ESPRIT

718/728L/728/738/748/748ES

Installation Manual

PARADOX
SECURITY SYSTEMS

IM8 960715-0000

Requirements and guidelines for U.L. INSTALLATIONS

UL listed in accordance with standard **UL1023** (Household Burglar - Alarm System Units), standard **UL985** (Household Fire Warning Units) and **UL1635** (Digital Alarm Communicator System Units).

UL has only evaluated the 718, 728L, 728, 738 and 748 for compatibility with the Ademco model 685, FBI model CP220FB, SUR-GUARD SG-MLR2-D6 and Silent Knight model 9000.

Some operational features are not permitted in UL installations. To respect the standards for household applications, the installer should follow these guidelines when configuring the system.

1. ALL components of the system should be UL listed for the intended application.

2. If the installation is a FIRE ALARM application, refer to NFPA Standard 74 for details on locating smoke detectors. There must be at least one UL-Listed Indoor Fire Alarm Warning Signaling Appliance.

3. For U.L. Burglar Applications:
   Maximum entry time = 45 seconds
   Maximum exit time = 60 seconds
   Minimum bell cutoff time = 4 minutes

Requirements and Guidelines for AUSTEL INSTALLATIONS

Austel-approved installations: use a transformer approved by the State Electricity commission, such as "Dyen" PA series 15VAC 22VA. With this transformer, do not exceed the following maximum currents: - maximum Auxiliary current (including keypads): 300mA
- maximum Bell current :600mA

Requirements and Guidelines for ULC INSTALLATIONS

When the system controls a fire alarm system, wiring method must correspond to section 32 of the Canadian Electrical Code.

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//// INTRODUCTION

Thank you for placing your trust in the ***Esprit*** series of control panels. You've chosen a sophisticated, user-friendly control panel designed to meet all of your technological, performance and security requirements. For your convenience and ease of use, almost all of the programming, and upload/download features of ***Esprit*** panels are identical.

We hope that the important features of the ***Esprit*** line, which include Advanced Technology Zoning, which allows 2 zones and a tamper on a single pair of wires, a 120-event, PC-uploadable event buffer, and high-speed pre-programmed communicator formats, will simplify your task of supplying quality security service to your customers.

ABOUT THIS MANUAL

This installation manual has been created to provide you with the information you will need to understand panel operation, features and functions. The information in this manual is common to **all Esprit** panels except where noted. It expands on the guidelines found in the ***"Programming Guide***". The ***"Programming Guide"*** also contains information **specific** to the model you are installing. Even if you are familiar with other security control panels, we recommend that you read this manual at least once to familiarize yourself with panel features. Please refer to the index for a complete list of manual contents.

ABOUT PARADOX

We do our best to develop technologically-advanced control panels. If you have any comments or suggestions, or if you require additional technical assistance, please contact your local distributor. Every effort has been made to ensure that your distributor's staff has received complete training from Paradox Security Systems so that you receive prompt and effective service.

CONTROL PANEL DESCRIPTIONS

All Panels have Upload and Download capability, telephone line monitor and fast formats. (Model 718 does not provide fast formats.)

Esprit 718 (UL/ULC listed)

Up to 5 hardwire zone control panel: Comprised of 3 onboard single zone inputs, up to 2 additional keypad zones (1 per keypad), 3 keypad-activated panic alarms. 1 PGM output, and 9 user codes. Enclosure 6.5”X9”X3” (16.5cmX22.8cmX7.6cm).

Esprit 728L (UL/ULC listed)

Up to 8 hardwire zone control panel: Comprised of 3 onboard doubled zone inputs (Advanced Technology Zoning), up to 2 additional keypad zones (1 per keypad), 3 keypad-activated panic alarms, 1 PGM output, 120 event Buffer, and 9 user codes. Enclosure 6.5”X9”X3” (16.5cmX22.8cmX7.6cm).

Esprit 728 (UL/ULC listed - CE)

Up to 8 hardwire zone control panel: Comprised of 3 onboard doubled zone inputs (Advanced Technology Zoning) up to 2 additional keypad zones (1 per keypad), 3 keypad-activated panic alarms, 1 PGM output, 120 event Buffer, partitioning and 17 User codes. Enclosure 8”X10”X3” (20.3cmX25.4cmX7.6cm)

Esprit 738 (UL/ULC listed - CE)

Up to 14 hardwire zone control panel: Comprised of 6 onboard doubled zone inputs (Advanced Technology Zoning), up to 2 additional keypad zones (1 per keypad), 3 keypad-activated panic alarms, 2 PGM outputs, 120 event Buffer, alarm relay, partitioning and 17 User codes. Enclosure 11”X11”X3” (28cmX28cmX7.6cm)

Esprit 748 (UL/ULC listed - CE)

24 hardwire zone control panel: Comprised of 12 onboard doubled zone inputs (Advanced Technology Zoning) and 3 keypad-activated panic alarms. Keypad zones are displayed in parallel to zones 13 and 19. 2 PGM outputs, 120 event Buffer, alarm relay, partitioning and 17 User codes. Enclosure 11”X11"X3” (28cmX28cmX7.6cm)

Esprit 748ES (UL listed - CE)

24 hardwire zone control panel: 24 single zone inputs and 3 keypad-activated panic alarms. Keypad zones displayed in parallel to zones 13 and 19. Aux power: 1.2A, (Fuseless electronic shut down at 3A, automatic restore). 5 pairs of AUX terminals, 2 PGM outputs, 120 event Buffer, 17 User codes and alarm relay. Enclosure 14”x12.5”x4” (35.6cmX31.8cmX10.2cm)

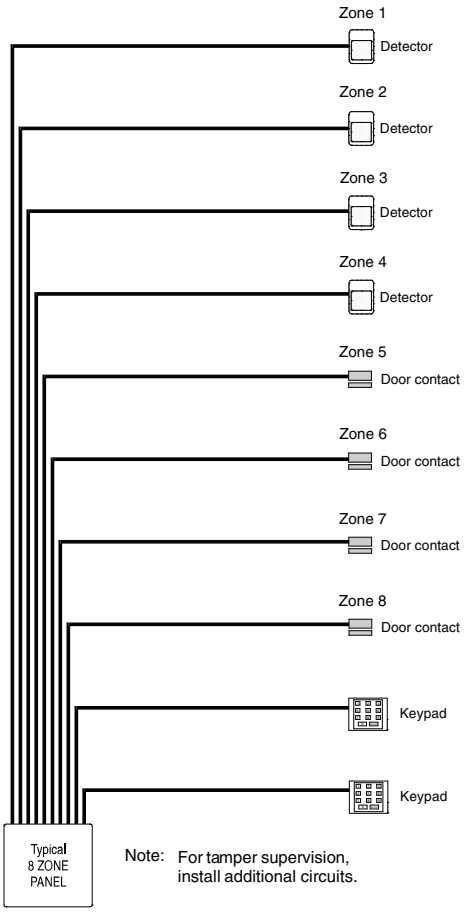
//// FEATURES

Reliability
The Esprit's superior capabilities are driven by cutting edge hardware. Use of the most powerful RISC processors on the market, with built-in "Analog to Digital" converters and SMD Technology, means these control panels require 30-40% less components than any comparable units.

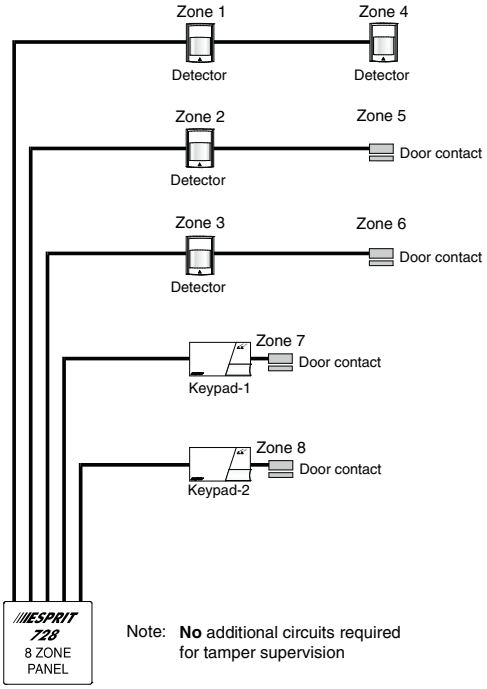
Total Compatibility
All programming, comprehensive system features, and upload/download software of Esprit panels are identical. This total compatibility significantly reduces the time required to conduct training, programming and system upgrades. There's just one set of procedures for all Esprit panels.

