1CFF	1D13	1D27	1D3B	1D4F	1D63	1D77	1D8B	1D9F
Z04	1B0C	1B20	1B34	1B48	1B5C	1B70	1B84	1B98	1BAC	1BC0	1BD4	1BE8	1BFC	1C10	1C24	1C38	1C4C	1C60	1C74	1C88	1C9C	1CB0	1CC4	1CD8	1CEC	1D00	1D14	1D28	1D3C	1D50	1D64	1D78	1D8C	1DA0
Z05	1B0D	1B21	1B35	1B49	1B5D	1B71	1B85	1B99	1BAD	1BC1	1BD5	1BE9	1BFD	1C11	1C25	1C39	1C4D	1C61	1C75	1C89	1C9D	1CB1	1CC5	1CD9	1CED	1D01	1D15	1D29	1D3D	1D51	1D65	1D79	1D8D	1DA1
Z06	1B0E	1B22	1B36	1B4A	1B5E	1B72	1B86	1B9A	1BAE	1BC2	1BD6	1BEA	1BFE	1C12	1C26	1C3A	1C4E	1C62	1C76	1C8A	1C9E	1CB2	1CC6	1CDA	1CEE	1D02	1D16	1D2A	1D3E	1D52	1D66	1D7A	1D8E	1DA2
Z07	1B0F	1B23	1B37	1B4B	1B5F	1B73	1B87	1B9B	1BAF	1BC3	1BD7	1BEB	1BFF	1C13	1C27	1C3B	1C4F	1C63	1C77	1C8B	1C9F	1CB3	1CC7	1CDB	1CEF	1D03	1D17	1D2B	1D3F	1D53	1D67	1D7B	1D8F	1DA3
Z08	1B10	1B24	1B38	1B4C	1B60	1B74	1B88	1B9C	1BB0	1BC4	1BD8	1BEC	1C00	1C14	1C28	1C3C	1C50	1C64	1C78	1C8C	1CA0	1CB4	1CC8	1CDC	1CF0	1D04	1D18	1D2C	1D40	1D54	1D68	1D7C	1D90	1DA4
Z09	1B11	1B25	1B39	1B4D	1B61	1B75	1B89	1B9D	1BB1	1BC5	1BD9	1BED	1C01	1C15	1C29	1C3D	1C51	1C65	1C79	1C8D	1CA1	1CB5	1CC9	1CDD	1CF1	1D05	1D19	1D2D	1D41	1D55	1D69	1D7D	1D91	1DA5
Z10	1B12	1B26	1B3A	1B4E	1B62	1B76	1B8A	1B9E	1BB2	1BC6	1BDA	1BEE	1C02	1C16	1C2A	1C3E	1C52	1C66	1C7A	1C8E	1CA2	1CB6	1CCA	1CDE	1CF2	1D06	1D1A	1D2E	1D42	1D56	1D6A	1D7E	1D92	1DA6
Z11	1B13	1B27	1B3B	1B4F	1B63	1B77	1B8B	1B9F	1BB3	1BC7	1BDB	1BEF	1C03	1C17	1C2B	1C3F	1C53	1C67	1C7B	1C8F	1CA3	1CB7	1CCB	1CDF	1CF3	1D07	1D1B	1D2F	1D43	1D57	1D6B	1D7F	1D93	1DA7
Z12	1B14	1B28	1B3C	1B50	1B64	1B78	1B8C	1BA0	1BB4	1BC8	1BDC	1BF0	1C04	1C18	1C2C	1C40	1C54	1C68	1C7C	1C90	1CA4	1CB8	1CCC	1CE0	1CF4	1D08	1D1C	1D30	1D44	1D58	1D6C	1D80	1D94	1DA8
Z13	1B15	1B29	1B3D	1B51	1B65	1B79	1B8D	1BA1	1BB5	1BC9	1BDD	1BF1	1C05	1C19	1C2D	1C41	1C55	1C69	1C7D	1C91	1CA5	1CB9	1CCD	1CE1	1CF5	1D09	1D1D	1D31	1D45	1D59	1D6D	1D81	1D95	1DA9
Z14	1B16	1B2A	1B3E	1B52	1B66	1B7A	1B8E	1BA2	1BB6	1BCA	1BDE	1BF2	1C06	1C1A	1C2E	1C42	1C56	1C6A	1C7E	1C92	1CA6	1CBA	1CCE	1CE2	1CF6	1D0A	1D1E	1D32	1D46	1D5A	1D6E	1D82	1D96	1DAA
Z15	1B17	1B2B	1B3F	1B53	1B67	1B7B	1B8F	1BA3	1BB7	1BCB	1BDF	1BF3	1C07	1C1B	1C2F	1C43	1C57	1C6B	1C7F	1C93	1CA7	1CBB	1CCF	1CE3	1CF7	1D0B	1D1F	1D33	1D47	1D5B	1D6F	1D83	1D97	1DAB
Z16	1B18	1B2C	1B40	1B54	1B68	1B7C	1B90	1BA4	1BB8	1BCC	1BE0	1BF4	1C08	1C1C	1C30	1C44	1C58	1C6C	1C80	1C94	1CA8	1CBC	1CD0	1CE4	1CF8	1D0C	1D20	1D34	1D48	1D5C	1D70	1D84	1D98	1DAC
S01	1B19	1B2D	1B41	1B55	1B69	1B7D	1B91	1BA5	1BB9	1BCD	1BE1	1BF5	1C09	1C1D	1C31	1C45	1C59	1C6D	1C81	1C95	1CA9	1CBD	1CD1	1CE5	1CF9	1D0D	1D21	1D35	1D49	1D5D	1D71	1D85	1D99	1DAD
S02	1B1A	1B2E	1B42	1B56	1B6A	1B7E	1B92	1BA6	1BBA	1BCE	1BE2	1BF6	1C0A	1C1E	1C32	1C46	1C5A	1C6E	1C82	1C96	1CAA	1CBE	1CD2	1CE6	1CFA	1D0E	1D22	1D36	1D4A	1D5E	1D72	1D86	1D9A	1DAE
S03	1B1B	1B2F	1B43	1B57	1B6B	1B7F	1B93	1BA7	1BBB	1BCF	1BE3	1BF7	1C0B	1C1F	1C33	1C47	1C5B	1C6F	1C83	1C97	1CAB	1CBF	1CD3	1CE7	1CFB	1D0F	1D23	1D37	1D4B	1D5F	1D73	1D87	1D9B	1DAF
S04	1B1C	1B30	1B44	1B58	1B6C	1B80	1B94	1BA8	1BBC	1BD0	1BE4	1BF8	1C0C	1C20	1C34	1C48	1C5C	1C70	1C84	1C98	1CAC	1CC0	1CD4	1CE8	1CFC	1D10	1D24	1D38	1D4C	1D60	1D74	1D88	1D9C	1DB0
M																																		
Z01	2268	2279	228A	229B	22AC	22BD	22CE	22DF	22F0	2301	2312	2323	2334	2345	2356	2367	2378	2389	239A	23AB	23BC	23CD	23DE	23EF	2400	2411	2422	2433	2444	2455	2466	2477	2488	2499
Z02	2269	227A	228B	229C	22AD	22BE	22CF	22E0	22F1	2302	2313	2324	2335	2346	2357	2368	2379	238A	239B	23AC	23BD	23CE	23DF	23F0	2401	2412	2423	2434	2445	2456	2467	2478	2489	249A
Z03	226A	227B	228C	229D	22AE	22BF	22D0	22E1	22F2	2303	2314	2325	2336	2347	2358	2369	237A	238B	239C	23AD	23BE	23CF	23E0	23F1	2402	2413	2424	2435	2446	2457	2468	2479	248A	249B
Z04	226B	227C	228D	229E	22AF	22C0	22D1	22E2	22F3	2304	2315	2326	2337	2348	2359	236A	237B	238C	239D	23AE	23BF	23D0	23E1	23F2	2403	2414	2425	2436	2447	2458	2469	247A	248B	249C
Z05	226C	227D	228E	229F	22B0	22C1	22D2	22E3	22F4	2305	2316	2327	2338	2349	235A	236B	237C	238D	239E	23AF	23C0	23D1	23E2	23F3	2404	2415	2426	2437	2448	2459	246A	247B	248C	249D
Z06	226D	227E	228F	22A0	22B1	22C2	22D3	22E4	22F5	2306	2317	2328	2339	234A	235B	236C	237D	238E	239F	23B0	23C1	23D2	23E3	23F4	2405	2416	2427	2438	2449	245A	246B	247C	248D	249E
Z07	226E	227F	2290	22A1	22B2	22C3	22D4	22E5	22F6	2307	2318	2329	233A	234B	235C	236D	237E	238F	23A0	23B1	23C2	23D3	23E4	23F5	2406	2417	2428	2439	244A	245B	246C	247D	248E	249F
Z08	226F	2280	2291	22A2	22B3	22C4	22D5	22E6	22F7	2308	2319	232A	233B	234C	235D	236E	237F	2390	23A1	23B2	23C3	23D4	23E5	23F6	2407	2418	2429	243A	244B	245C	246D	247E	248F	24A0

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	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
R																																		
Z01	167D	168D	169D	16AD	16BD	16CD	16DD	16ED	16FD	170D	171D	172D	173D	174D	175D	176D	177D	178D	179D	17AD	17BD	17CD	17DD	17ED	17FD	180D	181D	182D	183D	184D	185D	186D	187D	188D
Z02	167E	168E	169E	16AE	16BE	16CE	16DE	16EE	16FE	170E	171E	172E	173E	174E	175E	176E	177E	178E	179E	17AE	17BE	17CE	17DE	17EE	17FE	180E	181E	182E	183E	184E	185E	186E	187E	188E
Z03	167F	168F	169F	16AF	16BF	16CF	16DF	16EF	16FF	170F	171F	172F	173F	174F	175F	176F	177F	178F	179F	17AF	17BF	17CF	17DF	17EF	17FF	180F	181F	182F	183F	184F	185F	186F	187F	188F
Z04	1680	1690	16A0	16B0	16C0	16D0	16E0	16F0	1700	1710	1720	1730	1740	1750	1760	1770	1780	1790	17A0	17B0	17C0	17D0	17E0	17F0	1800	1810	1820	1830	1840	1850	1860	1870	1880	1890
Z05	1681	1691	16A1	16B1	16C1	16D1	16E1	16F1	1701	1711	1721	1731	1741	1751	1761	1771	1781	1791	17A1	17B1	17C1	17D1	17E1	17F1	1801	1811	1821	1831	1841	1851	1861	1871	1881	1891
Z06	1682	1692	16A2	16B2	16C2	16D2	16E2	16F2	1702	1712	1722	1732	1742	1752	1762	1772	1782	1792	17A2	17B2	17C2	17D2	17E2	17F2	1802	1812	1822	1832	1842	1852	1862	1872	1882	1892
Z07	1683	1693	16A3	16B3	16C3	16D3	16E3	16F3	1703	1713	1723	1733	1743	1753	1763	1773	1783	1793	17A3	17B3	17C3	17D3	17E3	17F3	1803	1813	1823	1833	1843	1853	1863	1873	1883	1893
Z08	1684	1694	16A4	16B4	16C4	16D4	16E4	16F4	1704	1714	1724	1734	1744	1754	1764	1774	1784	1794	17A4	17B4	17C4	17D4	17E4	17F4	1804	1814	1824	1834	1844	1854	1864	1874	1884	1894
S01	1685	1695	16A5	16B5	16C5	16D5	16E5	16F5	1705	1715	1725	1735	1745	1755	1765	1775	1785	1795	17A5	17B5	17C5	17D5	17E5	17F5	1805	1815	1825	1835	1845	1855	1865	1875	1885	1895
S02	1686	1696	16A6	16B6	16C6	16D6	16E6	16F6	1706	1716	1726	1736	1746	1756	1766	1776	1786	1796	17A6	17B6	17C6	17D6	17E6	17F6	1806	1816	1826	1836	1846	1856	1866	1876	1886	1896
S03	1687	1697	16A7	16B7	16C7	16D7	16E7	16F7	1707	1717	1727	1737	1747	1757	1767	1777	1787	1797	17A7	17B7	17C7	17D7	17E7	17F7	1807	1817	1827	1837	1847	1857	1867	1877	1887	1897
S04	1688	1698	16A8	16B8	16C8	16D8	16E8	16F8	1708	1718	1728	1738	1748	1758	1768	1778	1788	1798	17A8	17B8	17C8	17D8	17E8	17F8	1808	1818	1828	1838	1848	1858	1868	1878	1888	1898
S05	1689	1699	16A9	16B9	16C9	16D9	16E9	16F9	1709	1719	1729	1739	1749	1759	1769	1779	1789	1799	17A9	17B9	17C9	17D9	17E9	17F9	1809	1819	1829	1839	1849	1859	1869	1879	1889	1899
S06	168A	169A	16AA	16BA	16CA	16DA	16EA	16FA	170A	171A	172A	173A	174A	175A	176A	177A	178A	179A	17AA	17BA	17CA	17DA	17EA	17FA	180A	181A	182A	183A	184A	185A	186A	187A	188A	189A
S07	168B	169B	16AB	16BB	16CB	16DB	16EB	16FB	170B	171B	172B	173B	174B	175B	176B	177B	178B	179B	17AB	17BB	17CB	17DB	17EB	17FB	180B	181B	182B	183B	184B	185B	186B	187B	188B	189B
S08	168C	169C	16AC	16BC	16CC	16DC	16EC	16FC	170C	171C	172C	173C	174C	175C	176C	177C	178C	179C	17AC	17BC	17CC	17DC	17EC	17FC	180C	181C	182C	183C	184C	185C	186C	187C	188C	189C
N																																		
Z01	1DB1	1DC5	1DD9	1DED	1E01	1E15	1E29	1E3D	1E51	1E65	1E79	1E8D	1EA1	1EB5	1EC9	1EDD	1EF1	1F05	1F19	1F2D	1F41	1F55	1F69	1F7D	1F91	1FA5	1FB9	1FCD	1FE1	1FF5	2009	201D	2031	2045
Z02	1DB2	1DC6	1DDA	1DEE	1E02	1E16	1E2A	1E3E	1E52	1E66	1E7A	1E8E	1EA2	1EB6	1ECA	1EDE	1EF2	1F06	1F1A	1F2E	1F42	1F56	1F6A	1F7E	1F92	1FA6	1FBA	1FCE	1FE2	1FF6	200A	201E	2032	2046
Z03	1DB3	1DC7	1DDB	1DEF	1E03	1E17	1E2B	1E3F	1E53	1E67	1E7B	1E8F	1EA3	1EB7	1ECB	1EDF	1EF3	1F07	1F1B	1F2F	1F43	1F57	1F6B	1F7F	1F93	1FA7	1FBB	1FCF	1FE3	1FF7	200B	201F	2033	2047
Z04	1DB4	1DC8	1DDC	1DF0	1E04	1E18	1E2C	1E40	1E54	1E68	1E7C	1E90	1EA4	1EB8	1ECC	1EE0	1EF4	1F08	1F1C	1F30	1F44	1F58	1F6C	1F80	1F94	1FA8	1FBC	1FD0	1FE4	1FF8	200C	2020	2034	2048
Z05	1DB5	1DC9	1DDD	1DF1	1E05	1E19	1E2D	1E41	1E55	1E69	1E7D	1E91	1EA5	1EB9	1ECD	1EE1	1EF5	1F09	1F1D	1F31	1F45	1F59	1F6D	1F81	1F95	1FA9	1FBD	1FD1	1FE5	1FF9	200D	2021	2035	2049
Z06	1DB6	1DCA	1DDE	1DF2	1E06	1E1A	1E2E	1E42	1E56	1E6A	1E7E	1E92	1EA6	1EBA	1ECE	1EE2	1EF6	1F0A	1F1E	1F32	1F46	1F5A	1F6E	1F82	1F96	1FAA	1FBE	1FD2	1FE6	1FFA	200E	2022	2036	204A
Z07	1DB7	1DCB	1DDF	1DF3	1E07	1E1B	1E2F	1E43	1E57	1E6B	1E7F	1E93	1EA7	1EBB	1ECF	1EE3	1EF7	1F0B	1F1F	1F33	1F47	1F5B	1F6F	1F83	1F97	1FAB	1FBF	1FD3	1FE7	1FFB	200F	2023	2037	204B
Z08	1DB8	1DCC	1DE0	1DF4	1E08	1E1C	1E30	1E44	1E58	1E6C	1E80	1E94	1EA8	1EBC	1ED0	1EE4	1EF8	1F0C	1F20	1F34	1F48	1F5C	1F70	1F84	1F98	1FAC	1FC0	1FD4	1FE8	1FFC	2010	2024	2038	204C
Z09	1DB9	1DCD	1DE1	1DF5	1E09	1E1D	1E31	1E45	1E59	1E6D	1E81	1E95	1EA9	1EBD	1ED1	1EE5	1EF9	1F0D	1F21	1F35	1F49	1F5D	1F71	1F85	1F99	1FAD	1FC1	1FD5	1FE9	1FFD	2011	2025	2039	204D
Z10	1DBA	1DCE	1DE2	1DF6	1E0A	1E1E	1E32	1E46	1E5A	1E6E	1E82	1E96	1EAA	1EBE	1ED2	1EE6	1EFA	1F0E	1F22	1F36	1F4A	1F5E	1F72	1F86	1F9A	1FAE	1FC2	1FD6	1FEA	1FFE	2012	2026	203A	204E
Z11	1DBB	1DCF	1DE3	1DF7	1E0B	1E1F	1E33	1E47	1E5B	1E6F	1E83	1E97	1EAB	1EBF	1ED3	1EE7	1EFB	1F0F	1F23	1F37	1F4B	1F5F	1F73	1F87	1F9B	1FAF	1FC3	1FD7	1FEB	1FFF	2013	2027	203B	204F
Z12	1DBC	1DD0	1DE4	1DF8	1E0C	1E20	1E34	1E48	1E5C	1E70	1E84	1E98	1EAC	1EC0	1ED4	1EE8	1EFC	1F10	1F24	1F38	1F4C	1F60	1F74	1F88	1F9C	1FB0	1FC4	1FD8	1FEC	2000	2014	2028	203C	2050
Z13	1DBD	1DD1	1DE5	1DF9	1E0D	1E21	1E35	1E49	1E5D	1E71	1E85	1E99	1EAD	1EC1	1ED5	1EE9	1EFD	1F11	1F25	1F39	1F4D	1F61	1F75	1F89	1F9D	1FB1	1FC5	1FD9	1FED	2001	2015	2029	203D	2051
Z14	1DBE	1DD2	1DE6	1DFA	1E0E	1E22	1E36	1E4A	1E5E	1E72	1E86	1E9A	1EAE	1EC2	1ED6	1EEA	1EFE	1F12	1F26	1F3A	1F4E	1F62	1F76	1F8A	1F9E	1FB2	1FC6	1FDA	1FEE	2002	2016	202A	203E	2052
Z15	1DBF	1DD3	1DE7	1DFB	1E0F	1E23	1E37	1E4B	1E5F	1E73	1E87	1E9B	1EAF	1EC3	1ED7	1EEB	1EFF	1F13	1F27	1F3B	1F4F	1F63	1F77	1F8B	1F9F	1FB3	1FC7	1FDB	1FEF	2003	2017	202B	203F	2053
Z16	1DC0	1DD4	1DE8	1DFC	1E10	1E24	1E38	1E4C	1E60	1E74	1E88	1E9C	1EB0	1EC4	1ED8	1EEC	1F00	1F14	1F28	1F3C	1F50	1F64	1F78	1F8C	1FA0	1FB4	1FC8	1FDC	1FF0	2004	2018	202C	2040	2054
S01	1DC1	1DD5	1DE9	1DFD	1E11	1E25	1E39	1E4D	1E61	1E75	1E89	1E9D	1EB1	1EC5	1ED9	1EED	1F01	1F15	1F29	1F3D	1F51	1F65	1F79	1F8D	1FA1	1FB5	1FC9	1FDD	1FF1	2005	2019	202D	2041	2055
S02	1DC2	1DD6	1DEA	1DFE	1E12	1E26	1E3A	1E4E	1E62	1E76	1E8A	1E9E	1EB2	1EC6	1EDA	1EEE	1F02	1F16	1F2A	1F3E	1F52	1F66	1F7A	1F8E	1FA2	1FB6	1FCA	1FDE	1FF2	2006	201A	202E	2042	2056
S03	1DC3	1DD7	1DEB	1DFF	1E13	1E27	1E3B	1E4F	1E63	1E77	1E8B	1E9F	1EB3	1EC7	1EDB	1EEF	1F03	1F17	1F2B	1F3F	1F53	1F67	1F7B	1F8F	1FA3	1FB7	1FCB	1FDF	1FF3	2007	201B	202F	2043	2057
S04	1DC4	1DD8	1DEC	1E00	1E14	1E28	1E3C	1E50	1E64	1E78	1E8C	1EA0	1EB4	1EC8	1EDC	1EF0	1F04	1F18	1F2C	1F40	1F54	1F68	1F7C	1F90	1FA4	1FB8	1FCC	1FE0	1FF4	2008	201C	2030	2044	2058
M																																		
Z01	24AA	24BB	24CC	24DD	24EE	24FF	2510	2521	2532	2543	2554	2565	2576	2587	2598	25A9	25BA	25CB	25DC	25ED	25FE	260F	2620	2631	2642	2653	2664	2675	2686	2697	26A8	26B9	26CA	26DB
Z02	24AB	24BC	24CD	24DE	24EF	2500	2511	2522	2533	2544	2555	2566	2577	2588	2599	25AA	25BB	25CC	25DD	25EE	25FF	2610	2621	2632	2643	2654	2665	2676	2687	2698	26A9	26BA	26CB	26DC
Z03	24AC	24BD	24CE	24DF	24F0	2501	2512	2523	2534	2545	2556	2567	2578	2589	259A	25AB	25BC	25CD	25DE	25EF	2600	2611	2622	2633	2644	2655	2666	2677	2688	2699	26AA	26BB	26CC	26DD
Z04	24AD	24BE	24CF	24E0	24F1	2502	2513	2524	2535	2546	2557	2568	2579	258A	259B	25AC	25BD	25CE	25DF	25F0	2601	2612	2623	2634	2645	2656	2667	2678	2689	269A	26AB	26BC	26CD	26DE
Z05	24AE	24BF	24D0	24E1	24F2	2503	2514	2525	2536	2547	2558	2569	257A	258B	259C	25AD	25BE	25CF	25E0	25F1	2602	2613	2624	2635	2646	2657	2668	2679	268A	269B	26AC	26BD	26CE	26DF
Z06	24AF	24C0	24D1	24E2	24F3	2504	2515	2526	2537	2548	2559	256A	257B	258C	259D	25AE	25BF	25D0	25E1	25F2	2603	2614	2625	2636	2647	2658	2669	267A	268B	269C	26AD	26BE	26CF	26E0
Z07	24B0	24C1	24D2	24E3	24F4	2505	2516	2527	2538	2549	255A	256B	257C	258D	259E	25AF	25C0	25D1	25E2	25F3	2604	2615	2626	2637	2648	2659	266A	267B	268C	269D	26AE	26BF	26D0	26E1
Z08	24B1	24C2	24D3	24E4	24F5	2506	2517	2528	2539	254A	255B	256C	257D	258E	259F	25B0	25C1	25D2	25E3	25F4	2605	2616	2627	2638	2649	265A	266B	267C	268D	269E	26AF	26C0	26D1	26E2

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		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Exp 8 Zone	**M**																															
Low Volts.	**S01**	2061	2072	2083	2094	20A5	20B6	20C7	20D8	20E9	20FA	210B	211C	212D	213E	214F	2160	2171	2182	2193	21A4	21B5	21C6	21D7	21E8	21F9	220A	221B	222C	223D	224E	225F
Zone 1 Extra	**S02**	2062	2073	2084	2095	20A6	20B7	20C8	20D9	20EA	20FB	210C	211D	212E	213F	2150	2161	2172	2183	2194	21A5	21B6	21C7	21D8	21E9	21FA	220B	221C	222D	223E	224F	2260
Zone 2 Extra	**S03**	2063	2074	2085	2096	20A7	20B8	20C9	20DA	20EB	20FC	210D	211E	212F	2140	2151	2162	2173	2184	2195	21A6	21B7	21C8	21D9	21EA	21FB	220C	221D	222E	223F	2250	2261
Zone 3 Extra	**S04**	2064	2075	2086	2097	20A8	20B9	20CA	20DB	20EC	20FD	210E	211F	2130	2141	2152	2163	2174	2185	2196	21A7	21B8	21C9	21DA	21EB	21FC	220D	221E	222F	2240	2251	2262
Zone 4 Extra	**S05**	2065	2076	2087	2098	20A9	20BA	20CB	20DC	20ED	20FE	210F	2120	2131	2142	2153	2164	2175	2186	2197	21A8	21B9	21CA	21DB	21EC	21FD	220E	221F	2230	2241	2252	2263
Zone 5 Extra	**S06**	2066	2077	2088	2099	20AA	20BB	20CC	20DD	20EE	20FF	2110	2121	2132	2143	2154	2165	2176	2187	2198	21A9	21BA	21CB	21DC	21ED	21FE	220F	2220	2231	2242	2253	2264
Zone 6 Extra	**S07**	2067	2078	2089	209A	20AB	20BC	20CD	20DE	20EF	2100	2111	2122	2133	2144	2155	2166	2177	2188	2199	21AA	21BB	21CC	21DD	21EE	21FF	2210	2221	2232	2243	2254	2265
Zone 7 Extra	**S08**	2068	2079	208A	209B	20AC	20BD	20CE	20DF	20F0	2101	2112	2123	2134	2145	2156	2167	2178	2189	219A	21AB	21BC	21CD	21DE	21EF	2200	2211	2222	2233	2244	2255	2266
LAN fail	**S09**	2069	207A	208B	209C	20AD	20BE	20CF	20E0	20F1	2102	2113	2124	2135	2146	2157	2168	2179	218A	219B	21AC	21BD	21CE	21DF	21F0	2201	2212	2223	2234	2245	2256	2267
Exp 16 Zone	**E**																															
Z01		26EC	2706	2720	273A	2754	276E	2788	27A2	27BC	27D6	27F0	280A	2824	283E	2858	2872	288C	28A6	28C0	28DA	28F4	290E	2928	2942	295C	2976	2990	29AA	29C4	29DE	29F8
Z02		26ED	2707	2721	273B	2755	276F	2789	27A3	27BD	27D7	27F1	280B	2825	283F	2859	2873	288D	28A7	28C1	28DB	28F5	290F	2929	2943	295D	2977	2991	29AB	29C5	29DF	29F9
Z03		26EE	2708	2722	273C	2756	2770	278A	27A4	27BE	27D8	27F2	280C	2826	2840	285A	2874	288E	28A8	28C2	28DC	28F6	2910	292A	2944	295E	2978	2992	29AC	29C6	29E0	29FA
Z04		26EF	2709	2723	273D	2757	2771	278B	27A5	27BF	27D9	27F3	280D	2827	2841	285B	2875	288F	28A9	28C3	28DD	28F7	2911	292B	2945	295F	2979	2993	29AD	29C7	29E1	29FB
Z05		26F0	270A	2724	273E	2758	2772	278C	27A6	27C0	27DA	27F4	280E	2828	2842	285C	2876	2890	28AA	28C4	28DE	28F8	2912	292C	2946	2960	297A	2994	29AE	29C8	29E2	29FC
Z06		26F1	270B	2725	273F	2759	2773	278D	27A7	27C1	27DB	27F5	280F	2829	2843	285D	2877	2891	28AB	28C5	28DF	28F9	2913	292D	2947	2961	297B	2995	29AF	29C9	29E3	29FD
Z07		26F2	270C	2726	2740	275A	2774	278E	27A8	27C2	27DC	27F6	2810	282A	2844	285E	2878	2892	28AC	28C6	28E0	28FA	2914	292E	2948	2962	297C	2996	29B0	29CA	29E4	29FE
Z08		26F3	270D	2727	2741	275B	2775	278F	27A9	27C3	27DD	27F7	2811	282B	2845	285F	2879	2893	28AD	28C7	28E1	28FB	2915	292F	2949	2963	297D	2997	29B1	29CB	29E5	29FF
Z09		26F4	270E	2728	2742	275C	2776	2790	27AA	27C4	27DE	27F8	2812	282C	2846	2860	287A	2894	28AE	28C8	28E2	28FC	2916	2930	294A	2964	297E	2998	29B2	29CC	29E6	2A00
Z10		26F5	270F	2729	2743	275D	2777	2791	27AB	27C5	27DF	27F9	2813	282D	2847	2861	287B	2895	28AF	28C9	28E3	28FD	2917	2931	294B	2965	297F	2999	29B3	29CD	29E7	2A01
Z11		26F6	2710	272A	2744	275E	2778	2792	27AC	27C6	27E0	27FA	2814	282E	2848	2862	287C	2896	28B0	28CA	28E4	28FE	2918	2932	294C	2966	2980	299A	29B4	29CE	29E8	2A02
Z12		26F7	2711	272B	2745	275F	2779	2793	27AD	27C7	27E1	27FB	2815	282F	2849	2863	287D	2897	28B1	28CB	28E5	28FF	2919	2933	294D	2967	2981	299B	29B5	29CF	29E9	2A03
Z13		26F8	2712	272C	2746	2760	277A	2794	27AE	27C8	27E2	27FC	2816	2830	284A	2864	287E	2898	28B2	28CC	28E6	2900	291A	2934	294E	2968	2982	299C	29B6	29D0	29EA	2A04
Z14		26F9	2713	272D	2747	2761	277B	2795	27AF	27C9	27E3	27FD	2817	2831	284B	2865	287F	2899	28B3	28CD	28E7	2901	291B	2935	294F	2969	2983	299D	29B7	29D1	29EB	2A05
Z15		26FA	2714	272E	2748	2762	277C	2796	27B0	27CA	27E4	27FE	2818	2832	284C	2866	2880	289A	28B4	28CE	28E8	2902	291C	2936	2950	296A	2984	299E	29B8	29D2	29EC	2A06
Z16		26FB	2715	272F	2749	2763	277D	2797	27B1	27CB	27E5	27FF	2819	2833	284D	2867	2881	289B	28B5	28CF	28E9	2903	291D	2937	2951	296B	2985	299F	29B9	29D3	29ED	2A07
Cabinet tamp	**S01**	26FC	2716	2730	274A	2764	277E	2798	27B2	27CC	27E6	2800	281A	2834	284E	2868	2882	289C	28B6	28D0	28EA	2904	291E	2938	2952	296C	2986	29A0	29BA	29D4	29EE	2A08
Int siren tamp	**S02**	26FD	2717	2731	274B	2765	277F	2799	27B3	27CD	27E7	2801	281B	2835	284F	2869	2883	289D	28B7	28D1	28EB	2905	291F	2939	2953	296D	2987	29A1	29BB	29D5	29EF	2A09
Ext siren tamp	**S03**	26FE	2718	2732	274C	2766	2780	279A	27B4	27CE	27E8	2802	281C	2836	2850	286A	2884	289E	28B8	28D2	28EC	2906	2920	293A	2954	296E	2988	29A2	29BC	29D6	29F0	2A0A
AC fail.	**S04**	26FF	2719	2733	274D	2767	2781	279B	27B5	27CF	27E9	2803	281D	2837	2851	286B	2885	289F	28B9	28D3	28ED	2907	2921	293B	2955	296F	2989	29A3	29BD	29D7	29F1	2A0B
Low battery.	**S05**	2700	271A	2734	274E	2768	2782	279C	27B6	27D0	27EA	2804	281E	2838	2852	286C	2886	28A0	28BA	28D4	28EE	2908	2922	293C	2956	2970	298A	29A4	29BE	29D8	29F2	2A0C
LAN fuse	**S06**	2701	271B	2735	274F	2769	2783	279D	27B7	27D1	27EB	2805	281F	2839	2853	286D	2887	28A1	28BB	28D5	28EF	2909	2923	293D	2957	2971	298B	29A5	29BF	29D9	29F3	2A0D
Detector fuse	**S07**	2702	271C	2736	2750	276A	2784	279E	27B8	27D2	27EC	2806	2820	283A	2854	286E	2888	28A2	28BC	28D6	28F0	290A	2924	293E	2958	2972	298C	29A6	29C0	29DA	29F4	2A0E
LAN fail	**S08**	2703	271D	2737	2751	276B	2785	279F	27B9	27D3	27ED	2807	2821	283B	2855	286F	2889	28A3	28BD	28D7	28F1	290B	2925	293F	2959	2973	298D	29A7	29C1	29DB	29F5	2A0F
Batt test fail	**S09**	2704	271E	2738	2752	276C	2786	27A0	27BA	27D4	27EE	2808	2822	283C	2856	2870	288A	28A4	28BE	28D8	28F2	290C	2926	2940	295A	2974	298E	29A8	29C2	29DC	29F6	2A10
Spare	**S10**	2705	271F	2739	2753	276D	2787	27A1	27BB	27D5	27EF	2809	2823	283D	2857	2871	288B	28A5	28BF	28D9	28F3	290D	2927	2941	295B	2975	298F	29A9	29C3	29DD	29F7	2A11

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M																																		
S01	2270	2281	2292	22A3	22B4	22C5	22D6	22E7	22F8	2309	231A	232B	233C	234D	235E	236F	2380	2391	23A2	23B3	23C4	23D5	23E6	23F7	2408	2419	242A	243B	244C	245D	246E	247F	2490	24A1
S02	2271	2282	2293	22A4	22B5	22C6	22D7	22E8	22F9	230A	231B	232C	233D	234E	235F	2370	2381	2392	23A3	23B4	23C5	23D6	23E7	23F8	2409	241A	242B	243C	244D	245E	246F	2480	2491	24A2
S03	2272	2283	2294	22A5	22B6	22C7	22D8	22E9	22FA	230B	231C	232D	233E	234F	2360	2371	2382	2393	23A4	23B5	23C6	23D7	23E8	23F9	240A	241B	242C	243D	244E	245F	2470	2481	2492	24A3
S04	2273	2284	2295	22A6	22B7	22C8	22D9	22EA	22FB	230C	231D	232E	233F	2350	2361	2372	2383	2394	23A5	23B6	23C7	23D8	23E9	23FA	240B	241C	242D	243E	244F	2460	2471	2482	2493	24A4
S05	2274	2285	2296	22A7	22B8	22C9	22DA	22EB	22FC	230D	231E	232F	2340	2351	2362	2373	2384	2395	23A6	23B7	23C8	23D9	23EA	23FB	240C	241D	242E	243F	2450	2461	2472	2483	2494	24A5
S06	2275	2286	2297	22A8	22B9	22CA	22DB	22EC	22FD	230E	231F	2330	2341	2352	2363	2374	2385	2396	23A7	23B8	23C9	23DA	23EB	23FC	240D	241E	242F	2440	2451	2462	2473	2484	2495	24A6
S07	2276	2287	2298	22A9	22BA	22CB	22DC	22ED	22FE	230F	2320	2331	2342	2353	2364	2375	2386	2397	23A8	23B9	23CA	23DB	23EC	23FD	240E	241F	2430	2441	2452	2463	2474	2485	2496	24A7
S08	2277	2288	2299	22AA	22BB	22CC	22DD	22EE	22FF	2310	2321	2332	2343	2354	2365	2376	2387	2398	23A9	23BA	23CB	23DC	23ED	23FE	240F	2420	2431	2442	2453	2464	2475	2486	2497	24A8
S09	2278	2289	229A	22AB	22BC	22CD	22DE	22EF	2300	2311	2322	2333	2344	2355	2366	2377	2388	2399	23AA	23BB	23CC	23DD	23EE	23FF	2410	2421	2432	2443	2454	2465	2476	2487	2498	24A9
E																																		
Z01	2A12	2A2C	2A46	2A60	2A7A	2A94	2AAE	2AC8	2AE2	2AFC	2B16	2B30	2B4A	2B64	2B7E	2B98	2BB2	2BCC	2BE6	2C00	2C1A	2C34	2C4E	2C68	2C82	2C9C	2CB6	2CD0	2CEA	2D04	2D1E	2D38	2D52	2D6C
Z02	2A13	2A2D	2A47	2A61	2A7B	2A95	2AAF	2AC9	2AE3	2AFD	2B17	2B31	2B4B	2B65	2B7F	2B99	2BB3	2BCD	2BE7	2C01	2C1B	2C35	2C4F	2C69	2C83	2C9D	2CB7	2CD1	2CEB	2D05	2D1F	2D39	2D53	2D6D
Z03	2A14	2A2E	2A48	2A62	2A7C	2A96	2AB0	2ACA	2AE4	2AFE	2B18	2B32	2B4C	2B66	2B80	2B9A	2BB4	2BCE	2BE8	2C02	2C1C	2C36	2C50	2C6A	2C84	2C9E	2CB8	2CD2	2CEC	2D06	2D20	2D3A	2D54	2D6E
Z04	2A15	2A2F	2A49	2A63	2A7D	2A97	2AB1	2ACB	2AE5	2AFF	2B19	2B33	2B4D	2B67	2B81	2B9B	2BB5	2BCF	2BE9	2C03	2C1D	2C37	2C51	2C6B	2C85	2C9F	2CB9	2CD3	2CED	2D07	2D21	2D3B	2D55	2D6F
Z05	2A16	2A30	2A4A	2A64	2A7E	2A98	2AB2	2ACC	2AE6	2B00	2B1A	2B34	2B4E	2B68	2B82	2B9C	2BB6	2BD0	2BEA	2C04	2C1E	2C38	2C52	2C6C	2C86	2CA0	2CBA	2CD4	2CEE	2D08	2D22	2D3C	2D56	2D70
Z06	2A17	2A31	2A4B	2A65	2A7F	2A99	2AB3	2ACD	2AE7	2B01	2B1B	2B35	2B4F	2B69	2B83	2B9D	2BB7	2BD1	2BEB	2C05	2C1F	2C39	2C53	2C6D	2C87	2CA1	2CBB	2CD5	2CEF	2D09	2D23	2D3D	2D57	2D71
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M																																		
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		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Int. Reader	**I**																															
Z01		30FA	3122	314A	3172	319A	31C2	31EA	3212	323A	3262	328A	32B2	32DA	3302	332A	3352	337A	33A2	33CA	33F2	341A	3442	346A	3492	34BA	34E2	350A	3532	355A	3582	35AA
Z02		30FB	3123	314B	3173	319B	31C3	31EB	3213	323B	3263	328B	32B3	32DB	3303	332B	3353	337B	33A3	33CB	33F3	341B	3443	346B	3493	34BB	34E3	350B	3533	355B	3583	35AB
Z03		30FC	3124	314C	3174	319C	31C4	31EC	3214	323C	3264	328C	32B4	32DC	3304	332C	3354	337C	33A4	33CC	33F4	341C	3444	346C	3494	34BC	34E4	350C	3534	355C	3584	35AC
Z04		30FD	3125	314D	3175	319D	31C5	31ED	3215	323D	3265	328D	32B5	32DD	3305	332D	3355	337D	33A5	33CD	33F5	341D	3445	346D	3495	34BD	34E5	350D	3535	355D	3585	35AD
Z05		30FE	3126	314E	3176	319E	31C6	31EE	3216	323E	3266	328E	32B6	32DE	3306	332E	3356	337E	33A6	33CE	33F6	341E	3446	346E	3496	34BE	34E6	350E	3536	355E	3586	35AE
Z06		30FF	3127	314F	3177	319F	31C7	31EF	3217	323F	3267	328F	32B7	32DF	3307	332F	3357	337F	33A7	33CF	33F7	341F	3447	346F	3497	34BF	34E7	350F	3537	355F	3587	35AF
Z07		3100	3128	3150	3178	31A0	31C8	31F0	3218	3240	3268	3290	32B8	32E0	3308	3330	3358	3380	33A8	33D0	33F8	3420	3448	3470	3498	34C0	34E8	3510	3538	3560	3588	35B0
Z08		3101	3129	3151	3179	31A1	31C9	31F1	3219	3241	3269	3291	32B9	32E1	3309	3331	3359	3381	33A9	33D1	33F9	3421	3449	3471	3499	34C1	34E9	3511	3539	3561	3589	35B1
Z09		3102	312A	3152	317A	31A2	31CA	31F2	321A	3242	326A	3292	32BA	32E2	330A	3332	335A	3382	33AA	33D2	33FA	3422	344A	3472	349A	34C2	34EA	3512	353A	3562	358A	35B2
Z10		3103	312B	3153	317B	31A3	31CB	31F3	321B	3243	326B	3293	32BB	32E3	330B	3333	335B	3383	33AB	33D3	33FB	3423	344B	3473	349B	34C3	34EB	3513	353B	3563	358B	35B3
Z11		3104	312C	3154	317C	31A4	31CC	31F4	321C	3244	326C	3294	32BC	32E4	330C	3334	335C	3384	33AC	33D4	33FC	3424	344C	3474	349C	34C4	34EC	3514	353C	3564	358C	35B4
Z12		3105	312D	3155	317D	31A5	31CD	31F5	321D	3245	326D	3295	32BD	32E5	330D	3335	335D	3385	33AD	33D5	33FD	3425	344D	3475	349D	34C5	34ED	3515	353D	3565	358D	35B5
Z13		3106	312E	3156	317E	31A6	31CE	31F6	321E	3246	326E	3296	32BE	32E6	330E	3336	335E	3386	33AE	33D6	33FE	3426	344E	3476	349E	34C6	34EE	3516	353E	3566	358E	35B6
Z14		3107	312F	3157	317F	31A7	31CF	31F7	321F	3247	326F	3297	32BF	32E7	330F	3337	335F	3387	33AF	33D7	33FF	3427	344F	3477	349F	34C7	34EF	3517	353F	3567	358F	35B7
Z15		3108	3130	3158	3180	31A8	31D0	31F8	3220	3248	3270	3298	32C0	32E8	3310	3338	3360	3388	33B0	33D8	3400	3428	3450	3478	34A0	34C8	34F0	3518	3540	3568	3590	35B8
Z16		3109	3131	3159	3181	31A9	31D1	31F9	3221	3249	3271	3299	32C1	32E9	3311	3339	3361	3389	33B1	33D9	3401	3429	3451	3479	34A1	34C9	34F1	3519	3541	3569	3591	35B9
Lock tam D1	**S01**	310A	3132	315A	3182	31AA	31D2	31FA	3222	324A	3272	329A	32C2	32EA	3312	333A	3362	338A	33B2	33DA	3402	342A	3452	347A	34A2	34CA	34F2	351A	3542	356A	3592	35BA
Lock tamp D2	**S02**	310B	3133	315B	3183	31AB	31D3	31FB	3223	324B	3273	329B	32C3	32EB	3313	333B	3363	338B	33B3	33DB	3403	342B	3453	347B	34A3	34CB	34F3	351B	3543	356B	3593	35BB
Lock tamp D3	**S03**	310C	3134	315C	3184	31AC	31D4	31FC	3224	324C	3274	329C	32C4	32EC	3314	333C	3364	338C	33B4	33DC	3404	342C	3454	347C	34A4	34CC	34F4	351C	3544	356C	3594	35BC
Lock tamp D4	**S04**	310D	3135	315D	3185	31AD	31D5	31FD	3225	324D	3275	329D	32C5	32ED	3315	333D	3365	338D	33B5	33DD	3405	342D	3455	347D	34A5	34CD	34F5	351D	3545	356D	3595	35BD
Dr Forced D1	**S05**	310E	3136	315E	3186	31AE	31D6	31FE	3226	324E	3276	329E	32C6	32EE	3316	333E	3366	338E	33B6	33DE	3406	342E	3456	347E	34A6	34CE	34F6	351E	3546	356E	3596	35BE
Dr Forced D2	**S06**	310F	3137	315F	3187	31AF	31D7	31FF	3227	324F	3277	329F	32C7	32EF	3317	333F	3367	338F	33B7	33DF	3407	342F	3457	347F	34A7	34CF	34F7	351F	3547	356F	3597	35BF
Dr Forced D3	**S07**	3110	3138	3160	3188	31B0	31D8	3200	3228	3250	3278	32A0	32C8	32F0	3318	3340	3368	3390	33B8	33E0	3408	3430	3458	3480	34A8	34D0	34F8	3520	3548	3570	3598	35C0
Dr Forced D4	**S08**	3111	3139	3161	3189	31B1	31D9	3201	3229	3251	3279	32A1	32C9	32F1	3319	3341	3369	3391	33B9	33E1	3409	3431	3459	3481	34A9	34D1	34F9	3521	3549	3571	3599	35C1
Door Held D1	**S09**	3112	313A	3162	318A	31B2	31DA	3202	322A	3252	327A	32A2	32CA	32F2	331A	3342	336A	3392	33BA	33E2	340A	3432	345A	3482	34AA	34D2	34FA	3522	354A	3572	359A	35C2
Door Held D2	**S10**	3113	313B	3163	318B	31B3	31DB	3203	322B	3253	327B	32A3	32CB	32F3	331B	3343	336B	3393	33BB	33E3	340B	3433	345B	3483	34AB	34D3	34FB	3523	354B	3573	359B	35C3
Door Held D3	**S11**	3114	313C	3164	318C	31B4	31DC	3204	322C	3254	327C	32A4	32CC	32F4	331C	3344	336C	3394	33BC	33E4	340C	3434	345C	3484	34AC	34D4	34FC	3524	354C	3574	359C	35C4
Door Held D4	**S12**	3115	313D	3165	318D	31B5	31DD	3205	322D	3255	327D	32A5	32CD	32F5	331D	3345	336D	3395	33BD	33E5	340D	3435	345D	3485	34AD	34D5	34FD	3525	354D	3575	359D	35C5
Illegal Card D1	**S13**	3116	313E	3166	318E	31B6	31DE	3206	322E	3256	327E	32A6	32CE	32F6	331E	3346	336E	3396	33BE	33E6	340E	3436	345E	3486	34AE	34D6	34FE	3526	354E	3576	359E	35C6
Illegal Card D2	**S14**	3117	313F	3167	318F	31B7	31DF	3207	322F	3257	327F	32A7	32CF	32F7	331F	3347	336F	3397	33BF	33E7	340F	3437	345F	3487	34AF	34D7	34FF	3527	354F	3577	359F	35C7
Illegal Card D3	**S15**	3118	3140	3168	3190	31B8	31E0	3208	3230	3258	3280	32A8	32D0	32F8	3320	3348	3370	3398	33C0	33E8	3410	3438	3460	3488	34B0	34D8	3500	3528	3550	3578	35A0	35C8
Illegal Card D4	**S16**	3119	3141	3169	3191	31B9	31E1	3209	3231	3259	3281	32A9	32D1	32F9	3321	3349	3371	3399	33C1	33E9	3411	3439	3461	3489	34B1	34D9	3501	3529	3551	3579	35A1	35C9
Cabinet tamp	**S17**	311A	3142	316A	3192	31BA	31E2	320A	3232	325A	3282	32AA	32D2	32FA	3322	334A	3372	339A	33C2	33EA	3412	343A	3462	348A	34B2	34DA	3502	352A	3552	357A	35A2	35CA
Gen lock fault	**S18**	311B	3143	316B	3193	31BB	31E3	320B	3233	325B	3283	32AB	32D3	32FB	3323	334B	3373	339B	33C3	33EB	3413	343B	3463	348B	34B3	34DB	3503	352B	3553	357B	35A3	35CB
Batt test fail	**S19**	311C	3144	316C	3194	31BC	31E4	320C	3234	325C	3284	32AC	32D4	32FC	3324	334C	3374	339C	33C4	33EC	3414	343C	3464	348C	34B4	34DC	3504	352C	3554	357C	35A4	35CC
AC fail.	**S20**	311D	3145	316D	3195	31BD	31E5	320D	3235	325D	3285	32AD	32D5	32FD	3325	334D	3375	339D	33C5	33ED	3415	343D	3465	348D	34B5	34DD	3505	352D	3555	357D	35A5	35CD
Low battery.	**S21**	311E	3146	316E	3196	31BE	31E6	320E	3236	325E	3286	32AE	32D6	32FE	3326	334E	3376	339E	33C6	33EE	3416	343E	3466	348E	34B6	34DE	3506	352E	3556	357E	35A6	35CE
LAN fuse	**S22**	311F	3147	316F	3197	31BF	31E7	320F	3237	325F	3287	32AF	32D7	32FF	3327	334F	3377	339F	33C7	33EF	3417	343F	3467	348F	34B7	34DF	3507	352F	3557	357F	35A7	35CF
Detector fuse	**S23**	3120	3148	3170	3198	31C0	31E8	3210	3238	3260	3288	32B0	32D8	3300	3328	3350	3378	33A0	33C8	33F0	3418	3440	3468	3490	34B8	34E0	3508	3530	3558	3580	35A8	35D0
LAN fail	**S24**	3121	3149	3171	3199	31C1	31E9	3211	3239	3261	3289	32B1	32D9	3301	3329	3351	3379	33A1	33C9	33F1	3419	3441	3469	3491	34B9	34E1	3509	3531	3559	3581	35A9	35D1

