

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 therefore 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.

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” or “Lift Control”. Use the right arrow to toggle between the two options.

R01 1st Door D000

This screen allows the selection of the first Door (or Lift) that this Reader module is to control.

R01 1st Lift L000

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. 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. (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 Lift Installation notes.

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 | Cards | 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 | Enter 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. |
| X | Exit 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. |
| F | First 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.) |
| W | DOTL Warning | 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 <u>local</u> 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 | No 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 | Tongue 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. |
| 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)

None	No Reader Arming.
Extra Area if PB	User's Extra Area will arm if “ARM” Input is Unsealed when Card presented.
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 when Card presented.
Entry Area if PB	Area on the other side of the Door will arm if “ARM” Input is Unsealed when Card presented.
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.
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. <i>See “Reader Area Control” in the Applications Programming section for more details.</i>

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> Swipe

This screen allows the type of Reader Head connected to the 1st Reader Input on the Reader Module to be selected.

Refer to the following table for more details.

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.
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. <i>See notes below.</i>
Insertion	Selects an insertion style magnetic Card Reader. All digits between the start sentinel and up to and including the 1st separator 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	Selects a Wiegand Reader which outputs 27 bits including the start bit and stop bit. (Reader must be 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. Reader must be 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 or Indala ARK-501 keypad can be buffered and sent as Wiegand data. Reader must be Version 9 or later, fitted with at least V12 firmware.

Additional information on the “Swipe Last” format is found on the following page.

Swipe Last Format

Swipe Last 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.

eg. 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.

**R01:Rdr1 Mode ->
Credit Card**

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 Proximity Plus PIN code Reader.

HID5355

Get PIN from a Hughes HID5355 Proximity Plus PIN code Reader.

NOTES:

1) 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) When using the "Proximity Plus PIN code" Readers (ARK-501 & HID5355), only the "Card + PIN" and "Card Only" operations are supported. i.e. "PIN Only" operation is not supported.

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.

R01:Rdr2 Loc. -> Outside

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.

R01:Rdr2 Format> Swipe

R01:Rdr2 Mode -> Credit Card

R01:Rdr2 Keys LCD Term

R01:Rdr2 Module for PINs: T000

The tables below show how the 2 Door Access Module connections vary between “One Door” and “Two Door” modes:

Reader Auxiliary Outputs

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

* 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.

Reader Zone Inputs

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*

* These Zones are sealed when open circuit. Therefore, the Normally Open and Common contacts of the send button are used.

Zones labelled “Spare” are available as general purpose Zone Inputs if Tongue sense is not set.

Reader System Inputs

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.

If the Tongue sense option is set to No, tongue sense Inputs are ignored in the above logic.

LED Indications

Reason	No. of Flashes
No Door Programmed	4
No Access Group Assigned	4
Door not in list	4
Card Cancelled	3
Area Armed	3
Wrong Issue	3
Not Site Code User	3
Format Mismatch	3
No Card Found	3
User # too big	3
Site Code not found	3
Card not found	3
TimeZone violation	2
Card Expired	2
Anti-passback violation	2
Need PIN.	2
Wrong PIN/No Terminal for PINs	2
No Door List	2
Time-out for 2nd User	2
Button not Allowed	1

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.

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). This mode is activated by setting the “W” (DOTL **W**arning) option to YES and the “N” (No LEDs) option to NO under Reader Programming.

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:	Chip U7:		
V14	V9	V3 or later	DOTL Warning operates on Door 1 and Door 2.
V13	V9	V3 or Later	DOTL Warning operates on Door 1 only.
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.

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)