Advanced Technology Zoning (***728L***, ***728***, ***738***, ***748***)
Advanced Technology Zoning software circuitry has been developed, which permits 2 zones and tamper on a single pair of wires, as well as wire fault recognition. ATZ simplifies the task of meeting the zone requirements of any application and, at the same time, reduces installation costs.

Zoning - the "Old-fashioned" Way



The Paradox innovation - "Advanced Technology Zoning"



Model 728 shown
(also available on 728L, 738, 748)

FEATURES (continued)

Streamlined Keypad / PC Programming, User-friendly Operation
The reduced number of steps required to program Esprit panels via a keypad speeds up installation. End-user access to most system functions calls for just one touch of the keypad.

Strategic System Partitioning (***728***, ***738***, ***748***,***748ES***)
Each control panel can be used to monitor two distinct security systems, as well as common areas. Partitioning provides a practical and flexible solution to situations where combined systems are a necessity. User-friendly Esprit partitioning does it all with just one access code.

High-Speed Preprogrammed Communication
Esprit panels can slash set-up and reporting time by transmitting preprogrammed and high speed communicator formats.

Event Buffer and "Real time clock" (***728L***, ***728***, ***738***, ***748***,***748ES***)
Incorporation of a real time clock permits the creation of a 120 event, PC uploadable buffer with time and date. Two automatic arming options are made possible by the inclusion of the "real time" clock. Auto arming can be programmed to take place at specific intervals, or following a set time period without any zone activity (auto arm and/or report only).

Programmable Outputs
Almost any control panel status situation may be used to activate the Esprit's programmable outputs. Once a panel status mode is selected for a PGM to follow, the polarity and duration of the output may also be programmed. 18 supplementary programmable outputs are available with the SRI18 module, which connects to the panel serial output.

Alarm Relay (***738***, ***748***, ***748ES***)
Single pole, double throw dry contacts rated at 5 amps that follow the local alarm (bell/siren) output.

Augmented Auxiliary Power (***748ES***)
1.2 amps of regulated auxiliary power supplied via 5 sets of power terminals. Ideal for applications with numerous detection or ancillary devices. Requires a 75VA transformer.

Espload Upload/download Software
Espload upload/download software revolutionizes control panel supervision by delivering powerful panel programming, modification, real-time monitoring and data management tools. It can function with most Hayes-compatible modems, requires less than 60 seconds to transmit a full upload or download, and is extremely simple to learn and to operate. The upload/download software is not permitted on UL installations.

NOTE

Programming Guide and Simplified Bench Test

Want to get started right away? Please refer to the **"Programming Guide"** for the specific Esprit control panel that you are using.

//// SPECIFICATIONS

Digital Communicator:

Compatible with most telecommunication standards world wide.
Reporting formats:
Pulse: Ademco slow (10BPS), Silent Knight fast, Sescoa (20 BPS) Radionics, Radionics with parity (40 BPS), 1400Hz - 1800Hz (20 BPS)
DTMF: Contact ID, Ademco Express, "No handshake" DTMF format. (Pager)
Optional SIA format (Standard on ***708***)
True Dial tone detection and telephone line monitoring.
Full Up/down loadable with PC.
Regular, Split and Double reporting modes.

Event Buffer: (***728L***, ***728***, ***738***, ***748***,***748ES***)

120 event buffer with time and date.

Operating modes:

17 User codes (2 Master codes) 4 or 6 digit codes. (***728***,***738 748***,***748ES***)
9 User codes (2 Master codes) 4 or 6 digit codes. (***718, 728L***)
Partitioning to System "A", System "B" and a Common area. (***728***,***738,748***,***748ES***)
Stay (at Home), regular, and auto bypass (Away) arming.
Fast "One key Full Arm", "One key Stay Arm" and "One key Exit".
Key Switch Arm/Disarm ("stay" or "regular" mode.)
PS1 bedside remote, 3 keypad-activated panic alarms.
Real Time Clock for "list of events", auto arming and test reports.
Auto arm on time or no zone activity delay time.

Inputs and Outputs:

Zones: N.C., EOL or "Advanced Technology Zoning" and wire/tamper recognition using 1 resistor per zone.
Battery Charger: 360mA with active Battery test.
Aux power: 400 mA, (UL, ULC installations) Fuseless electronic shut down at 1A, Automatic restore
Bell Out: 1A, (Fuseless electronic shut-down at 3A, Automatic restore)
AC input: 16.5 Vac, 40VA (75VA for ***748ES*** @ 1.2 amps)
PGM outputs: More than 1000 options to follow
2 operation modes: Timed (1 sec. to 2 hrs.) or following a predetermined condition.
N.C. or N.O to ground, 30 mA Max. Can also be remote controlled by PC.
Serial Data Output (1200,1, N) for use with Accessory Modules

Accessory Modules:

SRI 18: 18 PGM outputs, ***708:*** Secondary Digital Dialer (UL listed)
708DV: DVACS communicator (Canada only), ***Esprint:*** Parallel printer interface (not UL listed).

Keypads:

616, 626, 629 and 633 (LED) keypads. 639 and 640 (LCD) keypads, PS1 bedside remote. (For UL systems use only 616, 626, 640 or PS1.)

Current consumption:

(measured with battery connected, without AC and 1KΩ resistor on bell and 1KΩ resistor on zones)

718 control panel*:*	29mA DC	**616/626** LED keypads:	15mA DC Typical
728 control panel*:*	29mA DC		30mA DC Maximum
728L control panel*:*	29mA DC	**629** access control keypad:	30mA DC Typical
738 control panel*:*	25mA DC		55mA DC Maximum
748 control panel*:*	37mA DC	**633** LED keypad:	15mA DC Typical
748ES control panel*:*	60mA DC		35mA DC Maximum
PS1 bedside remote:	15mA DC Typical	**639/640** LCD keypads:	20mA DC Typical
	20mA DC Maximum		45mA DC Maximum
SR!-18:	50mA DC Typical		

//// BASIC INSTALLATION

LOCATION AND MOUNTING

The printed circuit board, mounting hardware and keypad should be removed from the packaging inside the panel box. **Press the five white nylon mounting studs into cabinet from the back prior to mounting the cabinet.** Before mounting the circuit board on the back of the cabinet, pull all cables into cabinet and prepare them for connection.

Be sure to select a control panel installation site that is not easily accessible to intruders. Leave at least 2" around the panel box to permit adequate ventilation/heat dissipation. Installation location should be dry, close to an AC source, ground connection and a telephone line connection.

EARTH GROUND

The earth terminal should be connected to the cabinet and grounding rod as per local electrical codes.

AC

Use a 16VAC transformer with a minimum 40VA rating to provide sufficient AC power (for ***748ES***, use 75VA). Do not utilize any switch-controlled outlets to power the transformer. UL listed systems require K12 model T16V40 transformer; ULC listed systems require Frost model FTC1637 transformer.

PROGRAMMABLE OUTPUTS

If the programmable outputs are to be used, they should ideally be connected through external relays, as these outputs should not drive more than 30mA. A relay should be used in cases where more than 30mA is required.

BELL/SIREN OUTPUT

Bells or other warning devices requiring a steady voltage output during alarms, are powered by the Bell+/ Bell- terminals. The bell output is microprocessor-controlled and will automatically shut down if current exceeds 3 amps. The processor will allow current to resume only after the bell cut-off time expires.The correct polarity connections should be made when hooking up sirens (speakers with built-in siren drivers). "Bell+" terminal is the connection for the positive lead. "Bell-" terminal is the connection for the negative lead. The bell output supplies 12V upon alarm. It can support two 20-watt or two 30-watt sirens. (Above 1A, battery supplies current.)

AUXILIARY POWER TERMINALS

Motion detectors and any security devices requiring 12VDC voltage can be powered by the auxiliary power supply. A maximum of 400mA 12VDC is available, (225mA for 748ES and 250mA max. for 24 hr. standby-UL, ULC installations) from the AUX+ and AUX- terminals. For each additional keypad or PS1 module, the auxiliary current supply must be reduced by individual model current consumption. The auxiliary supply is microprocessor-protected against current overload and automatically shuts down if current exceeds 1 amp. Auxiliary power will resume after battery test takes place, (within 0 - 60 seconds).