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	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65
I																																		
Z01	35D2	35FA	3622	364A	3672	369A	36C2	36EA	3712	373A	3762	378A	37B2	37DA	3802	382A	3852	387A	38A2	38CA	38F2	391A	3942	396A	3992	39BA	39E2	3A0A	3A32	3A5A	3A82	3AAA	3AD2	3AFA
Z02	35D3	35FB	3623	364B	3673	369B	36C3	36EB	3713	373B	3763	378B	37B3	37DB	3803	382B	3853	387B	38A3	38CB	38F3	391B	3943	396B	3993	39BB	39E3	3A0B	3A33	3A5B	3A83	3AAB	3AD3	3AFB
Z03	35D4	35FC	3624	364C	3674	369C	36C4	36EC	3714	373C	3764	378C	37B4	37DC	3804	382C	3854	387C	38A4	38CC	38F4	391C	3944	396C	3994	39BC	39E4	3A0C	3A34	3A5C	3A84	3AAC	3AD4	3AFC
Z04	35D5	35FD	3625	364D	3675	369D	36C5	36ED	3715	373D	3765	378D	37B5	37DD	3805	382D	3855	387D	38A5	38CD	38F5	391D	3945	396D	3995	39BD	39E5	3A0D	3A35	3A5D	3A85	3AAD	3AD5	3AFD
Z05	35D6	35FE	3626	364E	3676	369E	36C6	36EE	3716	373E	3766	378E	37B6	37DE	3806	382E	3856	387E	38A6	38CE	38F6	391E	3946	396E	3996	39BE	39E6	3A0E	3A36	3A5E	3A86	3AAE	3AD6	3AFE
Z06	35D7	35FF	3627	364F	3677	369F	36C7	36EF	3717	373F	3767	378F	37B7	37DF	3807	382F	3857	387F	38A7	38CF	38F7	391F	3947	396F	3997	39BF	39E7	3A0F	3A37	3A5F	3A87	3AAF	3AD7	3AFF
Z07	35D8	3600	3628	3650	3678	36A0	36C8	36F0	3718	3740	3768	3790	37B8	37E0	3808	3830	3858	3880	38A8	38D0	38F8	3920	3948	3970	3998	39C0	39E8	3A10	3A38	3A60	3A88	3AB0	3AD8	3B00
Z08	35D9	3601	3629	3651	3679	36A1	36C9	36F1	3719	3741	3769	3791	37B9	37E1	3809	3831	3859	3881	38A9	38D1	38F9	3921	3949	3971	3999	39C1	39E9	3A11	3A39	3A61	3A89	3AB1	3AD9	3B01
Z09	35DA	3602	362A	3652	367A	36A2	36CA	36F2	371A	3742	376A	3792	37BA	37E2	380A	3832	385A	3882	38AA	38D2	38FA	3922	394A	3972	399A	39C2	39EA	3A12	3A3A	3A62	3A8A	3AB2	3ADA	3B02
Z10	35DB	3603	362B	3653	367B	36A3	36CB	36F3	371B	3743	376B	3793	37BB	37E3	380B	3833	385B	3883	38AB	38D3	38FB	3923	394B	3973	399B	39C3	39EB	3A13	3A3B	3A63	3A8B	3AB3	3ADB	3B03
Z11	35DC	3604	362C	3654	367C	36A4	36CC	36F4	371C	3744	376C	3794	37BC	37E4	380C	3834	385C	3884	38AC	38D4	38FC	3924	394C	3974	399C	39C4	39EC	3A14	3A3C	3A64	3A8C	3AB4	3ADC	3B04
Z12	35DD	3605	362D	3655	367D	36A5	36CD	36F5	371D	3745	376D	3795	37BD	37E5	380D	3835	385D	3885	38AD	38D5	38FD	3925	394D	3975	399D	39C5	39ED	3A15	3A3D	3A65	3A8D	3AB5	3ADD	3B05
Z13	35DE	3606	362E	3656	367E	36A6	36CE	36F6	371E	3746	376E	3796	37BE	37E6	380E	3836	385E	3886	38AE	38D6	38FE	3926	394E	3976	399E	39C6	39EE	3A16	3A3E	3A66	3A8E	3AB6	3ADE	3B06
Z14	35DF	3607	362F	3657	367F	36A7	36CF	36F7	371F	3747	376F	3797	37BF	37E7	380F	3837	385F	3887	38AF	38D7	38FF	3927	394F	3977	399F	39C7	39EF	3A17	3A3F	3A67	3A8F	3AB7	3ADF	3B07
Z15	35E0	3608	3630	3658	3680	36A8	36D0	36F8	3720	3748	3770	3798	37C0	37E8	3810	3838	3860	3888	38B0	38D8	3900	3928	3950	3978	39A0	39C8	39F0	3A18	3A40	3A68	3A90	3AB8	3AE0	3B08
Z16	35E1	3609	3631	3659	3681	36A9	36D1	36F9	3721	3749	3771	3799	37C1	37E9	3811	3839	3861	3889	38B1	38D9	3901	3929	3951	3979	39A1	39C9	39F1	3A19	3A41	3A69	3A91	3AB9	3AE1	3B09
S01	35E2	360A	3632	365A	3682	36AA	36D2	36FA	3722	374A	3772	379A	37C2	37EA	3812	383A	3862	388A	38B2	38DA	3902	392A	3952	397A	39A2	39CA	39F2	3A1A	3A42	3A6A	3A92	3ABA	3AE2	3B0A
S02	35E3	360B	3633	365B	3683	36AB	36D3	36FB	3723	374B	3773	379B	37C3	37EB	3813	383B	3863	388B	38B3	38DB	3903	392B	3953	397B	39A3	39CB	39F3	3A1B	3A43	3A6B	3A93	3ABB	3AE3	3B0B
S03	35E4	360C	3634	365C	3684	36AC	36D4	36FC	3724	374C	3774	379C	37C4	37EC	3814	383C	3864	388C	38B4	38DC	3904	392C	3954	397C	39A4	39CC	39F4	3A1C	3A44	3A6C	3A94	3ABC	3AE4	3B0C
S04	35E5	360D	3635	365D	3685	36AD	36D5	36FD	3725	374D	3775	379D	37C5	37ED	3815	383D	3865	388D	38B5	38DD	3905	392D	3955	397D	39A5	39CD	39F5	3A1D	3A45	3A6D	3A95	3ABD	3AE5	3B0D
S05	35E6	360E	3636	365E	3686	36AE	36D6	36FE	3726	374E	3776	379E	37C6	37EE	3816	383E	3866	388E	38B6	38DE	3906	392E	3956	397E	39A6	39CE	39F6	3A1E	3A46	3A6E	3A96	3ABE	3AE6	3B0E
S06	35E7	360F	3637	365F	3687	36AF	36D7	36FF	3727	374F	3777	379F	37C7	37EF	3817	383F	3867	388F	38B7	38DF	3907	392F	3957	397F	39A7	39CF	39F7	3A1F	3A47	3A6F	3A97	3ABF	3AE7	3B0F
S07	35E8	3610	3638	3660	3688	36B0	36D8	3700	3728	3750	3778	37A0	37C8	37F0	3818	3840	3868	3890	38B8	38E0	3908	3930	3958	3980	39A8	39D0	39F8	3A20	3A48	3A70	3A98	3AC0	3AE8	3B10
S08	35E9	3611	3639	3661	3689	36B1	36D9	3701	3729	3751	3779	37A1	37C9	37F1	3819	3841	3869	3891	38B9	38E1	3909	3931	3959	3981	39A9	39D1	39F9	3A21	3A49	3A71	3A99	3AC1	3AE9	3B11
S09	35EA	3612	363A	3662	368A	36B2	36DA	3702	372A	3752	377A	37A2	37CA	37F2	381A	3842	386A	3892	38BA	38E2	390A	3932	395A	3982	39AA	39D2	39FA	3A22	3A4A	3A72	3A9A	3AC2	3AEA	3B12
S10	35EB	3613	363B	3663	368B	36B3	36DB	3703	372B	3753	377B	37A3	37CB	37F3	381B	3843	386B	3893	38BB	38E3	390B	3933	395B	3983	39AB	39D3	39FB	3A23	3A4B	3A73	3A9B	3AC3	3AEB	3B13
S11	35EC	3614	363C	3664	368C	36B4	36DC	3704	372C	3754	377C	37A4	37CC	37F4	381C	3844	386C	3894	38BC	38E4	390C	3934	395C	3984	39AC	39D4	39FC	3A24	3A4C	3A74	3A9C	3AC4	3AEC	3B14
S12	35ED	3615	363D	3665	368D	36B5	36DD	3705	372D	3755	377D	37A5	37CD	37F5	381D	3845	386D	3895	38BD	38E5	390D	3935	395D	3985	39AD	39D5	39FD	3A25	3A4D	3A75	3A9D	3AC5	3AED	3B15
S13	35EE	3616	363E	3666	368E	36B6	36DE	3706	372E	3756	377E	37A6	37CE	37F6	381E	3846	386E	3896	38BE	38E6	390E	3936	395E	3986	39AE	39D6	39FE	3A26	3A4E	3A76	3A9E	3AC6	3AEE	3B16
S14	35EF	3617	363F	3667	368F	36B7	36DF	3707	372F	3757	377F	37A7	37CF	37F7	381F	3847	386F	3897	38BF	38E7	390F	3937	395F	3987	39AF	39D7	39FF	3A27	3A4F	3A77	3A9F	3AC7	3AEF	3B17
S15	35F0	3618	3640	3668	3690	36B8	36E0	3708	3730	3758	3780	37A8	37D0	37F8	3820	3848	3870	3898	38C0	38E8	3910	3938	3960	3988	39B0	39D8	3A00	3A28	3A50	3A78	3AA0	3AC8	3AF0	3B18
S16	35F1	3619	3641	3669	3691	36B9	36E1	3709	3731	3759	3781	37A9	37D1	37F9	3821	3849	3871	3899	38C1	38E9	3911	3939	3961	3989	39B1	39D9	3A01	3A29	3A51	3A79	3AA1	3AC9	3AF1	3B19
S17	35F2	361A	3642	366A	3692	36BA	36E2	370A	3732	375A	3782	37AA	37D2	37FA	3822	384A	3872	389A	38C2	38EA	3912	393A	3962	398A	39B2	39DA	3A02	3A2A	3A52	3A7A	3AA2	3ACA	3AF2	3B1A
S18	35F3	361B	3643	366B	3693	36BB	36E3	370B	3733	375B	3783	37AB	37D3	37FB	3823	384B	3873	389B	38C3	38EB	3913	393B	3963	398B	39B3	39DB	3A03	3A2B	3A53	3A7B	3AA3	3ACB	3AF3	3B1B
S19	35F4	361C	3644	366C	3694	36BC	36E4	370C	3734	375C	3784	37AC	37D4	37FC	3824	384C	3874	389C	38C4	38EC	3914	393C	3964	398C	39B4	39DC	3A04	3A2C	3A54	3A7C	3AA4	3ACC	3AF4	3B1C
S20	35F5	361D	3645	366D	3695	36BD	36E5	370D	3735	375D	3785	37AD	37D5	37FD	3825	384D	3875	389D	38C5	38ED	3915	393D	3965	398D	39B5	39DD	3A05	3A2D	3A55	3A7D	3AA5	3ACD	3AF5	3B1D
S21	35F6	361E	3646	366E	3696	36BE	36E6	370E	3736	375E	3786	37AE	37D6	37FE	3826	384E	3876	389E	38C6	38EE	3916	393E	3966	398E	39B6	39DE	3A06	3A2E	3A56	3A7E	3AA6	3ACE	3AF6	3B1E
S22	35F7	361F	3647	366F	3697	36BF	36E7	370F	3737	375F	3787	37AF	37D7	37FF	3827	384F	3877	389F	38C7	38EF	3917	393F	3967	398F	39B7	39DF	3A07	3A2F	3A57	3A7F	3AA7	3ACF	3AF7	3B1F
S23	35F8	3620	3648	3670	3698	36C0	36E8	3710	3738	3760	3788	37B0	37D8	3800	3828	3850	3878	38A0	38C8	38F0	3918	3940	3968	3990	39B8	39E0	3A08	3A30	3A58	3A80	3AA8	3AD0	3AF8	3B20
S24	35F9	3621	3649	3671	3699	36C1	36E9	3711	3739	3761	3789	37B1	37D9	3801	3829	3851	3879	38A1	38C9	38F1	3919	3941	3969	3991	39B9	39E1	3A09	3A31	3A59	3A81	3AA9	3AD1	3AF9	3B21

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	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
I																																		
Z01	3B22	3B4A	3B72	3B9A	3BC2	3BEA	3C12	3C3A	3C62	3C8A	3CB2	3CDA	3D02	3D2A	3D52	3D7A	3DA2	3DCA	3DF2	3E1A	3E42	3E6A	3E92	3EBA	3EE2	3F0A	3F32	3F5A	3F82	3FAA	3FD2	3FFA	4022	404A
Z02	3B23	3B4B	3B73	3B9B	3BC3	3BEB	3C13	3C3B	3C63	3C8B	3CB3	3CDB	3D03	3D2B	3D53	3D7B	3DA3	3DCB	3DF3	3E1B	3E43	3E6B	3E93	3EBB	3EE3	3F0B	3F33	3F5B	3F83	3FAB	3FD3	3FFB	4023	404B
Z03	3B24	3B4C	3B74	3B9C	3BC4	3BEC	3C14	3C3C	3C64	3C8C	3CB4	3CDC	3D04	3D2C	3D54	3D7C	3DA4	3DCC	3DF4	3E1C	3E44	3E6C	3E94	3EBC	3EE4	3F0C	3F34	3F5C	3F84	3FAC	3FD4	3FFC	4024	404C
Z04	3B25	3B4D	3B75	3B9D	3BC5	3BED	3C15	3C3D	3C65	3C8D	3CB5	3CDD	3D05	3D2D	3D55	3D7D	3DA5	3DCD	3DF5	3E1D	3E45	3E6D	3E95	3EBD	3EE5	3F0D	3F35	3F5D	3F85	3FAD	3FD5	3FFD	4025	404D
Z05	3B26	3B4E	3B76	3B9E	3BC6	3BEE	3C16	3C3E	3C66	3C8E	3CB6	3CDE	3D06	3D2E	3D56	3D7E	3DA6	3DCE	3DF6	3E1E	3E46	3E6E	3E96	3EBE	3EE6	3F0E	3F36	3F5E	3F86	3FAE	3FD6	3FFE	4026	404E
Z06	3B27	3B4F	3B77	3B9F	3BC7	3BEF	3C17	3C3F	3C67	3C8F	3CB7	3CDF	3D07	3D2F	3D57	3D7F	3DA7	3DCF	3DF7	3E1F	3E47	3E6F	3E97	3EBF	3EE7	3F0F	3F37	3F5F	3F87	3FAF	3FD7	3FFF	4027	404F
Z07	3B28	3B50	3B78	3BA0	3BC8	3BF0	3C18	3C40	3C68	3C90	3CB8	3CE0	3D08	3D30	3D58	3D80	3DA8	3DD0	3DF8	3E20	3E48	3E70	3E98	3EC0	3EE8	3F10	3F38	3F60	3F88	3FB0	3FD8	4000	4028	4050
Z08	3B29	3B51	3B79	3BA1	3BC9	3BF1	3C19	3C41	3C69	3C91	3CB9	3CE1	3D09	3D31	3D59	3D81	3DA9	3DD1	3DF9	3E21	3E49	3E71	3E99	3EC1	3EE9	3F11	3F39	3F61	3F89	3FB1	3FD9	4001	4029	4051
Z09	3B2A	3B52	3B7A	3BA2	3BCA	3BF2	3C1A	3C42	3C6A	3C92	3CBA	3CE2	3D0A	3D32	3D5A	3D82	3DAA	3DD2	3DFA	3E22	3E4A	3E72	3E9A	3EC2	3EEA	3F12	3F3A	3F62	3F8A	3FB2	3FDA	4002	402A	4052
Z10	3B2B	3B53	3B7B	3BA3	3BCB	3BF3	3C1B	3C43	3C6B	3C93	3CBB	3CE3	3D0B	3D33	3D5B	3D83	3DAB	3DD3	3DFB	3E23	3E4B	3E73	3E9B	3EC3	3EEB	3F13	3F3B	3F63	3F8B	3FB3	3FDB	4003	402B	4053
Z11	3B2C	3B54	3B7C	3BA4	3BCC	3BF4	3C1C	3C44	3C6C	3C94	3CBC	3CE4	3D0C	3D34	3D5C	3D84	3DAC	3DD4	3DFC	3E24	3E4C	3E74	3E9C	3EC4	3EEC	3F14	3F3C	3F64	3F8C	3FB4	3FDC	4004	402C	4054
Z12	3B2D	3B55	3B7D	3BA5	3BCD	3BF5	3C1D	3C45	3C6D	3C95	3CBD	3CE5	3D0D	3D35	3D5D	3D85	3DAD	3DD5	3DFD	3E25	3E4D	3E75	3E9D	3EC5	3EED	3F15	3F3D	3F65	3F8D	3FB5	3FDD	4005	402D	4055
Z13	3B2E	3B56	3B7E	3BA6	3BCE	3BF6	3C1E	3C46	3C6E	3C96	3CBE	3CE6	3D0E	3D36	3D5E	3D86	3DAE	3DD6	3DFE	3E26	3E4E	3E76	3E9E	3EC6	3EEE	3F16	3F3E	3F66	3F8E	3FB6	3FDE	4006	402E	4056
Z14	3B2F	3B57	3B7F	3BA7	3BCF	3BF7	3C1F	3C47	3C6F	3C97	3CBF	3CE7	3D0F	3D37	3D5F	3D87	3DAF	3DD7	3DFF	3E27	3E4F	3E77	3E9F	3EC7	3EEF	3F17	3F3F	3F67	3F8F	3FB7	3FDF	4007	402F	4057
Z15	3B30	3B58	3B80	3BA8	3BD0	3BF8	3C20	3C48	3C70	3C98	3CC0	3CE8	3D10	3D38	3D60	3D88	3DB0	3DD8	3E00	3E28	3E50	3E78	3EA0	3EC8	3EF0	3F18	3F40	3F68	3F90	3FB8	3FE0	4008	4030	4058
Z16	3B31	3B59	3B81	3BA9	3BD1	3BF9	3C21	3C49	3C71	3C99	3CC1	3CE9	3D11	3D39	3D61	3D89	3DB1	3DD9	3E01	3E29	3E51	3E79	3EA1	3EC9	3EF1	3F19	3F41	3F69	3F91	3FB9	3FE1	4009	4031	4059
S01	3B32	3B5A	3B82	3BAA	3BD2	3BFA	3C22	3C4A	3C72	3C9A	3CC2	3CEA	3D12	3D3A	3D62	3D8A	3DB2	3DDA	3E02	3E2A	3E52	3E7A	3EA2	3ECA	3EF2	3F1A	3F42	3F6A	3F92	3FBA	3FE2	400A	4032	405A
S02	3B33	3B5B	3B83	3BAB	3BD3	3BFB	3C23	3C4B	3C73	3C9B	3CC3	3CEB	3D13	3D3B	3D63	3D8B	3DB3	3DDB	3E03	3E2B	3E53	3E7B	3EA3	3ECB	3EF3	3F1B	3F43	3F6B	3F93	3FBB	3FE3	400B	4033	405B
S03	3B34	3B5C	3B84	3BAC	3BD4	3BFC	3C24	3C4C	3C74	3C9C	3CC4	3CEC	3D14	3D3C	3D64	3D8C	3DB4	3DDC	3E04	3E2C	3E54	3E7C	3EA4	3ECC	3EF4	3F1C	3F44	3F6C	3F94	3FBC	3FE4	400C	4034	405C
S04	3B35	3B5D	3B85	3BAD	3BD5	3BFD	3C25	3C4D	3C75	3C9D	3CC5	3CED	3D15	3D3D	3D65	3D8D	3DB5	3DDD	3E05	3E2D	3E55	3E7D	3EA5	3ECD	3EF5	3F1D	3F45	3F6D	3F95	3FBD	3FE5	400D	4035	405D
S05	3B36	3B5E	3B86	3BAE	3BD6	3BFE	3C26	3C4E	3C76	3C9E	3CC6	3CEE	3D16	3D3E	3D66	3D8E	3DB6	3DDE	3E06	3E2E	3E56	3E7E	3EA6	3ECE	3EF6	3F1E	3F46	3F6E	3F96	3FBE	3FE6	400E	4036	405E
S06	3B37	3B5F	3B87	3BAF	3BD7	3BFF	3C27	3C4F	3C77	3C9F	3CC7	3CEF	3D17	3D3F	3D67	3D8F	3DB7	3DDF	3E07	3E2F	3E57	3E7F	3EA7	3ECF	3EF7	3F1F	3F47	3F6F	3F97	3FBF	3FE7	400F	4037	405F
S07	3B38	3B60	3B88	3BB0	3BD8	3C00	3C28	3C50	3C78	3CA0	3CC8	3CF0	3D18	3D40	3D68	3D90	3DB8	3DE0	3E08	3E30	3E58	3E80	3EA8	3ED0	3EF8	3F20	3F48	3F70	3F98	3FC0	3FE8	4010	4038	4060
S08	3B39	3B61	3B89	3BB1	3BD9	3C01	3C29	3C51	3C79	3CA1	3CC9	3CF1	3D19	3D41	3D69	3D91	3DB9	3DE1	3E09	3E31	3E59	3E81	3EA9	3ED1	3EF9	3F21	3F49	3F71	3F99	3FC1	3FE9	4011	4039	4061
S09	3B3A	3B62	3B8A	3BB2	3BDA	3C02	3C2A	3C52	3C7A	3CA2	3CCA	3CF2	3D1A	3D42	3D6A	3D92	3DBA	3DE2	3E0A	3E32	3E5A	3E82	3EAA	3ED2	3EFA	3F22	3F4A	3F72	3F9A	3FC2	3FEA	4012	403A	4062
S10	3B3B	3B63	3B8B	3BB3	3BDB	3C03	3C2B	3C53	3C7B	3CA3	3CCB	3CF3	3D1B	3D43	3D6B	3D93	3DBB	3DE3	3E0B	3E33	3E5B	3E83	3EAB	3ED3	3EFB	3F23	3F4B	3F73	3F9B	3FC3	3FEB	4013	403B	4063
S11	3B3C	3B64	3B8C	3BB4	3BDC	3C04	3C2C	3C54	3C7C	3CA4	3CCC	3CF4	3D1C	3D44	3D6C	3D94	3DBC	3DE4	3E0C	3E34	3E5C	3E84	3EAC	3ED4	3EFC	3F24	3F4C	3F74	3F9C	3FC4	3FEC	4014	403C	4064
S12	3B3D	3B65	3B8D	3BB5	3BDD	3C05	3C2D	3C55	3C7D	3CA5	3CCD	3CF5	3D1D	3D45	3D6D	3D95	3DBD	3DE5	3E0D	3E35	3E5D	3E85	3EAD	3ED5	3EFD	3F25	3F4D	3F75	3F9D	3FC5	3FED	4015	403D	4065
S13	3B3E	3B66	3B8E	3BB6	3BDE	3C06	3C2E	3C56	3C7E	3CA6	3CCE	3CF6	3D1E	3D46	3D6E	3D96	3DBE	3DE6	3E0E	3E36	3E5E	3E86	3EAE	3ED6	3EFE	3F26	3F4E	3F76	3F9E	3FC6	3FEE	4016	403E	4066
S14	3B3F	3B67	3B8F	3BB7	3BDF	3C07	3C2F	3C57	3C7F	3CA7	3CCF	3CF7	3D1F	3D47	3D6F	3D97	3DBF	3DE7	3E0F	3E37	3E5F	3E87	3EAF	3ED7	3EFF	3F27	3F4F	3F77	3F9F	3FC7	3FEF	4017	403F	4067
S15	3B40	3B68	3B90	3BB8	3BE0	3C08	3C30	3C58	3C80	3CA8	3CD0	3CF8	3D20	3D48	3D70	3D98	3DC0	3DE8	3E10	3E38	3E60	3E88	3EB0	3ED8	3F00	3F28	3F50	3F78	3FA0	3FC8	3FF0	4018	4040	4068
S16	3B41	3B69	3B91	3BB9	3BE1	3C09	3C31	3C59	3C81	3CA9	3CD1	3CF9	3D21	3D49	3D71	3D99	3DC1	3DE9	3E11	3E39	3E61	3E89	3EB1	3ED9	3F01	3F29	3F51	3F79	3FA1	3FC9	3FF1	4019	4041	4069
S17	3B42	3B6A	3B92	3BBA	3BE2	3C0A	3C32	3C5A	3C82	3CAA	3CD2	3CFA	3D22	3D4A	3D72	3D9A	3DC2	3DEA	3E12	3E3A	3E62	3E8A	3EB2	3EDA	3F02	3F2A	3F52	3F7A	3FA2	3FCA	3FF2	401A	4042	406A
S18	3B43	3B6B	3B93	3BBB	3BE3	3C0B	3C33	3C5B	3C83	3CAB	3CD3	3CFB	3D23	3D4B	3D73	3D9B	3DC3	3DEB	3E13	3E3B	3E63	3E8B	3EB3	3EDB	3F03	3F2B	3F53	3F7B	3FA3	3FCB	3FF3	401B	4043	406B
S19	3B44	3B6C	3B94	3BBC	3BE4	3C0C	3C34	3C5C	3C84	3CAC	3CD4	3CFC	3D24	3D4C	3D74	3D9C	3DC4	3DEC	3E14	3E3C	3E64	3E8C	3EB4	3EDC	3F04	3F2C	3F54	3F7C	3FA4	3FCC	3FF4	401C	4044	406C
S20	3B45	3B6D	3B95	3BBD	3BE5	3C0D	3C35	3C5D	3C85	3CAD	3CD5	3CFD	3D25	3D4D	3D75	3D9D	3DC5	3DED	3E15	3E3D	3E65	3E8D	3EB5	3EDD	3F05	3F2D	3F55	3F7D	3FA5	3FCD	3FF5	401D	4045	406D
S21	3B46	3B6E	3B96	3BBE	3BE6	3C0E	3C36	3C5E	3C86	3CAE	3CD6	3CFE	3D26	3D4E	3D76	3D9E	3DC6	3DEE	3E16	3E3E	3E66	3E8E	3EB6	3EDE	3F06	3F2E	3F56	3F7E	3FA6	3FCE	3FF6	401E	4046	406E
S22	3B47	3B6F	3B97	3BBF	3BE7	3C0F	3C37	3C5F	3C87	3CAF	3CD7	3CFF	3D27	3D4F	3D77	3D9F	3DC7	3DEF	3E17	3E3F	3E67	3E8F	3EB7	3EDF	3F07	3F2F	3F57	3F7F	3FA7	3FCF	3FF7	401F	4047	406F
S23	3B48	3B70	3B98	3BC0	3BE8	3C10	3C38	3C60	3C88	3CB0	3CD8	3D00	3D28	3D50	3D78	3DA0	3DC8	3DF0	3E18	3E40	3E68	3E90	3EB8	3EE0	3F08	3F30	3F58	3F80	3FA8	3FD0	3FF8	4020	4048	4070
S24	3B49	3B71	3B99	3BC1	3BE9	3C11	3C39	3C61	3C89	3CB1	3CD9	3D01	3D29	3D51	3D79	3DA1	3DC9	3DF1	3E19	3E41	3E69	3E91	3EB9	3EE1	3F09	3F31	3F59	3F81	3FA9	3FD1	3FF9	4021	4049	4071

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		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Analogue	**Q**																															
Z01		4072	407B	4084	408D	4096	409F	40A8	40B1	40BA	40C3	40CC	40D5	40DE	40E7	40F0	40F9	4102	410B	4114	411D	4126	412F	4138	4141	414A	4153	415C	4165	416E	4177	4180
Z02		4073	407C	4085	408E	4097	40A0	40A9	40B2	40BB	40C4	40CD	40D6	40DF	40E8	40F1	40FA	4103	410C	4115	411E	4127	4130	4139	4142	414B	4154	415D	4166	416F	4178	4181
Z03		4074	407D	4086	408F	4098	40A1	40AA	40B3	40BC	40C5	40CE	40D7	40E0	40E9	40F2	40FB	4104	410D	4116	411F	4128	4131	413A	4143	414C	4155	415E	4167	4170	4179	4182
Z04		4075	407E	4087	4090	4099	40A2	40AB	40B4	40BD	40C6	40CF	40D8	40E1	40EA	40F3	40FC	4105	410E	4117	4120	4129	4132	413B	4144	414D	4156	415F	4168	4171	417A	4183
Z05		4076	407F	4088	4091	409A	40A3	40AC	40B5	40BE	40C7	40D0	40D9	40E2	40EB	40F4	40FD	4106	410F	4118	4121	412A	4133	413C	4145	414E	4157	4160	4169	4172	417B	4184
Z06		4077	4080	4089	4092	409B	40A4	40AD	40B6	40BF	40C8	40D1	40DA	40E3	40EC	40F5	40FE	4107	4110	4119	4122	412B	4134	413D	4146	414F	4158	4161	416A	4173	417C	4185
Cabinet tamp	**S01**	4078	4081	408A	4093	409C	40A5	40AE	40B7	40C0	40C9	40D2	40DB	40E4	40ED	40F6	40FF	4108	4111	411A	4123	412C	4135	413E	4147	4150	4159	4162	416B	4174	417D	4186
Low Volts	**S02**	4079	4082	408B	4094	409D	40A6	40AF	40B8	40C1	40CA	40D3	40DC	40E5	40EE	40F7	4100	4109	4112	411B	4124	412D	4136	413F	4148	4151	415A	4163	416C	4175	417E	4187
LAN fail	**S03**	407A	4083	408C	4095	409E	40A7	40B0	40B9	40C2	40CB	40D4	40DD	40E6	40EF	40F8	4101	410A	4113	411C	4125	412E	4137	4140	4149	4152	415B	4164	416D	4176	417F	4188
LAN Pwr Sup	**P**																															
Z01		4BA9	4BBB	4BCD	4BDF	4BF1	4C03	4C15	4C27	4C39	4C4B	4C5D	4C6F	4C81	4C93	4CA5	4CB7	4CC9	4CDB	4CED	4CFF	4D11	4D23	4D35	4D47	4D59	4D6B	4D7D	4D8F	4DA1	4DB3	4DC5
Z02		4BAA	4BBC	4BCE	4BE0	4BF2	4C04	4C16	4C28	4C3A	4C4C	4C5E	4C70	4C82	4C94	4CA6	4CB8	4CCA	4CDC	4CEE	4D00	4D12	4D24	4D36	4D48	4D5A	4D6C	4D7E	4D90	4DA2	4DB4	4DC6
Cabinet tamp	**S01**	4BAB	4BBD	4BCF	4BE1	4BF3	4C05	4C17	4C29	4C3B	4C4D	4C5F	4C71	4C83	4C95	4CA7	4CB9	4CCB	4CDD	4CEF	4D01	4D13	4D25	4D37	4D49	4D5B	4D6D	4D7F	4D91	4DA3	4DB5	4DC7
AC fail.	**S02**	4BAC	4BBE	4BD0	4BE2	4BF4	4C06	4C18	4C2A	4C3C	4C4E	4C60	4C72	4C84	4C96	4CA8	4CBA	4CCC	4CDE	4CF0	4D02	4D14	4D26	4D38	4D4A	4D5C	4D6E	4D80	4D92	4DA4	4DB6	4DC8
Low battery.	**S03**	4BAD	4BBF	4BD1	4BE3	4BF5	4C07	4C19	4C2B	4C3D	4C4F	4C61	4C73	4C85	4C97	4CA9	4CBB	4CCD	4CDF	4CF1	4D03	4D15	4D27	4D39	4D4B	4D5D	4D6F	4D81	4D93	4DA5	4DB7	4DC9
Battery Fail	**S04**	4BAE	4BC0	4BD2	4BE4	4BF6	4C08	4C1A	4C2C	4C3E	4C50	4C62	4C74	4C86	4C98	4CAA	4CBC	4CCE	4CE0	4CF2	4D04	4D16	4D28	4D3A	4D4C	4D5E	4D70	4D82	4D94	4DA6	4DB8	4DCA
Detector fuse	**S05**	4BAF	4BC1	4BD3	4BE5	4BF7	4C09	4C1B	4C2D	4C3F	4C51	4C63	4C75	4C87	4C99	4CAB	4CBD	4CCF	4CE1	4CF3	4D05	4D17	4D29	4D3B	4D4D	4D5F	4D71	4D83	4D95	4DA7	4DB9	4DCB
LAN fuse	**S06**	4BB0	4BC2	4BD4	4BE6	4BF8	4C0A	4C1C	4C2E	4C40	4C52	4C64	4C76	4C88	4C9A	4CAC	4CBE	4CD0	4CE2	4CF4	4D06	4D18	4D2A	4D3C	4D4E	4D60	4D72	4D84	4D96	4DA8	4DBA	4DCC
Battery Fuse	**S07**	4BB1	4BC3	4BD5	4BE7	4BF9	4C0B	4C1D	4C2F	4C41	4C53	4C65	4C77	4C89	4C9B	4CAD	4CBF	4CD1	4CE3	4CF5	4D07	4D19	4D2B	4D3D	4D4F	4D61	4D73	4D85	4D97	4DA9	4DBB	4DCD
Aux 2 Fuse	**S08**	4BB2	4BC4	4BD6	4BE8	4BFA	4C0C	4C1E	4C30	4C42	4C54	4C66	4C78	4C8A	4C9C	4CAE	4CC0	4CD2	4CE4	4CF6	4D08	4D1A	4D2C	4D3E	4D50	4D62	4D74	4D86	4D98	4DAA	4DBC	4DCE
Aux 2 Tamper	**S09**	4BB3	4BC5	4BD7	4BE9	4BFB	4C0D	4C1F	4C31	4C43	4C55	4C67	4C79	4C8B	4C9D	4CAF	4CC1	4CD3	4CE5	4CF7	4D09	4D1B	4D2D	4D3F	4D51	4D63	4D75	4D87	4D99	4DAB	4DBD	4DCF
Det Over Curr	**S10**	4BB4	4BC6	4BD8	4BEA	4BFC	4C0E	4C20	4C32	4C44	4C56	4C68	4C7A	4C8C	4C9E	4CB0	4CC2	4CD4	4CE6	4CF8	4D0A	4D1C	4D2E	4D40	4D52	4D64	4D76	4D88	4D9A	4DAC	4DBE	4DD0
Batt Over Curr	**S11**	4BB5	4BC7	4BD9	4BEB	4BFD	4C0F	4C21	4C33	4C45	4C57	4C69	4C7B	4C8D	4C9F	4CB1	4CC3	4CD5	4CE7	4CF9	4D0B	4D1D	4D2F	4D41	4D53	4D65	4D77	4D89	4D9B	4DAD	4DBF	4DD1
Over Volts	**S12**	4BB6	4BC8	4BDA	4BEC	4BFE	4C10	4C22	4C34	4C46	4C58	4C6A	4C7C	4C8E	4CA0	4CB2	4CC4	4CD6	4CE8	4CFA	4D0C	4D1E	4D30	4D42	4D54	4D66	4D78	4D8A	4D9C	4DAE	4DC0	4DD2
Low Volts	**S13**	4BB7	4BC9	4BDB	4BED	4BFF	4C11	4C23	4C35	4C47	4C59	4C6B	4C7D	4C8F	4CA1	4CB3	4CC5	4CD7	4CE9	4CFB	4D0D	4D1F	4D31	4D43	4D55	4D67	4D79	4D8B	4D9D	4DAF	4DC1	4DD3
Slave Fail	**S14**	4BB8	4BCA	4BDC	4BEE	4C00	4C12	4C24	4C36	4C48	4C5A	4C6C	4C7E	4C90	4CA2	4CB4	4CC6	4CD8	4CEA	4CFC	4D0E	4D20	4D32	4D44	4D56	4D68	4D7A	4D8C	4D9E	4DB0	4DC2	4DD4
Batt test fail	**S15**	4BB9	4BCB	4BDD	4BEF	4C01	4C13	4C25	4C37	4C49	4C5B	4C6D	4C7F	4C91	4CA3	4CB5	4CC7	4CD9	4CEB	4CFD	4D0F	4D21	4D33	4D45	4D57	4D69	4D7B	4D8D	4D9F	4DB1	4DC3	4DD5
LAN fail	**S16**	4BBA	4BCC	4BDE	4BF0	4C02	4C14	4C26	4C38	4C4A	4C5C	4C6E	4C80	4C92	4CA4	4CB6	4CC8	4CDA	4CEC	4CFE	4D10	4D22	4D34	4D46	4D58	4D6A	4D7C	4D8E	4DA0	4DB2	4DC4	4DD6
RF Expander	**F**																															
Z01		529F	52C5	52EB	5311	5337	535D	5383	53A9	53CF	53F5	541B	5441	5467	548D	54B3	54D9	54FF	5525	554B	5571	5597	55BD	55E3	5609	562F	5655	567B	56A1	56C7	56ED	5713
Z02		52A0	52C6	52EC	5312	5338	535E	5384	53AA	53D0	53F6	541C	5442	5468	548E	54B4	54DA	5500	5526	554C	5572	5598	55BE	55E4	560A	5630	5656	567C	56A2	56C8	56EE	5714
Z03		52A1	52C7	52ED	5313	5339	535F	5385	53AB	53D1	53F7	541D	5443	5469	548F	54B5	54DB	5501	5527	554D	5573	5599	55BF	55E5	560B	5631	5657	567D	56A3	56C9	56EF	5715
Z04		52A2	52C8	52EE	5314	533A	5360	5386	53AC	53D2	53F8	541E	5444	546A	5490	54B6	54DC	5502	5528	554E	5574	559A	55C0	55E6	560C	5632	5658	567E	56A4	56CA	56F0	5716
Z05		52A3	52C9	52EF	5315	533B	5361	5387	53AD	53D3	53F9	541F	5445	546B	5491	54B7	54DD	5503	5529	554F	5575	559B	55C1	55E7	560D	5633	5659	567F	56A5	56CB	56F1	5717
Z06		52A4	52CA	52F0	5316	533C	5362	5388	53AE	53D4	53FA	5420	5446	546C	5492	54B8	54DE	5504	552A	5550	5576	559C	55C2	55E8	560E	5634	565A	5680	56A6	56CC	56F2	5718
Z07		52A5	52CB	52F1	5317	533D	5363	5389	53AF	53D5	53FB	5421	5447	546D	5493	54B9	54DF	5505	552B	5551	5577	559D	55C3	55E9	560F	5635	565B	5681	56A7	56CD	56F3	5719
Z08		52A6	52CC	52F2	5318	533E	5364	538A	53B0	53D6	53FC	5422	5448	546E	5494	54BA	54E0	5506	552C	5552	5578	559E	55C4	55EA	5610	5636	565C	5682	56A8	56CE	56F4	571A
Z09		52A7	52CD	52F3	5319	533F	5365	538B	53B1	53D7	53FD	5423	5449	546F	5495	54BB	54E1	5507	552D	5553	5579	559F	55C5	55EB	5611	5637	565D	5683	56A9	56CF	56F5	571B
Z10		52A8	52CE	52F4	531A	5340	5366	538C	53B2	53D8	53FE	5424	544A	5470	5496	54BC	54E2	5508	552E	5554	557A	55A0	55C6	55EC	5612	5638	565E	5684	56AA	56D0	56F6	571C
Z11		52A9	52CF	52F5	531B	5341	5367	538D	53B3	53D9	53FF	5425	544B	5471	5497	54BD	54E3	5509	552F	5555	557B	55A1	55C7	55ED	5613	5639	565F	5685	56AB	56D1	56F7	571D
Z12		52AA	52D0	52F6	531C	5342	5368	538E	53B4	53DA	5400	5426	544C	5472	5498	54BE	54E4	550A	5530	5556	557C	55A2	55C8	55EE	5614	563A	5660	5686	56AC	56D2	56F8	571E
Z13		52AB	52D1	52F7	531D	5343	5369	538F	53B5	53DB	5401	5427	544D	5473	5499	54BF	54E5	550B	5531	5557	557D	55A3	55C9	55EF	5615	563B	5661	5687	56AD	56D3	56F9	571F
Z14		52AC	52D2	52F8	531E	5344	536A	5390	53B6	53DC	5402	5428	544E	5474	549A	54C0	54E6	550C	5532	5558	557E	55A4	55CA	55F0	5616	563C	5662	5688	56AE	56D4	56FA	5720
Z15		52AD	52D3	52F9	531F	5345	536B	5391	53B7	53DD	5403	5429	544F	5475	549B	54C1	54E7	550D	5533	5559	557F	55A5	55CB	55F1	5617	563D	5663	5689	56AF	56D5	56FB	5721
Z16		52AE	52D4	52FA	5320	5346	536C	5392	53B8	53DE	5404	542A	5450	5476	549C	54C2	54E8	550E	5534	555A	5580	55A6	55CC	55F2	5618	563E	5664	568A	56B0	56D6	56FC	5722
Z17		52AF	52D5	52FB	5321	5347	536D	5393	53B9	53DF	5405	542B	5451	5477	549D	54C3	54E9	550F	5535	555B	5581	55A7	55CD	55F3	5619	563F	5665	568B	56B1	56D7	56FD	5723

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	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65
Q																																		
Z01	4189	4192	419B	41A4	41AD	41B6	41BF	41C8	41D1	41DA	41E3	41EC	41F5	41FE	4207	4210	4219	4222	422B	4234	423D	4246	424F	4258	4261	426A	4273	427C	4285	428E	4297	42A0	42A9	42B2
Z02	418A	4193	419C	41A5	41AE	41B7	41C0	41C9	41D2	41DB	41E4	41ED	41F6	41FF	4208	4211	421A	4223	422C	4235	423E	4247	4250	4259	4262	426B	4274	427D	4286	428F	4298	42A1	42AA	42B3
Z03	418B	4194	419D	41A6	41AF	41B8	41C1	41CA	41D3	41DC	41E5	41EE	41F7	4200	4209	4212	421B	4224	422D	4236	423F	4248	4251	425A	4263	426C	4275	427E	4287	4290	4299	42A2	42AB	42B4
Z04	418C	4195	419E	41A7	41B0	41B9	41C2	41CB	41D4	41DD	41E6	41EF	41F8	4201	420A	4213	421C	4225	422E	4237	4240	4249	4252	425B	4264	426D	4276	427F	4288	4291	429A	42A3	42AC	42B5
Z05	418D	4196	419F	41A8	41B1	41BA	41C3	41CC	41D5	41DE	41E7	41F0	41F9	4202	420B	4214	421D	4226	422F	4238	4241	424A	4253	425C	4265	426E	4277	4280	4289	4292	429B	42A4	42AD	42B6
Z06	418E	4197	41A0	41A9	41B2	41BB	41C4	41CD	41D6	41DF	41E8	41F1	41FA	4203	420C	4215	421E	4227	4230	4239	4242	424B	4254	425D	4266	426F	4278	4281	428A	4293	429C	42A5	42AE	42B7
S01	418F	4198	41A1	41AA	41B3	41BC	41C5	41CE	41D7	41E0	41E9	41F2	41FB	4204	420D	4216	421F	4228	4231	423A	4243	424C	4255	425E	4267	4270	4279	4282	428B	4294	429D	42A6	42AF	42B8
S02	4190	4199	41A2	41AB	41B4	41BD	41C6	41CF	41D8	41E1	41EA	41F3	41FC	4205	420E	4217	4220	4229	4232	423B	4244	424D	4256	425F	4268	4271	427A	4283	428C	4295	429E	42A7	42B0	42B9
S03	4191	419A	41A3	41AC	41B5	41BE	41C7	41D0	41D9	41E2	41EB	41F4	41FD	4206	420F	4218	4221	422A	4233	423C	4245	424E	4257	4260	4269	4272	427B	4284	428D	4296	429F	42A8	42B1	42BA
P																																		
Z01	4DD7	4DE9	4DFB	4E0D	4E1F	4E31	4E43	4E55	4E67	4E79	4E8B	4E9D	4EAF	4EC1	4ED3	4EE5	4EF7	4F09	4F1B	4F2D	4F3F	4F51	4F63	4F75	4F87	4F99	4FAB	4FBD	4FCF	4FE1	4FF3	5005	5017	5029
Z02	4DD8	4DEA	4DFC	4E0E	4E20	4E32	4E44	4E56	4E68	4E7A	4E8C	4E9E	4EB0	4EC2	4ED4	4EE6	4EF8	4F0A	4F1C	4F2E	4F40	4F52	4F64	4F76	4F88	4F9A	4FAC	4FBE	4FD0	4FE2	4FF4	5006	5018	502A
S01	4DD9	4DEB	4DFD	4E0F	4E21	4E33	4E45	4E57	4E69	4E7B	4E8D	4E9F	4EB1	4EC3	4ED5	4EE7	4EF9	4F0B	4F1D	4F2F	4F41	4F53	4F65	4F77	4F89	4F9B	4FAD	4FBF	4FD1	4FE3	4FF5	5007	5019	502B
S02	4DDA	4DEC	4DFE	4E10	4E22	4E34	4E46	4E58	4E6A	4E7C	4E8E	4EA0	4EB2	4EC4	4ED6	4EE8	4EFA	4F0C	4F1E	4F30	4F42	4F54	4F66	4F78	4F8A	4F9C	4FAE	4FC0	4FD2	4FE4	4FF6	5008	501A	502C
S03	4DDB	4DED	4DFF	4E11	4E23	4E35	4E47	4E59	4E6B	4E7D	4E8F	4EA1	4EB3	4EC5	4ED7	4EE9	4EFB	4F0D	4F1F	4F31	4F43	4F55	4F67	4F79	4F8B	4F9D	4FAF	4FC1	4FD3	4FE5	4FF7	5009	501B	502D
S04	4DDC	4DEE	4E00	4E12	4E24	4E36	4E48	4E5A	4E6C	4E7E	4E90	4EA2	4EB4	4EC6	4ED8	4EEA	4EFC	4F0E	4F20	4F32	4F44	4F56	4F68	4F7A	4F8C	4F9E	4FB0	4FC2	4FD4	4FE6	4FF8	500A	501C	502E
S05	4DDD	4DEF	4E01	4E13	4E25	4E37	4E49	4E5B	4E6D	4E7F	4E91	4EA3	4EB5	4EC7	4ED9	4EEB	4EFD	4F0F	4F21	4F33	4F45	4F57	4F69	4F7B	4F8D	4F9F	4FB1	4FC3	4FD5	4FE7	4FF9	500B	501D	502F
S06	4DDE	4DF0	4E02	4E14	4E26	4E38	4E4A	4E5C	4E6E	4E80	4E92	4EA4	4EB6	4EC8	4EDA	4EEC	4EFE	4F10	4F22	4F34	4F46	4F58	4F6A	4F7C	4F8E	4FA0	4FB2	4FC4	4FD6	4FE8	4FFA	500C	501E	5030
S07	4DDF	4DF1	4E03	4E15	4E27	4E39	4E4B	4E5D	4E6F	4E81	4E93	4EA5	4EB7	4EC9	4EDB	4EED	4EFF	4F11	4F23	4F35	4F47	4F59	4F6B	4F7D	4F8F	4FA1	4FB3	4FC5	4FD7	4FE9	4FFB	500D	501F	5031
S08	4DE0	4DF2	4E04	4E16	4E28	4E3A	4E4C	4E5E	4E70	4E82	4E94	4EA6	4EB8	4ECA	4EDC	4EEE	4F00	4F12	4F24	4F36	4F48	4F5A	4F6C	4F7E	4F90	4FA2	4FB4	4FC6	4FD8	4FEA	4FFC	500E	5020	5032
S09	4DE1	4DF3	4E05	4E17	4E29	4E3B	4E4D	4E5F	4E71	4E83	4E95	4EA7	4EB9	4ECB	4EDD	4EEF	4F01	4F13	4F25	4F37	4F49	4F5B	4F6D	4F7F	4F91	4FA3	4FB5	4FC7	4FD9	4FEB	4FFD	500F	5021	5033
S10	4DE2	4DF4	4E06	4E18	4E2A	4E3C	4E4E	4E60	4E72	4E84	4E96	4EA8	4EBA	4ECC	4EDE	4EF0	4F02	4F14	4F26	4F38	4F4A	4F5C	4F6E	4F80	4F92	4FA4	4FB6	4FC8	4FDA	4FEC	4FFE	5010	5022	5034
S11	4DE3	4DF5	4E07	4E19	4E2B	4E3D	4E4F	4E61	4E73	4E85	4E97	4EA9	4EBB	4ECD	4EDF	4EF1	4F03	4F15	4F27	4F39	4F4B	4F5D	4F6F	4F81	4F93	4FA5	4FB7	4FC9	4FDB	4FED	4FFF	5011	5023	5035
S12	4DE4	4DF6	4E08	4E1A	4E2C	4E3E	4E50	4E62	4E74	4E86	4E98	4EAA	4EBC	4ECE	4EE0	4EF2	4F04	4F16	4F28	4F3A	4F4C	4F5E	4F70	4F82	4F94	4FA6	4FB8	4FCA	4FDC	4FEE	5000	5012	5024	5036
S13	4DE5	4DF7	4E09	4E1B	4E2D	4E3F	4E51	4E63	4E75	4E87	4E99	4EAB	4EBD	4ECF	4EE1	4EF3	4F05	4F17	4F29	4F3B	4F4D	4F5F	4F71	4F83	4F95	4FA7	4FB9	4FCB	4FDD	4FEF	5001	5013	5025	5037
S14	4DE6	4DF8	4E0A	4E1C	4E2E	4E40	4E52	4E64	4E76	4E88	4E9A	4EAC	4EBE	4ED0	4EE2	4EF4	4F06	4F18	4F2A	4F3C	4F4E	4F60	4F72	4F84	4F96	4FA8	4FBA	4FCC	4FDE	4FF0	5002	5014	5026	5038
S15	4DE7	4DF9	4E0B	4E1D	4E2F	4E41	4E53	4E65	4E77	4E89	4E9B	4EAD	4EBF	4ED1	4EE3	4EF5	4F07	4F19	4F2B	4F3D	4F4F	4F61	4F73	4F85	4F97	4FA9	4FBB	4FCD	4FDF	4FF1	5003	5015	5027	5039
S16	4DE8	4DFA	4E0C	4E1E	4E30	4E42	4E54	4E66	4E78	4E8A	4E9C	4EAE	4EC0	4ED2	4EE4	4EF6	4F08	4F1A	4F2C	4F3E	4F50	4F62	4F74	4F86	4F98	4FAA	4FBC	4FCE	4FE0	4FF2	5004	5016	5028	503A
F																																		
Z01	5739	575F	5785	57AB	57D1	57F7	581D	5843	5869	588F	58B5	58DB	5901	5927	594D	5973	5999	59BF	59E5	5A0B	5A31	5A57	5A7D	5AA3	5AC9	5AEF	5B15	5B3B	5B61	5B87	5BAD	5BD3	5BF9	5C1F
Z02	573A	5760	5786	57AC	57D2	57F8	581E	5844	586A	5890	58B6	58DC	5902	5928	594E	5974	599A	59C0	59E6	5A0C	5A32	5A58	5A7E	5AA4	5ACA	5AF0	5B16	5B3C	5B62	5B88	5BAE	5BD4	5BFA	5C20
Z03	573B	5761	5787	57AD	57D3	57F9	581F	5845	586B	5891	58B7	58DD	5903	5929	594F	5975	599B	59C1	59E7	5A0D	5A33	5A59	5A7F	5AA5	5ACB	5AF1	5B17	5B3D	5B63	5B89	5BAF	5BD5	5BFB	5C21
Z04	573C	5762	5788	57AE	57D4	57FA	5820	5846	586C	5892	58B8	58DE	5904	592A	5950	5976	599C	59C2	59E8	5A0E	5A34	5A5A	5A80	5AA6	5ACC	5AF2	5B18	5B3E	5B64	5B8A	5BB0	5BD6	5BFC	5C22
Z05	573D	5763	5789	57AF	57D5	57FB	5821	5847	586D	5893	58B9	58DF	5905	592B	5951	5977	599D	59C3	59E9	5A0F	5A35	5A5B	5A81	5AA7	5ACD	5AF3	5B19	5B3F	5B65	5B8B	5BB1	5BD7	5BFD	5C23
Z06	573E	5764	578A	57B0	57D6	57FC	5822	5848	586E	5894	58BA	58E0	5906	592C	5952	5978	599E	59C4	59EA	5A10	5A36	5A5C	5A82	5AA8	5ACE	5AF4	5B1A	5B40	5B66	5B8C	5BB2	5BD8	5BFE	5C24
Z07	573F	5765	578B	57B1	57D7	57FD	5823	5849	586F	5895	58BB	58E1	5907	592D	5953	5979	599F	59C5	59EB	5A11	5A37	5A5D	5A83	5AA9	5ACF	5AF5	5B1B	5B41	5B67	5B8D	5BB3	5BD9	5BFF	5C25
Z08	5740	5766	578C	57B2	57D8	57FE	5824	584A	5870	5896	58BC	58E2	5908	592E	5954	597A	59A0	59C6	59EC	5A12	5A38	5A5E	5A84	5AAA	5AD0	5AF6	5B1C	5B42	5B68	5B8E	5BB4	5BDA	5C00	5C26
Z09	5741	5767	578D	57B3	57D9	57FF	5825	584B	5871	5897	58BD	58E3	5909	592F	5955	597B	59A1	59C7	59ED	5A13	5A39	5A5F	5A85	5AAB	5AD1	5AF7	5B1D	5B43	5B69	5B8F	5BB5	5BDB	5C01	5C27
Z10	5742	5768	578E	57B4	57DA	5800	5826	584C	5872	5898	58BE	58E4	590A	5930	5956	597C	59A2	59C8	59EE	5A14	5A3A	5A60	5A86	5AAC	5AD2	5AF8	5B1E	5B44	5B6A	5B90	5BB6	5BDC	5C02	5C28
Z11	5743	5769	578F	57B5	57DB	5801	5827	584D	5873	5899	58BF	58E5	590B	5931	5957	597D	59A3	59C9	59EF	5A15	5A3B	5A61	5A87	5AAD	5AD3	5AF9	5B1F	5B45	5B6B	5B91	5BB7	5BDD	5C03	5C29
Z12	5744	576A	5790	57B6	57DC	5802	5828	584E	5874	589A	58C0	58E6	590C	5932	5958	597E	59A4	59CA	59F0	5A16	5A3C	5A62	5A88	5AAE	5AD4	5AFA	5B20	5B46	5B6C	5B92	5BB8	5BDE	5C04	5C2A
Z13	5745	576B	5791	57B7	57DD	5803	5829	584F	5875	589B	58C1	58E7	590D	5933	5959	597F	59A5	59CB	59F1	5A17	5A3D	5A63	5A89	5AAF	5AD5	5AFB	5B21	5B47	5B6D	5B93	5BB9	5BDF	5C05	5C2B
Z14	5746	576C	5792	57B8	57DE	5804	582A	5850	5876	589C	58C2	58E8	590E	5934	595A	5980	59A6	59CC	59F2	5A18	5A3E	5A64	5A8A	5AB0	5AD6	5AFC	5B22	5B48	5B6E	5B94	5BBA	5BE0	5C06	5C2C
Z15	5747	576D	5793	57B9	57DF	5805	582B	5851	5877	589D	58C3	58E9	590F	5935	595B	5981	59A7	59CD	59F3	5A19	5A3F	5A65	5A8B	5AB1	5AD7	5AFD	5B23	5B49	5B6F	5B95	5BBB	5BE1	5C07	5C2D
Z16	5748	576E	5794	57BA	57E0	5806	582C	5852	5878	589E	58C4	58EA	5910	5936	595C	5982	59A8	59CE	59F4	5A1A	5A40	5A66	5A8C	5AB2	5AD8	5AFE	5B24	5B4A	5B70	5B96	5BBC	5BE2	5C08	5C2E
Z17	5749	576F	5795	57BB	57E1	5807	582D	5853	5879	589F	58C5	58EB	5911	5937	595D	5983	59A9	59CF	59F5	5A1B	5A41	5A67	5A8D	5AB3	5AD9	5AFF	5B25	5B4B	5B71	5B97	5BBD	5BE3	5C09	5C2F

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	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
Q																																		
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Z02	42BC	42C5	42CE	42D7	42E0	42E9	42F2	42FB	4304	430D	4316	431F	4328	4331	433A	4343	434C	4355	435E	4367	4370	4379	4382	438B	4394	439D	43A6	43AF	43B8	43C1	43CA	43D3	43DC	43E5
Z03	42BD	42C6	42CF	42D8	42E1	42EA	42F3	42FC	4305	430E	4317	4320	4329	4332	433B	4344	434D	4356	435F	4368	4371	437A	4383	438C	4395	439E	43A7	43B0	43B9	43C2	43CB	43D4	43DD	43E6
Z04	42BE	42C7	42D0	42D9	42E2	42EB	42F4	42FD	4306	430F	4318	4321	432A	4333	433C	4345	434E	4357	4360	4369	4372	437B	4384	438D	4396	439F	43A8	43B1	43BA	43C3	43CC	43D5	43DE	43E7
Z05	42BF	42C8	42D1	42DA	42E3	42EC	42F5	42FE	4307	4310	4319	4322	432B	4334	433D	4346	434F	4358	4361	436A	4373	437C	4385	438E	4397	43A0	43A9	43B2	43BB	43C4	43CD	43D6	43DF	43E8
Z06	42C0	42C9	42D2	42DB	42E4	42ED	42F6	42FF	4308	4311	431A	4323	432C	4335	433E	4347	4350	4359	4362	436B	4374	437D	4386	438F	4398	43A1	43AA	43B3	43BC	43C5	43CE	43D7	43E0	43E9
S01	42C1	42CA	42D3	42DC	42E5	42EE	42F7	4300	4309	4312	431B	4324	432D	4336	433F	4348	4351	435A	4363	436C	4375	437E	4387	4390	4399	43A2	43AB	43B4	43BD	43C6	43CF	43D8	43E1	43EA
S02	42C2	42CB	42D4	42DD	42E6	42EF	42F8	4301	430A	4313	431C	4325	432E	4337	4340	4349	4352	435B	4364	436D	4376	437F	4388	4391	439A	43A3	43AC	43B5	43BE	43C7	43D0	43D9	43E2	43EB
S03	42C3	42CC	42D5	42DE	42E7	42F0	42F9	4302	430B	4314	431D	4326	432F	4338	4341	434A	4353	435C	4365	436E	4377	4380	4389	4392	439B	43A4	43AD	43B6	43BF	43C8	43D1	43DA	43E3	43EC
P																																		
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S02	503E	5050	5062	5074	5086	5098	50AA	50BC	50CE	50E0	50F2	5104	5116	5128	513A	514C	515E	5170	5182	5194	51A6	51B8	51CA	51DC	51EE	5200	5212	5224	5236	5248	525A	526C	527E	5290
S03	503F	5051	5063	5075	5087	5099	50AB	50BD	50CF	50E1	50F3	5105	5117	5129	513B	514D	515F	5171	5183	5195	51A7	51B9	51CB	51DD	51EF	5201	5213	5225	5237	5249	525B	526D	527F	5291
S04	5040	5052	5064	5076	5088	509A	50AC	50BE	50D0	50E2	50F4	5106	5118	512A	513C	514E	5160	5172	5184	5196	51A8	51BA	51CC	51DE	51F0	5202	5214	5226	5238	524A	525C	526E	5280	5292
S05	5041	5053	5065	5077	5089	509B	50AD	50BF	50D1	50E3	50F5	5107	5119	512B	513D	514F	5161	5173	5185	5197	51A9	51BB	51CD	51DF	51F1	5203	5215	5227	5239	524B	525D	526F	5281	5293
S06	5042	5054	5066	5078	508A	509C	50AE	50C0	50D2	50E4	50F6	5108	511A	512C	513E	5150	5162	5174	5186	5198	51AA	51BC	51CE	51E0	51F2	5204	5216	5228	523A	524C	525E	5270	5282	5294
S07	5043	5055	5067	5079	508B	509D	50AF	50C1	50D3	50E5	50F7	5109	511B	512D	513F	5151	5163	5175	5187	5199	51AB	51BD	51CF	51E1	51F3	5205	5217	5229	523B	524D	525F	5271	5283	5295
S08	5044	5056	5068	507A	508C	509E	50B0	50C2	50D4	50E6	50F8	510A	511C	512E	5140	5152	5164	5176	5188	519A	51AC	51BE	51D0	51E2	51F4	5206	5218	522A	523C	524E	5260	5272	5284	5296
S09	5045	5057	5069	507B	508D	509F	50B1	50C3	50D5	50E7	50F9	510B	511D	512F	5141	5153	5165	5177	5189	519B	51AD	51BF	51D1	51E3	51F5	5207	5219	522B	523D	524F	5261	5273	5285	5297
S10	5046	5058	506A	507C	508E	50A0	50B2	50C4	50D6	50E8	50FA	510C	511E	5130	5142	5154	5166	5178	518A	519C	51AE	51C0	51D2	51E4	51F6	5208	521A	522C	523E	5250	5262	5274	5286	5298
S11	5047	5059	506B	507D	508F	50A1	50B3	50C5	50D7	50E9	50FB	510D	511F	5131	5143	5155	5167	5179	518B	519D	51AF	51C1	51D3	51E5	51F7	5209	521B	522D	523F	5251	5263	5275	5287	5299
S12	5048	505A	506C	507E	5090	50A2	50B4	50C6	50D8	50EA	50FC	510E	5120	5132	5144	5156	5168	517A	518C	519E	51B0	51C2	51D4	51E6	51F8	520A	521C	522E	5240	5252	5264	5276	5288	529A
S13	5049	505B	506D	507F	5091	50A3	50B5	50C7	50D9	50EB	50FD	510F	5121	5133	5145	5157	5169	517B	518D	519F	51B1	51C3	51D5	51E7	51F9	520B	521D	522F	5241	5253	5265	5277	5289	529B
S14	504A	505C	506E	5080	5092	50A4	50B6	50C8	50DA	50EC	50FE	5110	5122	5134	5146	5158	516A	517C	518E	51A0	51B2	51C4	51D6	51E8	51FA	520C	521E	5230	5242	5254	5266	5278	528A	529C
S15	504B	505D	506F	5081	5093	50A5	50B7	50C9	50DB	50ED	50FF	5111	5123	5135	5147	5159	516B	517D	518F	51A1	51B3	51C5	51D7	51E9	51FB	520D	521F	5231	5243	5255	5267	5279	528B	529D
S16	504C	505E	5070	5082	5094	50A6	50B8	50CA	50DC	50EE	5100	5112	5124	5136	5148	515A	516C	517E	5190	51A2	51B4	51C6	51D8	51EA	51FC	520E	5220	5232	5244	5256	5268	527A	528C	529E
F																																		
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Z02	5C46	5C6C	5C92	5CB8	5CDE	5D04	5D2A	5D50	5D76	5D9C	5DC2	5DE8	5E0E	5E34	5E5A	5E80	5EA6	5ECC	5EF2	5F18	5F3E	5F64	5F8A	5FB0	5FD6	5FFC	6022	6048	606E	6094	60BA	60E0	6106	612C
Z03	5C47	5C6D	5C93	5CB9	5CDF	5D05	5D2B	5D51	5D77	5D9D	5DC3	5DE9	5E0F	5E35	5E5B	5E81	5EA7	5ECD	5EF3	5F19	5F3F	5F65	5F8B	5FB1	5FD7	5FFD	6023	6049	606F	6095	60BB	60E1	6107	612D
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Z05	5C49	5C6F	5C95	5CBB	5CE1	5D07	5D2D	5D53	5D79	5D9F	5DC5	5DEB	5E11	5E37	5E5D	5E83	5EA9	5ECF	5EF5	5F1B	5F41	5F67	5F8D	5FB3	5FD9	5FFF	6025	604B	6071	6097	60BD	60E3	6109	612F
Z06	5C4A	5C70	5C96	5CBC	5CE2	5D08	5D2E	5D54	5D7A	5DA0	5DC6	5DEC	5E12	5E38	5E5E	5E84	5EAA	5ED0	5EF6	5F1C	5F42	5F68	5F8E	5FB4	5FDA	6000	6026	604C	6072	6098	60BE	60E4	610A	6130
Z07	5C4B	5C71	5C97	5CBD	5CE3	5D09	5D2F	5D55	5D7B	5DA1	5DC7	5DED	5E13	5E39	5E5F	5E85	5EAB	5ED1	5EF7	5F1D	5F43	5F69	5F8F	5FB5	5FDB	6001	6027	604D	6073	6099	60BF	60E5	610B	6131
Z08	5C4C	5C72	5C98	5CBE	5CE4	5D0A	5D30	5D56	5D7C	5DA2	5DC8	5DEE	5E14	5E3A	5E60	5E86	5EAC	5ED2	5EF8	5F1E	5F44	5F6A	5F90	5FB6	5FDC	6002	6028	604E	6074	609A	60C0	60E6	610C	6132
Z09	5C4D	5C73	5C99	5CBF	5CE5	5D0B	5D31	5D57	5D7D	5DA3	5DC9	5DEF	5E15	5E3B	5E61	5E87	5EAD	5ED3	5EF9	5F1F	5F45	5F6B	5F91	5FB7	5FDD	6003	6029	604F	6075	609B	60C1	60E7	610D	6133
Z10	5C4E	5C74	5C9A	5CC0	5CE6	5D0C	5D32	5D58	5D7E	5DA4	5DCA	5DF0	5E16	5E3C	5E62	5E88	5EAE	5ED4	5EFA	5F20	5F46	5F6C	5F92	5FB8	5FDE	6004	602A	6050	6076	609C	60C2	60E8	610E	6134
Z11	5C4F	5C75	5C9B	5CC1	5CE7	5D0D	5D33	5D59	5D7F	5DA5	5DCB	5DF1	5E17	5E3D	5E63	5E89	5EAF	5ED5	5EFB	5F21	5F47	5F6D	5F93	5FB9	5FDF	6005	602B	6051	6077	609D	60C3	60E9	610F	6135
Z12	5C50	5C76	5C9C	5CC2	5CE8	5D0E	5D34	5D5A	5D80	5DA6	5DCC	5DF2	5E18	5E3E	5E64	5E8A	5EB0	5ED6	5EFC	5F22	5F48	5F6E	5F94	5FBA	5FE0	6006	602C	6052	6078	609E	60C4	60EA	6110	6136
Z13	5C51	5C77	5C9D	5CC3	5CE9	5D0F	5D35	5D5B	5D81	5DA7	5DCD	5DF3	5E19	5E3F	5E65	5E8B	5EB1	5ED7	5EFD	5F23	5F49	5F6F	5F95	5FBB	5FE1	6007	602D	6053	6079	609F	60C5	60EB	6111	6137
Z14	5C52	5C78	5C9E	5CC4	5CEA	5D10	5D36	5D5C	5D82	5DA8	5DCE	5DF4	5E1A	5E40	5E66	5E8C	5EB2	5ED8	5EFE	5F24	5F4A	5F70	5F96	5FBC	5FE2	6008	602E	6054	607A	60A0	60C6	60EC	6112	6138
Z15	5C53	5C79	5C9F	5CC5	5CEB	5D11	5D37	5D5D	5D83	5DA9	5DCF	5DF5	5E1B	5E41	5E67	5E8D	5EB3	5ED9	5EFF	5F25	5F4B	5F71	5F97	5FBD	5FE3	6009	602F	6055	607B	60A1	60C7	60ED	6113	6139
Z16	5C54	5C7A	5CA0	5CC6	5CEC	5D12	5D38	5D5E	5D84	5DAA	5DD0	5DF6	5E1C	5E42	5E68	5E8E	5EB4	5EDA	5F00	5F26	5F4C	5F72	5F98	5FBE	5FE4	600A	6030	6056	607C	60A2	60C8	60EE	6114	613A
Z17	5C55	5C7B	5CA1	5CC7	5CED	5D13	5D39	5D5F	5D85	5DAB	5DD1	5DF7	5E1D	5E43	5E69	5E8F	5EB5	5EDB	5F01	5F27	5F4D	5F73	5F99	5FBF	5FE5	600B	6031	6057	607D	60A3	60C9	60EF	6115	613B

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Z18		52B0	52D6	52FC	5322	5348	536E	5394	53BA	53E0	5406	542C	5452	5478	549E	54C4	54EA	5510	5536	555C	5582	55A8	55CE	55F4	561A	5640	5666	568C	56B2	56D8	56FE	5724
Z19		52B1	52D7	52FD	5323	5349	536F	5395	53BB	53E1	5407	542D	5453	5479	549F	54C5	54EB	5511	5537	555D	5583	55A9	55CF	55F5	561B	5641	5667	568D	56B3	56D9	56FF	5725
Z20		52B2	52D8	52FE	5324	534A	5370	5396	53BC	53E2	5408	542E	5454	547A	54A0	54C6	54EC	5512	5538	555E	5584	55AA	55D0	55F6	561C	5642	5668	568E	56B4	56DA	5700	5726
Z21		52B3	52D9	52FF	5325	534B	5371	5397	53BD	53E3	5409	542F	5455	547B	54A1	54C7	54ED	5513	5539	555F	5585	55AB	55D1	55F7	561D	5643	5669	568F	56B5	56DB	5701	5727
Z22		52B4	52DA	5300	5326	534C	5372	5398	53BE	53E4	540A	5430	5456	547C	54A2	54C8	54EE	5514	553A	5560	5586	55AC	55D2	55F8	561E	5644	566A	5690	56B6	56DC	5702	5728
Z23		52B5	52DB	5301	5327	534D	5373	5399	53BF	53E5	540B	5431	5457	547D	54A3	54C9	54EF	5515	553B	5561	5587	55AD	55D3	55F9	561F	5645	566B	5691	56B7	56DD	5703	5729
Z24		52B6	52DC	5302	5328	534E	5374	539A	53C0	53E6	540C	5432	5458	547E	54A4	54CA	54F0	5516	553C	5562	5588	55AE	55D4	55FA	5620	5646	566C	5692	56B8	56DE	5704	572A
Z25		52B7	52DD	5303	5329	534F	5375	539B	53C1	53E7	540D	5433	5459	547F	54A5	54CB	54F1	5517	553D	5563	5589	55AF	55D5	55FB	5621	5647	566D	5693	56B9	56DF	5705	572B
Z26		52B8	52DE	5304	532A	5350	5376	539C	53C2	53E8	540E	5434	545A	5480	54A6	54CC	54F2	5518	553E	5564	558A	55B0	55D6	55FC	5622	5648	566E	5694	56BA	56E0	5706	572C
Z27		52B9	52DF	5305	532B	5351	5377	539D	53C3	53E9	540F	5435	545B	5481	54A7	54CD	54F3	5519	553F	5565	558B	55B1	55D7	55FD	5623	5649	566F	5695	56BB	56E1	5707	572D
Z28		52BA	52E0	5306	532C	5352	5378	539E	53C4	53EA	5410	5436	545C	5482	54A8	54CE	54F4	551A	5540	5566	558C	55B2	55D8	55FE	5624	564A	5670	5696	56BC	56E2	5708	572E
Z29		52BB	52E1	5307	532D	5353	5379	539F	53C5	53EB	5411	5437	545D	5483	54A9	54CF	54F5	551B	5541	5567	558D	55B3	55D9	55FF	5625	564B	5671	5697	56BD	56E3	5709	572F
Z30		52BC	52E2	5308	532E	5354	537A	53A0	53C6	53EC	5412	5438	545E	5484	54AA	54D0	54F6	551C	5542	5568	558E	55B4	55DA	5600	5626	564C	5672	5698	56BE	56E4	570A	5730
Z31		52BD	52E3	5309	532F	5355	537B	53A1	53C7	53ED	5413	5439	545F	5485	54AB	54D1	54F7	551D	5543	5569	558F	55B5	55DB	5601	5627	564D	5673	5699	56BF	56E5	570B	5731
Z32		52BE	52E4	530A	5330	5356	537C	53A2	53C8	53EE	5414	543A	5460	5486	54AC	54D2	54F8	551E	5544	556A	5590	55B6	55DC	5602	5628	564E	5674	569A	56C0	56E6	570C	5732
Cabinet Tamper	**S01**	52BF	52E5	530B	5331	5357	537D	53A3	53C9	53EF	5415	543B	5461	5487	54AD	54D3	54F9	551F	5545	556B	5591	55B7	55DD	5603	5629	564F	5675	569B	56C1	56E7	570D	5733
Low Volts	**S02**	52C0	52E6	530C	5332	5358	537E	53A4	53CA	53F0	5416	543C	5462	5488	54AE	54D4	54FA	5520	5546	556C	5592	55B8	55DE	5604	562A	5650	5676	569C	56C2	56E8	570E	5734
Trans Low Batt	**S03**	52C1	52E7	530D	5333	5359	537F	53A5	53CB	53F1	5417	543D	5463	5489	54AF	54D5	54FB	5521	5547	556D	5593	55B9	55DF	5605	562B	5651	5677	569D	56C3	56E9	570F	5735
Trans Poll Fail	**S04**	52C2	52E8	530E	5334	535A	5380	53A6	53CC	53F2	5418	543E	5464	548A	54B0	54D6	54FC	5522	5548	556E	5594	55BA	55E0	5606	562C	5652	5678	569E	56C4	56EA	5710	5736
Trans Jam	**S05**	52C3	52E9	530F	5335	535B	5381	53A7	53CD	53F3	5419	543F	5465	548B	54B1	54D7	54FD	5523	5549	556F	5595	55BB	55E1	5607	562D	5653	5679	569F	56C5	56EB	5711	5737
LAN Fail	**S06**	52C4	52EA	5310	5336	535C	5382	53A8	53CE	53F4	541A	5440	5466	548C	54B2	54D8	54FE	5524	554A	5570	5596	55BC	55E2	5608	562E	5654	567A	56A0	56C6	56EC	5712	5738