ZONE INPUT TERMINALS

(Please refer to zone connections (page 9) and wiring diagram in "Programming Guide".)

KEYPAD CONNECTIONS

The keypad has a terminal strip with 6 connections. The first 4 connections are labeled "yellow", "green", "black" and "red". They are connected to the corresponding color terminals on the control panel board. The last 2 connections are labeled " zone" and "COM". This is the zone input on the keypad. A **green** (1K ohm) resistor must be used on this zone. If the zone input is not used, the **green** (1K ohm) resistor must be installed on the terminal strip. The zone information is carried to the panel on the 4 wires of the keypad connection. Up to 5 keypads may be used on a system with 2 of the keypads utilizing the zone input.

	Displayed as	
	718/728L/728	**738/748/748ES**
Keypad zone 1	Zone 7 (Partition B)	Zone 13 (Partition A)
Keypad zone 2	Zone 8 (Partition B)	Zone 19 (Partition B)

Jumper "off" - Keypad zone 1 activated.
Jumper "on" - Keypad zone 2 activated.
(Panel default jumper setting is "on" (keypad zone 2). To switch to keypad zone 1, a "keypad power down" must be conducted. To do so, all 4 wires **must** be disconnected.)

TELEPHONE LINE CONNECTION

Connect the incoming telephone company wires into "TIP" and "RING". Wires should then be run from "T1" and "R1" to the installation's phone system.

POWERING UP THE UNIT

GENERAL

When keypads are installed far from the control panel, a keypad should be temporarily connected close to the panel to conduct "power-up" testing. Connect the transformer. After 5 seconds, begin testing the unit. Enter random commands on the keypad. It should "beep" in response to these commands. Open a zone to ensure that keypad and panel are responding to signals. If the keypad does not respond and if no indicator lights illuminate, check for AC voltage at the “AC” terminals. If 16VAC is flowing, then keypad wiring should be verified. Also check for a short between "black" and "red' keypad wires.

PANEL PROGRAMMING METHODS

To conduct panel programming, use the keypad or initiate communication with Espload (see page 21). Use of ***Esploa***d is highly recommended, as it greatly reduces the potential for data entry errors during programming. For Keypad Programming, see "Programming Guide".

BATTERY HOOK-UP (required on UL/ULC installation)

Warning: Do not connect transformer or battery until all wiring is completed. Use a 12VDC 7AH rechargeable acid/lead or gel cell battery. Connect "red" battery lead to positive battery terminal, and "black" battery lead to negative battery terminal. Reversed connections will blow the battery fuse. Battery should not be connected until AC panel connections have been made. After connecting battery **[TRBL]** key should illuminate. Pressing **[TRBL]** causes key **[8]** to illuminate (trouble indicator for "timer loss"). (See "Trouble Display Monitoring" section, p. 18-19)

BATTERY TEST

The panel verifies battery connection every 60 seconds. If the battery is not connected, trouble indicator key **[1]** illuminates. If battery is connected, a 4 second test of battery under load is conducted. Every hour, a 64 second battery test will be carried out (not applicable to software versions 1.4 and beyond). Panel arming can be blocked if the battery test fails, if programmed. Test failure causes trouble indicator key **[1]** to illuminate, indicating that battery capacity is insufficient. When the panel runs on battery power, with or without AC, if battery voltage drops to 10.5 volts, trouble indicator key **[1]** will illuminate. (If programmed, a trouble report code will also be sent to the central station.) At 8.5 volts all outputs are closed.

ZONE WIRING CONFIGURATIONS AND OPTIONS

The selection of the panel (number of zones) should be based on the requirements of a security installation.

LOOP CONFIGURATIONS AND ZONE CONNECTIONS

Single zones can be configured for N.C. contacts without EOL, or zone resistors (see Fig. 1, page 10). By using 1 zone resistor, single zones can be configured for N.C. and/or N.O. contacts (see Fig. 2, page 10). A single zone can also be configured to detect alarm and tamper (tamper will transmit a separate distinct signal and cause the zone light at the keypad to flash) see Fig. 3, page 11.

Note: Configuring zones in single zone mode reduces number of available zones. (728L, 728, 738, 748)

By utilizing 2 zone resistors (see "Typical", pg. 10) each loop (pair of wires) will recognize two distinct alarm zones for N.C. contacts. A separate "tamper" signal can also be transmitted and displayed on the keypad (flashing zone light). Adding a **green** (1K OHM) EOL resistor will provide loop supervision (see Fig. 4, pg. 11).

Notes:

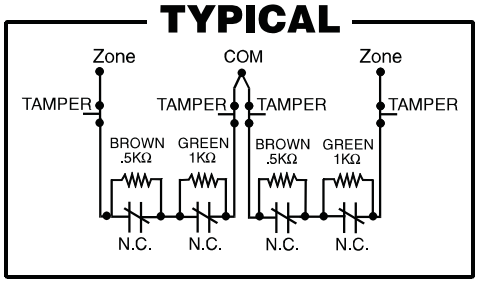
1) Two zones per loop configuration reduces wiring and installation requirements by permitting the connection of two distinct zones per input (loop), on the same pair of wires. Coverage is not compromised in any way. Each zone can be reported separately, based on different resistor values, and the same pair of wires can also provide "anti-tamper" and "wiring failure" recognition. In order to have Advanced Technology Zones, enable at address **210**, key **[8]**.

2) The input terminals are marked with 2 digits ex. 1/4, 1/13. These digits indicate the two zones that are associated with that input when ATZ (zone doubling) is used. Two resistors are required when ATZ is operational.The first digit (regular zone) is identified by a green (1K ohm) resistor, and the 2nd digit (doubled zone) is identified by a brown (.5K ohm) resistor.

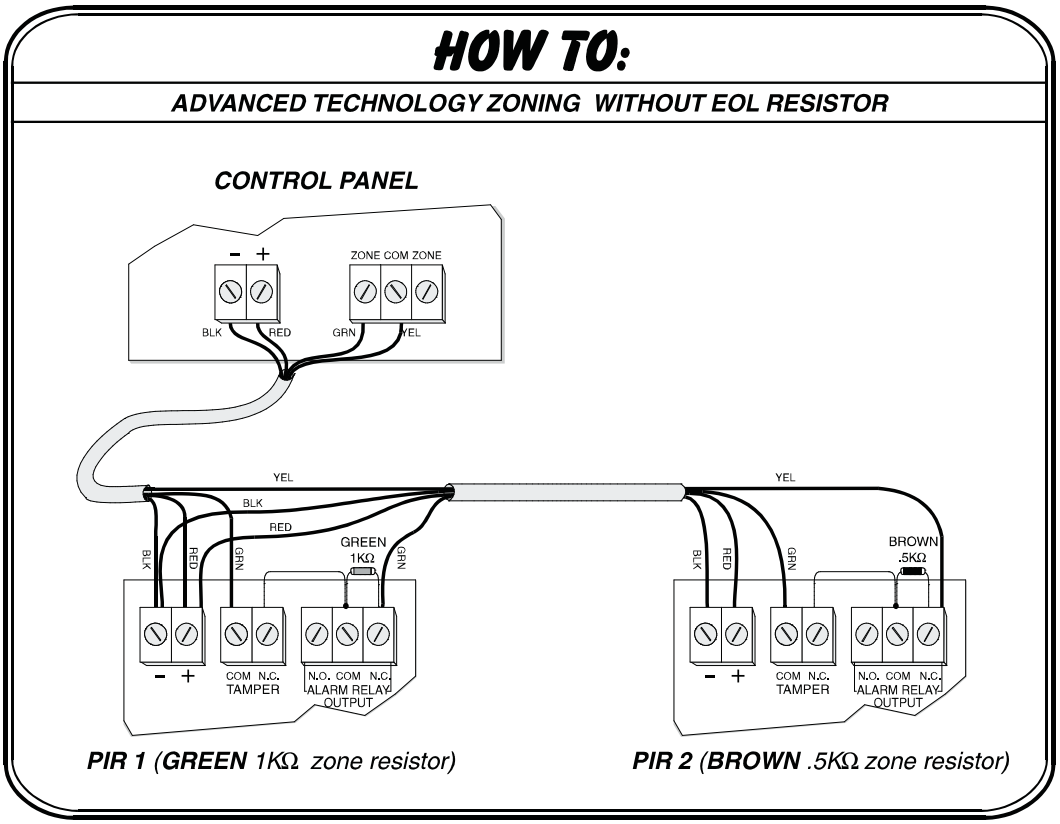
The system hardware will recognize the following conditions for each zone:

* ***ADVANCED TECHNOLOGY ZONE connection, 2 zone resistors (without EOL), tamper recognition (N.C. contacts)***

address **208,** key **[MEM] =** "on"
key **[10] =** See "Tamper/wire Fault Definitions
key **[11] =** and Options"
address **210,** key **[8] =** "on"
Tamper fault transmits separate code.
Each zone transmits separate alarm code, see "TYPICAL"
4 Alarm zones
2 Tamper signals

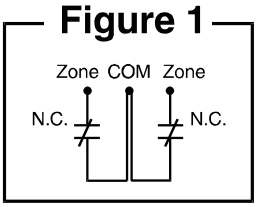


*Not available on models ***718, 748ES***



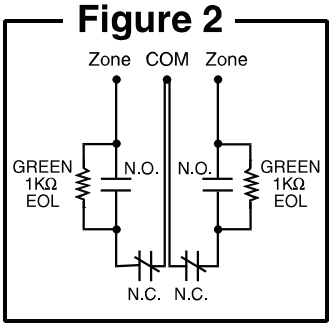
SINGLE ZONE connection without EOL resistor (N.C. contacts)

address **208,** key **[MEM] =** "on"
key **[10] =** "off" (default)
key **[11] =** "off" (default)
address **210,** key **[8] =** "off"
N.C. contacts see Figure 1
Note: Keypad zones always use a **green** (1K OHM) EOL resistor.



SINGLE ZONE connection with 1 EOL resistor (N.C. and N.O. contacts)

address **208,** key **[MEM] =** "off" (default)
key **[10] =** "off" (default)
key **[11] =** "off"(default)
address **210,** key **[8] =** "off"
N.C. and/or N.O. contacts, see Figure 2

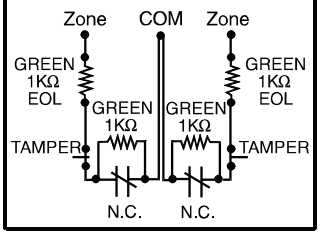


(UL / ULC configuration)

SINGLE ZONE connection with 1 green (1K OHM) EOL resistor, tamper recognition (N.C. contacts)

address **208,** key **[MEM] =** "off"
key **[10] =** See "Tamper/wire Fault Definitions
key **[11] =** and Options"
address **210,** key **[8] =** "off"
Tamper fault transmits separate code, see Figure 3

Figure 3



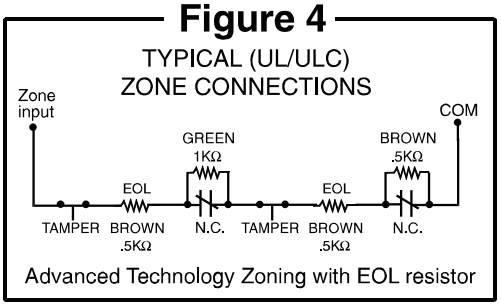
(UL / ULC configuration)

ADVANCED TECHNOLOGY ZONE connection, 2 zone with zone resistors, 1 green (1K OHM) EOL resistor tamper (open) recognition, wire fault (short circuit) recognition (N.C. contacts)

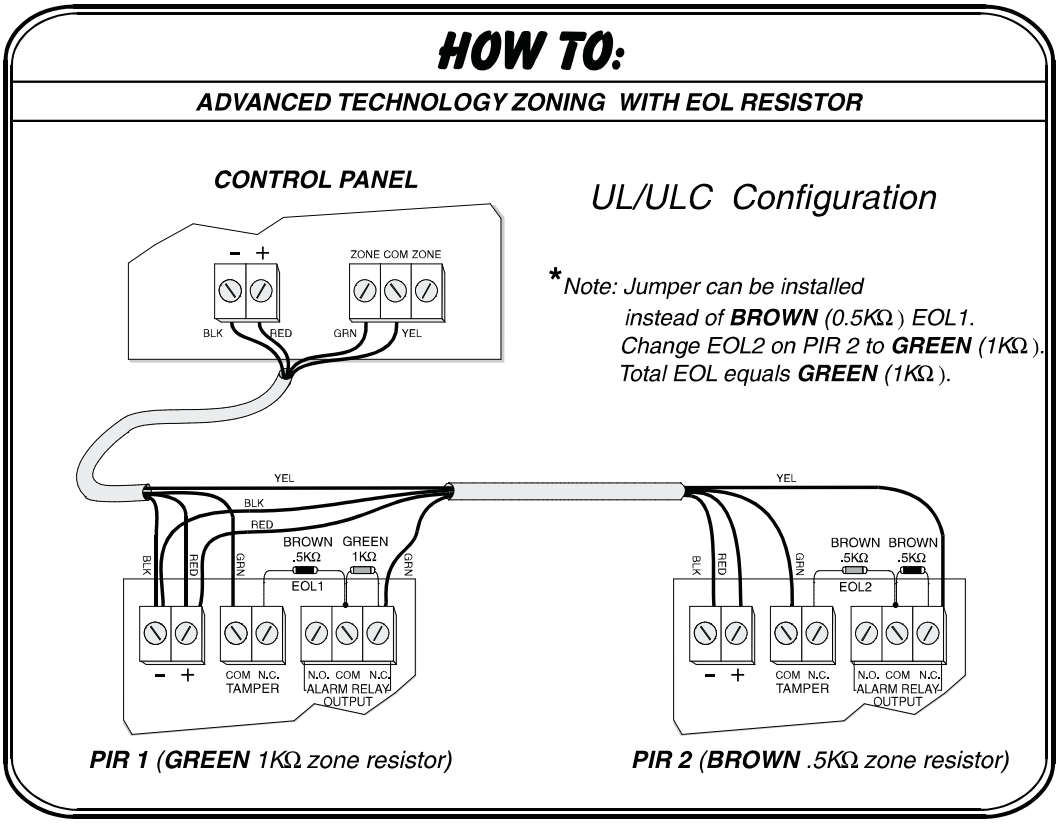
address **208,** key **[MEM] =** "off"
key **[10] =** See "Tamper/wire Fault Definitions
key **[11] =** and Options"
address **210,** key **[8] =** "on"
Tamper fault transmits separate code. Each zone transmits separate alarm code. Wire faults (short circuit) transmit alarm codes, and are indicated by fast flashing zone light on keypad and reported in ***Espload***, see figure 4.

*Not available on models ***718, 748ES***

Figure 4



(UL / ULC configuration)



Tamper/wire Fault Definitions and Options
When using 2 zone resistors, the panel offers four possible definitions for line/tamper wiring recognition, independent of zone definition.

"Tamper/wire" disabled (Address **208**, Key **[10]** "off", Key **[11]** "off")
Tamper/wiring failure recognition is disabled. (Also disables ATZ zone doubling for software versions prior to 0.98.)

"Trouble" enabled (Address **208**, Key **[10]** "off", Key **[11]** "on")
Tamper/wiring failure will generate an alarm, when armed. A trouble report code will be sent to the central when disarmed. (Also enables ATZ zone doubling for software versions prior to 0.98.)

"Silent alarm" enabled (Address **208**, Key **[10]** "on", Key **[11]** "off")
Tamper/wiring failure will generate a silent alarm (no siren) when the system is disarmed. Alarm and trouble report codes will be sent to the central. (Also enables ATZ zone doubling for software versions prior to 0.98.)

"Audible alarm" enabled (Address **208**, Key **[10]** "on", Key **[11]** "on")
Tamper/wiring failure will generate an audible alarm (siren). Alarm and trouble report codes will be sent to the central. (Also enables ATZ zone doubling for software versions prior to 0.98.)

Exception: When the zone definition is "24 hour", the tamper definition follows the audible/silent alarm arm definition of the "24 hour" zone.

Tamper recognition addresses:
Tamper report and restoration codes should be programmed at addresses **191** and **180.**

Fire circuit
The **fire** zone (enabled by defining zone 3 (zone 12 for software versions prior to 0.98) as "24 hour') should always be connected with a 1K OHM EOL resistor (UL-PN201100200-PRT). If there is a line short in the fire zone, a fire alarm will be generated. If the line is "open", a "fire loop" trouble report will be sent to the central and trouble indicator **[11]** will illuminate on the keypad.