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Z18	574A	5770	5796	57BC	57E2	5808	582E	5854	587A	58A0	58C6	58EC	5912	5938	595E	5984	59AA	59D0	59F6	5A1C	5A42	5A68	5A8E	5AB4	5ADA	5B00	5B26	5B4C	5B72	5B98	5BBE	5BE4	5C0A	5C30
Z19	574B	5771	5797	57BD	57E3	5809	582F	5855	587B	58A1	58C7	58ED	5913	5939	595F	5985	59AB	59D1	59F7	5A1D	5A43	5A69	5A8F	5AB5	5ADB	5B01	5B27	5B4D	5B73	5B99	5BBF	5BE5	5C0B	5C31
Z20	574C	5772	5798	57BE	57E4	580A	5830	5856	587C	58A2	58C8	58EE	5914	593A	5960	5986	59AC	59D2	59F8	5A1E	5A44	5A6A	5A90	5AB6	5ADC	5B02	5B28	5B4E	5B74	5B9A	5BC0	5BE6	5C0C	5C32
Z21	574D	5773	5799	57BF	57E5	580B	5831	5857	587D	58A3	58C9	58EF	5915	593B	5961	5987	59AD	59D3	59F9	5A1F	5A45	5A6B	5A91	5AB7	5ADD	5B03	5B29	5B4F	5B75	5B9B	5BC1	5BE7	5C0D	5C33
Z22	574E	5774	579A	57C0	57E6	580C	5832	5858	587E	58A4	58CA	58F0	5916	593C	5962	5988	59AE	59D4	59FA	5A20	5A46	5A6C	5A92	5AB8	5ADE	5B04	5B2A	5B50	5B76	5B9C	5BC2	5BE8	5C0E	5C34
Z23	574F	5775	579B	57C1	57E7	580D	5833	5859	587F	58A5	58CB	58F1	5917	593D	5963	5989	59AF	59D5	59FB	5A21	5A47	5A6D	5A93	5AB9	5ADF	5B05	5B2B	5B51	5B77	5B9D	5BC3	5BE9	5C0F	5C35
Z24	5750	5776	579C	57C2	57E8	580E	5834	585A	5880	58A6	58CC	58F2	5918	593E	5964	598A	59B0	59D6	59FC	5A22	5A48	5A6E	5A94	5ABA	5AE0	5B06	5B2C	5B52	5B78	5B9E	5BC4	5BEA	5C10	5C36
Z25	5751	5777	579D	57C3	57E9	580F	5835	585B	5881	58A7	58CD	58F3	5919	593F	5965	598B	59B1	59D7	59FD	5A23	5A49	5A6F	5A95	5ABB	5AE1	5B07	5B2D	5B53	5B79	5B9F	5BC5	5BEB	5C11	5C37
Z26	5752	5778	579E	57C4	57EA	5810	5836	585C	5882	58A8	58CE	58F4	591A	5940	5966	598C	59B2	59D8	59FE	5A24	5A4A	5A70	5A96	5ABC	5AE2	5B08	5B2E	5B54	5B7A	5BA0	5BC6	5BEC	5C12	5C38
Z27	5753	5779	579F	57C5	57EB	5811	5837	585D	5883	58A9	58CF	58F5	591B	5941	5967	598D	59B3	59D9	59FF	5A25	5A4B	5A71	5A97	5ABD	5AE3	5B09	5B2F	5B55	5B7B	5BA1	5BC7	5BED	5C13	5C39
Z28	5754	577A	57A0	57C6	57EC	5812	5838	585E	5884	58AA	58D0	58F6	591C	5942	5968	598E	59B4	59DA	5A00	5A26	5A4C	5A72	5A98	5ABE	5AE4	5B0A	5B30	5B56	5B7C	5BA2	5BC8	5BEE	5C14	5C3A
Z29	5755	577B	57A1	57C7	57ED	5813	5839	585F	5885	58AB	58D1	58F7	591D	5943	5969	598F	59B5	59DB	5A01	5A27	5A4D	5A73	5A99	5ABF	5AE5	5B0B	5B31	5B57	5B7D	5BA3	5BC9	5BEF	5C15	5C3B
Z30	5756	577C	57A2	57C8	57EE	5814	583A	5860	5886	58AC	58D2	58F8	591E	5944	596A	5990	59B6	59DC	5A02	5A28	5A4E	5A74	5A9A	5AC0	5AE6	5B0C	5B32	5B58	5B7E	5BA4	5BCA	5BF0	5C16	5C3C
Z31	5757	577D	57A3	57C9	57EF	5815	583B	5861	5887	58AD	58D3	58F9	591F	5945	596B	5991	59B7	59DD	5A03	5A29	5A4F	5A75	5A9B	5AC1	5AE7	5B0D	5B33	5B59	5B7F	5BA5	5BCB	5BF1	5C17	5C3D
Z32	5758	577E	57A4	57CA	57F0	5816	583C	5862	5888	58AE	58D4	58FA	5920	5946	596C	5992	59B8	59DE	5A04	5A2A	5A50	5A76	5A9C	5AC2	5AE8	5B0E	5B34	5B5A	5B80	5BA6	5BCC	5BF2	5C18	5C3E
S01	5759	577F	57A5	57CB	57F1	5817	583D	5863	5889	58AF	58D5	58FB	5921	5947	596D	5993	59B9	59DF	5A05	5A2B	5A51	5A77	5A9D	5AC3	5AE9	5B0F	5B35	5B5B	5B81	5BA7	5BCD	5BF3	5C19	5C3F
S02	575A	5780	57A6	57CC	57F2	5818	583E	5864	588A	58B0	58D6	58FC	5922	5948	596E	5994	59BA	59E0	5A06	5A2C	5A52	5A78	5A9E	5AC4	5AEA	5B10	5B36	5B5C	5B82	5BA8	5BCE	5BF4	5C1A	5C40
S03	575B	5781	57A7	57CD	57F3	5819	583F	5865	588B	58B1	58D7	58FD	5923	5949	596F	5995	59BB	59E1	5A07	5A2D	5A53	5A79	5A9F	5AC5	5AEB	5B11	5B37	5B5D	5B83	5BA9	5BCF	5BF5	5C1B	5C41
S04	575C	5782	57A8	57CE	57F4	581A	5840	5866	588C	58B2	58D8	58FE	5924	594A	5970	5996	59BC	59E2	5A08	5A2E	5A54	5A7A	5AA0	5AC6	5AEC	5B12	5B38	5B5E	5B84	5BAA	5BD0	5BF6	5C1C	5C42
S05	575D	5783	57A9	57CF	57F5	581B	5841	5867	588D	58B3	58D9	58FF	5925	594B	5971	5997	59BD	59E3	5A09	5A2F	5A55	5A7B	5AA1	5AC7	5AED	5B13	5B39	5B5F	5B85	5BAB	5BD1	5BF7	5C1D	5C43
S06	575E	5784	57AA	57D0	57F6	581C	5842	5868	588E	58B4	58DA	5900	5926	594C	5972	5998	59BE	59E4	5A0A	5A30	5A56	5A7C	5AA2	5AC8	5AEE	5B14	5B3A	5B60	5B86	5BAC	5BD2	5BF8	5C1E	5C44

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Z18	5C56	5C7C	5CA2	5CC8	5CEE	5D14	5D3A	5D60	5D86	5DAC	5DD2	5DF8	5E1E	5E44	5E6A	5E90	5EB6	5EDC	5F02	5F28	5F4E	5F74	5F9A	5FC0	5FE6	600C	6032	6058	607E	60A4	60CA	60F0	6116	613C
Z19	5C57	5C7D	5CA3	5CC9	5CEF	5D15	5D3B	5D61	5D87	5DAD	5DD3	5DF9	5E1F	5E45	5E6B	5E91	5EB7	5EDD	5F03	5F29	5F4F	5F75	5F9B	5FC1	5FE7	600D	6033	6059	607F	60A5	60CB	60F1	6117	613D
Z20	5C58	5C7E	5CA4	5CCA	5CF0	5D16	5D3C	5D62	5D88	5DAE	5DD4	5DFA	5E20	5E46	5E6C	5E92	5EB8	5EDE	5F04	5F2A	5F50	5F76	5F9C	5FC2	5FE8	600E	6034	605A	6080	60A6	60CC	60F2	6118	613E
Z21	5C59	5C7F	5CA5	5CCB	5CF1	5D17	5D3D	5D63	5D89	5DAF	5DD5	5DFB	5E21	5E47	5E6D	5E93	5EB9	5EDF	5F05	5F2B	5F51	5F77	5F9D	5FC3	5FE9	600F	6035	605B	6081	60A7	60CD	60F3	6119	613F
Z22	5C5A	5C80	5CA6	5CCC	5CF2	5D18	5D3E	5D64	5D8A	5DB0	5DD6	5DFC	5E22	5E48	5E6E	5E94	5EBA	5EE0	5F06	5F2C	5F52	5F78	5F9E	5FC4	5FEA	6010	6036	605C	6082	60A8	60CE	60F4	611A	6140
Z23	5C5B	5C81	5CA7	5CCD	5CF3	5D19	5D3F	5D65	5D8B	5DB1	5DD7	5DFD	5E23	5E49	5E6F	5E95	5EBB	5EE1	5F07	5F2D	5F53	5F79	5F9F	5FC5	5FEB	6011	6037	605D	6083	60A9	60CF	60F5	611B	6141
Z24	5C5C	5C82	5CA8	5CCE	5CF4	5D1A	5D40	5D66	5D8C	5DB2	5DD8	5DFE	5E24	5E4A	5E70	5E96	5EBC	5EE2	5F08	5F2E	5F54	5F7A	5FA0	5FC6	5FEC	6012	6038	605E	6084	60AA	60D0	60F6	611C	6142
Z25	5C5D	5C83	5CA9	5CCF	5CF5	5D1B	5D41	5D67	5D8D	5DB3	5DD9	5DFF	5E25	5E4B	5E71	5E97	5EBD	5EE3	5F09	5F2F	5F55	5F7B	5FA1	5FC7	5FED	6013	6039	605F	6085	60AB	60D1	60F7	611D	6143
Z26	5C5E	5C84	5CAA	5CD0	5CF6	5D1C	5D42	5D68	5D8E	5DB4	5DDA	5E00	5E26	5E4C	5E72	5E98	5EBE	5EE4	5F0A	5F30	5F56	5F7C	5FA2	5FC8	5FEE	6014	603A	6060	6086	60AC	60D2	60F8	611E	6144
Z27	5C5F	5C85	5CAB	5CD1	5CF7	5D1D	5D43	5D69	5D8F	5DB5	5DDB	5E01	5E27	5E4D	5E73	5E99	5EBF	5EE5	5F0B	5F31	5F57	5F7D	5FA3	5FC9	5FEF	6015	603B	6061	6087	60AD	60D3	60F9	611F	6145
Z28	5C60	5C86	5CAC	5CD2	5CF8	5D1E	5D44	5D6A	5D90	5DB6	5DDC	5E02	5E28	5E4E	5E74	5E9A	5EC0	5EE6	5F0C	5F32	5F58	5F7E	5FA4	5FCA	5FF0	6016	603C	6062	6088	60AE	60D4	60FA	6120	6146
Z29	5C61	5C87	5CAD	5CD3	5CF9	5D1F	5D45	5D6B	5D91	5DB7	5DDD	5E03	5E29	5E4F	5E75	5E9B	5EC1	5EE7	5F0D	5F33	5F59	5F7F	5FA5	5FCB	5FF1	6017	603D	6063	6089	60AF	60D5	60FB	6121	6147
Z30	5C62	5C88	5CAE	5CD4	5CFA	5D20	5D46	5D6C	5D92	5DB8	5DDE	5E04	5E2A	5E50	5E76	5E9C	5EC2	5EE8	5F0E	5F34	5F5A	5F80	5FA6	5FCC	5FF2	6018	603E	6064	608A	60B0	60D6	60FC	6122	6148
Z31	5C63	5C89	5CAF	5CD5	5CFB	5D21	5D47	5D6D	5D93	5DB9	5DDF	5E05	5E2B	5E51	5E77	5E9D	5EC3	5EE9	5F0F	5F35	5F5B	5F81	5FA7	5FCD	5FF3	6019	603F	6065	608B	60B1	60D7	60FD	6123	6149
Z32	5C64	5C8A	5CB0	5CD6	5CFC	5D22	5D48	5D6E	5D94	5DBA	5DE0	5E06	5E2C	5E52	5E78	5E9E	5EC4	5EEA	5F10	5F36	5F5C	5F82	5FA8	5FCE	5FF4	601A	6040	6066	608C	60B2	60D8	60FE	6124	614A
S01	5C65	5C8B	5CB1	5CD7	5CFD	5D23	5D49	5D6F	5D95	5DBB	5DE1	5E07	5E2D	5E53	5E79	5E9F	5EC5	5EEB	5F11	5F37	5F5D	5F83	5FA9	5FCF	5FF5	601B	6041	6067	608D	60B3	60D9	60FF	6125	614B
S02	5C66	5C8C	5CB2	5CD8	5CFE	5D24	5D4A	5D70	5D96	5DBC	5DE2	5E08	5E2E	5E54	5E7A	5EA0	5EC6	5EEC	5F12	5F38	5F5E	5F84	5FAA	5FD0	5FF6	601C	6042	6068	608E	60B4	60DA	6100	6126	614C
S03	5C67	5C8D	5CB3	5CD9	5CFF	5D25	5D4B	5D71	5D97	5DBD	5DE3	5E09	5E2F	5E55	5E7B	5EA1	5EC7	5EED	5F13	5F39	5F5F	5F85	5FAB	5FD1	5FF7	601D	6043	6069	608F	60B5	60DB	6101	6127	614D
S04	5C68	5C8E	5CB4	5CDA	5D00	5D26	5D4C	5D72	5D98	5DBE	5DE4	5E0A	5E30	5E56	5E7C	5EA2	5EC8	5EEE	5F14	5F3A	5F60	5F86	5FAC	5FD2	5FF8	601E	6044	606A	6090	60B6	60DC	6102	6128	614E
S05	5C69	5C8F	5CB5	5CDB	5D01	5D27	5D4D	5D73	5D99	5DBF	5DE5	5E0B	5E31	5E57	5E7D	5EA3	5EC9	5EEF	5F15	5F3B	5F61	5F87	5FAD	5FD3	5FF9	601F	6045	606B	6091	60B7	60DD	6103	6129	614F
S06	5C6A	5C90	5CB6	5CDC	5D02	5D28	5D4E	5D74	5D9A	5DC0	5DE6	5E0C	5E32	5E58	5E7E	5EA4	5ECA	5EF0	5F16	5F3C	5F62	5F88	5FAE	5FD4	5FFA	6020	6046	606C	6092	60B8	60DE	6104	612A	6150

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Model 3000 / Access 4000

TABLE 14
SIA DECIMAL MAPPING
V5.10

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Control	**C**																																
Z01		1																															
~		~																															
Z16		16																															
Cab tamp	**S01**	17																															
Int sir tamp	**S02**	18																															
Ext sir tamp	**S03**	19																															
AC fail.	**S04**	20																															
Low batt.	**S05**	21																															
LAN fuse	**S06**	22																															
Det fuse	**S07**	23																															
Lan Com	**S08**	24																															
Batt test fail	**S09**	25																															
Checksum	**S10**	26																															
Reset.	**S11**	27																															
Line Fail	**S12**	28																															
Uart 1	**S13**	29																															
Uart 2	**S14**	30																															
Uart 3	**S15**	31																															
Uart 4	**S16**	32																															
Zone SelfTest	**S17**	33																															
Time Report	**S18**	34																															
Manual trigger	**S19**	35																															
Comms B'up	**S20**	36																															
Comms Fail.	**S21**	37																															
Phone Fault	**S22**	38																															
Module Subst	**S23**	39																															
PreArm 1 start	**S24**	40																															
PreArm 1 fail	**S25**	41																															
PreArm 2 start	**S26**	42																															
PreArm 2 fail	**S27**	43																															
Req service	**S28**	44																															
IRDR problem	**S29**	45																															
GSM problem	**S30**	46																															
Exp pwr test	**S31**	47																															
Spare	**S32**	48																															
LCD	**T**																																
Z01		49	59	69	79	89	99	109	119	129	139	149	159	169	179	189	199	209	219	229	239	249	259	269	279	289	299	309	319	329	339	349	359
Z02		50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360
Cabinet tamp	**S01**	51	61	71	81	91	101	111	121	131	141	151	161	171	181	191	201	211	221	231	241	251	261	271	281	291	301	311	321	331	341	351	361
Panic	**S02**	52	62	72	82	92	102	112	122	132	142	152	162	172	182	192	202	212	222	232	242	252	262	272	282	292	302	312	322	332	342	352	362
Door Forced	**S03**	53	63	73	83	93	103	113	123	133	143	153	163	173	183	193	203	213	223	233	243	253	263	273	283	293	303	313	323	333	343	353	363
Door Held	**S04**	54	64	74	84	94	104	114	124	134	144	154	164	174	184	194	204	214	224	234	244	254	264	274	284	294	304	314	324	334	344	354	364
Duress	**S05**	55	65	75	85	95	105	115	125	135	145	155	165	175	185	195	205	215	225	235	245	255	265	275	285	295	305	315	325	335	345	355	365
Deadman	**S06**	56	66	76	86	96	106	116	126	136	146	156	166	176	186	196	206	216	226	236	246	256	266	276	286	296	306	316	326	336	346	356	366
Too many tries	**S07**	57	67	77	87	97	107	117	127	137	147	157	167	177	187	197	207	217	227	237	247	257	267	277	287	297	307	317	327	337	347	357	367
LAN fail.	**S08**	58	68	78	88	98	108	118	128	138	148	158	168	178	188	198	208	218	228	238	248	258	268	278	288	298	308	318	328	338	348	358	368

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		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Exp 32 Zone	**B**																																
Z01		689	731	773	815	857	899	941	983	1025	1067	1109	1151	1193	1235	1277	1319	1361	1403	1445	1487	1529	1571	1613	1655	1697	1739	1781	1823	1865	1907	1949	1991
Z02		690	732	774	816	858	900	942	984	1026	1068	1110	1152	1194	1236	1278	1320	1362	1404	1446	1488	1530	1572	1614	1656	1698	1740	1782	1824	1866	1908	1950	1992
Z03		691	733	775	817	859	901	943	985	1027	1069	1111	1153	1195	1237	1279	1321	1363	1405	1447	1489	1531	1573	1615	1657	1699	1741	1783	1825	1867	1909	1951	1993
Z04		692	734	776	818	860	902	944	986	1028	1070	1112	1154	1196	1238	1280	1322	1364	1406	1448	1490	1532	1574	1616	1658	1700	1742	1784	1826	1868	1910	1952	1994
Z05		693	735	777	819	861	903	945	987	1029	1071	1113	1155	1197	1239	1281	1323	1365	1407	1449	1491	1533	1575	1617	1659	1701	1743	1785	1827	1869	1911	1953	1995
Z06		694	736	778	820	862	904	946	988	1030	1072	1114	1156	1198	1240	1282	1324	1366	1408	1450	1492	1534	1576	1618	1660	1702	1744	1786	1828	1870	1912	1954	1996
Z07		695	737	779	821	863	905	947	989	1031	1073	1115	1157	1199	1241	1283	1325	1367	1409	1451	1493	1535	1577	1619	1661	1703	1745	1787	1829	1871	1913	1955	1997
Z08		696	738	780	822	864	906	948	990	1032	1074	1116	1158	1200	1242	1284	1326	1368	1410	1452	1494	1536	1578	1620	1662	1704	1746	1788	1830	1872	1914	1956	1998
Z09		697	739	781	823	865	907	949	991	1033	1075	1117	1159	1201	1243	1285	1327	1369	1411	1453	1495	1537	1579	1621	1663	1705	1747	1789	1831	1873	1915	1957	1999
Z10		698	740	782	824	866	908	950	992	1034	1076	1118	1160	1202	1244	1286	1328	1370	1412	1454	1496	1538	1580	1622	1664	1706	1748	1790	1832	1874	1916	1958	2000
Z11		699	741	783	825	867	909	951	993	1035	1077	1119	1161	1203	1245	1287	1329	1371	1413	1455	1497	1539	1581	1623	1665	1707	1749	1791	1833	1875	1917	1959	2001
Z12		700	742	784	826	868	910	952	994	1036	1078	1120	1162	1204	1246	1288	1330	1372	1414	1456	1498	1540	1582	1624	1666	1708	1750	1792	1834	1876	1918	1960	2002
Z13		701	743	785	827	869	911	953	995	1037	1079	1121	1163	1205	1247	1289	1331	1373	1415	1457	1499	1541	1583	1625	1667	1709	1751	1793	1835	1877	1919	1961	2003
Z14		702	744	786	828	870	912	954	996	1038	1080	1122	1164	1206	1248	1290	1332	1374	1416	1458	1500	1542	1584	1626	1668	1710	1752	1794	1836	1878	1920	1962	2004
Z15		703	745	787	829	871	913	955	997	1039	1081	1123	1165	1207	1249	1291	1333	1375	1417	1459	1501	1543	1585	1627	1669	1711	1753	1795	1837	1879	1921	1963	2005
Z16		704	746	788	830	872	914	956	998	1040	1082	1124	1166	1208	1250	1292	1334	1376	1418	1460	1502	1544	1586	1628	1670	1712	1754	1796	1838	1880	1922	1964	2006
Z17		705	747	789	831	873	915	957	999	1041	1083	1125	1167	1209	1251	1293	1335	1377	1419	1461	1503	1545	1587	1629	1671	1713	1755	1797	1839	1881	1923	1965	2007
Z18		706	748	790	832	874	916	958	1000	1042	1084	1126	1168	1210	1252	1294	1336	1378	1420	1462	1504	1546	1588	1630	1672	1714	1756	1798	1840	1882	1924	1966	2008
Z19		707	749	791	833	875	917	959	1001	1043	1085	1127	1169	1211	1253	1295	1337	1379	1421	1463	1505	1547	1589	1631	1673	1715	1757	1799	1841	1883	1925	1967	2009
Z20		708	750	792	834	876	918	960	1002	1044	1086	1128	1170	1212	1254	1296	1338	1380	1422	1464	1506	1548	1590	1632	1674	1716	1758	1800	1842	1884	1926	1968	2010
Z21		709	751	793	835	877	919	961	1003	1045	1087	1129	1171	1213	1255	1297	1339	1381	1423	1465	1507	1549	1591	1633	1675	1717	1759	1801	1843	1885	1927	1969	2011
Z22		710	752	794	836	878	920	962	1004	1046	1088	1130	1172	1214	1256	1298	1340	1382	1424	1466	1508	1550	1592	1634	1676	1718	1760	1802	1844	1886	1928	1970	2012
Z23		711	753	795	837	879	921	963	1005	1047	1089	1131	1173	1215	1257	1299	1341	1383	1425	1467	1509	1551	1593	1635	1677	1719	1761	1803	1845	1887	1929	1971	2013
Z24		712	754	796	838	880	922	964	1006	1048	1090	1132	1174	1216	1258	1300	1342	1384	1426	1468	1510	1552	1594	1636	1678	1720	1762	1804	1846	1888	1930	1972	2014
Z25		713	755	797	839	881	923	965	1007	1049	1091	1133	1175	1217	1259	1301	1343	1385	1427	1469	1511	1553	1595	1637	1679	1721	1763	1805	1847	1889	1931	1973	2015
Z26		714	756	798	840	882	924	966	1008	1050	1092	1134	1176	1218	1260	1302	1344	1386	1428	1470	1512	1554	1596	1638	1680	1722	1764	1806	1848	1890	1932	1974	2016
Z27		715	757	799	841	883	925	967	1009	1051	1093	1135	1177	1219	1261	1303	1345	1387	1429	1471	1513	1555	1597	1639	1681	1723	1765	1807	1849	1891	1933	1975	2017
Z28		716	758	800	842	884	926	968	1010	1052	1094	1136	1178	1220	1262	1304	1346	1388	1430	1472	1514	1556	1598	1640	1682	1724	1766	1808	1850	1892	1934	1976	2018
Z29		717	759	801	843	885	927	969	1011	1053	1095	1137	1179	1221	1263	1305	1347	1389	1431	1473	1515	1557	1599	1641	1683	1725	1767	1809	1851	1893	1935	1977	2019
Z30		718	760	802	844	886	928	970	1012	1054	1096	1138	1180	1222	1264	1306	1348	1390	1432	1474	1516	1558	1600	1642	1684	1726	1768	1810	1852	1894	1936	1978	2020
Z31		719	761	803	845	887	929	971	1013	1055	1097	1139	1181	1223	1265	1307	1349	1391	1433	1475	1517	1559	1601	1643	1685	1727	1769	1811	1853	1895	1937	1979	2021
Z32		720	762	804	846	888	930	972	1014	1056	1098	1140	1182	1224	1266	1308	1350	1392	1434	1476	1518	1560	1602	1644	1686	1728	1770	1812	1854	1896	1938	1980	2022
Cabinet tamp	**S01**	721	763	805	847	889	931	973	1015	1057	1099	1141	1183	1225	1267	1309	1351	1393	1435	1477	1519	1561	1603	1645	1687	1729	1771	1813	1855	1897	1939	1981	2023
Int siren tamp	**S02**	722	764	806	848	890	932	974	1016	1058	1100	1142	1184	1226	1268	1310	1352	1394	1436	1478	1520	1562	1604	1646	1688	1730	1772	1814	1856	1898	1940	1982	2024
Ext siren tamp	**S03**	723	765	807	849	891	933	975	1017	1059	1101	1143	1185	1227	1269	1311	1353	1395	1437	1479	1521	1563	1605	1647	1689	1731	1773	1815	1857	1899	1941	1983	2025
AC fail.	**S04**	724	766	808	850	892	934	976	1018	1060	1102	1144	1186	1228	1270	1312	1354	1396	1438	1480	1522	1564	1606	1648	1690	1732	1774	1816	1858	1900	1942	1984	2026
Low battery.	**S05**	725	767	809	851	893	935	977	1019	1061	1103	1145	1187	1229	1271	1313	1355	1397	1439	1481	1523	1565	1607	1649	1691	1733	1775	1817	1859	1901	1943	1985	2027
LAN fuse	**S06**	726	768	810	852	894	936	978	1020	1062	1104	1146	1188	1230	1272	1314	1356	1398	1440	1482	1524	1566	1608	1650	1692	1734	1776	1818	1860	1902	1944	1986	2028
Detector fuse	**S07**	727	769	811	853	895	937	979	1021	1063	1105	1147	1189	1231	1273	1315	1357	1399	1441	1483	1525	1567	1609	1651	1693	1735	1777	1819	1861	1903	1945	1987	2029
LAN fail	**S08**	728	770	812	854	896	938	980	1022	1064	1106	1148	1190	1232	1274	1316	1358	1400	1442	1484	1526	1568	1610	1652	1694	1736	1778	1820	1862	1904	1946	1988	2030
Batt test fail	**S09**	729	771	813	855	897	939	981	1023	1065	1107	1149	1191	1233	1275	1317	1359	1401	1443	1485	1527	1569	1611	1653	1695	1737	1779	1821	1863	1905	1947	1989	2031
Spare	**S10**	730	772	814	856	898	940	982	1024	1066	1108	1150	1192	1234	1276	1318	1360	1402	1444	1486	1528	1570	1612	1654	1696	1738	1780	1822	1864	1906	1948	1990	2032

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		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Reader	**R**																																
Z01		2033	2049	2065	2081	2097	2113	2129	2145	2161	2177	2193	2209	2225	2241	2257	2273	2289	2305	2321	2337	2353	2369	2385	2401	2417	2433	2449	2465	2481	2497	2513	2529
Z02		2034	2050	2066	2082	2098	2114	2130	2146	2162	2178	2194	2210	2226	2242	2258	2274	2290	2306	2322	2338	2354	2370	2386	2402	2418	2434	2450	2466	2482	2498	2514	2530
Z03		2035	2051	2067	2083	2099	2115	2131	2147	2163	2179	2195	2211	2227	2243	2259	2275	2291	2307	2323	2339	2355	2371	2387	2403	2419	2435	2451	2467	2483	2499	2515	2531
Z04		2036	2052	2068	2084	2100	2116	2132	2148	2164	2180	2196	2212	2228	2244	2260	2276	2292	2308	2324	2340	2356	2372	2388	2404	2420	2436	2452	2468	2484	2500	2516	2532
Z05		2037	2053	2069	2085	2101	2117	2133	2149	2165	2181	2197	2213	2229	2245	2261	2277	2293	2309	2325	2341	2357	2373	2389	2405	2421	2437	2453	2469	2485	2501	2517	2533
Z06		2038	2054	2070	2086	2102	2118	2134	2150	2166	2182	2198	2214	2230	2246	2262	2278	2294	2310	2326	2342	2358	2374	2390	2406	2422	2438	2454	2470	2486	2502	2518	2534
Z07		2039	2055	2071	2087	2103	2119	2135	2151	2167	2183	2199	2215	2231	2247	2263	2279	2295	2311	2327	2343	2359	2375	2391	2407	2423	2439	2455	2471	2487	2503	2519	2535
Z08		2040	2056	2072	2088	2104	2120	2136	2152	2168	2184	2200	2216	2232	2248	2264	2280	2296	2312	2328	2344	2360	2376	2392	2408	2424	2440	2456	2472	2488	2504	2520	2536
Cabinet tamp	**S01**	2041	2057	2073	2089	2105	2121	2137	2153	2169	2185	2201	2217	2233	2249	2265	2281	2297	2313	2329	2345	2361	2377	2393	2409	2425	2441	2457	2473	2489	2505	2521	2537
Low Voltage	**S02**	2042	2058	2074	2090	2106	2122	2138	2154	2170	2186	2202	2218	2234	2250	2266	2282	2298	2314	2330	2346	2362	2378	2394	2410	2426	2442	2458	2474	2490	2506	2522	2538
Door 1 Forced	**S03**	2043	2059	2075	2091	2107	2123	2139	2155	2171	2187	2203	2219	2235	2251	2267	2283	2299	2315	2331	2347	2363	2379	2395	2411	2427	2443	2459	2475	2491	2507	2523	2539
Door 1 Held	**S04**	2044	2060	2076	2092	2108	2124	2140	2156	2172	2188	2204	2220	2236	2252	2268	2284	2300	2316	2332	2348	2364	2380	2396	2412	2428	2444	2460	2476	2492	2508	2524	2540
Door 2 Forced	**S05**	2045	2061	2077	2093	2109	2125	2141	2157	2173	2189	2205	2221	2237	2253	2269	2285	2301	2317	2333	2349	2365	2381	2397	2413	2429	2445	2461	2477	2493	2509	2525	2541
Door 2 Held	**S06**	2046	2062	2078	2094	2110	2126	2142	2158	2174	2190	2206	2222	2238	2254	2270	2286	2302	2318	2334	2350	2366	2382	2398	2414	2430	2446	2462	2478	2494	2510	2526	2542
Illegal Card	**S07**	2047	2063	2079	2095	2111	2127	2143	2159	2175	2191	2207	2223	2239	2255	2271	2287	2303	2319	2335	2351	2367	2383	2399	2415	2431	2447	2463	2479	2495	2511	2527	2543
LAN fail.	**S08**	2048	2064	2080	2096	2112	2128	2144	2160	2176	2192	2208	2224	2240	2256	2272	2288	2304	2320	2336	2352	2368	2384	2400	2416	2432	2448	2464	2480	2496	2512	2528	2544
Wireless	**N**																																
Z01		2545	2565	2585	2605	2625	2645	2665	2685	2705	2725	2745	2765	2785	2805	2825	2845	2865	2885	2905	2925	2945	2965	2985	3005	3025	3045	3065	3085	3105	3125	3145	3165
Z02		2546	2566	2586	2606	2626	2646	2666	2686	2706	2726	2746	2766	2786	2806	2826	2846	2866	2886	2906	2926	2946	2966	2986	3006	3026	3046	3066	3086	3106	3126	3146	3166
Z03		2547	2567	2587	2607	2627	2647	2667	2687	2707	2727	2747	2767	2787	2807	2827	2847	2867	2887	2907	2927	2947	2967	2987	3007	3027	3047	3067	3087	3107	3127	3147	3167
Z04		2548	2568	2588	2608	2628	2648	2668	2688	2708	2728	2748	2768	2788	2808	2828	2848	2868	2888	2908	2928	2948	2968	2988	3008	3028	3048	3068	3088	3108	3128	3148	3168
Z05		2549	2569	2589	2609	2629	2649	2669	2689	2709	2729	2749	2769	2789	2809	2829	2849	2869	2889	2909	2929	2949	2969	2989	3009	3029	3049	3069	3089	3109	3129	3149	3169
Z06		2550	2570	2590	2610	2630	2650	2670	2690	2710	2730	2750	2770	2790	2810	2830	2850	2870	2890	2910	2930	2950	2970	2990	3010	3030	3050	3070	3090	3110	3130	3150	3170
Z07		2551	2571	2591	2611	2631	2651	2671	2691	2711	2731	2751	2771	2791	2811	2831	2851	2871	2891	2911	2931	2951	2971	2991	3011	3031	3051	3071	3091	3111	3131	3151	3171
Z08		2552	2572	2592	2612	2632	2652	2672	2692	2712	2732	2752	2772	2792	2812	2832	2852	2872	2892	2912	2932	2952	2972	2992	3012	3032	3052	3072	3092	3112	3132	3152	3172
Z09		2553	2573	2593	2613	2633	2653	2673	2693	2713	2733	2753	2773	2793	2813	2833	2853	2873	2893	2913	2933	2953	2973	2993	3013	3033	3053	3073	3093	3113	3133	3153	3173
Z10		2554	2574	2594	2614	2634	2654	2674	2694	2714	2734	2754	2774	2794	2814	2834	2854	2874	2894	2914	2934	2954	2974	2994	3014	3034	3054	3074	3094	3114	3134	3154	3174
Z11		2555	2575	2595	2615	2635	2655	2675	2695	2715	2735	2755	2775	2795	2815	2835	2855	2875	2895	2915	2935	2955	2975	2995	3015	3035	3055	3075	3095	3115	3135	3155	3175
Z12		2556	2576	2596	2616	2636	2656	2676	2696	2716	2736	2756	2776	2796	2816	2836	2856	2876	2896	2916	2936	2956	2976	2996	3016	3036	3056	3076	3096	3116	3136	3156	3176
Z13		2557	2577	2597	2617	2637	2657	2677	2697	2717	2737	2757	2777	2797	2817	2837	2857	2877	2897	2917	2937	2957	2977	2997	3017	3037	3057	3077	3097	3117	3137	3157	3177
Z14		2558	2578	2598	2618	2638	2658	2678	2698	2718	2738	2758	2778	2798	2818	2838	2858	2878	2898	2918	2938	2958	2978	2998	3018	3038	3058	3078	3098	3118	3138	3158	3178
Z15		2559	2579	2599	2619	2639	2659	2679	2699	2719	2739	2759	2779	2799	2819	2839	2859	2879	2899	2919	2939	2959	2979	2999	3019	3039	3059	3079	3099	3119	3139	3159	3179
Z16		2560	2580	2600	2620	2640	2660	2680	2700	2720	2740	2760	2780	2800	2820	2840	2860	2880	2900	2920	2940	2960	2980	3000	3020	3040	3060	3080	3100	3120	3140	3160	3180
Trans Timeout	**S01**	2561	2581	2601	2621	2641	2661	2681	2701	2721	2741	2761	2781	2801	2821	2841	2861	2881	2901	2921	2941	2961	2981	3001	3021	3041	3061	3081	3101	3121	3141	3161	3181
Low Battery	**S02**	2562	2582	2602	2622	2642	2662	2682	2702	2722	2742	2762	2782	2802	2822	2842	2862	2882	2902	2922	2942	2962	2982	3002	3022	3042	3062	3082	3102	3122	3142	3162	3182
Spare	**S03**	2563	2583	2603	2623	2643	2663	2683	2703	2723	2743	2763	2783	2803	2823	2843	2863	2883	2903	2923	2943	2963	2983	3003	3023	3043	3063	3083	3103	3123	3143	3163	3183
Spare	**S04**	2564	2584	2604	2624	2644	2664	2684	2704	2724	2744	2764	2784	2804	2824	2844	2864	2884	2904	2924	2944	2964	2984	3004	3024	3044	3064	3084	3104	3124	3144	3164	3184
Exp 8 Zone	**M**																																
Z01		3185	3202	3219	3236	3253	3270	3287	3304	3321	3338	3355	3372	3389	3406	3423	3440	3457	3474	3491	3508	3525	3542	3559	3576	3593	3610	3627	3644	3661	3678	3695	3712
Z02		3186	3203	3220	3237	3254	3271	3288	3305	3322	3339	3356	3373	3390	3407	3424	3441	3458	3475	3492	3509	3526	3543	3560	3577	3594	3611	3628	3645	3662	3679	3696	3713
Z03		3187	3204	3221	3238	3255	3272	3289	3306	3323	3340	3357	3374	3391	3408	3425	3442	3459	3476	3493	3510	3527	3544	3561	3578	3595	3612	3629	3646	3663	3680	3697	3714
Z04		3188	3205	3222	3239	3256	3273	3290	3307	3324	3341	3358	3375	3392	3409	3426	3443	3460	3477	3494	3511	3528	3545	3562	3579	3596	3613	3630	3647	3664	3681	3698	3715
Z05		3189	3206	3223	3240	3257	3274	3291	3308	3325	3342	3359	3376	3393	3410	3427	3444	3461	3478	3495	3512	3529	3546	3563	3580	3597	3614	3631	3648	3665	3682	3699	3716
Z06		3190	3207	3224	3241	3258	3275	3292	3309	3326	3343	3360	3377	3394	3411	3428	3445	3462	3479	3496	3513	3530	3547	3564	3581	3598	3615	3632	3649	3666	3683	3700	3717
Z07		3191	3208	3225	3242	3259	3276	3293	3310	3327	3344	3361	3378	3395	3412	3429	3446	3463	3480	3497	3514	3531	3548	3565	3582	3599	3616	3633	3650	3667	3684	3701	3718
Z08		3192	3209	3226	3243	3260	3277	3294	3311	3328	3345	3362	3379	3396	3413	3430	3447	3464	3481	3498	3515	3532	3549	3566	3583	3600	3617	3634	3651	3668	3685	3702	3719

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	M	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Low Volts.	**S01**	3193	3210	3227	3244	3261	3278	3295	3312	3329	3346	3363	3380	3397	3414	3431	3448	3465	3482	3499	3516	3533	3550	3567	3584	3601	3618	3635	3652	3669	3686	3703	3720
Zone 1 Extra	**S02**	3194	3211	3228	3245	3262	3279	3296	3313	3330	3347	3364	3381	3398	3415	3432	3449	3466	3483	3500	3517	3534	3551	3568	3585	3602	3619	3636	3653	3670	3687	3704	3721
Zone 2 Extra	**S03**	3195	3212	3229	3246	3263	3280	3297	3314	3331	3348	3365	3382	3399	3416	3433	3450	3467	3484	3501	3518	3535	3552	3569	3586	3603	3620	3637	3654	3671	3688	3705	3722
Zone 3 Extra	**S04**	3196	3213	3230	3247	3264	3281	3298	3315	3332	3349	3366	3383	3400	3417	3434	3451	3468	3485	3502	3519	3536	3553	3570	3587	3604	3621	3638	3655	3672	3689	3706	3723
Zone 4 Extra	**S05**	3197	3214	3231	3248	3265	3282	3299	3316	3333	3350	3367	3384	3401	3418	3435	3452	3469	3486	3503	3520	3537	3554	3571	3588	3605	3622	3639	3656	3673	3690	3707	3724
Zone 5 Extra	**S06**	3198	3215	3232	3249	3266	3283	3300	3317	3334	3351	3368	3385	3402	3419	3436	3453	3470	3487	3504	3521	3538	3555	3572	3589	3606	3623	3640	3657	3674	3691	3708	3725
Zone 6 Extra	**S07**	3199	3216	3233	3250	3267	3284	3301	3318	3335	3352	3369	3386	3403	3420	3437	3454	3471	3488	3505	3522	3539	3556	3573	3590	3607	3624	3641	3658	3675	3692	3709	3726
Zone 7 Extra	**S08**	3200	3217	3234	3251	3268	3285	3302	3319	3336	3353	3370	3387	3404	3421	3438	3455	3472	3489	3506	3523	3540	3557	3574	3591	3608	3625	3642	3659	3676	3693	3710	3727
LAN fail	**S09**	3201	3218	3235	3252	3269	3286	3303	3320	3337	3354	3371	3388	3405	3422	3439	3456	3473	3490	3507	3524	3541	3558	3575	3592	3609	3626	3643	3660	3677	3694	3711	3728
Exp 16 Zone	**E**																																
Z01		3729	3755	3781	3807	3833	3859	3885	3911	3937	3963	3989	4015	4041	4067	4093	4119	4145	4171	4197	4223	4249	4275	4301	4327	4353	4379	4405	4431	4457	4483	4509	4535
Z02		3730	3756	3782	3808	3834	3860	3886	3912	3938	3964	3990	4016	4042	4068	4094	4120	4146	4172	4198	4224	4250	4276	4302	4328	4354	4380	4406	4432	4458	4484	4510	4536
Z03		3731	3757	3783	3809	3835	3861	3887	3913	3939	3965	3991	4017	4043	4069	4095	4121	4147	4173	4199	4225	4251	4277	4303	4329	4355	4381	4407	4433	4459	4485	4511	4537
Z04		3732	3758	3784	3810	3836	3862	3888	3914	3940	3966	3992	4018	4044	4070	4096	4122	4148	4174	4200	4226	4252	4278	4304	4330	4356	4382	4408	4434	4460	4486	4512	4538
Z05		3733	3759	3785	3811	3837	3863	3889	3915	3941	3967	3993	4019	4045	4071	4097	4123	4149	4175	4201	4227	4253	4279	4305	4331	4357	4383	4409	4435	4461	4487	4513	4539
Z06		3734	3760	3786	3812	3838	3864	3890	3916	3942	3968	3994	4020	4046	4072	4098	4124	4150	4176	4202	4228	4254	4280	4306	4332	4358	4384	4410	4436	4462	4488	4514	4540
Z07		3735	3761	3787	3813	3839	3865	3891	3917	3943	3969	3995	4021	4047	4073	4099	4125	4151	4177	4203	4229	4255	4281	4307	4333	4359	4385	4411	4437	4463	4489	4515	4541
Z08		3736	3762	3788	3814	3840	3866	3892	3918	3944	3970	3996	4022	4048	4074	4100	4126	4152	4178	4204	4230	4256	4282	4308	4334	4360	4386	4412	4438	4464	4490	4516	4542
Z09		3737	3763	3789	3815	3841	3867	3893	3919	3945	3971	3997	4023	4049	4075	4101	4127	4153	4179	4205	4231	4257	4283	4309	4335	4361	4387	4413	4439	4465	4491	4517	4543
Z10		3738	3764	3790	3816	3842	3868	3894	3920	3946	3972	3998	4024	4050	4076	4102	4128	4154	4180	4206	4232	4258	4284	4310	4336	4362	4388	4414	4440	4466	4492	4518	4544
Z11		3739	3765	3791	3817	3843	3869	3895	3921	3947	3973	3999	4025	4051	4077	4103	4129	4155	4181	4207	4233	4259	4285	4311	4337	4363	4389	4415	4441	4467	4493	4519	4545
Z12		3740	3766	3792	3818	3844	3870	3896	3922	3948	3974	4000	4026	4052	4078	4104	4130	4156	4182	4208	4234	4260	4286	4312	4338	4364	4390	4416	4442	4468	4494	4520	4546
Z13		3741	3767	3793	3819	3845	3871	3897	3923	3949	3975	4001	4027	4053	4079	4105	4131	4157	4183	4209	4235	4261	4287	4313	4339	4365	4391	4417	4443	4469	4495	4521	4547
Z14		3742	3768	3794	3820	3846	3872	3898	3924	3950	3976	4002	4028	4054	4080	4106	4132	4158	4184	4210	4236	4262	4288	4314	4340	4366	4392	4418	4444	4470	4496	4522	4548
Z15		3743	3769	3795	3821	3847	3873	3899	3925	3951	3977	4003	4029	4055	4081	4107	4133	4159	4185	4211	4237	4263	4289	4315	4341	4367	4393	4419	4445	4471	4497	4523	4549
Z16		3744	3770	3796	3822	3848	3874	3900	3926	3952	3978	4004	4030	4056	4082	4108	4134	4160	4186	4212	4238	4264	4290	4316	4342	4368	4394	4420	4446	4472	4498	4524	4550
Cabinet tamp	**S01**	3745	3771	3797	3823	3849	3875	3901	3927	3953	3979	4005	4031	4057	4083	4109	4135	4161	4187	4213	4239	4265	4291	4317	4343	4369	4395	4421	4447	4473	4499	4525	4551
Int siren tamp	**S02**	3746	3772	3798	3824	3850	3876	3902	3928	3954	3980	4006	4032	4058	4084	4110	4136	4162	4188	4214	4240	4266	4292	4318	4344	4370	4396	4422	4448	4474	4500	4526	4552
Ext siren tamp	**S03**	3747	3773	3799	3825	3851	3877	3903	3929	3955	3981	4007	4033	4059	4085	4111	4137	4163	4189	4215	4241	4267	4293	4319	4345	4371	4397	4423	4449	4475	4501	4527	4553
AC fail.	**S04**	3748	3774	3800	3826	3852	3878	3904	3930	3956	3982	4008	4034	4060	4086	4112	4138	4164	4190	4216	4242	4268	4294	4320	4346	4372	4398	4424	4450	4476	4502	4528	4554
Low battery.	**S05**	3749	3775	3801	3827	3853	3879	3905	3931	3957	3983	4009	4035	4061	4087	4113	4139	4165	4191	4217	4243	4269	4295	4321	4347	4373	4399	4425	4451	4477	4503	4529	4555
LAN fuse	**S06**	3750	3776	3802	3828	3854	3880	3906	3932	3958	3984	4010	4036	4062	4088	4114	4140	4166	4192	4218	4244	4270	4296	4322	4348	4374	4400	4426	4452	4478	4504	4530	4556
Detector fuse	**S07**	3751	3777	3803	3829	3855	3881	3907	3933	3959	3985	4011	4037	4063	4089	4115	4141	4167	4193	4219	4245	4271	4297	4323	4349	4375	4401	4427	4453	4479	4505	4531	4557
LAN fail	**S08**	3752	3778	3804	3830	3856	3882	3908	3934	3960	3986	4012	4038	4064	4090	4116	4142	4168	4194	4220	4246	4272	4298	4324	4350	4376	4402	4428	4454	4480	4506	4532	4558
Batt test fail	**S09**	3753	3779	3805	3831	3857	3883	3909	3935	3961	3987	4013	4039	4065	4091	4117	4143	4169	4195	4221	4247	4273	4299	4325	4351	4377	4403	4429	4455	4481	4507	4533	4559
Spare	**S10**	3754	3780	3806	3832	3858	3884	3910	3936	3962	3988	4014	4040	4066	4092	4118	4144	4170	4196	4222	4248	4274	4300	4326	4352	4378	4404	4430	4456	4482	4508	4534	4560

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Int. Reader	**I**																																
Z01		4561	4601	4641	4681	4721	4761	4801	4841	4881	4921	4961	5001	5041	5081	5121	5161	5201	5241	5281	5321	5361	5401	5441	5481	5521	5561	5601	5641	5681	5721	5761	5801
Z02		4562	4602	4642	4682	4722	4762	4802	4842	4882	4922	4962	5002	5042	5082	5122	5162	5202	5242	5282	5322	5362	5402	5442	5482	5522	5562	5602	5642	5682	5722	5762	5802
Z03		4563	4603	4643	4683	4723	4763	4803	4843	4883	4923	4963	5003	5043	5083	5123	5163	5203	5243	5283	5323	5363	5403	5443	5483	5523	5563	5603	5643	5683	5723	5763	5803
Z04		4564	4604	4644	4684	4724	4764	4804	4844	4884	4924	4964	5004	5044	5084	5124	5164	5204	5244	5284	5324	5364	5404	5444	5484	5524	5564	5604	5644	5684	5724	5764	5804
Z05		4565	4605	4645	4685	4725	4765	4805	4845	4885	4925	4965	5005	5045	5085	5125	5165	5205	5245	5285	5325	5365	5405	5445	5485	5525	5565	5605	5645	5685	5725	5765	5805
Z06		4566	4606	4646	4686	4726	4766	4806	4846	4886	4926	4966	5006	5046	5086	5126	5166	5206	5246	5286	5326	5366	5406	5446	5486	5526	5566	5606	5646	5686	5726	5766	5806
Z07		4567	4607	4647	4687	4727	4767	4807	4847	4887	4927	4967	5007	5047	5087	5127	5167	5207	5247	5287	5327	5367	5407	5447	5487	5527	5567	5607	5647	5687	5727	5767	5807
Z08		4568	4608	4648	4688	4728	4768	4808	4848	4888	4928	4968	5008	5048	5088	5128	5168	5208	5248	5288	5328	5368	5408	5448	5488	5528	5568	5608	5648	5688	5728	5768	5808
Z09		4569	4609	4649	4689	4729	4769	4809	4849	4889	4929	4969	5009	5049	5089	5129	5169	5209	5249	5289	5329	5369	5409	5449	5489	5529	5569	5609	5649	5689	5729	5769	5809
Z10		4570	4610	4650	4690	4730	4770	4810	4850	4890	4930	4970	5010	5050	5090	5130	5170	5210	5250	5290	5330	5370	5410	5450	5490	5530	5570	5610	5650	5690	5730	5770	5810
Z11		4571	4611	4651	4691	4731	4771	4811	4851	4891	4931	4971	5011	5051	5091	5131	5171	5211	5251	5291	5331	5371	5411	5451	5491	5531	5571	5611	5651	5691	5731	5771	5811
Z12		4572	4612	4652	4692	4732	4772	4812	4852	4892	4932	4972	5012	5052	5092	5132	5172	5212	5252	5292	5332	5372	5412	5452	5492	5532	5572	5612	5652	5692	5732	5772	5812
Z13		4573	4613	4653	4693	4733	4773	4813	4853	4893	4933	4973	5013	5053	5093	5133	5173	5213	5253	5293	5333	5373	5413	5453	5493	5533	5573	5613	5653	5693	5733	5773	5813
Z14		4574	4614	4654	4694	4734	4774	4814	4854	4894	4934	4974	5014	5054	5094	5134	5174	5214	5254	5294	5334	5374	5414	5454	5494	5534	5574	5614	5654	5694	5734	5774	5814
Z15		4575	4615	4655	4695	4735	4775	4815	4855	4895	4935	4975	5015	5055	5095	5135	5175	5215	5255	5295	5335	5375	5415	5455	5495	5535	5575	5615	5655	5695	5735	5775	5815
Z16		4576	4616	4656	4696	4736	4776	4816	4856	4896	4936	4976	5016	5056	5096	5136	5176	5216	5256	5296	5336	5376	5416	5456	5496	5536	5576	5616	5656	5696	5736	5776	5816
Lock tam D1	**S01**	4577	4617	4657	4697	4737	4777	4817	4857	4897	4937	4977	5017	5057	5097	5137	5177	5217	5257	5297	5337	5377	5417	5457	5497	5537	5577	5617	5657	5697	5737	5777	5817
Lock tamp D2	**S02**	4578	4618	4658	4698	4738	4778	4818	4858	4898	4938	4978	5018	5058	5098	5138	5178	5218	5258	5298	5338	5378	5418	5458	5498	5538	5578	5618	5658	5698	5738	5778	5818
Lock tamp D3	**S03**	4579	4619	4659	4699	4739	4779	4819	4859	4899	4939	4979	5019	5059	5099	5139	5179	5219	5259	5299	5339	5379	5419	5459	5499	5539	5579	5619	5659	5699	5739	5779	5819
Lock tamp D4	**S04**	4580	4620	4660	4700	4740	4780	4820	4860	4900	4940	4980	5020	5060	5100	5140	5180	5220	5260	5300	5340	5380	5420	5460	5500	5540	5580	5620	5660	5700	5740	5780	5820
Dr Forced D1	**S05**	4581	4621	4661	4701	4741	4781	4821	4861	4901	4941	4981	5021	5061	5101	5141	5181	5221	5261	5301	5341	5381	5421	5461	5501	5541	5581	5621	5661	5701	5741	5781	5821
Dr Forced D2	**S06**	4582	4622	4662	4702	4742	4782	4822	4862	4902	4942	4982	5022	5062	5102	5142	5182	5222	5262	5302	5342	5382	5422	5462	5502	5542	5582	5622	5662	5702	5742	5782	5822
Dr Forced D3	**S07**	4583	4623	4663	4703	4743	4783	4823	4863	4903	4943	4983	5023	5063	5103	5143	5183	5223	5263	5303	5343	5383	5423	5463	5503	5543	5583	5623	5663	5703	5743	5783	5823
Dr Forced D4	**S08**	4584	4624	4664	4704	4744	4784	4824	4864	4904	4944	4984	5024	5064	5104	5144	5184	5224	5264	5304	5344	5384	5424	5464	5504	5544	5584	5624	5664	5704	5744	5784	5824
Door Held D1	**S09**	4585	4625	4665	4705	4745	4785	4825	4865	4905	4945	4985	5025	5065	5105	5145	5185	5225	5265	5305	5345	5385	5425	5465	5505	5545	5585	5625	5665	5705	5745	5785	5825
Door Held D2	**S10**	4586	4626	4666	4706	4746	4786	4826	4866	4906	4946	4986	5026	5066	5106	5146	5186	5226	5266	5306	5346	5386	5426	5466	5506	5546	5586	5626	5666	5706	5746	5786	5826
Door Held D3	**S11**	4587	4627	4667	4707	4747	4787	4827	4867	4907	4947	4987	5027	5067	5107	5147	5187	5227	5267	5307	5347	5387	5427	5467	5507	5547	5587	5627	5667	5707	5747	5787	5827
Door Held D4	**S12**	4588	4628	4668	4708	4748	4788	4828	4868	4908	4948	4988	5028	5068	5108	5148	5188	5228	5268	5308	5348	5388	5428	5468	5508	5548	5588	5628	5668	5708	5748	5788	5828
Illegal Card D1	**S13**	4589	4629	4669	4709	4749	4789	4829	4869	4909	4949	4989	5029	5069	5109	5149	5189	5229	5269	5309	5349	5389	5429	5469	5509	5549	5589	5629	5669	5709	5749	5789	5829
Illegal Card D2	**S14**	4590	4630	4670	4710	4750	4790	4830	4870	4910	4950	4990	5030	5070	5110	5150	5190	5230	5270	5310	5350	5390	5430	5470	5510	5550	5590	5630	5670	5710	5750	5790	5830
Illegal Card D3	**S15**	4591	4631	4671	4711	4751	4791	4831	4871	4911	4951	4991	5031	5071	5111	5151	5191	5231	5271	5311	5351	5391	5431	5471	5511	5551	5591	5631	5671	5711	5751	5791	5831
Illegal Card D4	**S16**	4592	4632	4672	4712	4752	4792	4832	4872	4912	4952	4992	5032	5072	5112	5152	5192	5232	5272	5312	5352	5392	5432	5472	5512	5552	5592	5632	5672	5712	5752	5792	5832
Cabinet tamp	**S17**	4593	4633	4673	4713	4753	4793	4833	4873	4913	4953	4993	5033	5073	5113	5153	5193	5233	5273	5313	5353	5393	5433	5473	5513	5553	5593	5633	5673	5713	5753	5793	5833
Gen lock fault	**S18**	4594	4634	4674	4714	4754	4794	4834	4874	4914	4954	4994	5034	5074	5114	5154	5194	5234	5274	5314	5354	5394	5434	5474	5514	5554	5594	5634	5674	5714	5754	5794	5834
Batt test fail	**S19**	4595	4635	4675	4715	4755	4795	4835	4875	4915	4955	4995	5035	5075	5115	5155	5195	5235	5275	5315	5355	5395	5435	5475	5515	5555	5595	5635	5675	5715	5755	5795	5835
AC fail.	**S20**	4596	4636	4676	4716	4756	4796	4836	4876	4916	4956	4996	5036	5076	5116	5156	5196	5236	5276	5316	5356	5396	5436	5476	5516	5556	5596	5636	5676	5716	5756	5796	5836
Low battery.	**S21**	4597	4637	4677	4717	4757	4797	4837	4877	4917	4957	4997	5037	5077	5117	5157	5197	5237	5277	5317	5357	5397	5437	5477	5517	5557	5597	5637	5677	5717	5757	5797	5837
LAN fuse	**S22**	4598	4638	4678	4718	4758	4798	4838	4878	4918	4958	4998	5038	5078	5118	5158	5198	5238	5278	5318	5358	5398	5438	5478	5518	5558	5598	5638	5678	5718	5758	5798	5838
Detector fuse	**S23**	4599	4639	4679	4719	4759	4799	4839	4879	4919	4959	4999	5039	5079	5119	5159	5199	5239	5279	5319	5359	5399	5439	5479	5519	5559	5599	5639	5679	5719	5759	5799	5839
LAN fail	**S24**	4600	4640	4680	4720	4760	4800	4840	4880	4920	4960	5000	5040	5080	5120	5160	5200	5240	5280	5320	5360	5400	5440	5480	5520	5560	5600	5640	5680	5720	5760	5800	5840

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		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Analogue	**Q**																																
Z01		5841	5850	5859	5868	5877	5886	5895	5904	5913	5922	5931	5940	5949	5958	5967	5976	5985	5994	6003	6012	6021	6030	6039	6048	6057	6066	6075	6084	6093	6102	6111	6120
Z02		5842	5851	5860	5869	5878	5887	5896	5905	5914	5923	5932	5941	5950	5959	5968	5977	5986	5995	6004	6013	6022	6031	6040	6049	6058	6067	6076	6085	6094	6103	6112	6121
Z03		5843	5852	5861	5870	5879	5888	5897	5906	5915	5924	5933	5942	5951	5960	5969	5978	5987	5996	6005	6014	6023	6032	6041	6050	6059	6068	6077	6086	6095	6104	6113	6122
Z04		5844	5853	5862	5871	5880	5889	5898	5907	5916	5925	5934	5943	5952	5961	5970	5979	5988	5997	6006	6015	6024	6033	6042	6051	6060	6069	6078	6087	6096	6105	6114	6123
Z05		5845	5854	5863	5872	5881	5890	5899	5908	5917	5926	5935	5944	5953	5962	5971	5980	5989	5998	6007	6016	6025	6034	6043	6052	6061	6070	6079	6088	6097	6106	6115	6124
Z06		5846	5855	5864	5873	5882	5891	5900	5909	5918	5927	5936	5945	5954	5963	5972	5981	5990	5999	6008	6017	6026	6035	6044	6053	6062	6071	6080	6089	6098	6107	6116	6125
Cabinet tamp	**S01**	5847	5856	5865	5874	5883	5892	5901	5910	5919	5928	5937	5946	5955	5964	5973	5982	5991	6000	6009	6018	6027	6036	6045	6054	6063	6072	6081	6090	6099	6108	6117	6126
Low Volts	**S02**	5848	5857	5866	5875	5884	5893	5902	5911	5920	5929	5938	5947	5956	5965	5974	5983	5992	6001	6010	6019	6028	6037	6046	6055	6064	6073	6082	6091	6100	6109	6118	6127
LAN fail	**S03**	5849	5858	5867	5876	5885	5894	5903	5912	5921	5930	5939	5948	5957	5966	5975	5984	5993	6002	6011	6020	6029	6038	6047	6056	6065	6074	6083	6092	6101	6110	6119	6128
LAN Pwr Sup	**P**																																
Z01		6769	6787	6805	6823	6841	6859	6877	6895	6913	6931	6949	6967	6985	7003	7021	7039	7057	7075	7093	7111	7129	7147	7165	7183	7201	7219	7237	7255	7273	7291	7309	7327
Z02		6770	6788	6806	6824	6842	6860	6878	6896	6914	6932	6950	6968	6986	7004	7022	7040	7058	7076	7094	7112	7130	7148	7166	7184	7202	7220	7238	7256	7274	7292	7310	7328
Cabinet tamp	**S01**	6771	6789	6807	6825	6843	6861	6879	6897	6915	6933	6951	6969	6987	7005	7023	7041	7059	7077	7095	7113	7131	7149	7167	7185	7203	7221	7239	7257	7275	7293	7311	7329
AC fail.	**S02**	6772	6790	6808	6826	6844	6862	6880	6898	6916	6934	6952	6970	6988	7006	7024	7042	7060	7078	7096	7114	7132	7150	7168	7186	7204	7222	7240	7258	7276	7294	7312	7330
Low battery.	**S03**	6773	6791	6809	6827	6845	6863	6881	6899	6917	6935	6953	6971	6989	7007	7025	7043	7061	7079	7097	7115	7133	7151	7169	7187	7205	7223	7241	7259	7277	7295	7313	7331
Battery Fail	**S04**	6774	6792	6810	6828	6846	6864	6882	6900	6918	6936	6954	6972	6990	7008	7026	7044	7062	7080	7098	7116	7134	7152	7170	7188	7206	7224	7242	7260	7278	7296	7314	7332
Detector fuse	**S05**	6775	6793	6811	6829	6847	6865	6883	6901	6919	6937	6955	6973	6991	7009	7027	7045	7063	7081	7099	7117	7135	7153	7171	7189	7207	7225	7243	7261	7279	7297	7315	7333
LAN fuse	**S06**	6776	6794	6812	6830	6848	6866	6884	6902	6920	6938	6956	6974	6992	7010	7028	7046	7064	7082	7100	7118	7136	7154	7172	7190	7208	7226	7244	7262	7280	7298	7316	7334
Battery Fuse	**S07**	6777	6795	6813	6831	6849	6867	6885	6903	6921	6939	6957	6975	6993	7011	7029	7047	7065	7083	7101	7119	7137	7155	7173	7191	7209	7227	7245	7263	7281	7299	7317	7335
Aux 2 Fuse	**S08**	6778	6796	6814	6832	6850	6868	6886	6904	6922	6940	6958	6976	6994	7012	7030	7048	7066	7084	7102	7120	7138	7156	7174	7192	7210	7228	7246	7264	7282	7300	7318	7336
Aux 2 Tamper	**S09**	6779	6797	6815	6833	6851	6869	6887	6905	6923	6941	6959	6977	6995	7013	7031	7049	7067	7085	7103	7121	7139	7157	7175	7193	7211	7229	7247	7265	7283	7301	7319	7337
Det Over Curr	**S10**	6780	6798	6816	6834	6852	6870	6888	6906	6924	6942	6960	6978	6996	7014	7032	7050	7068	7086	7104	7122	7140	7158	7176	7194	7212	7230	7248	7266	7284	7302	7320	7338
Batt Over Curr	**S11**	6781	6799	6817	6835	6853	6871	6889	6907	6925	6943	6961	6979	6997	7015	7033	7051	7069	7087	7105	7123	7141	7159	7177	7195	7213	7231	7249	7267	7285	7303	7321	7339
Over Volts	**S12**	6782	6800	6818	6836	6854	6872	6890	6908	6926	6944	6962	6980	6998	7016	7034	7052	7070	7088	7106	7124	7142	7160	7178	7196	7214	7232	7250	7268	7286	7304	7322	7340
Low Volts	**S13**	6783	6801	6819	6837	6855	6873	6891	6909	6927	6945	6963	6981	6999	7017	7035	7053	7071	7089	7107	7125	7143	7161	7179	7197	7215	7233	7251	7269	7287	7305	7323	7341
Slave Fail	**S14**	6784	6802	6820	6838	6856	6874	6892	6910	6928	6946	6964	6982	7000	7018	7036	7054	7072	7090	7108	7126	7144	7162	7180	7198	7216	7234	7252	7270	7288	7306	7324	7342
Batt test fail	**S15**	6785	6803	6821	6839	6857	6875	6893	6911	6929	6947	6965	6983	7001	7019	7037	7055	7073	7091	7109	7127	7145	7163	7181	7199	7217	7235	7253	7271	7289	7307	7325	7343
LAN fail	**S16**	6786	6804	6822	6840	6858	6876	6894	6912	6930	6948	6966	6984	7002	7020	7038	7056	7074	7092	7110	7128	7146	7164	7182	7200	7218	7236	7254	7272	7290	7308	7326	7344
RF Expander	**F**																																
Z01		7345	7383	7421	7459	7497	7535	7573	7611	7649	7687	7725	7763	7801	7839	7877	7915	7953	7991	8029	8067	8105	8143	8181	8219	8257	8295	8333	8371	8409	8447	8485	8523
Z02		7346	7384	7422	7460	7498	7536	7574	7612	7650	7688	7726	7764	7802	7840	7878	7916	7954	7992	8030	8068	8106	8144	8182	8220	8258	8296	8334	8372	8410	8448	8486	8524
Z03		7347	7385	7423	7461	7499	7537	7575	7613	7651	7689	7727	7765	7803	7841	7879	7917	7955	7993	8031	8069	8107	8145	8183	8221	8259	8297	8335	8373	8411	8449	8487	8525
Z04		7348	7386	7424	7462	7500	7538	7576	7614	7652	7690	7728	7766	7804	7842	7880	7918	7956	7994	8032	8070	8108	8146	8184	8222	8260	8298	8336	8374	8412	8450	8488	8526
Z05		7349	7387	7425	7463	7501	7539	7577	7615	7653	7691	7729	7767	7805	7843	7881	7919	7957	7995	8033	8071	8109	8147	8185	8223	8261	8299	8337	8375	8413	8451	8489	8527
Z06		7350	7388	7426	7464	7502	7540	7578	7616	7654	7692	7730	7768	7806	7844	7882	7920	7958	7996	8034	8072	8110	8148	8186	8224	8262	8300	8338	8376	8414	8452	8490	8528
Z07		7351	7389	7427	7465	7503	7541	7579	7617	7655	7693	7731	7769	7807	7845	7883	7921	7959	7997	8035	8073	8111	8149	8187	8225	8263	8301	8339	8377	8415	8453	8491	8529
Z08		7352	7390	7428	7466	7504	7542	7580	7618	7656	7694	7732	7770	7808	7846	7884	7922	7960	7998	8036	8074	8112	8150	8188	8226	8264	8302	8340	8378	8416	8454	8492	8530
Z09		7353	7391	7429	7467	7505	7543	7581	7619	7657	7695	7733	7771	7809	7847	7885	7923	7961	7999	8037	8075	8113	8151	8189	8227	8265	8303	8341	8379	8417	8455	8493	8531
Z10		7354	7392	7430	7468	7506	7544	7582	7620	7658	7696	7734	7772	7810	7848	7886	7924	7962	8000	8038	8076	8114	8152	8190	8228	8266	8304	8342	8380	8418	8456	8494	8532
Z11		7355	7393	7431	7469	7507	7545	7583	7621	7659	7697	7735	7773	7811	7849	7887	7925	7963	8001	8039	8077	8115	8153	8191	8229	8267	8305	8343	8381	8419	8457	8495	8533
Z12		7356	7394	7432	7470	7508	7546	7584	7622	7660	7698	7736	7774	7812	7850	7888	7926	7964	8002	8040	8078	8116	8154	8192	8230	8268	8306	8344	8382	8420	8458	8496	8534
Z13		7357	7395	7433	7471	7509	7547	7585	7623	7661	7699	7737	7775	7813	7851	7889	7927	7965	8003	8041	8079	8117	8155	8193	8231	8269	8307	8345	8383	8421	8459	8497	8535
Z14		7358	7396	7434	7472	7510	7548	7586	7624	7662	7700	7738	7776	7814	7852	7890	7928	7966	8004	8042	8080	8118	8156	8194	8232	8270	8308	8346	8384	8422	8460	8498	8536
Z15		7359	7397	7435	7473	7511	7549	7587	7625	7663	7701	7739	7777	7815	7853	7891	7929	7967	8005	8043	8081	8119	8157	8195	8233	8271	8309	8347	8385	8423	8461	8499	8537
Z16		7360	7398	7436	7474	7512	7550	7588	7626	7664	7702	7740	7778	7816	7854	7892	7930	7968	8006	8044	8082	8120	8158	8196	8234	8272	8310	8348	8386	8424	8462	8500	8538

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Z17		7361	7399	7437	7475	7513	7551	7589	7627	7665	7703	7741	7779	7817	7855	7893	7931	7969	8007	8045	8083	8121	8159	8197	8235	8273	8311	8349	8387	8425	8463	8501	8539
Z18		7362	7400	7438	7476	7514	7552	7590	7628	7666	7704	7742	7780	7818	7856	7894	7932	7970	8008	8046	8084	8122	8160	8198	8236	8274	8312	8350	8388	8426	8464	8502	8540
Z19		7363	7401	7439	7477	7515	7553	7591	7629	7667	7705	7743	7781	7819	7857	7895	7933	7971	8009	8047	8085	8123	8161	8199	8237	8275	8313	8351	8389	8427	8465	8503	8541
Z20		7364	7402	7440	7478	7516	7554	7592	7630	7668	7706	7744	7782	7820	7858	7896	7934	7972	8010	8048	8086	8124	8162	8200	8238	8276	8314	8352	8390	8428	8466	8504	8542
Z21		7365	7403	7441	7479	7517	7555	7593	7631	7669	7707	7745	7783	7821	7859	7897	7935	7973	8011	8049	8087	8125	8163	8201	8239	8277	8315	8353	8391	8429	8467	8505	8543
Z22		7366	7404	7442	7480	7518	7556	7594	7632	7670	7708	7746	7784	7822	7860	7898	7936	7974	8012	8050	8088	8126	8164	8202	8240	8278	8316	8354	8392	8430	8468	8506	8544
Z23		7367	7405	7443	7481	7519	7557	7595	7633	7671	7709	7747	7785	7823	7861	7899	7937	7975	8013	8051	8089	8127	8165	8203	8241	8279	8317	8355	8393	8431	8469	8507	8545
Z24		7368	7406	7444	7482	7520	7558	7596	7634	7672	7710	7748	7786	7824	7862	7900	7938	7976	8014	8052	8090	8128	8166	8204	8242	8280	8318	8356	8394	8432	8470	8508	8546
Z25		7369	7407	7445	7483	7521	7559	7597	7635	7673	7711	7749	7787	7825	7863	7901	7939	7977	8015	8053	8091	8129	8167	8205	8243	8281	8319	8357	8395	8433	8471	8509	8547
Z26		7370	7408	7446	7484	7522	7560	7598	7636	7674	7712	7750	7788	7826	7864	7902	7940	7978	8016	8054	8092	8130	8168	8206	8244	8282	8320	8358	8396	8434	8472	8510	8548
Z27		7371	7409	7447	7485	7523	7561	7599	7637	7675	7713	7751	7789	7827	7865	7903	7941	7979	8017	8055	8093	8131	8169	8207	8245	8283	8321	8359	8397	8435	8473	8511	8549
Z28		7372	7410	7448	7486	7524	7562	7600	7638	7676	7714	7752	7790	7828	7866	7904	7942	7980	8018	8056	8094	8132	8170	8208	8246	8284	8322	8360	8398	8436	8474	8512	8550
Z29		7373	7411	7449	7487	7525	7563	7601	7639	7677	7715	7753	7791	7829	7867	7905	7943	7981	8019	8057	8095	8133	8171	8209	8247	8285	8323	8361	8399	8437	8475	8513	8551
Z30		7374	7412	7450	7488	7526	7564	7602	7640	7678	7716	7754	7792	7830	7868	7906	7944	7982	8020	8058	8096	8134	8172	8210	8248	8286	8324	8362	8400	8438	8476	8514	8552
Z31		7375	7413	7451	7489	7527	7565	7603	7641	7679	7717	7755	7793	7831	7869	7907	7945	7983	8021	8059	8097	8135	8173	8211	8249	8287	8325	8363	8401	8439	8477	8515	8553
Z32		7376	7414	7452	7490	7528	7566	7604	7642	7680	7718	7756	7794	7832	7870	7908	7946	7984	8022	8060	8098	8136	8174	8212	8250	8288	8326	8364	8402	8440	8478	8516	8554
Cabinet Tamper	**S01**	7377	7415	7453	7491	7529	7567	7605	7643	7681	7719	7757	7795	7833	7871	7909	7947	7985	8023	8061	8099	8137	8175	8213	8251	8289	8327	8365	8403	8441	8479	8517	8555
Low Volts	**S02**	7378	7416	7454	7492	7530	7568	7606	7644	7682	7720	7758	7796	7834	7872	7910	7948	7986	8024	8062	8100	8138	8176	8214	8252	8290	8328	8366	8404	8442	8480	8518	8556
Trans Low Batt	**S03**	7379	7417	7455	7493	7531	7569	7607	7645	7683	7721	7759	7797	7835	7873	7911	7949	7987	8025	8063	8101	8139	8177	8215	8253	8291	8329	8367	8405	8443	8481	8519	8557
Trans Poll Fail	**S04**	7380	7418	7456	7494	7532	7570	7608	7646	7684	7722	7760	7798	7836	7874	7912	7950	7988	8026	8064	8102	8140	8178	8216	8254	8292	8330	8368	8406	8444	8482	8520	8558
Trans Jam	**S05**	7381	7419	7457	7495	7533	7571	7609	7647	7685	7723	7761	7799	7837	7875	7913	7951	7989	8027	8065	8103	8141	8179	8217	8255	8293	8331	8369	8407	8445	8483	8521	8559
LAN Fail	**S06**	7382	7420	7458	7496	7534	7572	7610	7648	7686	7724	7762	7800	7838	7876	7914	7952	7990	8028	8066	8104	8142	8180	8218	8256	8294	8332	8370	8408	8446	8484	8522	8560

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Model 3000

&

ACCESS 4000

Type 2 Control Module 995001 / 995002

SECURITY, ACCESS CONTROL & BUILDING AUTOMATION SYSTEM

INSTALLATION MANUAL

OVERVIEW

The 3000/Access 4000 provides the next generation in Access Control, Security and Building Automation Systems.

MODULAR DESIGN & EXPANDABILITY Modular hardware design provides the ability to adapt and expand a system to cater for virtually any configuration or application required - small or large. Large numbers of LCD Terminals, Input/Output Expanders and Access Control Modules can share a secure, monitored LAN system utilizing a fast, efficient communications format. Using the recommended cabling, modules on the LAN can be installed hundreds of metres from the Control Module. With the current range of modules available, this arrangement can provide over 2000 Zone inputs and over 2000 Auxiliaries on a single system.

THE MODULES. The heart of the system is the Control Module. This unit stores all data, communicates with all other modules connected to the system LAN, and reports alarms and system activity to the Central Station via Dialer, Direct Line, GSM modem and other formats. To program and operate the system an Elite LCD Terminal or any of the PC based system management tools mentioned below are normally used. The LCD Terminal provides a 20 key backlit keypad, a backlit Liquid Crystal Display and connections for several Zone Inputs and Auxiliary outputs.
Universal Zone Expanders are used to provide additional Inputs (16 or 32), Sirens and Auxiliary Outputs (8 to 32) in a system and can be installed remotely in suitable locations to greatly reduce the amount of cabling required to detectors and output devices. The Mini Expander Module provides low cost expansion when up to 8 Zones and Auxiliaries are required along with special event counting options (Event Counting available V3 or later).
Door and Lift Access Modules are installed near the Door/s or in Lift Cars to provide Reader interfacing plus all the Inputs and outputs for complete monitoring and control of the Door/s and/or Lifts.
The Analogue Module allows analogue values to be monitored and set points used for trigger control and/or report functions.

SYSTEM MANAGEMENT. Upload/Download software is available for system Programming and Management, allowing the option of local or remote connection with operator password protection. Windows based system management software is also available incorporating dynamic graphics capabilities and sophisticated monitoring and report generation facilites.

INSTALLER PIN CODE.

The Default Installer PIN Code is 01.
This default PIN Code should be changed by the Installer as soon as possible. i.e. As soon as programming commences.

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Electrical Specifications

Power Supply Input:	Transformer Input Voltage:	240V AC -10% / +10%. 50 Hertz.
	Transformer Output Voltage:	16.5V AC. 50 Hertz.
	Current Consumption:	Maximum 500 milliAmps from 240V AC Source.
	Fuse Protection:	Separate AC mains input fuse. 500 milliAmps. M205 (20mm) (Units made prior to September 2000 have an 8AG -25mm fuse)
	PCB AC Input Voltage:	16 to 18V AC. 50 Hertz.
	Battery Capacity:	12V 6.5 AH. Sealed Lead Acid Battery.
	Battery Input Fuse:	5 Amperes.
Power Supply Output:	Current:	Total combined current required by devices connected to LAN "POS" and "DET+" must not exceed:
	- 4A Transformer:	1.2 Amperes.
	- 1.5A Plug pack	800mA.
	Fuse Protection:	Separate 2 Ampere fuses provided for: Siren1, Siren2, LAN Power & Detector Power.

ALWAYS REPLACE FUSES WITH THE SAME FUSE TYPE AND VALUE!

NOTE: *See data supplied with detectors and output devices for actual current consumption of items connected to the module.*

Mechanical Specifications

Dimensions:	Length: 435 mm. Width: 320 mm. Depth: 112 mm.
Weight:	9.5 k.g. (Includes mains transformer, battery and cover.)
	7.3 k.g. (No mains transformer. Includes battery and cover.)

Installing your Model 3000 / Access 4000 system.

Control Module Parts List

- Control Module PCB mounted on metal chassis in metal box.
- Tamper switch bracket.
- Telephone line cable. Notes: Non-standard configuration. Only suitable for use with this product. Not supplied in all countries.
- Installation Kit containing:
  - 9 x plastic “D” bungs. Must be fitted to all unused cable entry cutouts in the cover.
  - 1 x Special AC Powercord entry “D” bung.
  - 6 x 8 Way plug-on screw terminals.
  - 8 x 2 Way plug-on screw terminals.
  - Tamper switch.
  - Tamper switch bracket.
  - 2 x 6.3mm Tamper switch connectors.
  - 1 x 40cm 2-way Battery connection cable with 4.8mm Battery terminal connectors.
  - 1 x 2 Amp M205 (20mm) Fuse. (Spare)
  - 20 x 2k2 End-of-line resistors. 16 x Zone Inputs, 4 x Spare. (red-red-black-brown-brown)
  - 20 x 6k8 End-of-line resistors. 16 x Zone Inputs, 4 x Spare. (blue-grey-black-brown-brown)
  - 8 x M4 x 10mm PAN Head screws.
  - 1 x Jumper Link 0.1”.
- Spiral bound User Manual.
- User’s Quick Reference Card. (4 page booklet)
- Installation Manual. (This document)

AC Supply:
The Controller is supplied with one of the following AC supply options:
-Internal 4Amp Power Transformer with associated mounting, interconnection and fuse hardware.
-1.5Amp Plug Pack.

In countries where a Mains input cable is required and is not pre-fitted, the following parts are also supplied:

- 1 x Plastic Cable grommet.
- Sufficient mounting screws to assemble all parts to housing.

INSTALLATION AND SAFETY INSTRUCTIONS

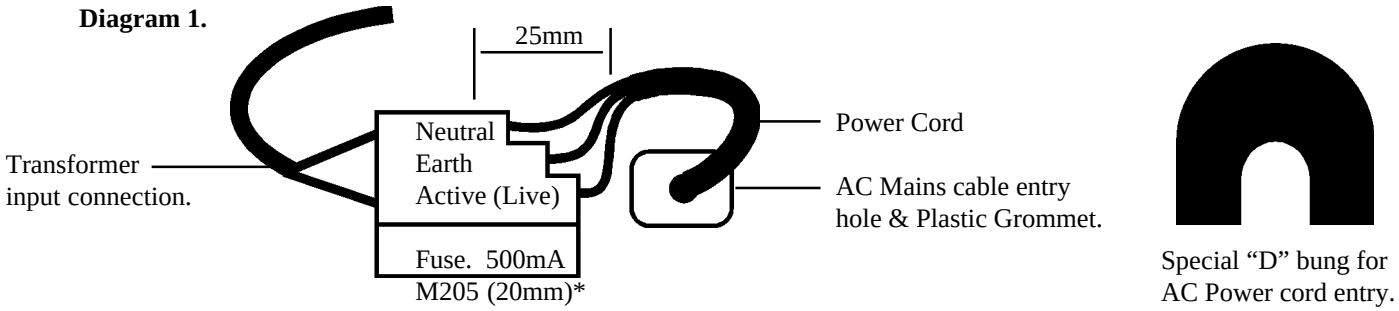
Electrical AC Mains Power connection.
(Only applicable to models fitted with an internal AC Mains Transformer)

In countries where the module is supplied without a mains power cord, a suitable mains power cord for connection to the 240V AC Mains supply must be installed by a suitably qualified electrician or technician.

1. Strip 30mm of the sheath from the end of the power cord. Trim 5mm from the ends of the Active and Neutral conductors so that the Earth conductor remains slightly longer.
2. Strip 5mm of insulation from each of the conductors. (Units manufactured prior to September 2000 used a terminal block with no wire protection leaf and must have conductive sleeves fitted to the exposed ends of the conductors)
3. Feed at least 150mm of the power cord through the AC mains cable entry hole from the rear (underside) of the chassis.
4. Terminate the power cord in the terminal and fuse block as illustrated in Diagram 1 below. (Note that the Active wire is always connected into the termination nearest to the fuse)
5. Determine the appropriate length of power cord between the terminal block and the cable entry hole. (Approx. 100mm) Working from the rear of the chassis, fit the plastic grommet (supplied) around the power cord and apply pressure to both sides of the grommet to clamp the cable. The grommet can now be inserted into the AC mains cable entry hole.
6. When fitting the cover, ensure that the special AC Powercord "D" bung is fitted to the cable entry cutout in the cover where the AC Powercord enters the enclosure. Standard "D" bungs must be fitted to <u>all</u> other unused cable entry cutouts.

IMPORTANT NOTE: An AC Mains socket-outlet shall be installed near the equipment and shall be easily accessible for connection of the mains power cord.

Diagram 1.



*Note: Units manufactured prior to September 2000 have terminal blocks that utilise an 8AG (25mm) fuse.

Mounting the Unit. See Diagram 2.

1. Installation environment should be maintained at a temperature of 0º to 40º Celsius and 15% to 85% Relative humidity (non-condensing)
2. CE Control Modules are supplied in metal enclosures which must be secured to a flat, vertical surface using fasteners through the four "keyhole" mounting holes in the chassis.
3. <u>When mounting this product onto flammable surfaces, a fire protection backplate MUST BE INSTALLED</u>. The mounting holes in the backplate align with the mounting holes in the chassis so no additional mounting hardware is required. Standard "D" Bungs must be fitted to <u>all</u> unused cable entry cutouts.
   This backplate is available from your distributor. Please quote part number 925010.
4. The tamper switch bracket must be positioned through one of the slots in either side of the chassis and under the base of the chassis, <u>before</u> the chassis is secured to the wall.
5. Orientation of the enclosure MUST be as per either of the illustrations in Diagram 2.

Connecting Power to the PCB. See Diagram 2 below.

IF INTERNAL MAINS TRANSFORMER FITTED.

1. Measure and cut two appropriate lengths of insulated cable to connect between the AC mains transformer output terminal block (A) and the "AC" Input connections on the PCB (B).
2. Strip 5mm of insulation from both ends of the cables and terminate into the transformer output terminal block and then into the "AC" Input connections on the PCB. The cables may be routed underneath the chassis to avoid interference with other cables.

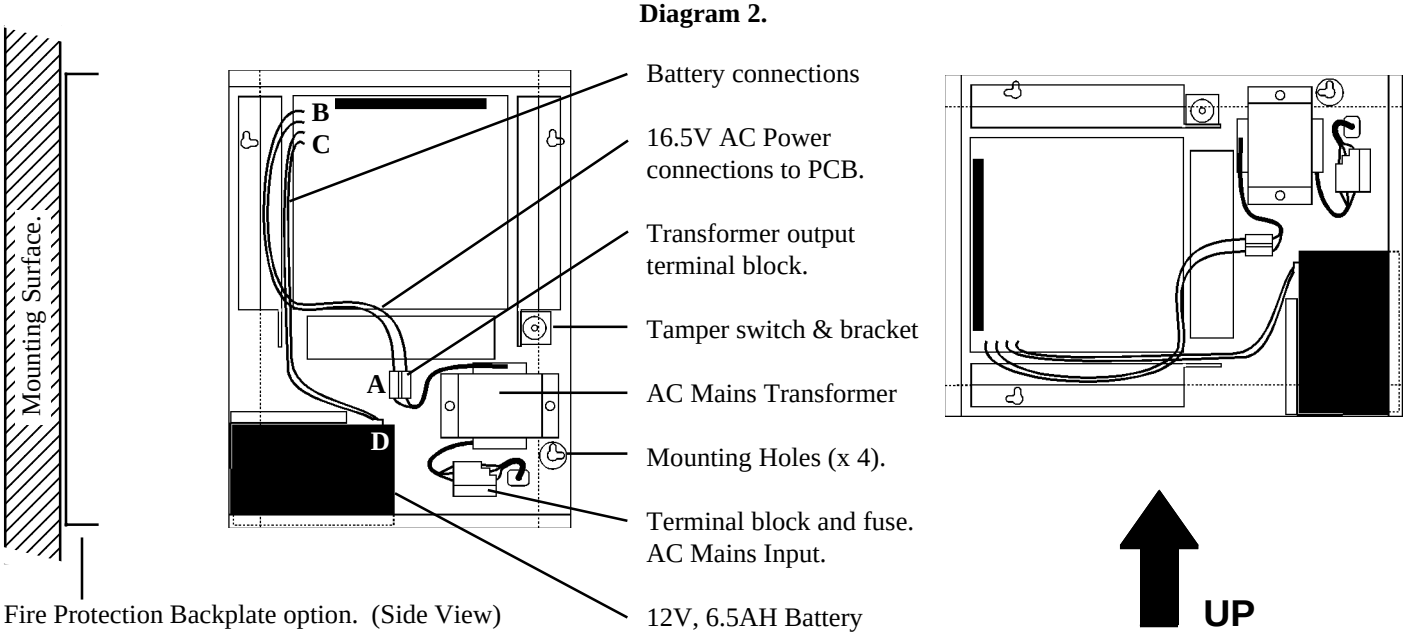
IF PLUG PACK SUPPLIED.