For UL/ULC installations, a 4 wire, latching, smoke detector (UL- Falcon Model 5454, ULC - BRK Model 2412) must be used along with a 1K OHM EOL resistor. To supervise the power, an “end of line” relay (Model MR3) should be installed, the contacts of which will cause a FIRE TROUBLE in the event the power is interrupted.
To reset (unlatch) the smoke detectors after an alarm, power to the detectors must be momentarily interrupted. One way to accomplish this is to connect the negative (-) side of the smoke detector power to PGM 1. Then program the PGM to be N.C. (normally closed), and to “open” when the **[TRBL]** and **[11]** keys are pushed in sequence.

Example: To program PGM1 for smoke detector reset:

Address **195** = **[BYP]**
Address **196** = **[5] [3]**
Address **198** = **[2] [2ND]**
Address **254** = **[10] [10] [4]**

GUIDELINES FOR SMOKE DETECTOR LOCATION

Smoke Detection.

Where to locate Smoke Detectors in Existing Construction.

The major threat from fire in a family living unit is at night when everyone is asleep. The principal threat to persons in sleeping areas comes from fires in the remainder of the unit; therefore, smoke detector(s) are best located between the bedroom areas and the rest of the unit. In units with only one bedroom area on one floor, the smoke detector should be located as shown in Figure 1. In family living units with more than one bedroom area or with bedrooms on more than one floor, more than one smoke detector will be needed, as shown in Figure 2 and 3.

Smoke Detector Mounting - Dead Air Space.

The smoke from a fire generally rises to the ceiling, spreads out across the ceiling surface, and begins to bank down from the ceiling. The corner where the ceiling and wall meet is an air space into which the smoke may have difficulty penetrating. In most fires, this dead air space measures about 4 in. (0.1m) along the ceiling from the corner and about 4 in. (0.1m) down the wall as shown in Figure 4. Detectors should not be placed in this dead air space.

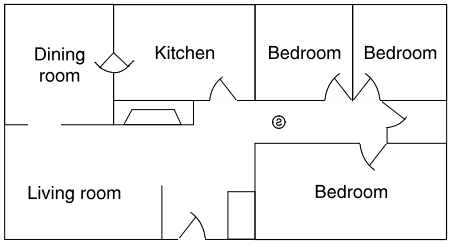


Figure 1. A smoke detector should be located between the sleeping area and the rest of the family living unit.

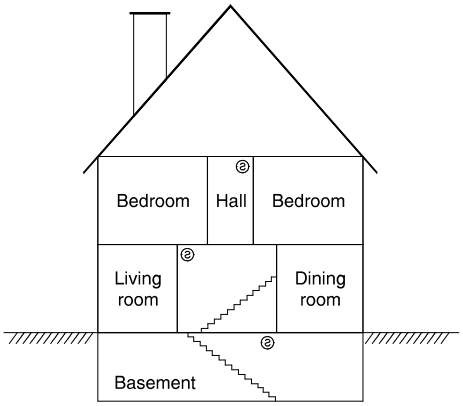


Figure 3. A smoke detector should be located on each storey.

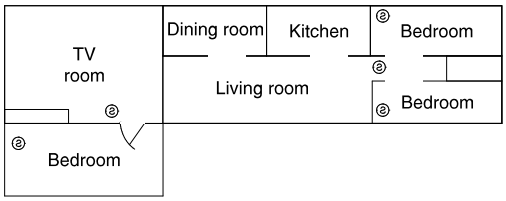


Figure 2. In family living units with more than one sleeping area, a smoke detector should be provided to protect each sleeping area in addition to detectors required in bedrooms.

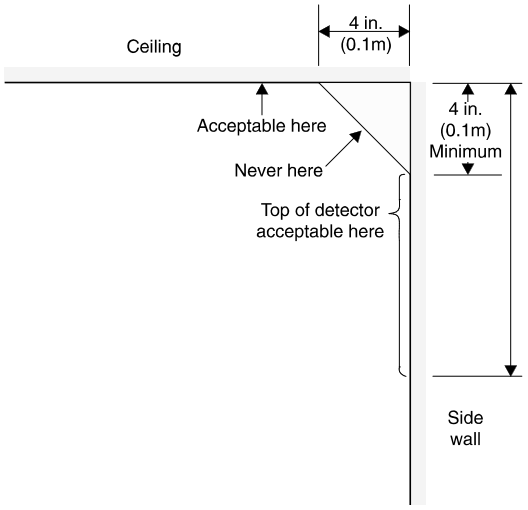


Figure 4. A smoke detector should be located on each storey.

//// USER / KEYPAD FUNCTIONS

INTRODUCTION

The ***Esprit***'s innovative keypads take a new approach to security features and functions. Each numeral on the keypad from 1 to 12 represents an actual zone. When the **[2ND]** key flashes, (depending on the model number of the control) the same numerals represent a second set of 12 zones, zones 13 to 24. (The **[2ND]** key will first light up to indicate that one or more of these zones (13-24) are open. Pressing on the **[2ND]** key will then cause it to flash.) When the zone light is "off", the status in the protected zone is normal. If the zone light is "on", this means the zone is open.

"CONF" confirmation beep: an intermittent series of beeps that indicates that the keypad entry was successful.

"END/REJ" end/rejection beep: 1 long tone indicates that the operation was incorrectly entered on the keypad.

SYSTEM ARMING/DISARMING OPTIONS

Regular System Arming (default code 474747)

(Without partitioning - for information on partitioned system arming, see pages 15, 16)

The green **"ready"** light must be illuminated. This **"ready"** indicator will only illuminate if all zones are closed. All door/window contacts must be closed, and any movement in motion detector-protected areas must be halted. When the **"ready"** light illuminates, a valid access code should be entered.

Upon entry of this code, the red **"armed"** light will illuminate, followed by the keypad "CONF" beep. (If the access code is entered incorrectly, the "END/REJ" beep will sound. If an incorrect entry is made at any time, press **[CLEAR]** and re-enter the data.) The green **"ready"** light will flash for the period of the exit delay, and the **[STAY]** and **[AWAY]** keys will flash.

Note: Keypad will beep on exit if programmed at address **208** key **[12]**.

Auto bypass (away) arming (key **[AWAY]**)

To arm the system rapidly without manually entering zones to be bypassed (and/or to leave the protected area without waiting for the "ready" light), use the "AWAY" auto bypass feature. The **[AWAY]** key should be pressed, followed by a valid access code (address **202**). (The **"ready"** light does not have to be "on", but all open zones must be "bypass-enabled" (addresses **236** and **238**). Once the exit delay expires, any open zones will automatically be bypassed and the system will be armed. Armed status is indicated by illumination of the **[AWAY]** key. (The fire zone cannot be bypassed.) If any zones have been left open, the **[BYP]** key will illuminate to indicate that zones have automatically been bypassed. A partial arm code will be sent if programmed.

Please note: This feature is not recommended for regular use because bypassing zones can reduce the efficiency of system protection. Zones remain bypassed until disarming.

Auto away arming

If an access code used to arm the system has been assigned "away" (address **202**) priority, and an open zone is bypass enabled (addresses **236** and **238**), activation of "auto away" arming at address **210**, key **[3],** will permit "away" arming to take place without pressing the **[AWAY]** key. The feature must not be enabled on UL listed systems.

Stay Arming **[STAY]** + access code

When "stay arming" is activated, the security installation is "partially" armed. This means that selected **STAY** zones are armed (address **240**, **242**), so that users (address **200**) can remain in the protected area. This convenient feature offers individuals arming the system the choice to leave the premises during an exit delay (without altering the "stay arm" status), or remain on the premises. A system user returning to a protected area that is "stay" armed (**[STAY]** key is "on") can re-enter and disarm, as long as a valid access code is keyed in during the entry delay.

Fast "regular" arming Key **[10]**

Fast arming is enabled at address **208** (key **[7]** "on"). If activated, when the ready light is on, pressing key **[10]** for 2 seconds automatically arms the system. There's no need to enter an access code. This feature can be used to permit selected individuals (i.e. maintenance workers, repair personnel) to full arm the system when leaving the protected area. (When partitioning is enabled, key **[10]** arms system "A" and "B".)

Fast "stay" arming key **[11]**
Fast "stay" arming is enabled at address **208** (key **[8]** "on"). When activated, no **"ready"** light is required, however "stay" zones must be closed to arm the system. Pressing [**STAY**] (key **[11])** for 2 seconds automatically "stay" arms the system. (See "stay" arming features.)

Double "stay" arming (software versions 0.98 and beyond)
During the exit delay, pressing [**STAY**] (key [**11**]) again will switch any delay 1 or delay 2 zones to instant zones. (24 hour "stay" zones, follow "stay" zones, and instant "stay" zones are not affected.) Regular and partitioned systems provide this feature; however, in a partitioned system the only zones affected will be "System A" zones. Full system arming cancels "double stay" arming.

Fast exit
Exit while the system is armed in "stay" mode (key **[11/STAY]** is flashing):

A: Fast exit and Stay key **[11]**

To exit the premises and remain "stay armed": press key **[11/STAY]** for two seconds. The system switches to "exit delay" mode (**"ready"** LED flashes). At the end of the "exit delay" period, the system will return to "stay" arming mode.

B: Fast exit and Regular Arm key **[10]**

To exit the premises and "regular" arm: press key **[10]** for two seconds. The system switches to "regular" arming (key **[11]** and **[12]** are flashing) with "exit delay" (**"ready"** LED flashes). At the end of the "exit delay" period, the system is "regular" armed.

System disarming
The protected area should be entered through a designated entry/exit door. The keypad sounder will beep to remind user to disarm the system. A valid access code should be entered on the keypad, before the allotted entry time expires. If the access code is entered incorrectly, press **[CLEAR]** and re-enter it. The **"armed"** light will extinguish and the sounder will change to the "CONF" beep (series of short beeps) before silencing.

Alarm memory
When disarming the system (or resetting the alarm), the memory light **[MEM]** will illuminate if any alarm situations took place during the preceding armed period. A record of all alarm situations that occurred while the system was armed is stored in memory. After disarming the system, pressing once on the **[MEM]** key causes it to flash and brings up the alarm events, which are displayed on the keypad. (Alarm events consist of all zones that generated alarms.)

SYSTEM PARTITIONING

GENERAL

By activating the panel's "partitioning" feature, zones can be divided into two distinct systems, with a shared fire zone (zone #3). Both systems are controlled by one panel, making partitioning a particularly useful feature in installations where shared security systems are more practical (i.e. office/warehouse, apartment/condo complexes). The 718, 728L, 728, 738, 748 are not UL listed for commercial application.

PARTITIONING (***728***, ***738***, ***748***,***748ES***)
Partition "on" *(Address **206**, key **[8]** "on")*
Addresses **240** and **242:**
Regardless of the control panel model, Partition “A” (account code A) will always consist of zones 1 to 6 and zones 13 to 18. Partition “B” will always consist of zones 7 to 12 and 19 to 24. A “Common Zone” is a zone common to (connected to) both partition “A” and “B”. If Partition “A” or “B” is disarmed, common zones will be disarmed. Both Partition “A” and “B” must be armed for “Common Zones” to be armed.

All zones are “Common Zones” unless they have been designated as “A” only or “B” only (not common) at address **240** and **242**.

Panel	"A" Partition Zones	"B" Partition Zones	Total Possible Zones
748, 748ES	1-6, 13-18, 13 = (Keypad 1)	7-12, 19-24, 19 = (Keypad 2)	24
738	1-6, 13(Keypad 1)	7-12, 19 (Keypad 2)	14
728	1-6 (See note)	7 (Keypad 1), 8 (Keypad 2)	8

Notes re: ***728*** (also see page 27)

The designation for zones 1, 2, 3,4,5 and 6 can be changed to zones 7, 8, 9,10,11 and 12 respectively so that they form part of partition “B”.

Zones 1 and 2 will be swapped with zones 7 and 8.

Note: When partitioning is not activated (address 206, key [8] "off") any zones selected at addresses 240 and 242 will be armed upon "stay" arming.

Keypad display:
Both systems are displayed on the keypad at the same time. In partitioning mode, when System "A" is armed, the **[STAY]** key flashes. If System "B" is armed, the **[AWAY]** key flashes. If both systems are armed, both of these keys will flash.

ARMING/DISARMING

Code definition:	***Partition "on"*** *(Address **206**, key **[8]** "on")*
Address **200**:	Designates access codes that arm System "A" zones.
Address **202**:	Designates access codes that arm System "B" zones.
Address **204**:	Designates access codes that can "bypass" zones

When a code is activated at both addresses (**200** and **202**), it can do the following:

1) The code can fully arm the system. If the code is entered when systems "A" and "B" are disarmed, it will completely arm the system.
2) The code can fully disarm the system. If the code is entered when system "A" and "B" zones are armed, it will completely disarm the system.
3) When the system is partially armed (i.e. only System "A" or "B" is armed) entering this code will arm the other system.
4) The code can be used to selectively arm/disarm System "A" or System "B" zones.
   Enter **[11]** + code to arm/disarm System "A" zones.
   Enter **[12]** + code to arm/disarm System "B" zones.

Note: Codes that are not selected at either address are disabled.

The master code can always access both systems and bypass zones.

(1) **System "A"** codes can stop sirens coming from **System "B"** zones (and vice versa), but will not disarm the other system.
(2) It is not possible to arm one system during the other system's **exit** delay.

Note: When partitioning is not activated, (address **206,** key **[8]** "off"):
Address **200** determines which access codes can activate "stay" arming.
Address **202** determines which access codes can activate "away" arming.
Address **204** determines which access codes can "bypass" zones.

KEYSWITCH/PUSH-BUTTON ARMING/DISARMING (PS1)

In parallel to keypads, a keyswitch or push button can be used to arm/disarm the system. (The ***Esprit*** PS1 can be installed in bedrooms or any other desired location.) Keyswitch/push button operation is enabled/disabled at address **206**, key **[3]** "on". Keyswitch can activate "regular" or "stay" arming, based on the definition assigned at address **206**, key **[2]**. (key **[2]** "off" = "regular" arming, key **[2]** "on" = "stay" arming) If "stay" arming is activated, the keyswitch/push button (PS1) cannot be used to disarm the system if it is in entry delay or if an alarm has been generated. In this case, the system can only be disarmed from a keypad. (When partitioning is activated, the keyswitch can be used to arm/disarm System "A" regardless of System "B" status. Pressing key **[11]** will arm System "A".) Pressing two keys on the PS1 simultaneously for 2 seconds will generate a "panic (1)" alarm (see "Keypad (Panic) Alarms).

ZONE BYPASSING

MANUAL

Bypassed zones will not generate an alarm. Manual bypass arming is employed when a system user chooses not to arm the entire protected area. Only zones that have been defined as "bypass enabled" (addresses **236** and **238**) can be selected by the user (address **204**) during manual bypass arming. To bypass zones, enter **[BYP]** + a valid access code. **[BYP]** key will illuminate. When a zone light is on, it indicates that the zone has been bypassed. Pressing **[CLEAR]** erases all bypass entries and current bypass zones and will exit the bypass mode. Zones to be bypassed should then be re-entered. If bypass information is correct, press **[ENTER]** to end and save bypass functions being programmed. **[BYP]** key will remain illuminated, indicating that some zones have been bypassed. To cancel the zone bypass "status" just entered, press **[BYP]** + user code + **[CLEAR]**. Zone bypasses are automatically cancelled every time the system is disarmed, except in "24 hour" zones. If a "24 hour" zone is bypassed and the system is subsequently disarmed, the "24 hour" zone will remain bypassed.

Note: When partitioning is used, zones assigned to the other system cannot be bypassed if that system is armed.

BYPASS RECALL

This feature permits system users to reinstate the latest zone bypass instructions saved in memory. By pressing **[BYP]** while in bypass programming mode, previous bypass status is re-established. Even if a user is in process of entering new bypass information on keypad, one touch of the **[BYP]** key overrides new information and reinstates the preceding zone bypass instructions saved.
Reminder: The fire zone cannot be bypassed.

CHIME ZONES

Chime zones report a presence (movement or door opening) in the selected zones by emitting a distinctive rapid intermittent beep. Each keypad is independently "chime" programmed and must be reprogrammed in the event of total power loss. To enable a zone's chime feature, press the selected zone key **[1]** to **[6]** until the rapid intermittent beep is heard. To enable the chime feature of the keypad zone connected to the particular keypad, use key **[8]**. To disable a zone's chime feature, press on the appropriate key until a steady beep is heard. Disable keypad souder (mute), (heading), press key **[9]**.