1. Feed the 16V AC cable from the plug pack into the underside of the chassis and up through the cable entry hole beside the AC input terminals. Ensure that 5mm of insulation is stripped from the end of the cables and terminate into the "AC" Input connections on the PCB (B).
2. When fitting the cover, ensure that the special AC Powercord "D" bung is fitted to the cable entry cutout in the cover where the Plug Pack cable enters the enclosure. Standard "D" bungs must be fitted to all other unused cable entry cutouts.

Connecting the Battery to the PCB. See Diagram 2 below.

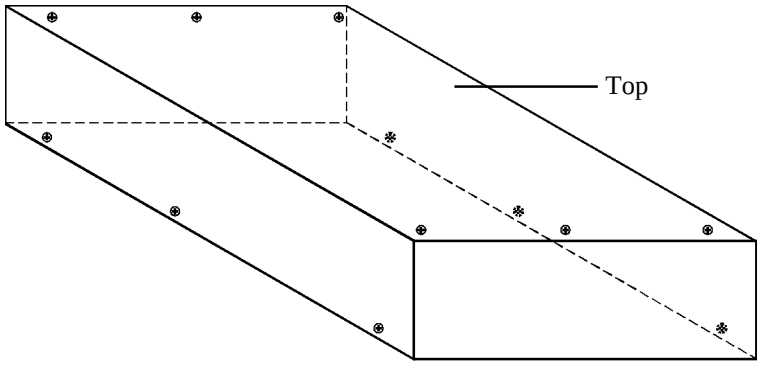
1. Measure and cut two appropriate lengths of insulated cable to connect between the "+B" and "-B" connections on the PCB (C) and the Battery terminals (D).
2. Strip 5mm of insulation from both ends of the cables and terminate one end into the "+B" and "-B" connections on the PCB. IMPORTANT NOTE: There are two terminals provided for each of the "+B" and "-B" connections. Ensure that each cable is connected to the correct terminal to avoid creating a short circuit across the Battery.
3. Terminate the other end of the cables into the 4.8mm Battery Terminal connectors supplied in the installation kit. The cables may be routed underneath the chassis to avoid interference with other cables.

Diagram 2.



Fire Protection Backplate option. (Side View)

Diagram 3.



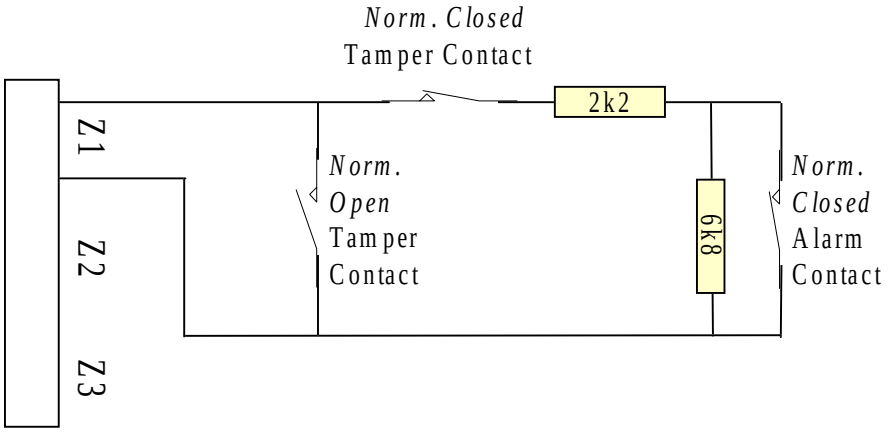
Fitting the Cover.

In order to comply with regulations, all twelve (12) of the screws provided to fix the cover to the chassis must be tightly secured. Three screws are located on each of the long sides, and at each end of the top of the cover as illustrated in Diagram 3 opposite.

Wiring Diagrams

ZONE INPUT WIRING

Typical Detection devices with *Normally Closed* Alarm contacts and *Normally Closed* **OR** *Normally Open* Tamper Contacts are wired as follows:



INPUT STATES:		
2k2	=	Sealed
9k (2k2 + 6k8)	=	Unsealed (or Alarm)
Open Circuit	=	Tamper
Short Circuit	=	Tamper

Detection devices with *Normally Open* Alarm contacts are wired in exactly the same manner as above. When programming the Zone Input, however, the option to "**S**wap Seal and Alarm conditions" must be set to [Y]es.

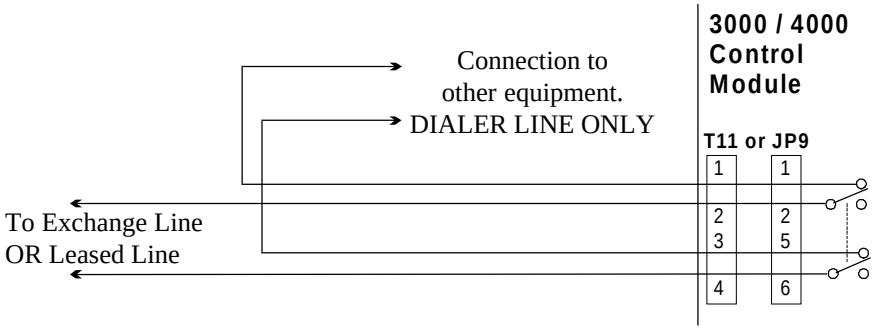
e.g.

E01:Z01	X S R A N T . .
Options ->	n Y n n n n n n

TELECOMMUNICATIONS WIRING

Mode 3 wiring diagram for Dialer reporting formats. (e.g. Contact ID, 4+2, IRfast, etc.)

Other equipment such as a telephone, fax machine or answering machine may share the Dialer line connection. If so, the telecom connection must be wired as shown to ensure that the system has priority use of the line so that alarm reporting is not compromised.



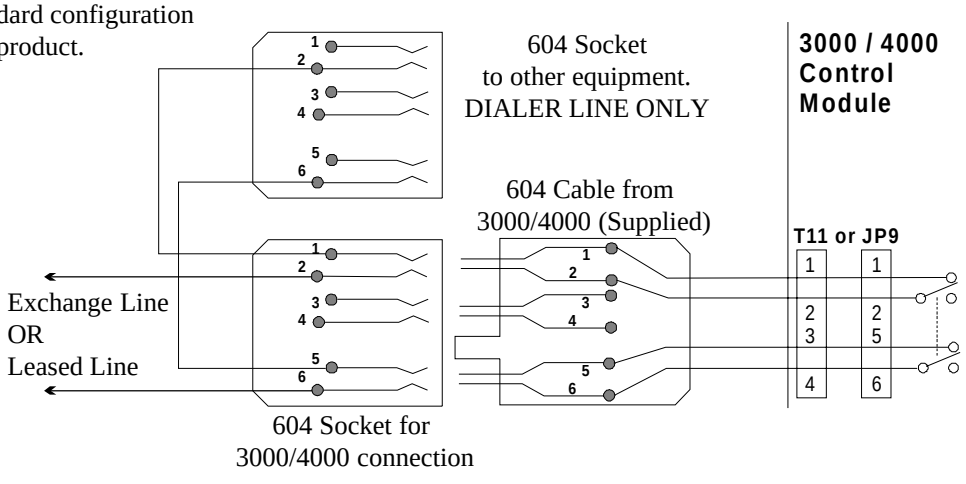
"604" Plug & socket wiring. (Australia Only)
NOTE: Cable supplied is a non-standard configuration and is only suitable for use with this product.

Dialer Line

Phone Line IN: Pins 2 & 6
Phone Line OUT: Pins 1 & 5

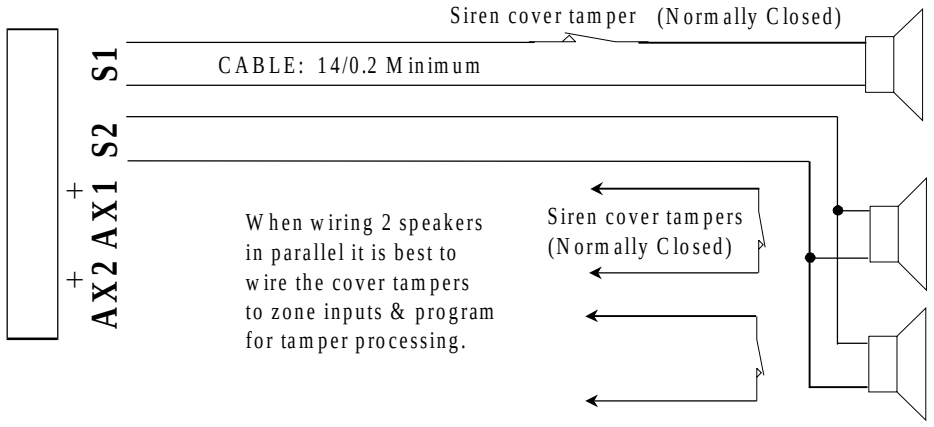
Direct Line

For Direct Line formats (e.g. EarthNet), the Leased Line connects to Pins 2 & 6.



SIREN WIRING

Maximum of two 8 Ohm Siren speakers may be connected to each siren driver, wired in parallel. Norm. Closed Siren cover Tampers may be wired in series with the speaker cable. This method utilizes the siren speaker circuit monitoring.

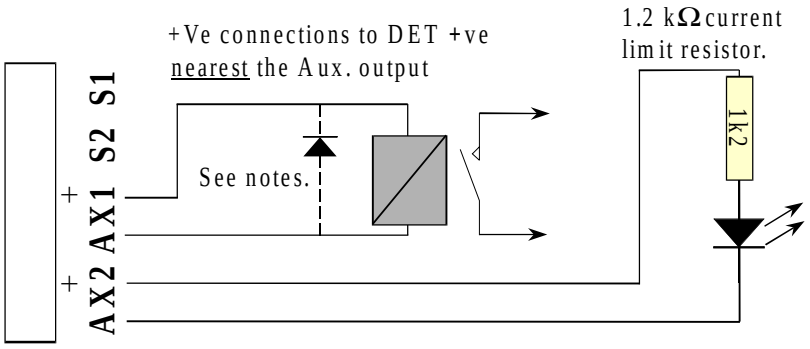


NOTE:
If high-impedance devices such as Piezo Siren speakers are used, a 6k8 Resistor should be installed across the device to Seal the "Siren Tamper" System Input.

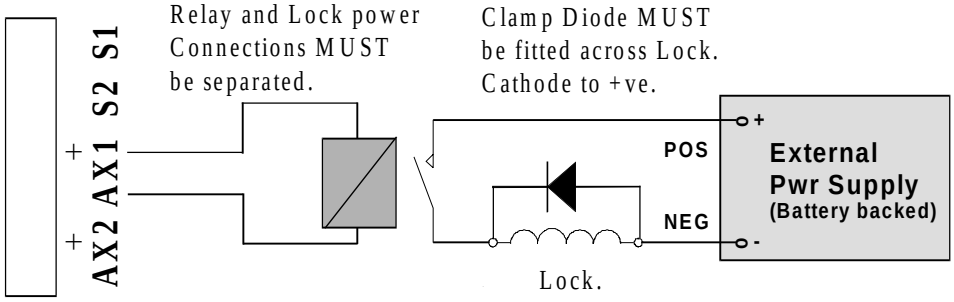
AUXILIARY WIRING

Rules for Auxiliary wiring on any module in the 3000/Access 4000 system.

- Auxiliaries 1 & 2 on the Control Module & Expander Modules can switch up to 500mA continuous and are suitable for inductive loads provided that a clamp diode is fitted across the load as shown below.
- Max current on any other individual Auxiliary must be less than 200mA.
- On any module with Plug pack; Auxiliaries + LAN current + Detectors must be less than 700mA, or an external power supply should be used.
- The Positive of the device must be wired to the Positive connection nearest the Auxiliary. i.e. On the same module.
- If an external power supply is used to power the device, a good common Negative connection MUST exist between the power supply and the module.
- Clamp diode should be fitted across inductive loads. Cathode (bar) to +ve.



Locks are activated via a relay. External power supply is used for lock power to prevent voltage spikes reaching the Concept equipment, provide longer battery backup & minimise the possibility of earth loops.



LINKS. *See pages 10 & 11 for location.*

LK1 Telecom Country Selection. Removed: Europe TBR21 Fitted: Australia / New Zealand.

LK2 Memory chip (RAM) size select.
- 1-2 128k DS1245Y (32 Pin) or 512k DS1247Y (32 Pin)
- 2-3 32k DS1230Y (28 Pin)

LK3 Installer Code Default. Disconnect AC and Battery from Control Module; Short LK3 Pins; Reconnect power, then remove the short. Installer code will be defaulted to "01".

LK4 RAM Initialize. ("Continue"). Used when required to rectify Memory problems.
CAUTION! Will erase all programming if shorted to initialise memory.

LK6 Microprocessor select. Factory use only. Removed (Normal): Standard Micro. Fitted: Micro Type 1 or 2.

LK8 EPROM type selection. Factory or Firmware upgrade use only.
- 1-2 Flash. (EEPROM) V5.00 or later.
- 3-4 4 MBit EPROM.
- 5-6 2 MBit EPROM. V1 to V4.9x

LK9 EPROM configuration. Factory or Firmware upgrade use only.
- 1-2 EPROM. V1 to V4.9x
- 2-3 Flash. (EEPROM) V5.00 or later.

See page 11 for diagrams.

LK10 LAN Termination.
No Link. Unterminated. Link not fitted unless unit is first or last module on the LAN system.
Link IN. Terminated. Link fitted when unit IS the first or last module on the LAN system.
(See "LAN SYSTEM" details beginning on page 12 of this manual for more information)

LK12 PSTN (Dialer) / Direct Line (e.g. EarthNet) selection.
LK13
- Both links 1-2 PSTN (Dialler formats: IRfast, Contact ID, etc.)
- Both links 2-3 Direct Line (e.g. EarthNet)

JP5 Regulated Power Supply Current Limit setting.
- Not Shorted 1.0 Amp. Normal setting for 6.5 to 7.0 AmpHour Battery.
- Shorted 3.0 Amp. Setting for 15 to 17 AmpHour Battery.

TERMINALS. *See pages 10 & 11 for location.*

T1-4 Zone Input connections. *See Zone Input Wiring on page 6.*

T5 LAN connections. *See "LAN SYSTEM" details beginning on page 12 for details.*

T6 Auxiliary outputs and Siren Outputs. *See "SIREN WIRING" & "AUXILIARY WIRING" on page 7 for details.*

T7 Battery connection.

T8 Detector Power. 12V Supply for Detectors and Auxiliary Devices.
Total current sourced from "DET+" and "LAN POS" must not exceed 1.2 Amps.

T9 16 to 18 V AC Input to PCB. (From Transformer Secondary winding or Plug Pack output cable)

T10 Tamper Switch Input. Tamper switch supplied. No End-of-line resistors necessary.

T11 Telecom connection Terminal block. Alternate connection for Dialer line or Direct line connection.
- Pins 2 & 4: Line In. Connection to Exchange line or Leased line.
- Pins 1 & 3: Line Out. Connection to other equipment sharing the Exchange line.

See drawings on page 6.

LEDs. DIALER, LAN, POWER SUPPLY STATUS & FUSE FAIL. *See pages 10 & 11 for location.*

LED2	**ON**	Line Seize Relay active
LED3	**ON**	Dial Indicator
LED4	**ON**	Ring Voltage Indicator
LED5	**ON**	Telecom/Port 0 Transmit Data
LED6	**ON**	Telecom/Port 0 Receive Data
LED7	**ON**	LAN Power Fuse Blown.
LED8	**ON**	Detector Fuse Blown.
LED9	**ON**	Battery Fuse Blown & AC not present.
LED10	**ON**	5V Supply OK.
LED11	**ON**	13.8V Supply OK.
LED12	**ON**	16V AC Supply OK.
LED15	**ON**	LAN Receive Data
LED16	**ON**	LAN Transmit Data
LED17	**ON**	Battery Charge Relay On. (Batt >12.7V)

HEADERS. *See pages 10 & 11 for location.*

JP1 Port 0 connection. TEMPORARY connection of a PC for Upload/Download programming is allowed using the "Port 0 Interface cable" (993030). This Port shares the on-board modem with the Line interface and therefore MUST NOT be used as a permanent connection.

JP2 UART Serial Port Board. A UART Board and appropriate cable/s must be fitted if Printer, PC, GSM modem, External modem or Securitel Interface etc. is being used.
NOTE: Control Module must be powered down when fitting or removing a UART board.

JP3 Auxiliary Expansion Port. For 8 Auxiliary Expansion board. P/N: 995055.

JP4 Auxiliary LAN connection. An LCD Terminal can be connected to this Header if required for diagnostic purposes. A cable is available (P/N: 993028) with matching header socket and flying leads.

JP6 Fibre Optic Port. For future applications.

JP7 Not currently used.

JP9 Telecom socket. *See drawings on page 6.*

CONTROL MODULE FAULT LEDs (LED 13 & LED 14). *See pages 10 & 11 for location.*

LED1	LED2	EXPLANATION / REMEDY
ON	OFF	Ram Fault. RAM faulty, in backwards, out by one pin or LK2 not correct. Power off, fit correctly or replace.
OFF	ON	Non-volatile RAM not initialised. Short LK4 to continue. (**NOTE:** Erases all programming)
ON	ON	Configuration Problem. (RAM Directory) Return options memory chip to Distributor.
Fast Flash	OFF	Hardware Problem. (EEPROM not itialized) Return unit for service.
OFF	Fast Flash	Wrong GAL for NVRAM size. (Illegal Memory size) Contact the Distributor.
Fast Flash	Fast Flash	Wrong GAL for required options. (Illegal option/s) Contact the Distributor.
Fast Flash	ON	Faulty Program chip. (EPROM) Return unit for service.
ON	Fast Flash	Default of installer code not allowed. Contact Installer or return to Distributor for defaulting. Short LK4 or remove and reconnect power to the Control Module to continue with normal operation.
Slow Flash	OFF	PIC Micro not communicating. Return unit for service.
OFF	Slow Flash	Incorrect Micro. Contact the Distributor.
Slow Flash	Slow Flash	Secure Micro Version wrong. Contact the Distributor.
Slow Flash	ON	Lock bits not set. Contact the Distributor.
ON	Slow Flash	Configuration Version problem. Contact the Distributor.

EXPANDER / READER MODULE FAULT LEDs

RX	TX	EXPLANATION / REMEDY
ON	ON	Module is un-addressed.
OFF	ON	Module type unknown. Firmware upgrade required to Control Module.
Flash	ON	Duplicate Module. This module number is already in use by a module of the same type.
Flash	Flash	Module number selected is too big for Control Module RAM size. Select a lower Module number.
ON	OFF	Too many modules on Network for Control Module RAM size.

LCD TERMINAL ERROR MESSAGES

MESSAGE	EXPLANATION / REMEDY
No Rx	Terminal requesting address from Control Module, but no reply being received.
Can't Tx	Terminal cannot send data because LAN is being held in "start" condition. Check for A/B reversed.
Exists	Module number selected already being used by another LCD Terminal. Choose another number.
Too Big	Module number selected is too big for Control Module RAM size. Select a lower Module number.
Too Many	Too many modules on Network for Control Module RAM size.

THE CONTROL

T7 & T9
16V AC Input & Battery connections.

LED12. AC Supply present.
LED 9. Battery Fuse blown.

JP5
Regulated P.S. Current Limit.

LED17
On = Battery Charge relay On.
(Battery supply above 12.7V)

JP1
Port 0. Temporary PC connection
via Port 0 interface cable.

LK8 *****
EPROM Type selection.
1-2 Flash. (EEPROM)
3-4 4 MBit EPROM.
5-6 2 MBit EPROM.

***** See Page 8 for more details & firmware versions.

LK9 *****
EPROM Configuration.
1-2 EPROM.
2-3 Flash. (EEPROM)

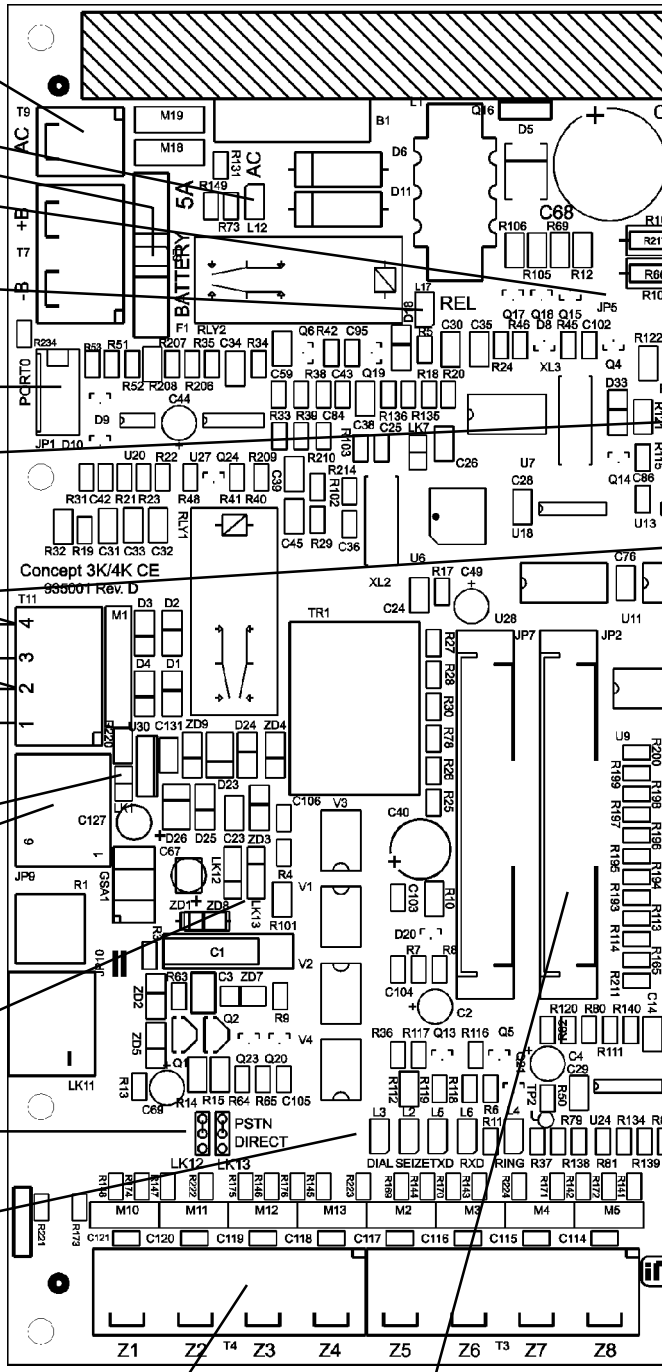
IN 2 & 4
OUT 1 & 3

T11
Alternate Telecom Line connection.

LK1
Telecom Country selection.

JP9
Mode 3 Line Socket for connection to Telecom Line. (Cable supplied)

LK12 & LK13
PSTN (Dialer) Both 1-2.
Direct Line Both 2-3.

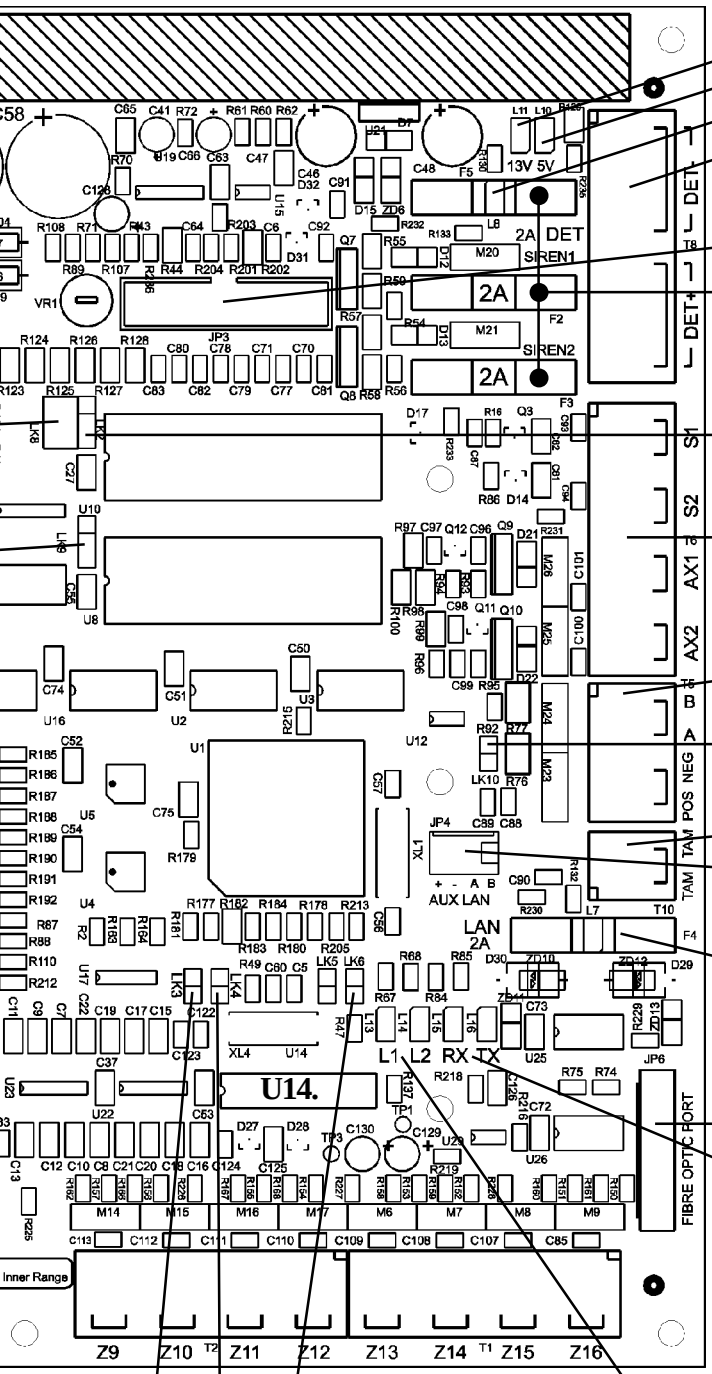


LED 2 to LED 6
Telecom/Port 0 Status LEDs.
LED 2. On = Line Seize Relay Active.
LED 3. On = Dial Indicator.
LED 4. On = Ring Voltage Indicator.
LED 5. On = Telecom/Port 0 Transmit Data.
LED 6. On = Telecom/Port 0 Receive Data.

T1 to T4.
Zone Inputs.
See "ZONE INPUT WIRING" on p6 for details.

JP2
Expansion Port
UART Interface connection.
NOTE: Control Module must be powered down when fitting or removing a UART board.

L MODULE PCB



LED 11. On = 13V Supply present
LED 10. On = 5V Supply present.
LED 8. On = Detector Fuse blown.

T8
Detector Power connections.

JP3
Auxiliary Output Expansion Port.

F2, F3 & F5
Fuses for Siren 1, Siren 2 & Detector Power.
2 Amp. M205.

LK2
Memory chip (RAM) size select.
2-3 28 Pin (32k)
1-2 32 Pin (128k & 512k)

T6
Auxiliary outputs & Siren outputs.

T5
LAN connections.

LK10
LAN Termination.

T10
Cabinet Tamper input.

JP4
Auxiliary LAN connection. For temporary connection of LCD Terminal for diagnostic purposes.

F4 LAN "POS" Fuse. 2Amp. M205.
LED7 On = LAN Fuse Fail.

JP6
Fibre Optic Port.
For future applications.

LED15 & LED 16 (RX & TX)
LAN Activity LEDs
Rx =Receive Data
Tx =Send Data

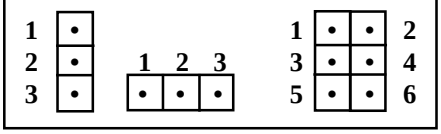
LK6
Microprocessor select.

LK4
Initilize RAM (Continue).
CAUTION.

LK3
Installer Code Default

LED13 & LED14 (L1 & L2)
FAULT LED
DIAGNOSTICS
See table on page 9.

JUMPER LINK ORIENTATION



LAN SYSTEM OVERVIEW

The 3000/Access 4000 LAN (Local Area Network) is a 3 or 4 wire network used to connect the modules in a system. Up to 250 modules can be connected on the LAN system, comprising up to 99 modules of any particular type. (Depending on Memory size & configuration) Using recommended cable types, modules on the LAN can be installed hundreds of metres from the Control Module.

Data encryption ensures secure LAN communications at all times, while the programmable supervisory polling system continuously monitors the network to detect cable tamper, cable fault conditions, module off-line and module substitution. The data format used in the 3000/Access 4000 LAN has been developed to ensure fast, reliable communications regardless of the size of the system.

For larger systems and complex sites, LAN Isolators can provide opto-isolation between sections of the LAN, eliminate potential earth loop problems, improve surge protection, provide signal level restoral for improved performance over longer cabling distances and offer a monitored "loop" LAN wiring option for a higher level of LAN integrity.

CONNECTING MODULES TO THE LAN. ***Refer to diagram opposite.***

- "A" & "B" signal connections are wired in parallel across the system using TWISTED PAIR cable. ❶
  See "Cable Types" details on page 14.
  The "NEG" connection (0V reference) must also be wired to every module. ❷

- An optional + 12 V connection (LAN +ve) may be used to provide power to modules that do not have their own on-board power supply. e.g. LCD Terminals. ❸

- The + 12 V connection (LAN +ve) used to power LCD Terminals, etc. can be derived from any module with it's own on-board power supply (Control Module and Expander Modules), or from a separate external power supply. ❹
  CAUTION ! Never connect the +ve (POS) of two power supply sources together. i.e. Control Module LAN POS, Expander Module LAN POS, or External Power Supply +ve. This is one of the reasons that "SPARE" wiring terminals are provided on most types of modules.

- When wiring the LAN to modules that are powered from their own on-board power supply (e.g. Zone Expanders), use the "Spare" terminal (labelled "SPARE" or "SPR") for the LAN +ve connection. ❺
  NOTE: LAN "POS" and "NEG" should not be used to power detectors, relays, etc. Always use "DET+" and "DET-" on the module to power these devices.

- When wiring the LAN to modules that are powered from an external Power Supply (e.g. Reader Modules), use the "Spare" terminal (labelled "SPARE" or "SPR") for the LAN +ve connection. ❻

- A DC Voltmeter may be used to check that the LAN will operate reliably. *See "LAN Voltage Testing" on Page 18.*

SYSTEM EARTHING

- The System Ground is connected to Mains Earth via the Power cord at the Control Module. The enclosure can be mounted on a grounded conductive surface, providing a secondary ground connection.

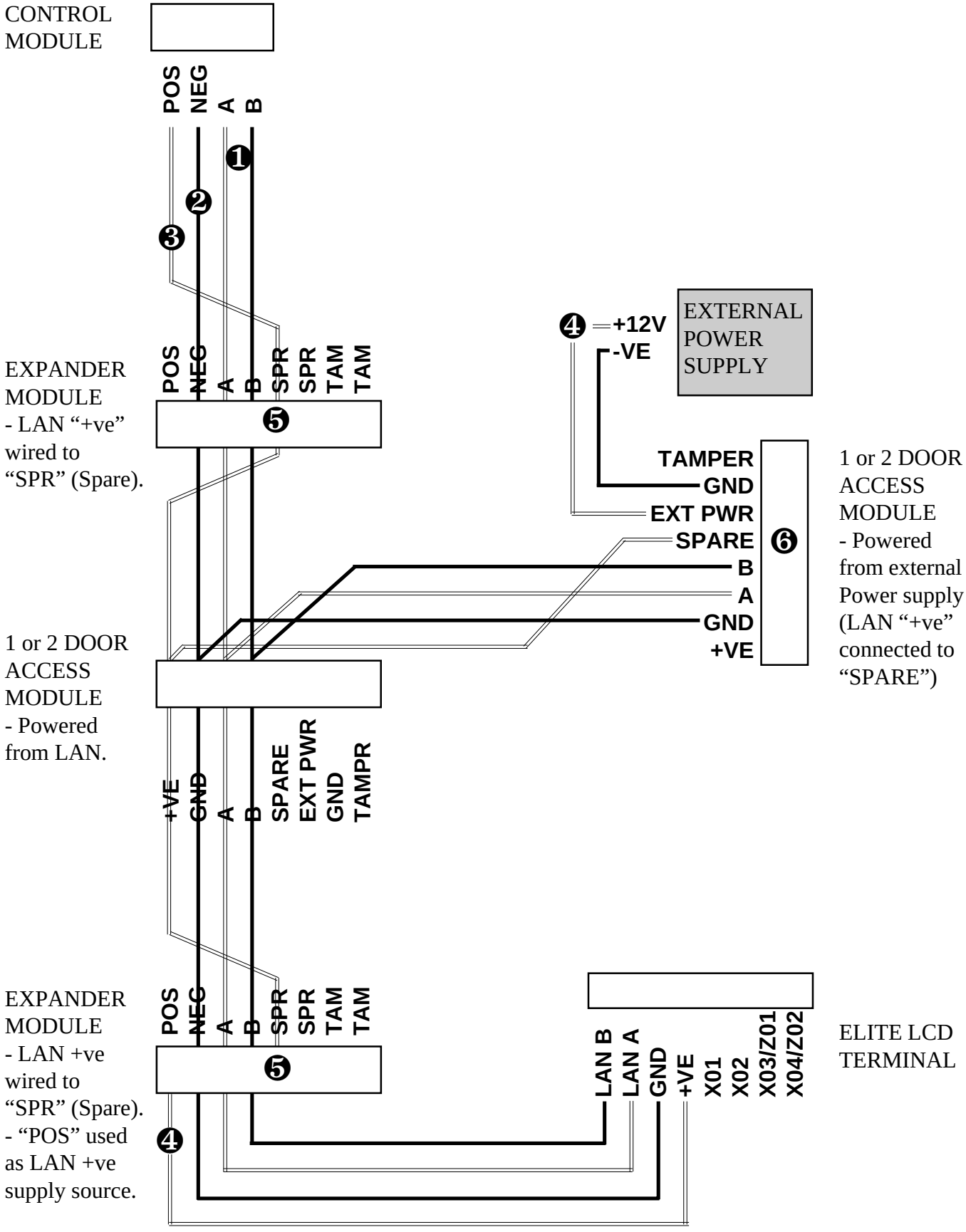
- In some cases a Printer, PC, modem, etc. connected to the Control Module UART board may also provide a connection to earth via the peripheral device. If so, ensure that the peripheral device is powered from the same AC Mains circuit or the RS232 Serial connection is isolated.

- The Intelligent 4 Door Access Module also has local Ground connected to Mains Earth via it's Power cord, however, the System LAN connection (X1 "ISO LAN") is isolated to eliminate Earth loops. Ensure that there are no other 0V or Ground connections between the Control Module and Intelligent 4 Door Access Modules.

- While the metal chassis of Modules with on-board power supply such as Universal Expanders is connected to Mains Earth, the PCB circuitry is isolated from the chassis. Ensure that wiring, additional hardware or peripherals connected to these modules does NOT provide an Earth connection to the Module PCB.

- Ensure that all other Modules (with no on-board Power supply) have NO local connection to Earth.

Connecting Modules to the LAN.



CABLE TYPES

- TWISTED PAIR Cable MUST be used to connect the LAN.
  Multi-strand wire is preferred for terminating into the screw terminal connectors.
  Two pair Telephone or LAN cable is suitable as it provides all 4 conductors required.
  One pair for "A" & "B", and the other for "POS" & "NEG". Unshielded cable is quite acceptable, however, in situations where electrical storms or high levels of electrical interference are a problem, shielded 2 pair cable may be used.
  Examples of suitable 2 pair cables:

Unshielded. ***Figure 1.***	Shielded (All Multistrand) ***Figure 2.***		
Olex TJC590AA002	Olex JEIP87AA002	Belden 8723 *	† 3 Pair.
Tycab TIC6105 †	Tycab DPF4702	Tycab DQQ47025 *	‡ Multistrand (7/0.2).
MM MegaTwistpatch ‡	MM B2002CS	Garland MCP-2S	* Indivually screened pairs.
Category 5.	Electra EAS7202P / 7302P	Electra EAS16202P	

- If SHIELDED CABLE is used, DO NOT use the shield as a negative connection & do not allow the shield to make contact with Negative, Ground, or any other wiring or metalwork within the system. Shields should only be terminated to a Protective Earth at ONE END of the cable. ❶ *See "System Earthing" below.* If no suitable earth point is available at a module location, the shield can be looped back to the shield of the previous length of cable. ❷

- LAN POWER CABLING. Separate heavy duty Figure 8 cable (24 / 0.20 recommended) should also be run for "POS" & "NEG" over longer distances if used for powering modules. e.g. LCD Terminals. ***Figure 3.***

LAN "POS" current required:	**Max. Cabling Length for LAN +ve (POS) & GND (NEG)**		
	Twisted pair	Fig 8. 14 / 0.20	Fig 8. 24 / 0.20
60mA (e.g. 1 LCD Terminal)	200 metres	400m	640m
120mA (e.g. 2 LCD Terminals)	100 metres	200m	320m
180mA (e.g. 1 Reader Module - Reader pwr not incl)	62metres	130m	210m
250mA (e.g. 4 LCD Terminals)	50 metres	100m	160m
500mA (e.g. 8 LCD Terminals)	25 metres	50m	76m

Remember to allow for any extra current required by Detectors, Auxiliaries, Readers, etc:
NOTE: Lock strikes must not be powered from the LAN.

Relay (1A contacts)	approx. 25mA	Small Proximity reader (~10cm read range)	~50 to 120mA
Relay (5A contacts)	approx. 45mA	Standard Prox reader (~15cm read range)	~120 to 180mA
PIR	15 to 25mA typical.	Magnetic Swipe reader.	~15mA

Figure 1.
Twisted pair communications cable.

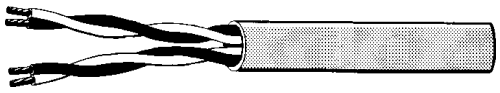


Figure 2.
Shielded, twisted pair communications cable

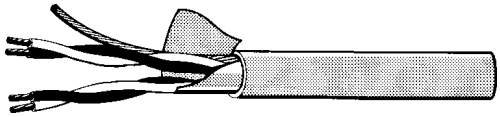


Figure 3.
Heavy duty Figure 8 cable. **24 / 0.20**
Used for LAN +ve & GND on long cable runs.



SURGE PROTECTION.

- In multi-building installations and on longer cable runs, shielded cable may be used to provide added protection against voltage surges.

- Each individual shield should be terminated to a Protective Earth point such as an earth stake, building earth (metal building framework) or water pipe. ❶ It is very important to ensure that the shield makes no contact with Negative, Ground or any other wiring within the system.

- LAN Isolator/s can also be included in a Surge protection scheme to electrically isolate different sections of the LAN at the point where LAN cabling enters/exits each building, or on cable runs that are more exposed to voltage spikes or surges.

SYSTEM CABLING CONFIGURATION ***Figure 4 & Figure 5.***

- Avoid installing the LAN cable with mains power cables & any other cables likely to cause interference wherever possible

- No module is to be more than 1.5km (1500 metres) cable length from the Control Module OR from a LAN Isolator "LAN 2" or "LAN 3" Port. ❸ (LAN Isolator/s can be used to extend the maximum cabling distance)

- TOTAL LAN CABLING in a system without LAN Isolators should not exceed 2000 metres, and/or 64 Modules. ❹
  If the total amount of LAN cable will exceed 2000 metres, and/or there are more than 64 modules to be connected, LAN Isolator/s must be used to separate the LAN system into sections and maintain optimum LAN performance. i.e. Include one LAN Isolator for every 2000 metres of LAN cabling and/or for every 64 Modules connected. ❺

LAN TERMINATION ***Figure 4 & Figure 5.***

- The LAN MUST be Terminated for optimum performance, by ensuring that the Termination Resistor (470 Ohm*) is "IN" on the first and last modules in the LAN network. Terminated modules are indicated with a "**T**" on the illustrations. ❻
  (Termination is put "IN" with a jumper link or a DIPswitch, depending on the module type) ** See Note 1 on Page 15.*

- MULTIPLE CABLE RUNS. In systems where there are multiple cabling runs going out from the Control Module or LAN Isolator (i.e. "star" configuration), Termination is fitted on the modules at the end of the two longest runs. ❼

Figure 4.
Simple LAN configuration.