KEYPAD (PANIC) ALARMS

The Esprit provides three “Panic” zones on the keypad. Keys must be pressed simultaneously for 2 seconds in order to activate. (Pressing 2 keys on the PS1 for 2 seconds generates a "panic 1" alarm.)

Alarm	**Press keys**	**Alarm Code** Address	**Silent/Audible** Address	**Silent/Fire** Address
Panic 1	**[1]** & **[3]**	**184** (SECTION 31)	**208**, Key **[4]**	
Panic 2	**[4]** & **[6]**	**185** (SECTION 31)	**208**, Key **[5]**	
Panic 3	**[7]** & **[9]**	**186** (SECTION 31)		**208**, Key **[6]**

TROUBLE DISPLAY/MONITORING

Trouble status is continuously monitored by the panel. It can recognize and display 10 different trouble conditions on the keypad or in ***Espload***, and report 8 to the central station. (To send "trouble status reports" to the central, 2-digit trouble report codes should be programmed.)

When trouble conditions occur, the **[TRBL]** key illuminates and if "trouble warning" is enabled (address **210,** key **[9]**) the keypad will beep intermittently. Press **[TRBL]** to switch keypad to "trouble display" mode. **[TRBL]** key flashes. Keys that are "on" indicate current trouble conditions and those in memory. Press any key except **[2ND]** to return keypad to normal display. Press **[2ND]** to view current troubles only. Press **[CLEAR]** to erase previous trouble conditions in memory, and to silence trouble warning.

Key [1] ***No battery/low battery***

Battery is disconnected from the panel, or capacity is low. Panel conducts dynamic battery test under load every minute for a 4 sec. period, and every hour for a 64 sec. period. Key **[1]** "on" indicates battery is disconnected, or it should be replaced because it won't provide adequate back-up current in event of AC loss. Trouble indicator **[1] also** comes "on" if battery voltage drops to 10.5 volts while panel is running on battery power (with no AC).
Note: System can be programmed to inhibit arming if no/low battery condition exists - Address **210**, key **[4]**.

Key [2] ***Power failure*** ***(software versions 1.4 and beyond only)***

Inadequate AC power is going to panel **and/or** power supply is unable to charge battery **and/or** power supply voltage exceeds 14.9V. (Report can also be sent to central, and “power failure” report delay time is programmable at address 252. Delay duration can be from 000 - 255 minutes; default = 30 min.) To remove “power failure” from trouble display, **[2ND]** key should be “on” at address **210**.

Key [3] ***AC power failure*** ***(software versions prior to 1.4)***

Inadequate AC power is going to panel. (Report can also be sent to central, and "AC failure" report delay time is programmable at address **252**. Delay's duration can be from 000-255 minutes, default = 30 min.) To remove "AC failure" from trouble display, at address **210**, **[2ND]** key should be "on".

Key [4] ***Bell disconnect***

Bell is not connected to bell output. Note: When connecting bell to optional relay output, trouble indicator **[4]** is "on" constantly. To avoid this, connect a **green (**1KΩ) EOL resistor on bell output. If an internal siren is connected to bell output, and an external siren to relay, the panel will only recognize the existence of the internal siren.

Key [5] ***Maximum bell current***

Processor has recognized that, upon alarm, bell output current exceeds 3A., causing automatic shut-down of bell output. After opening the short or reducing the load, bell shut-down will end upon bell cut-off.

Key [6] ***Maximum auxiliary current***

Processor has recognized that auxiliary output current exceeds 1A. (748ES-3A) This causes automatic shut-down of auxiliary output. After opening the short or reducing the load, power will be automatically restored to the auxiliary output after battery test has been conducted (within 60 seconds).

Key [7] ***Communicator report failure***

The control panel has unsuccessfully attempted to initiate communication with the central. Report failure is stored in "event list" memory.

Key [8] ***Timer loss***

After total battery/AC power failure, the timer must be reprogrammed. To do so, press **[ENTER]** + code + **[MEM],** followed by correct time (00 - 23 for hours, 00 - 59 for minutes) + **[ENTER]** + **[ENTER]** + **[TRBL]** + **[CLEAR]**.

Key [9] ***Tamper/zone wiring failure***

A zone line cut/line short has occurred. Tamper/wiring recognition must be activated at address **208** if this feature is required. EOL resistors must also be used for zone connection.

Key [10] ***Telephone line monitor***
Telephone line cannot be found for 30 seconds. "Telephone line monitor" is enabled at address **206.** This trouble condition can also trigger an alarm when the system is armed, if activated at address **206**. It will also be stored in "event list". Restoration of telephone line can be reported by programming address **183.**

Key [11] ***Fire trouble***
The zone wire has been cut on ***zone 3 (when its zone definition is "24 hour fire"). Fire zone ***key **[3]** also flashes. If programmed at address **174**, it will be reported to the central.
***Zone 12 and key [12] for software prior to 0.98.**

END-USER PROGRAMMING

MASTER AND USER CODES *(default master **474747**)*

[ENTER] + master code + code number (2 digits)+ new code (4 or 6 digits, 0 to 9) + **[ENTER]**.
Use **[2ND]** to erase a code.

Master code = 00 (**[10][10]**) Full access to all system functions.

User codes = 01-16 (728, 738, 748, 748ES) and **01-08** (718, 728L)
*(01 - can modify access codes. All user code priorities can be programmed at addresses **200**, **202**, **204,** using the installer code.)*
Note: **[2ND]** key flashes if location is empty (no code programmed).

"ONE-KEY" USER PROGRAMMING COMMANDS

Several panel features can be programmed quickly, without entering addresses or section numbers. Select "one-key access" programming mode by pressing **[ENTER]**, followed by **INSTALLER, MASTER OR USER CODE** (depending on feature you wish to activate, only certain codes will be functional). Then press the single key (listed below) corresponding to the feature you wish to enable.

KEY

[9] **Program "auto arming" time:** *(accessible to Master and User 1 only)*
Enter two digits (00 to 23) for hours + 2 digits (00 to 59) for minutes + **[ENTER]**.
To disable program, **[2ND], [2ND]**.

[MEM] **Program "panel time"** *(all 3 codes)*
Enter two digits (00 to 23) for hours + 2 digits (00 to 59) for minutes + **[ENTER]**

[BYP] **Test report** *(all 3 codes)*
Reporting is enabled at address **206,** key **[11], [12]**. A value must be entered at address **175**, and both telephone and account numbers should be programmed.

[TRBL] **Call Esploud via telephone** *(all 3 codes)*
Panel and PC ID numbers (addresses **001**-**004**) and PC download phone number (addresses **060**-**067**) must be programmed.

[AWAY] **Answer Esploud** *(all 3 codes)*
This feature is available when using the ADP-1 adapter. In ***Esploud***, "blind dial" must be activated in "modem setup" section and panel phone number programmed.

[STAY] **Cancel communication attempts** *(master code and user 1 can only stop calls from/to Esploud.)*
Until next reportable event. *(installer code - all communication)*

[STAY] **Reset to default panel settings** *(installer code only)*
Connect reset jumper on circuit board (see wiring diagram).
Press **[ENTER]** + installer code + **[STAY]**, remove reset jumper.

[2],[6] **Installer test mode** *(installer code only)*
In installer test mode, a confirmation beep (intermittent) indicates test is "on", a "rejection" beep (long) indicates test is "off". The bell will squawk during walk testing to indicate open zones.

[2],[7] **Streamlined value entry** *(installer code only)*
(see Installer programming page 21.)

Note: When communicating with Esploud, programming mode cannot be accessed.

//// SPECIAL TIMING FUNCTIONS

"NO MOVEMENT"

If a time is programmed at address **253**, and a report code is entered at address **190** (**SECTION 32**), the panel will send a report to the central if no movement takes place in the protected area for a designated time period.

"LATE TO CLOSE"

If the system is not armed by a specified time (addresses **245, 246**) the code programmed at address **190** (**SECTION 32**) will be transmitted.

AUTO ARMING

The panel can be programmed to automatically arm itself every day in two ways: at the same time programmed for the auto test report (addresses **245**, **246**) and/or once the "no movement" delay has elapsed (address **253**). To program "auto arming", go to address **206** and enable key **[5]** (auto arm on time), and/or key **[6]** (auto arm on "no movement"). All zones must be closed in order for system to auto arm. If panel fails to auto arm the "no movement/late to close" report will be transmitted.
Note: The "auto arm" report is programmed at address **188**, **SECTION 32**.