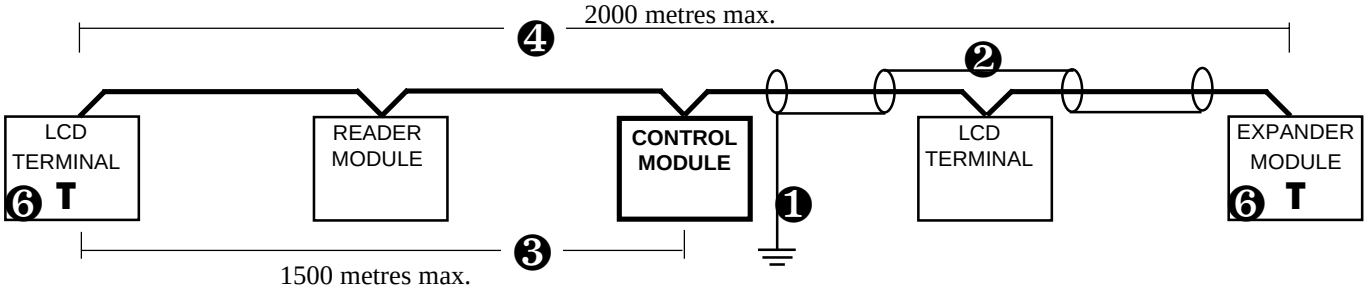
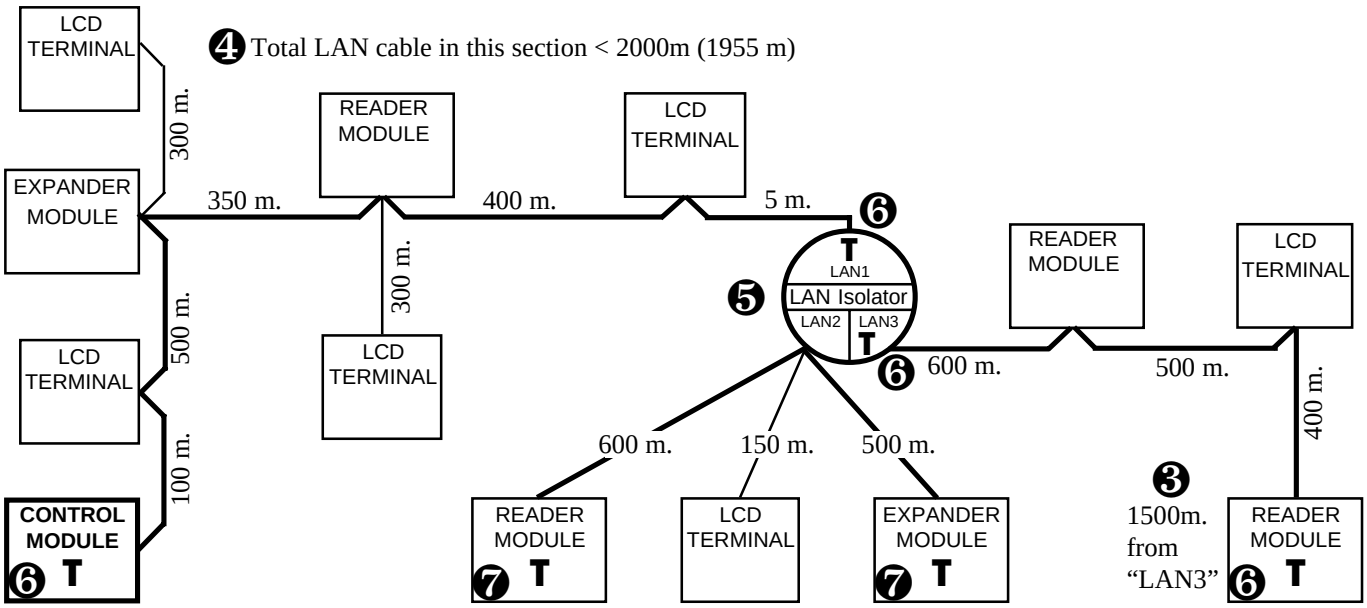


Figure 5.
Complex LAN configuration.



LAN TROUBLESHOOTING FLOWCHART

BEFORE SYSTEM POWER UP
(No Power connected to modules
AND No batteries connected)

A1. WHERE POSSIBLE, PHYSICALLY CHECK:
-LAN A & B connections not reversed on any module.
-No modules connected to earth. (via mounting bolts, ext. power supplies, input/output cabling, etc.) Note that the Control Module may be connected to earth via external equipment connections. i.e. Printer, PC, modem, etc. If so, this must be the only earth connection in the system.
-Only two modules in the system are terminated.

⇓

A2. CHECK FOR SHORT CIRCUITS ON THE LAN
(No Power connected AND No batteries connected)
METER ON OHMS RANGE
Check at the Control Module for short circuits between:
-LAN A & B.
-LAN A to +ve and -ve.
-LAN B to +ve and -ve.
Note:DC Resistance in the LAN cable (~0.18Ohms/metre) can mask short circuits that exist on longer cable runs.

⇓

A3. CHECK FOR CORRECT LAN TERMINATION
(No Power connected AND No batteries connected)
METER ON OHMS RANGE
Measure between LAN A & LAN B on the Control Module:

170 to 300 Ohm.*	OK. (System with up to 32 modules)
140 to 270 Ohm.*	OK. (System with up to 64 modules)
Lower value.	More than two modules terminated or Short cct across LAN A & LAN B.
Higher value.	Less than two modules terminated or Open cct on LAN A &/or B wiring.

** See Notes 1 & 2.*

⇓

POWER UP SYSTEM & CONNECT BATTERIES

A4. CHECK CONTROL MODULE OPERATION

DC POWER CHECK. With Meter on DC Volts range, measure between LAN +VE & LAN -VE (GND) on the Control Module:

11V to 14V.	OK.
<11V.	Too many devices being powered from the Control Module or Battery Flat.

Check FAULT LEDs on Control Module:

Both Off.	OK. *Proceed to step A5.*
Any other state.	Refer to "*Control Module Fault LEDs*" table on Page 9.

⇓

A5. DETERMINE THE TYPE OF LAN PROBLEM

A. SOME MODULES HAVE INTERMITTENT COMMUNICATIONS PROBLEM.
Proceed to Step B1, "Intermittent LAN problems". ⇒

B. SOME/ALL MODULES NOT COMMUNICATING AT ALL. *Proceed to Step A6.*

⇓

A6. IS THE LAN COMPLETELY DEAD ?

YES. *Proceed to Step C1, "LAN Dead".* ⇒ ⇒

NO. (Some Modules not communicating, others OK)
Proceed to Step A7.

⇓

A7. CHECK STATUS OF PROBLEM MODULE/S

DC POWER CHECK. Meter on DC Volts range. Check for 11 to 14 Volts between LAN +VE & LAN -VE (GND) on the problem module. *See Note 3.*

Check FAULT LEDs (TX & RX LEDs) OR LCD Display on problem Module:
Both LEDs Off OR Display has no "Module ..." messages. *Proceed to step A8.*

Any other state. Refer to "*Expander/Reader Module Fault LEDs*" table or *"LCD Terminal Error messages"* table on Page 9.

⇓

A8. TEST LAN VOLTAGES AT PROBLEM MODULE/S

Perform LAN Voltage Checks at the problem Module/s. Refer to the table *"LAN Voltage Testing"* on Page 16.

⇓

A9. SUBSTITUTE MODULE/S

If the troubleshooting procedure fails to locate any power, wiring or termination problems, you may have an equipment fault. Replace the module/s suspected of causing the problem.

⇒ ⇒ ⇒ ⇒ ⇒

LAN DEAD

⇒ **C1.** TEST VOLTAGES AT CONTROL MODULE

Perform LAN Voltage Checks at the Control Module. Refer to the table *"LAN Voltage Testing"* on Page 16.

If this fails to locate the problem, *proceed to Step C2.*

⇓

C2. ISOLATE PROBLEM CABLING OR MODULE/S

Disconnect all LAN wiring from Control Module. Reconnect one LCD Terminal and ensure that it communicates. (If it doesn't, follow Steps A7 & A8)

Reconnect the LAN one module at a time until a problem module, or section of cabling kills LAN communications when reconnected.

With the problem area identified, *proceed to Step A8.*

⇓

⇙

⇐ ⇐ ⇐ ⇐ ⇐

INTERMITTENT LAN PROBLEMS

B1. WHICH MODULES ARE INTERMITTENT ?

Using an LCD Terminal or Review Logging via Upload/ Download software, check Review Data for "Module Lost" and "Module Found" messages.

Each message will also identify the Module type and number. Note the problem module/s.
Proceed to Step B2.

⇓

B2. IS ANOTHER EVENT CAUSING THE MODULE TO BE LOST ?

Look at the Review Messages immediately preceding the "Module Lost" messages for any event that repeatedly coincides with the loss of module/s, or if the loss of module/s occurs at, or around, the same time of day. Look for messages such as Door Un-lock/Lock, Siren On, Auxiliary On, etc., and note the times when the "Module Lost" messages occured.

YES. Ancillary devices & external equipment (e.g. electrical machinery) can produce voltage spikes, electrical noise and excessive current drain.
If the LAN, Power & Auxiliary circuits are not wired correctly or Earth loops exist, these devices can interfere with LAN communications.

If such an event does coincide with loss of comms, reproduce the sequence of events to confirm the effect, then check any associated wiring circuits accordingly.

NO. *Proceed to Step A8*

NOTES:

1. LAN TERMINATION CHECK
Very early 3000 products (Australia & NZ only) had 120 Ohm Termination resistors which results in lower measurements (~70 to 140 Ohms). When expanding these systems, take termination OUT on the existing modules, and put termination IN on two of the new modules. Alternatively, take termination OUT on the existing modules and fit a 470 Ohm resistor between LAN A & B on those two modules instead. NOTE: This is only necessary if expanding the system, or if there are communication problems. If the system is operating reliably, no modification is necessary.

2. TERMINATION RESISTOR CHECK
To determine if a module is fitted with a 120 Ohm or 470 Ohm Termination Resistor, ensure that TERM is "IN", disconnect the module from the LAN, remove power, and measure across LAN A and B on the module with the meter on the OHMS range.

3. MODULE POWER TEST
The Test Menu can be used to check LAN Power conditions. Logon to the LCD Terminal, then press <MENU>, 4, 8. This activates the power test, and the results will be displayed on the LCD Terminal, and in the review memory. See "Concept 3000 Programmer's manual" Rev 2.3 p154 for more information.

LAN VOLTAGE TESTING

NOTES:

1. These Voltage checks should be done with no (or minimal) communications traffic on the LAN. To ensure this:
   a) Check that poll times for all addressed modules in the system are set to the default 60 / 120 seconds or greater.
   b) Disconnect LAN A and LAN B from any unaddressed modules on the LAN, as these modules will be constantly attempting to send messages to the Control Module.
   c) Ensure that Terminals, Readers, etc. are not being used while performing tests.
   Before proceeding with Voltage tests, check the "RX" LED on the Control Module to confirm that there is minimal LAN activity.

2. To determine if a problem exists on the module under test, or elsewhere on the LAN, these voltage tests can be performed:
   a) With the module connected to the LAN.
   b) On the cable connections with the module disconnected from the LAN.

Test Point + PROBE	**Test Point - PROBE**	**EXPECTED RESULT**	**PROBLEM/ REMEDY**
LAN +ve	LAN -ve or GND	11V to 14V DC	**0V.** Open circuit LAN +ve connection, or short cct between LAN +ve and LAN -ve. **<11V.** Too many modules powered from the LAN power supply source. Length (or guage) of LAN cabling causing excessive Voltage drop on the cable.
LAN B	LAN A	200 to 400mV DC	**<200mV.** Short cct between LAN A & B. More than 2 modules terminated in this section of LAN. **>400mV.** LAN A &/or LAN B Open circuit. Less than 2 modules terminated in this section of LAN **<0V (Negative reading)**. LAN A & LAN B connections reversed.
LAN A	LAN -ve or GND	200mV to 2.5V DC	**<200mV / >2.5V DC.** System may have more than one module connected to an earth point, causing earth loop/s. Ensure that no more than one module in the system is connected to earth. Remember that a module may be connected to earth via a peripheral device or it's cabling. e.g. PC, Printer, External power supply, Detector, Output device, etc. If installation methods &/or system configuration makes multiple earth points unavoidable, install LAN Isolator/s at suitable points in the LAN system to isolate the earthed section/s
LAN B	LAN -ve or GND	200mV to 2.5V DC	As above.

SYSTEM OPTIONS

A special Options Micro chip is used to enable certain system options and upgrade options in the Control Module.
The Chip is labelled U14 and is located between the Zone 9 to 16 Input connections and Links LK3 to LK6.
See PCB layout on page 11.

A range of standard Options Micro chips are available. These chips can be purchased and changed over by the installer at any time to provide additional features.
The price of each Options Micro Chip Type will vary according to the feature/s that the chip will enable.

NOTE: If the additional feature required is new and was not available in the version of firmware currently in the Control Module, then the Control Module firmware AND the Options Micro will need to be changed.

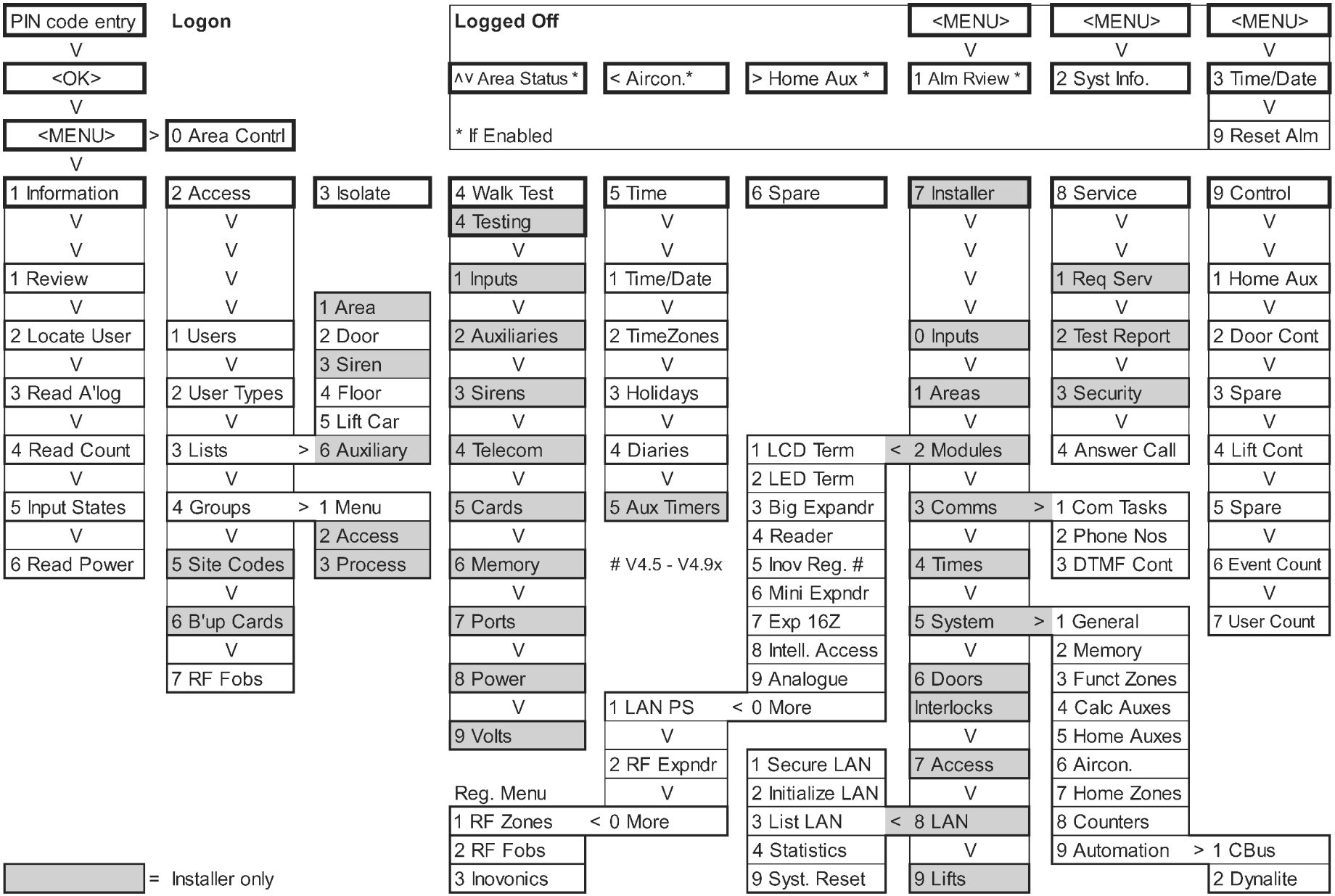
When purchasing 128k or 512k Memory expansion for the Control Module, an Options Micro chip will also be supplied to enable the use of the additional memory.
IMPORTANT NOTE: When purchasing Memory expansion you must specify which product is being upgraded. "3000" or "Access 4000".

Standard Factory Memory Sizes:
Model 3000: 32k.
Model Access 4000: 128k.

For full details of Options Micro Chip types, refer to the current Version of the Programmer's Manual or the Website. These details will be found under "3000 and Access 4000 Model Options" in the Overview and Introduction section.

Designed & manufactured in Australia.

Disclaimer: 1. The manufacturer &/or it's agents take no responsibility for any damage, financial loss or injury caused to any equipment, property or persons resulting from the correct or incorrect use of the system or it's peripherals. The purchaser assumes all responsibility in the use of the system and it's peripherals.
2. While every effort has been made to ensure the accuracy of this manual, the manufacturer assumes no responsibility or liability for any errors or omissions. Due to ongoing development, this manual is subject to change without notice.



3000 / ACCESS 4000
Menu Flowchart

Model 3000

&

ACCESS 4000

SECURITY, ACCESS CONTROL & BUILDING AUTOMATION SYSTEM

INSTALLATION MANUAL

OVERVIEW

The 3000/Access 4000 provides the next generation in Access Control, Security and Building Automation Systems.

MODULAR DESIGN & EXPANDABILITY Modular hardware design provides the ability to adapt and expand a system to cater for virtually any configuration or application required - small or large. Large numbers of LCD Terminals, Input/Output Expanders and Reader Modules can share a secure, monitored LAN system utilizing a fast, efficient communications format. Using the recommended cabling, modules on the LAN can be installed hundreds of metres from the Control Module. Up to 250 modules can be connected on the LAN system, comprising up to 99 modules of any particular type. With the current range of modules available, this arrangement can provide over 3000 Zone inputs and over 3000 Auxiliaries on a single system.

THE MODULES. The heart of the system is the Control Module. This unit stores all data, communicates with all other modules connected to the system LAN, and reports alarms and system activity to the Central Station. To program and operate the system an Elite LCD Terminal is normally used. The LCD Terminal provides a 20 key backlit keypad, a backlit Liquid Crystal Display and connections for several Zone Inputs and Auxiliary outputs.
Universal Zone Expanders are used to provide additional Inputs (16 or 32), Sirens and Auxiliaries (8 or 32) in a system and can be installed remotely in suitable locations to greatly reduce the amount of cabling required to detectors and output devices. The Mini Expander Module provides low cost expansion when up to 8 Zones and Auxiliaries are required along with special event counting options (Event Counting available V3 or later).
Reader Modules are installed near the Door/s to provide Reader interfacing and up to 7 Inputs and 5 outputs for complete monitoring and control of the Door/s.
The Analogue Module (using V3 or later Control Module firmware) allows analogue values to be monitored and set points used to trigger control and/or report functions.

SYSTEM MANAGEMENT. Upload/Download software is available for system Programming and Management, allowing the option of local or remote connection with operator password protection. Windows based system management software is also available incorporating dynamic graphics capabilities and sophisticated monitoring and report generation facilites.

Contents

CONTROL MODULE PARTS LIST 2

MOUNTING CONTROL MODULES AND EXPANDERS 3

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System cabling configuration 13
LAN Termination Details 13
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Installing your Model 3000 / Access 4000 system.

Control Module Parts List

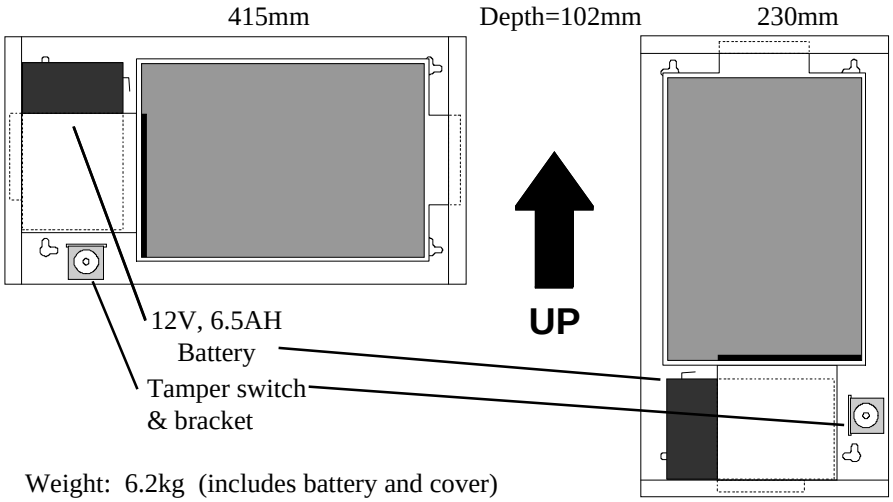
- Control Module PCB mounted on metal sub-chassis in metal box.
- Tamper switch bracket.
- Telephone line cable.
- Installation Kit containing:
  - Plug pack.
  - 7 x plastic “D” bungs.
  - 7 x 8 Way plug-on screw terminals.
  - Tamper switch.
  - 2 x 6.3mm Tamper switch connectors.
  - 2 x 4.8mm Battery terminal connectors.
  - 1 x 2 Amp Fuse.
  - 20 x 2k2 End-of-line resistors. (red-red-black-brown-brown)
  - 20 x 6k8 End-of-line resistors. (blue-grey-black-brown-brown)
- Spiral bound User Manual.
- User’s Quick Reference Card. (4 page booklet)
- Installation Manual. (This document)

Disclaimer: 1. The manufacturer &/or it’s agents take no responsibility for any damage, financial loss or injury caused to any equipment, property or persons resulting from the correct or incorrect use of the system or it’s peripherals. The purchaser assumes all responsibility in the use of the system and it’s peripherals.
2. While every effort has been made to ensure the accuracy of this manual, the manufacturer assumes no responsibility or liability for any errors or omissions. Due to ongoing development, this manual is subject to change without notice.

Mounting the Control Module & Zone Expanders

(Enclosure may vary - Australian enclosure illustrated)

- The Control Module and Zone Expanders are supplied in metal boxes which must be secured to a flat, vertical surface using fasteners through the four mounting holes in the chassis.
- The tamper switch bracket must be positioned through the slot in the chassis, before the chassis is secured to the wall.
- Orientation of the box MUST be as per one of the illustrations below.
- Installation environment should be maintained at a temperature of 0º to 40º Celsius and 15% to 85% Relative humidity (non-condensing)

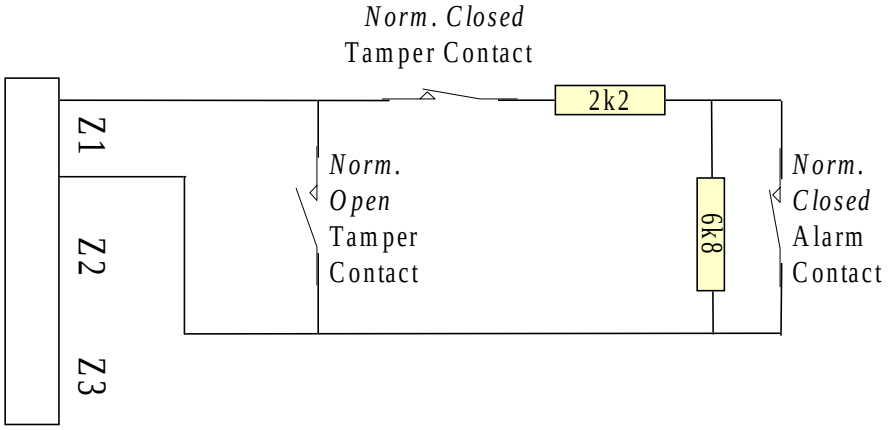


Weight: 6.2kg (includes battery and cover)

Wiring Diagrams

ZONE INPUT WIRING

Typical Detection devices with *Normally Closed* Alarm contacts and *Normally Closed* **OR** *Normally Open* Tamper Contacts are wired as follows:



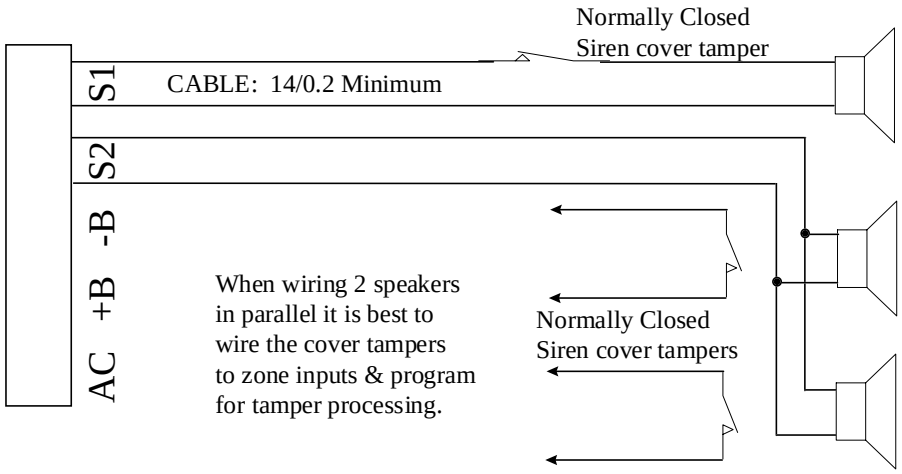
INPUT STATES:		
2k2	=	Sealed
9k (2k2 + 6k8)	=	Unsealed (or Alarm)
Open Circuit	=	Tamper
Short Circuit	=	Tamper

Detection devices with *Normally Open* Alarm contacts are wired in exactly the same manner as above. When programming the Zone Input, however, the option to "Reverse Seal and Alarm conditions" must be set to [Y]es.
e.g.

E01:Z01	X S R A N T . .
Options ->	n Y n n n n n n

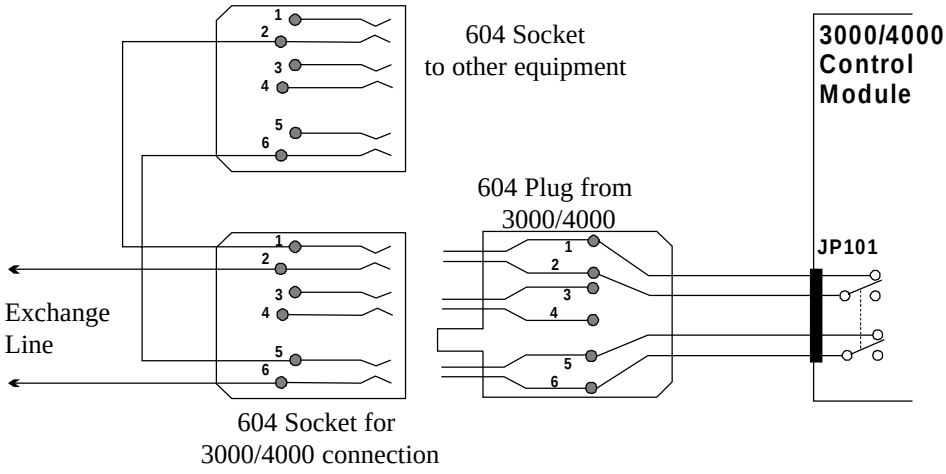
SIREN WIRING

Maximum of two 8 Ohm Siren speakers may be connected to each siren driver, wired in parallel. Norm. Closed Siren cover Tampers may be wired in series with the speaker cable. This method utilizes the siren speaker circuit monitoring.



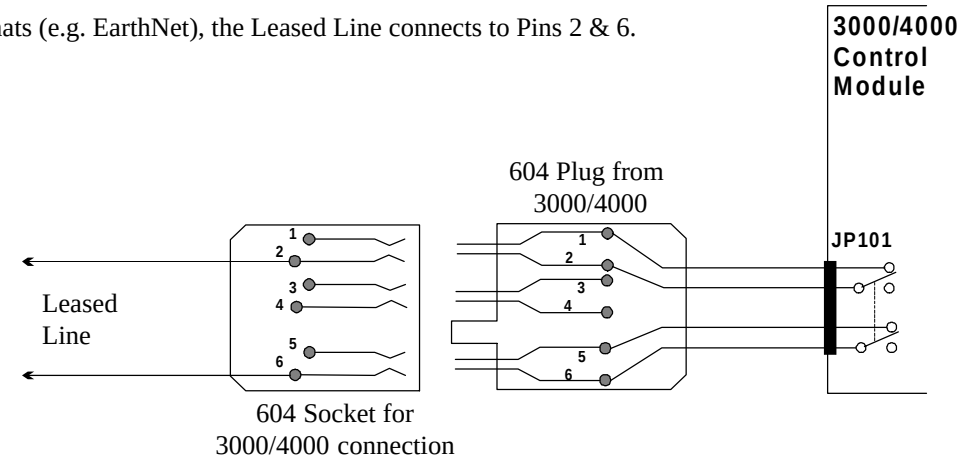
DIALLER LINE

Mode 3 socket wiring diagram for Dialler reporting formats. (e.g. IRfast and Contact ID)
Phone Line IN: Pins 2 & 6
Phone Line OUT: Pins 1 & 5



DIRECT LINE

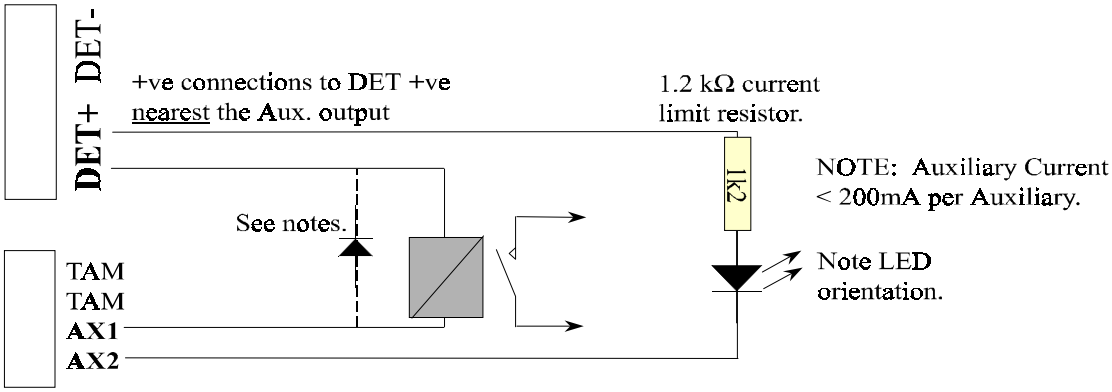
For Direct Line formats (e.g. EarthNet), the Leased Line connects to Pins 2 & 6.



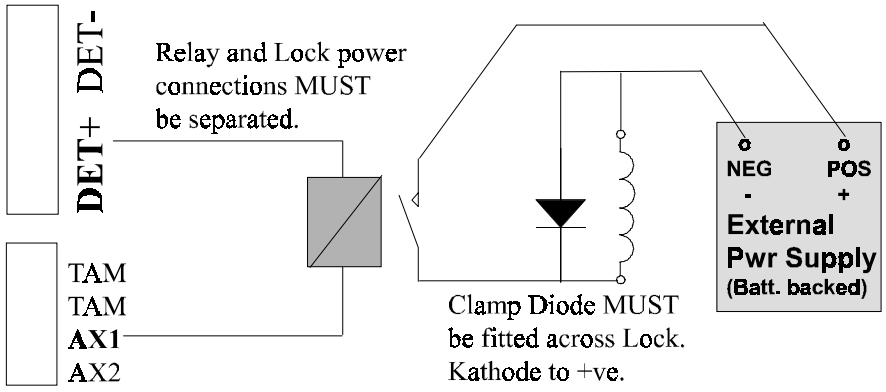
AUXILIARY WIRING

Rules for Auxiliary wiring on any module in the 3000/Access 4000 system.

- Aux's 1 & 2 on Control & Expander Modules can switch up to 500mA continuous and are suitable for inductive loads. (Except for Lock strikes, etc.)
- Max current on any other individual Auxiliary must be less than 200mA.
- On any module with Plug pack; Auxiliaries + LAN current + Detectors must be less than 700mA, or an external power supply should be used.
- The Positive connection of the device must be wired back to the Positive connection nearest the Auxiliary. i.e. On the same module.
- If an external power supply is used to power the device, a good common Negative connection MUST exist between the power supply and the module.
- Clamp diode should be fitted across inductive loads. Kathode (bar) to +ve.



Locks are activated via a relay. External power supply is used for lock power to prevent voltage spikes reaching the Concept equipment, provide longer battery backup & minimise the possibility of earth loops.



LINKS

LK2 RAM configuration. 1-2 32k DS1230Y (28 Pin)
2-3 128k DS1245Y (32 Pin)
2-3 512k DS1247Y (32 Pin)

LK3 Installer Code Default. Disconnect AC and Battery from Control Module; Short LK3 Pins; Reconnect power, then remove the short. Installer code will be defaulted to "01".

LK4 Continue. Used when required to rectify Memory problems.
CAUTION! Will erase all programming if shorted to initialise memory.

LK102/
LK103 Special. Only changed if advised by the Distributor.

LK104/ PSTN / Direct Line selection.
LK105 Both links 1-2 Direct Line (e.g. EarthNet)
Both links 2-3 PSTN (Dialler formats: IRfast, Contact ID, etc.)

LK201 Regulated Power Supply Current Limit setting.
No Link 1.0 Amp. Normal setting for Plug pack connection.
Link IN 1.5 Amp. Special custom external supply used.

LK202 LAN Termination. No Link. Unterminated. Link not fitted unless unit is first or last module on the LAN system.
Link IN. Terminated. Link fitted when unit IS the first or last module on the LAN system.
(See "LAN SYSTEM" details beginning on page 10 of this manual for more information)

TERMINALS

T205 POS, NEG, A, B — LAN connections. *(See "LAN SYSTEM" details in this manual for more information)*
AX1 Auxiliary output 1
AX2 Auxiliary output 2 *(See "AUXILIARY WIRING" in this manual for wiring diagrams)*
TAM Terminals for connection of cabinet tamper switch. No End-of-line resistors necessary.

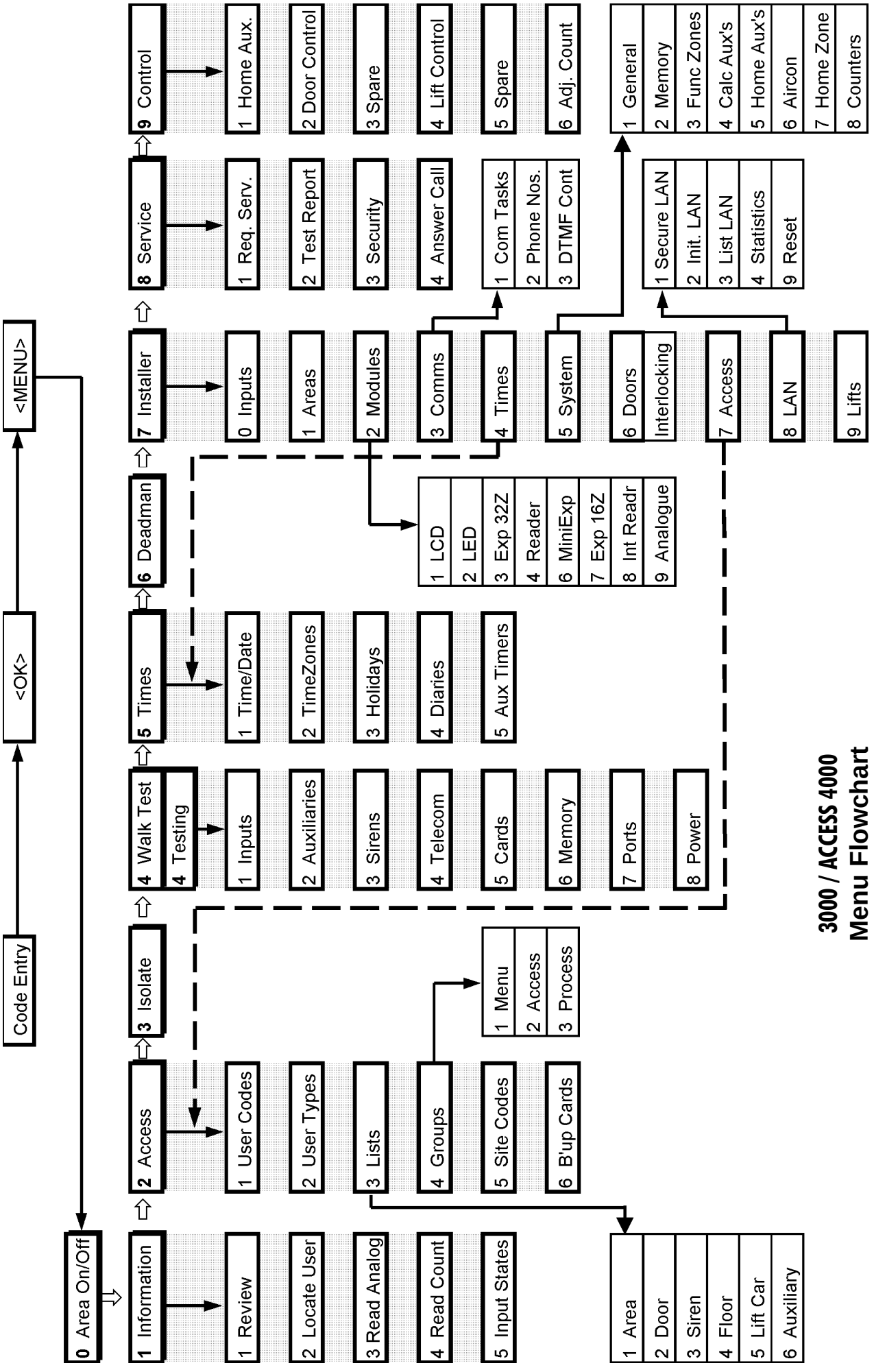
T206 Positive and Negative Detector Power connections. Note that total current drawn by devices connected to these terminals, plus devices connected to Auxiliaries and the LAN power connections, must not exceed 700mA.

T207 AC Terminals for 16Volt AC Plug pack connection. (supplied)
Plug pack specs: Input: 240VAC RMS +/-5%.
Output: 16VAC RMS 1.5A
+B Positive connection to 12Volt 6.5 AH Battery.
-B Negative connection to 12 Volt 6.5 AH Battery.
S1 "Internal" monitored Siren speaker connections. *See "SIREN WIRING" on p4 for wiring diagrams.*
S2 "External" monitored Siren speaker connections. *See "SIREN WIRING" on p4 for wiring diagrams.*

HEADERS

JP1 Port 0 connection. Using the "Port 0 Interface cable" (IRU3000), allows temporary connection of a PC for Upload/ Download programming. This Port shares the on-board modem with the Line interface and therefore MUST NOT be used as a permanent connection.

JP2 Header for connection of IRPX3000 UART Port Board. A UART Board and appropriate cable/s must be fitted if Printer, PC, External Modem or Securitel Interface etc. is being used. When fitting the UART board, disconnect power and battery from the Control module and align the connectors carefully.


Code Entry
<OK>
<MENU>
0 Area On/Off
1 Information
1 Review
2 Locate User
3 Read Analog
4 Read Count
5 Input States
2 Access
1 User Codes
2 User Types
3 Lists
4 Groups
5 Site Codes
6 B'up Cards
1 Menu
2 Access
3 Process
3 Isolate
4 Walk Test
4 Testing
1 Inputs
2 Auxiliaries
3 Sirens
4 Telecom
5 Cards
6 Memory
7 Ports
8 Power
5 Times
1 Time/Date
2 TimeZones
3 Holidays
4 Diaries
5 Aux Timers
6 Deadman
1 LCD
2 LED
3 Exp 32Z
4 Reader
6 MiniExp
7 Exp 16Z
8 Int Readr
9 Analogue
7 Installer
0 Inputs
1 Areas
2 Modules
3 Comms
4 Times
5 System
6 Doors
Interlocking
7 Access
8 LAN
9 Lifts
8 Service
1 Req. Serv.
2 Test Report
3 Security
4 Answer Call
1 Com Tasks
2 Phone Nos.
3 DTMF Cont
1 Secure LAN
2 Init. LAN
3 List LAN
4 Statistics
9 Reset
9 Control
1 Home Aux.
2 Door Control
3 Spare
4 Lift Control
5 Spare
6 Adj. Count
1 General
2 Memory
3 Func Zones
4 Calc Aux's
5 Home Aux's
6 Aircon
7 Home Zone
8 Counters
1 Area
2 Door
3 Siren
4 Floor
5 Lift Car
6 Auxiliary
3000 / ACCESS 4000
Menu Flowchart

THE CONTROL MODULE PCB

LK3 Installer Code Default

LK4 "Continue" Caution. See notes.

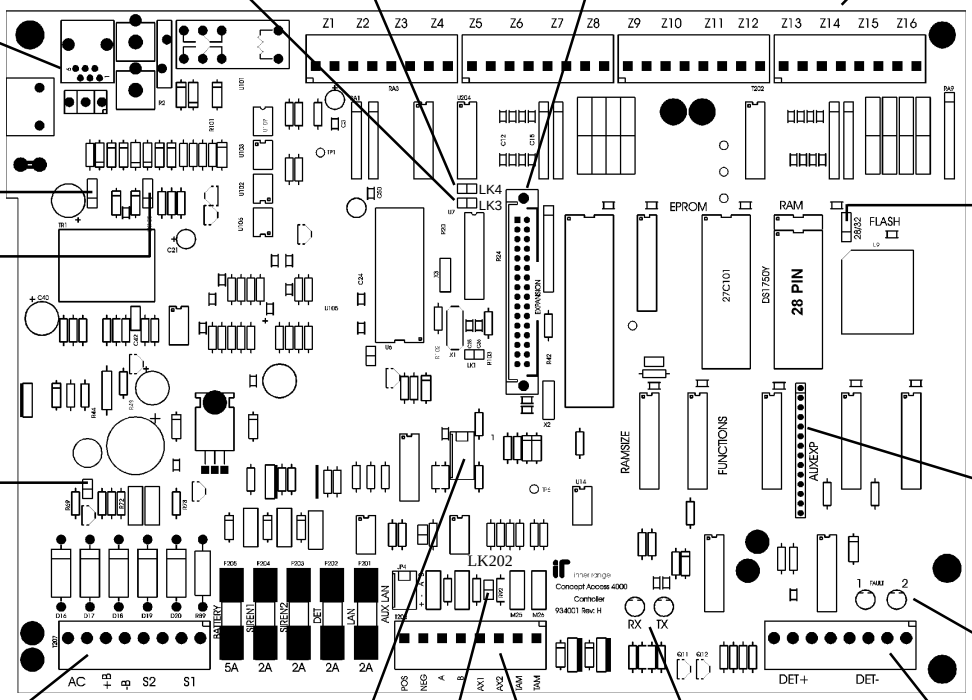
JP2 Expansion Port UART Interface connection.

JP101
Mode 3 Line Socket for connection to Telecom Line. (Cable supplied)
See "DIALLER LINE" on p4 for wiring diagram

LK104

LK105
PSTN Both 2-3.
Direct Line Both 1-2.

LK201
Regulated P.S. Current Limit
No Link Plug pack (normal-1.0Amp)
Link IN 1.5Amps (Custom Ext. Power supply only)



T207 Power Supply & Sirens

AC Plug pack connections. *(See Notes)*
B+/B- 12V 6.5AH Battery.
S1 Internal Siren output
S2 External Siren output

JP1 Port 0
See notes

LAN Activity LEDs
Rx =Receive Data
Tx =Send Data

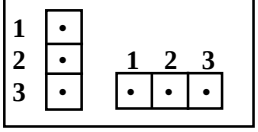
LK202 LAN Termination.

No Link Unterminated
Link IN Terminated. (Only if module is at either end of the LAN)

T205 LAN, Auxiliary outputs & Cabinet Tamper input. *See Notes.*

T201 to T204. Zone Inputs.
See "ZONE INPUT WIRING" on p3 for details.

JUMPER LINK ORIENTATION



LK2 RAM Configuration

2-3 32k DS1230Y (28 Pin)
1-2 128k DS1245Y (32 Pin)
1-2 512k DS1247Y (32 Pin)
Note orientation and position of 28 Pin IC in bottom of socket.

JP3 Auxiliary Expander Header connection for IRA3000 8 Auxiliary Expander.

CONTROL MODULE FAULT LED DIAGNOSTICS
See table on this page.

T206
Detector Power connections.

CONTROL MODULE FAULT LEDs

LED1	LED2	EXPLANATION / REMEDY
ON	OFF	Ram Fault. RAM faulty, in backwards, out by one pin or LK2 not correct. Power off, fit correctly or replace.
OFF	ON	Non-volatile RAM not initialised. Short LK4 to continue. (Erases all programming)
ON	ON	Configuration Problem. Return options memory chip to Distributor.
Fast Flash	OFF	Hardware Problem. (EEPROM) Return unit for service.
OFF	Fast Flash	Wrong GAL for NVRAM size. (Illegal Memory size) Contact the Distributor.
Fast Flash	Fast Flash	Wrong GAL for required options. (Illegal option/s) Contact the Distributor.
Fast Flash	ON	Faulty Program chip. (EPROM) Return unit for service.
ON	Fast Flash	No default for installer code. Short LK4 to continue. Contact Owner/Master Code holder.
Slow Flash	Slow Flash	Secure Micro Version wrong. Contact the Distributor.
Slow Flash	ON	Lock bits not set. Contact the Distributor.

EXPANDER / READER MODULE FAULT LEDs

RX	TX	EXPLANATION / REMEDY
ON	ON	Module is un-addressed.
OFF	ON	Module type unknown. Firmware upgrade required to Control Module.
Flash	ON	Duplicate Module. This module number is already in use by a module of the same type.
Flash	Flash	Module number selected is too big for Control Module RAM size. Select a lower Module number.
ON	OFF	Too many modules on Network for Control Module RAM size.

LCD TERMINAL ERROR MESSAGES

MESSAGE	EXPLANATION / REMEDY
No Rx	Terminal requesting address from Control Module, but no reply being received.
Can't Tx	Terminal cannot send data because LAN is being held in "start" condition. Check for A/B reversed.
Exists	Module number selected already being used by another LCD Terminal. Choose another number.
Too Big	Module number selected is too big for Control Module RAM size. Select a lower Module number.
Too Many	Too many modules on Network for Control Module RAM size.

LAN SYSTEM OVERVIEW

The 3000/Access 4000 LAN (Local Area Network) is a 3 or 4 wire network used to connect the modules in a system.
Up to 250 modules can be connected on the LAN system, comprising up to 99 modules of any particular type. Using the recommended cable types, modules on the LAN can be installed many hundreds of metres from the Control Module.

Data encryption ensures secure LAN communications at all times, while the programmable supervisory polling system continuously monitors the network to detect cable tamper, cable fault conditions, module off-line and module substitution. The data format used in the 3000/Access 4000 LAN has been developed to ensure fast, reliable communications regardless of the size of the system.

For larger systems and complex sites, LAN Isolators are used to provide opto-isolation between sections of the LAN, eliminate potential earth loop problems, improve surge and lightning protection, provide signal level restoral for improved performance over longer cabling distances and offer a monitored "loop" LAN wiring option for a higher level of LAN integrity.

CONNECTING MODULES TO THE LAN. ***Refer to diagram opposite.***

- "A" & "B" signal connections are wired in parallel across the system using twisted pair cable. ❶
  See "Cable Types" details on page 12.
  The "NEG" connection (0V reference) must also be wired to every module. ❷

- An optional + 12 V connection (LAN +ve) may be used to provide power to modules that do not have their own Plug pack and on-board power supply. e.g. LCD Terminals. ❸

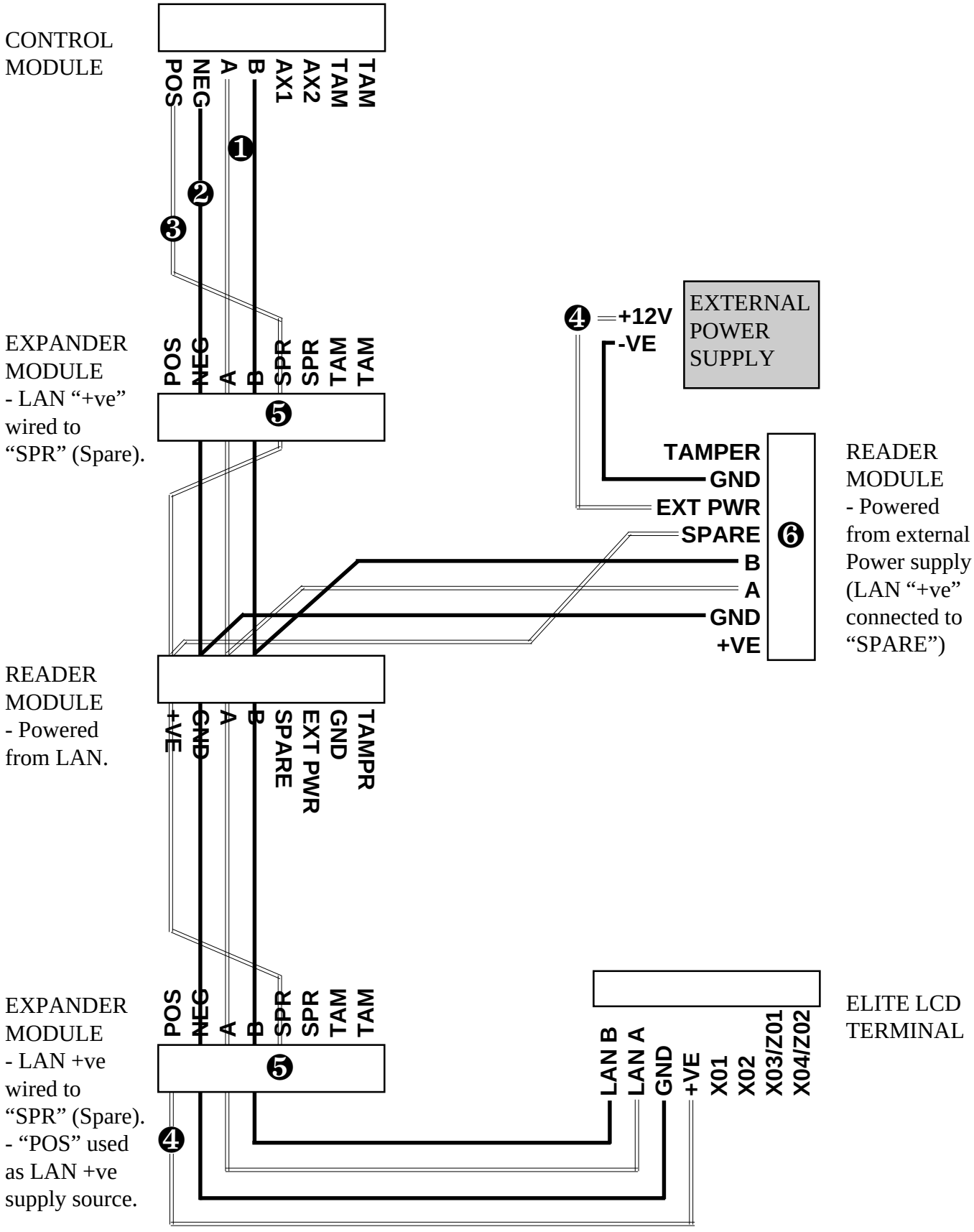
- The + 12 V connection (LAN +ve) used to power LCD Terminals, etc. can be derived from any module with it's own Plug pack and on-board power supply (Control Module and Expander Modules), or from a separate external power supply. ❹
  CAUTION ! Never connect the +ve (POS) of two power supply sources together. i.e. Control Module LAN POS, Expander Module LAN POS, or External Power Supply +ve. This is one of the reasons that "SPARE" wiring terminals are provided on most types of modules.

- When wiring the LAN to modules that are powered from their own Plug pack (e.g. Zone Expanders), use the "Spare" terminal (labelled "SPARE" or "SPR") for the LAN +ve connection. ❺
  NOTE: LAN "POS" and "NEG" should not be used to power detectors, relays, etc. Always use "DET+" and "DET-" on the module to power these devices.

- When wiring the LAN to modules that are powered from an external Power Supply (e.g. Reader Modules), use the "Spare" terminal (labelled "SPARE" or "SPR") for the LAN +ve connection. ❻

- A DC Voltmeter may be used to check that the LAN will operate reliably. *See "LAN Voltage Testing" on Page 16.*

Connecting Modules to the LAN.



CABLE TYPES

- TWISTED PAIR Cable MUST be used to connect the LAN.
  Two pair Telephone or LAN cable is suitable as it provides all 4 conductors required. One twisted pair for "A" & "B", and the other for "POS" & "NEG". Unshielded cable is quite acceptable, however, in situations where electrical storms or high levels of electrical interference are a problem, shielded 2 pair cable may be used. Examples of suitable 2 pair cables:

Unshielded. ***Figure 1.***	Shielded (All Multistrand) ***Figure 2.***	
Olex TJC590AA002	Olex JEIP87AA002	Belden 8723 *
Tycab TIC6105 †	Tycab DPF4702	Tycab DQQ47025 *
MM MegaTwistpatch ‡	MM B2002CS	Garland MCP-2S

† 3 Pair.
‡ Multistrand (7/0.2).
* Indivually screened pairs.

- If SHIELDED CABLE is used, DO NOT use the shield as a negative connection & do not allow the shield to make contact with Negative, Ground, or any other wiring or metalwork within the system. Shields should only be terminated to a Protective Earth at ONE END of the cable. ❶ *See "System Earthing" below.* If no suitable earth point is available at a module location, the shield can be looped back to the shield of the previous length of cable. ❷

- LAN POWER CABLING. Separate heavy duty Figure 8 cable (24 / 0.20 recommended) should also be run for "POS" & "NEG" over longer distances if used for powering modules. e.g. LCD Terminals. ***Figure 3.***

LAN "POS" current required:	**Max. Cabling Length for LAN +ve (POS) & GND (NEG)**		
	Twisted pair	Fig 8. 14 / 0.20	Fig 8. 24 / 0.20
60mA (e.g. 1 LCD Terminal)	200 metres	400m	640m
120mA (e.g. 2 LCD Terminals)	100 metres	200m	320m
180mA (e.g. 1 Reader Module - Reader pwr not incl)	62metres	130m	210m
250mA (e.g. 4 LCD Terminals)	50 metres	100m	160m
500mA (e.g. 8 LCD Terminals)	25 metres	50m	76m

Remember to allow for any extra current required by Detectors, Auxiliaries, Readers, etc:
NOTE: Lock strikes must not be powered from the LAN.

Relay (1A contacts)	approx. 25mA	Small Proximity reader (~10cm read range)	~50 to 120mA
Relay (5A contacts)	approx. 45mA	Standard Prox reader (~15cm read range)	~120 to 180mA
PIR	15 to 25mA typical.	Magnetic Swipe reader.	~15mA

Figure 1.
Twisted pair communications cable.

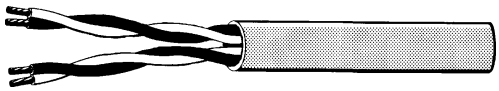


Figure 2.
Shielded, twisted pair communications cable

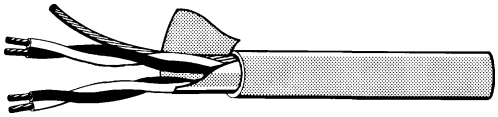


Figure 3.
Heavy duty Figure 8 cable. **24 / 0.20**
Used for LAN +ve & GND on long cable runs.



SYSTEM EARTHING

- DO NOT CONNECT A SYSTEM TO EARTH. This includes all Modules, Input, & Output devices. Plug packs do not have an earth wire as earthing is not required. Also ensure that mounting screws etc., or peripherals connected to modules do not provide an earth connection to the module. This is to avoid earth loops occuring.

- A Printer, PC, modem, etc. connected to the Control Module may provide a connection to earth via the Serial cable. This is acceptable but is the only exception to the above rule.

- LIGHTNING PROTECTION. In multi-building installations and on longer cable runs, shielded cable may be used to provide added protection against lightning strike. Each individual shield should be terminated to a Protective Earth point such as an earth stake, building earth (metal building framework) or water pipe. ❶ It is very important to ensure that the shield makes no contact with Negative, Ground or any other wiring within the system.
  LAN Isolator/s can also be included in a Lightning protection scheme to electrically isolate different sections of the LAN at the point where LAN cabling enters/exits each building, or on cable runs that are more exposed to lightning strike.

SYSTEM CABLING CONFIGURATION ***Figure 4 & Figure 5.***

- Avoid installing the LAN cable with mains power cables & any other cables likely to cause interference wherever possible

- No module is to be more than 1.5km (1500 metres) cable length from the Control Module OR from a LAN Isolator "LAN 2" or "LAN 3" Port. ❸ (LAN Isolator/s can be used to extend the maximum cabling distance)

- TOTAL LAN CABLING in a system without LAN Isolators should not exceed 2000 metres, and/or 64 Modules. ❹
  If the total amount of LAN cable will exceed 2000 metres, and/or there are more than 64 modules to be connected, LAN Isolator/s must be used to separate the LAN system into sections and maintain optimum LAN performance. i.e. Include one LAN Isolator for every 2000 metres of LAN cabling and/or for every 64 Modules connected. ❺

LAN TERMINATION ***Figure 4 & Figure 5.***

- The LAN MUST be Terminated for optimum performance, by ensuring that the Termination Resistor (470 Ohm*) is "IN" on the first and last modules in the LAN network. Terminated modules are indicated with a "**T**" on the illustrations. ❻
  (Termination is put "IN" with a jumper link or a DIPswitch, depending on the module type) ** See Note 1 on Page 15.*

- MULTIPLE CABLE RUNS. In systems where there are multiple cabling runs going out from the Control Module or LAN Isolator (i.e. "star" configuration), Termination is fitted on the modules at the end of the two longest runs. ❼

Figure 4.
Simple LAN configuration.

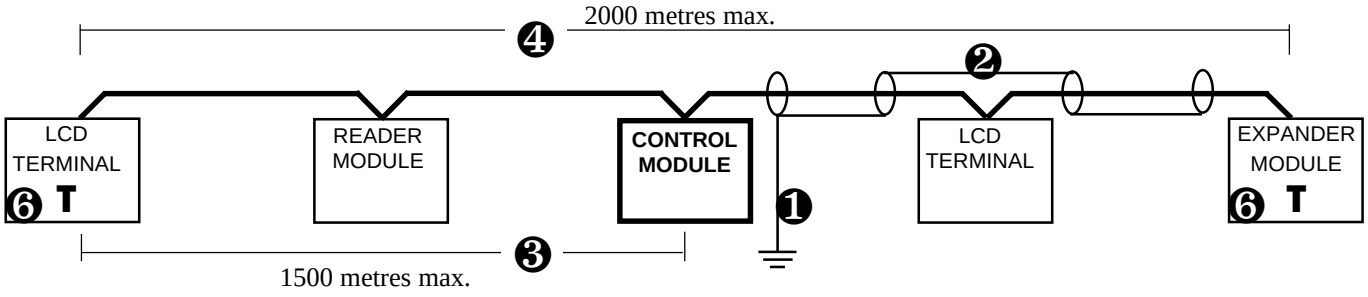
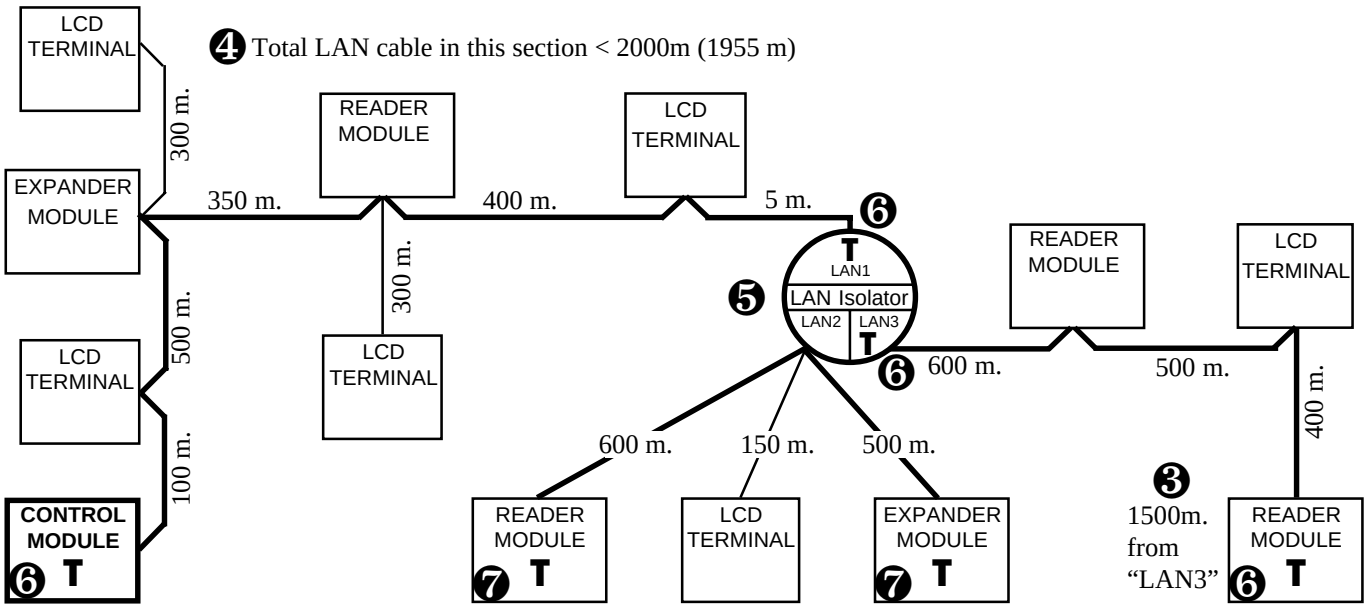


Figure 5.
Complex LAN configuration.



LAN TROUBLESHOOTING FLOWCHART

BEFORE SYSTEM POWER UP
(No Power connected to modules
AND No batteries connected)

A1. WHERE POSSIBLE, PHYSICALLY CHECK:
-LAN A & B connections not reversed on any module.
-No modules connected to earth. (via mounting bolts, ext. power supplies, input/output cabling, etc.) Note that the Control Module may be connected to earth via external equipment connections. i.e. Printer, PC, modem, etc. If so, this must be the only earth connection in the system.
-Only two modules in the system are terminated.

⇓

A2. CHECK FOR SHORT CIRCUITS ON THE LAN
(No Power connected AND No batteries connected)
METER ON OHMS RANGE
Check at the Control Module for short circuits between:
-LAN A & B.
-LAN A to +ve and -ve.
-LAN B to +ve and -ve.
Note:DC Resistance in the LAN cable (~0.18Ohms/metre) can mask short circuits that exist on longer cable runs.

⇓

A3. CHECK FOR CORRECT LAN TERMINATION
(No Power connected AND No batteries connected)
METER ON OHMS RANGE
Measure between LAN A & LAN B on the Control Module:

170 to 300 Ohm.*	OK. (System with up to 32 modules)
140 to 270 Ohm.*	OK. (System with up to 64 modules)
Lower value.	More than two modules terminated or Short cct across LAN A & LAN B.
Higher value.	Less than two modules terminated or Open cct on LAN A &/or B wiring.

** See Notes 1 & 2.*

⇓

POWER UP SYSTEM & CONNECT BATTERIES

A4. CHECK CONTROL MODULE OPERATION

DC POWER CHECK. With Meter on DC Volts range, measure between LAN +VE & LAN -VE (GND) on the Control Module:

11V to 14V.	OK.
<11V.	Too many devices being powered from the Control Module or Battery Flat.

Check FAULT LEDs on Control Module:

Both Off.	OK. *Proceed to step A5.*
Any other state.	Refer to "*Control Module Fault LEDs*" table on Page 9.

⇓

A5. DETERMINE THE TYPE OF LAN PROBLEM

A. SOME MODULES HAVE INTERMITTENT COMMUNICATIONS PROBLEM.
Proceed to Step B1, "Intermittent LAN problems". ⇒

B. SOME/ALL MODULES NOT COMMUNICATING AT ALL. *Proceed to Step A6.*

⇓

A6. IS THE LAN COMPLETELY DEAD ?

YES. *Proceed to Step C1, "LAN Dead".* ⇒ ⇒

NO. (Some Modules not communicating, others OK)
Proceed to Step A7.

⇓

A7. CHECK STATUS OF PROBLEM MODULE/S

DC POWER CHECK. Meter on DC Volts range. Check for 11 to 14 Volts between LAN +VE & LAN -VE (GND) on the problem module. *See Note 3.*

Check FAULT LEDs (TX & RX LEDs) OR LCD Display on problem Module:
Both LEDs Off OR Display has no "Module ..." messages. *Proceed to step A8.*

Any other state. Refer to "*Expander/Reader Module Fault LEDs*" table or *"LCD Terminal Error messages"* table on Page 9.

⇓

A8. TEST LAN VOLTAGES AT PROBLEM MODULE/S

Perform LAN Voltage Checks at the problem Module/s. Refer to the table *"LAN Voltage Testing"* on Page 16.

⇓

A9. SUBSTITUTE MODULE/S

If the troubleshooting procedure fails to locate any power, wiring or termination problems, you may have an equipment fault. Replace the module/s suspected of causing the problem.

⇒ ⇒ ⇒ ⇒ ⇒

LAN DEAD

⇒ **C1.** TEST VOLTAGES AT CONTROL MODULE

Perform LAN Voltage Checks at the Control Module. Refer to the table *"LAN Voltage Testing"* on Page 16.

If this fails to locate the problem, *proceed to Step C2.*

⇓

C2. ISOLATE PROBLEM CABLING OR MODULE/S

Disconnect all LAN wiring from Control Module. Reconnect one LCD Terminal and ensure that it communicates. (If it doesn't, follow Steps A7 & A8)

Reconnect the LAN one module at a time until a problem module, or section of cabling kills LAN communications when reconnected.

With the problem area identified, *proceed to Step A8.*

⇓

⇐ ⇐ ⇙ ⇐ ⇐ ⇐

INTERMITTENT LAN PROBLEMS

B1. WHICH MODULES ARE INTERMITTENT ?

Using an LCD Terminal or Review Logging via Upload/ Download software, check Review Data for "Module Lost" and "Module Found" messages.

Each message will also identify the Module type and number. Note the problem module/s.
Proceed to Step B2.

⇓

B2. IS ANOTHER EVENT CAUSING THE MODULE TO BE LOST ?

Look at the Review Messages immediately preceding the "Module Lost" messages for any event that repeatedly coincides with the loss of module/s, or if the loss of module/s occurs at, or around, the same time of day. Look for messages such as Door Un-lock/Lock, Siren On, Auxiliary On, etc., and note the times when the "Module Lost" messages occured.

YES. Ancillary devices & external equipment (e.g. electrical machinery) can produce voltage spikes, electrical noise and excessive current drain.
If the LAN, Power & Auxiliary circuits are not wired correctly or Earth loops exist, these devices can interfere with LAN communications.

If such an event does coincide with loss of comms, reproduce the sequence of events to confirm the effect, then check any associated wiring circuits accordingly.

NO. *Proceed to Step A8*

NOTES:

1. LAN TERMINATION CHECK
Very early 3000 products (Australia & NZ only) had 120 Ohm Termination resistors which results in lower measurements (~70 to 140 Ohms). When expanding these systems, take termination OUT on the existing modules, and put termination IN on two of the new modules. Alternatively, take termination OUT on the existing modules and fit a 470 Ohm resistor between LAN A & B on those two modules instead. NOTE: This is only necessary if expanding the system, or if there are communication problems. If the system is operating reliably, no modification is necessary.

2. TERMINATION RESISTOR CHECK
To determine if a module is fitted with a 120 Ohm or 470 Ohm Termination Resistor, ensure that TERM is "IN", disconnect the module from the LAN, remove power, and measure across LAN A and B on the module with the meter on the OHMS range.

3. MODULE POWER TEST
The Test Menu can be used to check LAN Power conditions. Logon to the LCD Terminal, then press <MENU>, 4, 8. This activates the power test, and the results will be displayed on the LCD Terminal, and in the review memory. See "Concept 3000 Programmer's manual" Rev 2.3 p154 for more information.

LAN VOLTAGE TESTING

NOTES:

1. These Voltage checks should be done with no (or minimal) communications traffic on the LAN. To ensure this:
   a) Check that poll times for all addressed modules in the system are set to the default 60 / 120 seconds or greater.
   b) Disconnect LAN A and LAN B from any unaddressed modules on the LAN, as these modules will be constantly attempting to send messages to the Control Module.
   c) Ensure that Terminals, Readers, etc. are not being used while performing tests.
   Before proceeding with Voltage tests, check the "RX" LED on the Control Module to confirm that there is minimal LAN activity.

2. To determine if a problem exists on the module under test, or elsewhere on the LAN, these voltage tests can be performed:
   a) With the module connected to the LAN.
   b) On the cable connections with the module disconnected from the LAN.

Test Point + PROBE	**Test Point - PROBE**	**EXPECTED RESULT**	**PROBLEM/ REMEDY**
LAN +ve	LAN -ve or GND	11V to 14V DC	**0V.** Open circuit LAN +ve connection, or short cct between LAN +ve and LAN -ve. **<11V.** Too many modules powered from the LAN power supply source. Length (or guage) of LAN cabling causing excessive Voltage drop on the cable.
LAN B	LAN A	200 to 400mV DC	**<200mV.** Short cct between LAN A & B. More than 2 modules terminated in this section of LAN. **>400mV.** LAN A &/or LAN B Open circuit. Less than 2 modules terminated in this section of LAN **<0V (Negative reading)**. LAN A & LAN B connections reversed.
LAN A	LAN -ve or GND	200mV to 2.5V DC	**<200mV / >2.5V DC.** System may have more than one module connected to an earth point, causing earth loop/s. Ensure that no more than one module in the system is connected to earth. Remember that a module may be connected to earth via a peripheral device or it's cabling. e.g. PC, Printer, External power supply, Detector, Output device, etc. If installation methods &/or system configuration makes multiple earth points unavoidable, install LAN Isolator/s at suitable points in the LAN system to isolate the earthed section/s
LAN B	LAN -ve or GND	200mV to 2.5V DC	As above.

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GLOSSARY OF TERMS

4+2 PULSE	Simple tone-burst communications format allowing the system to dial a Central Station to report alarms & other system activity on a normal PSTN phone line. 4 client code and 2 alarm digits are sent. Normally, the 1st digit represents the type of event (e.g., open, close, alarm, restore etc.) and the 2nd digit represents the event detail. Has very limited reporting capabilities. (V3 or later)
ACCEPT	PC software providing monitoring, control and management of the system in a simple Window point & click environment with graphical interface. (V2 or later)
ACCESS GROUP	Access groups are programmed to define access control options for different types of Doors/Lifts. They are then allocated to the Doors or Lifts to determine how each will operate.
ADDRESS	A number allocated to every module in the system that is connected to the Control Module via the LAN. Allows the Control Module to identify each module.
ALARM	The condition of a zone or system input when it is in an abnormal condition and the system has been set to respond to that condition. i.e. Area/s turned ON.
ALPHA-SEARCH	Many items in the system are identified with text names (as well as ID number). The Alpha-search option allows the User to quickly locate items by using the digit keys of the LCD Terminal to jump to names beginning with a specific letter.
ANTI-PASSBACK	A system to monitor/prevent a user passing through a door into the same area as the system records them as being already in. e.g. Prevents a user from passing their card back under a door for another person to use.
AREA	Dividing a system into areas allows different parts of the system to be protected differently. i.e. Turned ON or OFF at different times, Reported separately, etc. Areas are named for easy identification. e.g. WORKSHOP, OFFICE, STORE, etc.
AUXILIARY	A device used to control an external device or indicate that a particular condition or conditions exist in the system. An auxiliary may be a physical output (Lock auxiliary, Entry warning device, Strobe, etc.), or a “phantom” auxiliary used in the programming to link two or more functions together.
BACKUP CARD	A number of Backup Cards can be enrolled in the system that will still provide card access at Readers connected to Standard Reader Modules in the event of a communications failure between the Control Module and any Reader Modules.
CALCULATED AUXILIARY	Powerful auxiliary programming tools that can activate an auxiliary (or Input) as the result of programmable logic, or be used for special Control functions over Areas, Doors, Lifts, Area Counters and Anti-Passback processing.
CARD	General term for Magnetic Stripe, Proximity, Wiegand cards & other devices such as Insert keys, Barcodes, etc. that can be utilized to operate the system.
CENTRAL STATION	Remote monitoring facility to which alarms and system activity are reported by Security systems so that appropriate actions are initiated, and records kept.
CLIENT CODE	An ID number, usually 4 digits, sent to a Central Monitoring station with each event reported to identify the Client. A unique Client Code can be reported for each Area in the system if necessary. e.g. In multi-tenancy sites.

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CONTACT ID	Communications format allowing the system to dial a Central Station to report alarms & other system activity using DTMF tones on a normal PSTN phone line.
CONTROL MODULE	The heart of the System. The Control module stores all data, communicates with all modules connected to the system LAN, and reports alarms & system activity to the central station and/or computer.
DE-BOUNCE	*See "Zone De-bounce"*
DEFER AREA	Option to define specific Area/s that when turned Off by specific User Type/s, will start a timer running. When the timer expires, the Area will automatically turn On again, unless the User enters their code to "Defer" the Area On function and re-start the timer. (V3 or later)
DIARY	A feature for displaying pre-programmed messages or default messages on LCD terminals for a specified period.
DOOR	An access point in a system that can be programmed to provide and restrict access to users as required, and monitored for abnormal conditions.
DOOR FORCED	A System Input for each Door to indicate when a Door is Locked and has been opened without a valid unlock command. i.e. Without valid User Access, REN / REX button, Auto unlock via TimeZone, etc.
DOOR OPEN TOO LONG (or DOOR HELD)	A System Input for each Door to indicate when a Door is held open for too long when opened with a valid un-lock command. The "Maximum Door Open Time" is programmable for each door.
DTMF	(Dual-Tone Multiple Frequency) Audio frequency signalling system used for dialling telephone numbers and transmitting data. (Same as used on touchtone, push-button telephones for dialling) Also utilized to send Remote Control commands to the system via the telephone line connection. (V3 or later)
DUAL USER	Requirement for two Users to present their Cards / PIN codes at specified Door/s before access is granted.
DURESS	PIN code/s can be programmed that will activate a System input on the Terminal where the code was used, to report a Duress condition to the Central Station. i.e. When a user is being forced to turn OFF the system by an intruder, they would do so using their "Duress" PIN code.
EARTHNET	Communications format allowing the system to report alarms and other system activity to a Central Station using a supervised Direct (Private) line.
ENTRY DELAY	The maximum time that a user has to turn OFF an area, after entering the area and activating any detection devices nominated as "Primary Entry" types.
EXIT DELAY	The maximum time that a user has to exit the area after turning the area ON. Detection devices nominated as "Exit" types, will not generate alarms during this time.
EXPANDER MODULE (Zone Expander)	A module that connects to the Control Module via the system LAN and provides additional zones, sirens, and auxiliary outputs wherever they are required.

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FUNCTION ZONE	Programming facility that allows zone or system inputs to: -Individually control an auxiliary. (Completely independent of Area programming) e.g. Doorbells, Interface to lighting/heating/aircon. systems, etc. -or; Turn area/s ON and/or OFF. e.g. Keyswitch Control, Remote Control, etc.
HOLDUP AREA	Area option for special Input processing that delalys the reporting of an alarm, allowing the User to enter their PIN code and cancel the alarm if the device was activated accidentally. (V2 or later)
HOLIDAY	Specific dates or periods may be programmed as "Holidays". Holidays may then be utilized in the "TimeZones" to specify whether the TimeZone will be valid OR in-valid on the holiday date/s specified.
HOME AUXILIARY	Home Auxiliaries are specified auxiliaries that can be controlled by users directly from an LCD Terminal. e.g. Pool pump, sprinkler, etc. They can be named for easy identification, & programming can restrict which users can control which auxiliaries. A Home Auxiliary may also be controlled automatically by an Input.
HOME ZONE	A number of Inputs (depending on memory size and configuration) can be assigned to Home Zones. Via the Menu Group, User Types can be allowed "Home Zone Isolate" that simplifies the Isolate / De-isolate function by allowing Zones to be located with the alpha search feature. (V3 or later)
INPUT	An input may be a physical Zone Input on a Module, or a System input activated when specific conditions occur on a Module. (e.g. Low Battery, Line fault, Cabinet Tamper, Door Open Too Long, Illegal Card, etc.) Programming of Inputs and Areas will determine how (and if) the system will respond (generate an alarm, activate an auxiliary, etc.) when any input changes state. (See also "ZONE" and "SYSTEM INPUT")
INTERLOCK GROUP	A programming option allowing a List of Doors to be interlocked together. i.e. A door will not un-lock unless all the other Doors in the List are locked and closed. Interlock groups can also be programmed to check the status of a specific Area, Auxiliary or Zone before allowing access if required. (V2 or later)
IRFAST	Communications format allowing the system to dial a Central Station to report alarms & other system activity using a very fast data transmission technique on a normal PSTN telephone line.
ISOLATE / DE-ISOLATE	Isolating enables faulty devices wired to Zone inputs, or System inputs that cannot be immediately restored, to be temporarily taken out of service in order to prevent them causing alarms when the area is turned ON. Once the problem is rectified, the device is De-isolated to restore normal operation.
LAN	(Local Area Network) Data communications network used in the system to connect modules (LCD terminals, Expander Modules, Reader Modules, etc.) into the system.
LCD	(Liquid Crystal Display) A display that allows information to be viewed in plain English text. The LCD used in the LCD Terminals is backlit to allow viewing in any lighting conditions.
LED	(Light Emitting Diode) A semiconductor light source used as an indicator lamp with the advantages of lower power, longer life and higher speed over conventional filament lamps. Used on module PCBs to indicate status and diagnose problems. Also used on Elite LCD Terminals to indicate Area status and/or other system conditions.

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LIFT	A special access point in a system that can be programmed to provide and restrict user access to Lift Cars and Floors. This is achieved by enabling specific Floor selection buttons via a Reader in a Lift Car.
LISTS	Lists are used to simplify system programming. Once a List is created it can then be assigned in other programming options such as User Types, TimeZones, Calculated Auxiliaries and Function Zones, to define the items that are allowed to be controlled/accessed. There are 6 different types of Lists; Area, Siren, Door, Lift Car, Floor and Auxiliary Lists. (Aux Lists, V2 or later)
MENU GROUP	Menu Groups are programmed to define system operations & menu options allowed, and are then allocated to User Types and/or LCD Terminals to determine the control and menu access available.
MODEM	(Modulator-Demodulator) A device used to convert a digital signal from a microprocessor (Control Module, Computer, etc.) to an analog signal for transmission over a network (telephone line, LAN, etc.) The Control Module has an on-board modem for communicating via dialer or direct line to Central Monitoring Stations, or via dialer line to a PC. External Modems can also be connected to UART Ports if required.
MODULE	Module is the general term used for any device that connects to the system LAN to form part of the system, and includes LCD Terminals, Several types of Expander Modules, Reader (Door) Modules and Analogue Input Modules.
PANIC	A Panic alarm can be activated by a User by pressing the <HELP> key 3 times in quick succession.
PIN CODE	A unique numerical code of 1 to 8 digits, allocated to any user in the system who is required to perform functions at an LCD Terminal or Keypad.
POLL/POLLING	The process of a central controller expecting to receive a regular message from all remote Modules. Utilized on the system to monitor the presence of all modules on the LAN, thereby ensuring the LAN integrity.
PORT	A microprocessor interface (on a Control Module, Computer, etc.) that allows connection of an external device. e.g. Printer, Modem, Computer, Monitor, Securitel interface, etc.
PRIMARY ENTRY ZONE	A type of Input (defined in the Process Group) that will start an Entry delay timer running when a User first enters an Area. *(See "Entry Delay")*
PROCESS GROUP	Process Groups are programmed to define how Inputs (zones & system inputs) will be processed. Every Input in an Area is assigned a Process Group to determine what processing (if any) will take place when the input changes state in that Area. (States include: Seal, Alarm, Tamper and Isolate)
PULSE COUNT	An option in Process Group programming that requires an Input to register a specified number of Seal to Alarm transitions within a specified time before it will be regarded as being in alarm. The number of pulses, and time are defined in Area programming if required.
READER	General term for a variety of card, insert key, biometric readers, etc. which may be utilized on the system to access Doors, access Lifts, Login, Logout, etc. Includes Magnetic swipe or insert, Proximity, Wiegand, Barcode, Hand geometry, Fingerprint, or even high security scrambling Wiegand Keypads.

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REED (or REED-SWITCH)	(Also known as "Door Contact") Switch Contact activated with the presence of a magnetic field. Used to indicate the status of a Door/Window etc.
REN	(Request to Enter) Typically a button provided to unlock a door from the outside, bypassing the need to use a reader during low security periods.
REX	(Request to Exit) Typically a button provided to unlock a door from the inside either bypassing the need to use a reader during low security periods, or because an internal (exit) reader is not required. The "REX" device can also be a PIR or Photo-Electric beam to detect the User approaching the door.
REVIEW	Log of alarms and events that can be viewed at an LCD Terminal or PC. Each event is time/date stamped and programming options allow the installer to define which events are not logged. Number of events stored varies from 300 to 6500 depending on memory size fitted and memory configuration selected.
SECURITEL	Communications format used in Australia. Allows reporting of alarms and other system activity to a Central Station using a normal PSTN Telephone line, but providing a supervisory polling system for added security. (Requires interface unit)
SITE CODE	Used in conjunction with certain types of access control cards to identify a particular batch of cards when using the Site Code method. The system allows multiple Site Codes to be programmed.
SPREADNET	Spread-spectrum Wireless detector system from C&K Systems. The SpreadNet Receiver can be directly connected to a UART Serial Port on the Control Module, allowing up to 208 Wireless Zones to be monitored without any additional wiring. (V2 or later)
SUB AREA	A Sub Area can be defined for each Area in the system, allowing a common Area to be controlled (turned On and Off) by other Areas.
SYSTEM INPUT	System inputs are activated when specific conditions occur on a Module. They are used to indicate situations such as Cabinet tamper, Siren tamper, AC fail, Low Battery, Fuse tamper, Communications problems, LAN problems, Panic, Duress, Door Open Too Long, etc. etc. Programming of Inputs and Areas will determine how the system will respond (generate an alarm, activate an auxiliary, etc.) when any system input changes state.
TAMPER	An abnormal condition on a zone input or other device connected to the Concept system that indicates that interference or damage has occurred to the device or it's cabling. e.g. Open circuit or Short circuit condition. The system can be programmed to provide 24Hr monitoring for the tamper condition.
TERMINAL	Device connected to the system via the LAN to allow user interface via keypad entry and alphanumeric display. e.g. Elite LCD Terminal.
TIMEZONE	A time period specified in terms of START time, END time, and valid DAY/S of the week. Four such periods can be specified in each TimeZone. TimeZones are utilized in many functions such as specifying the valid period of user access, groups and lists, and turning areas and auxiliaries on and/or off automatically.
UART	(Universal Asynchronous Receiver / Transmitter) A type of Port available on the Control Module providing connection for up to 4 external serial data devices. e.g. Printer, Modem, Computer, Monitor, Securitel interface, etc. 1, 2 or 4 UART port/s are provided by fitting an interface to the Control Module.

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UNIVERSALEXPANDER MODULE (Zone Expander)	*See "Expander Module".*
USER	Any person allocated a PIN code and/or card who is able to perform operations on the system.
USER RANK	A method utilized in the system to restrict which Users (if any) that another User may alter, and which User Types they may assign to another User.
USER TYPE	User Types are programmed to define the extent of Security system control, Access control and system operations allowed to particular types of users. e.g. Manager, Cleaner, Sales Staff etc. "Menu Groups", various "Lists" and option settings are used to specify the exact level of control, access and other operations available.
ZONE (or ZONE INPUT)	A physical Input on any Module in a Concept system. Zone inputs are used for connecting detection devices (PIRs, Door/Window Reeds, Photoelectric beams, etc.), Keyswitches, "Request to Exit" buttons, Smoke detectors, Seismic detectors, etc., etc. Programming of Inputs and Areas will determine how the system will respond (generate an alarm, activate an auxiliary, etc.) when any zone input changes state.
ZONE DE-BOUNCE	All inputs on the majority of Security and Access control systems incorporate Zone de-bounce to minimize false alarms due to voltage spikes induced onto cabling. In this product, De-bounce simply requires that when a Zone input changes state, it must remain in the new state for at least 200 - 400 mS (depending on module type) before the change will be recognized. Applications requiring faster de-bounce times are catered for in Mini Expander Modules that have programmable de-bounce for every zone, allowing for 16 different values between 5mS and 1250mS. (V2 or later) Universal Expander Modules have a DIPswitch setting that selects between 40mS and 400mS de-bounce for all Zones on the Module.
ZONE EXPANDER	*See "Expander Module".*

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