OPERATIONAL NOTE REGARDING SPECIAL TIMING FUNCTIONS

The time programmed at addresses **245**, **246** can be used to:

1 Auto-arm the system and if programmed, transmit the arming code at address **188** (**SECTION 32**)

2. Specify the time of day for the Test Report, the code programmed at address **175** (**SECTION 28**)

3. Transmit the Late to Close/No Movement code, address **190** (**SECTION 32**), if the system is not armed.

The amount of time programmed at address **253** (Max = 63.75 hours) can be used to;

1. Transmit the Late to Close/No Movement code, address **190** (**SECTION 32**), if there is no movement in the protected area while the system is disarmed.

2. Auto-arm the system and if programmed, transmit the arming code at address **188** (**SECTION 32**) after transmitting the Late to Close/No Movement code (as above).

The "late to close/no movement" code programmed at address **190 (SECTION 32)** will be transmitted;

1. at the time programmed at addresses **245, 246** if the system is not armed (Late to Close).

2. after the time programmed at address **253** expires (No Movement).

The amount of time programmed at address **254** (Max = 127 minutes) can be used to:

1. keep a programmable output (PGM) active for up to 127 minutes after a certain event.

//// INSTALLER PROGRAMMING

ESPLOAD

Esprit control panels can be programmed remotely with Esplload upload/download software or on site with Esplload and a ADP-1 adapter. Contact your local Paradox Distributor for your free copy of Esplload software.

KEYPAD

To program Esprit panels via the keypad, first complete the programming work sheets and follow the programming procedure. Both are found in the **"Programming Guide".**

HOW TO:

HEXA PROGRAMMING

*(Used to program "Access to Upload/Download" and "Installer Code") All digits from 0 to F are valid. Programming values are programmed into memory locations from address **000** to **007**.*

*1)Press **[ENTER]** + installer code (default 747474)*
*2)Key **[ENTER]** will flash (programming mode)*
3)Enter 3 digit memory address (000-007)
4)Enter 2 digit data
*5)To erase, press **[CLEAR]**. To save press **[ENTER]***
6)Go to step 3 for next address.

*To exit programming mode press **[CLEAR]***

PROGRAMMABLE FEATURES

(Features are presented in same order as in the programming worksheets in "Programming Guide".)

ACCESS TO UPLOAD/DOWNLOAD

PANEL ANSWER: (Address **000**) **DIRECT ADDRESS**

(software versions prior to 1.4)

This value entry determines the number of rings required before the panel will answer. If **[2ND][2ND]** is entered, the panel will not answer. The panel default setting is 08 rings.

Related features: "Callback" **206**, **[4]** *"Answering machine override"* **206**, **[BYP]**

(software versions 1.4 and beyond)

The first digit entered at address 000 disables the “Answering Machine Override” (key **[2ND]** or key **[1]**), or determines the period of time between first and second call when override is enabled.

The second digit entered at address 000 determines the number of rings required before the panel will answer. If **[2ND][2ND]** is entered, the panel will not answer. (Default value is **[2ND] [8]**.)

NOTE: ***ADDRESS 000 - FIRST DIGIT - ANSWERING MACHINE OVERRIDE***

Value entered disables this feature or determines the period of time between first and second call when enabled.

[2ND] or **[1]** - Answering machine override disabled

[2] = 16 seconds	**[3]** = 24 seconds	**[4]** = 32 seconds
[5] = 40 seconds	**[6]** = 48 seconds	**[7]** = 56 seconds

[8] to **[F]** = 60 seconds

UPLOAD PANEL IDENTIFIER: (Addresses **001**, **002**) **DIRECT ADDRESS**

This four digit code identifies the control panel to the PC before uploading can be initiated. Each pair of code digits has its own memory address. There is no default code. Any hexa digits from 00 - FF can be entered. Program first 2 digits in address **001** and second 2 digits in **002**.

Related features: "Panel Answer" **000** *"Callback"* **206**, **[4]** *"Answering machine override"* **206**, **[BYP]**

PC DOWNLOAD PASSWORD: (Addresses **003**, **004**) **DIRECT ADDRESS**

This four digit download password identifies the PC to the panel prior to beginning the programming download process. Program first 2 digits in address **003** and second 2 digits in **004**.

INSTALLER CODE: (Addresses **005**, **006**, **007**) **DIRECT ADDRESS**

The default installer code contains 6 digits - **747474**. (Codes can also be programmed to contain 4 digits, address **208**, **[9]** "on".) Create a new installer code by entering values of 1st and 2nd digit at address **005**, 3rd and 4th digit at address **006**, and 5th and 6th digit at address **007**. The installer code has access to all programming addresses, except **008-058**. It does not provide access to arming/disarming or user code programming. It can be used to modify itself. (Use only numeric keys from [1] to [10] (key [10] = 0) to enter installer code.)

Related features: "Installer lock" **255**, **"***panel reset"* *"access code length"* **208**, **[9]**

HOW TO:

STREAMLINED (SECTION) HEXA PROGRAMMING

(Used to program sections 00 to 34)

To begin programming

*Press **[ENTER]** + installer code + **[2] [7]** (**[ENTER]** and **[2ND]** keys will flash)*
*Enter 2 digit section for programming (00 - 34) (**[ENTER]** key is "steady" and **[2ND]** key is "off")*
Enter 8 digits to program the section. Keypad will beep verifying completion of section programming.
Data is saved and the next section is advanced to automatically for programming.

*To select a specific section press **[CLEAR]** or **[ENTER]** (**[ENTER]** and **[2ND]** keys will flash).*
*Enter 2 digit section (00-34) (**[ENTER]** key is "steady" and **[2ND]** key is "off").*

*To exit programming mode press **[CLEAR]**.*

TELEPHONE AND ACCOUNT NUMBERS **STREAMLINED OR DIRECT ADDRESS** **SECTIONS 00 - 06**

Three telephone numbers can be programmed: a PC telephone number, and two central station numbers. Each number can contain a maximum of 16 digits.

Special instructions can be entered in the telephone numbers using the following keys:

[10] = the number "0"
[11] = *
[12] = #
[BYP] = switch from pulse to tone while dialing
[MEM] = pause 4 seconds
[TRBL] = end of number

If only one central station telephone number is available, the same telephone number must be programmed for telephone number 1 and 2. A separate "communicator reporting" format can be selected for each central station telephone number at address **194**.

PC Download Telephone Number: (Addresses **060**-**067**) **SECTION 00 - 01**

The PC download telephone number is dialed in three situations. It is dialed when communication with PC is initiated from the keypad. It is the automatic "callback" number, when the "callback" feature is enabled (**206**, **[4]** "on"). If the event buffer is full, and "call PC" feature is enabled (**208**, **[2ND]** "on"), this number will be dialed in order to download the event list.

Related features: "Upload Panel ID" **001** - **002** **"***PC password"* **003** - **004**

Central Station Telephone Number 1 (Addresses **068**-**075**) **SECTION 02 - 03**
Central Station Telephone Number 2 (Addresses **076**-**083**) **SECTION 04 - 05**

The panel can communicate with two central station numbers. Each of the numbers can be assigned a separate reporting format. (Format selection - address **194**, all keys).

Esploud note: Upon alarm, upload/download in progress will be interrupted and the panel will dial the central. If another type of reportable event occurs, Esploud provides the on-screen prompt: "Hang up or continue?"

System Account Codes (System "A"/"B") (Addresses **084**-**087**) **SECTION 06**

All report codes are preceded by a system account code to ensure correct identification of active zone(s) in a partitioned system. **If partitioning is deactivated, or you are using Esprit 718 or 728L, the same value should be programmed for both account numbers.** To program account codes for System "A" and "B", press **[ENTER]** + installer code + **[2][7]** + **[10][6]**. The first four digits entered afterwards correspond to the System "A" account code, and the last four digits to the System "B" account code.

REPORTING CODES: (Addresses **088**-**193**) **SECTION 07- 33**

DIRECT ADDRESS OR STREAMLINED PROGRAMMING

General

The panel can report information regarding system and "protected area" status to the central monitoring station, when reporting is activated at address **206**. All data to be communicated should be assigned a 2-digit hexa reporting code, consisting of numbers from 0-15. Examples of two digit hexa code combinations are **[6][13]** and **[9][15]**. Written in hexa notation, these codes are **[6][D]** and **[9][F]**. Using the keypad for hexa digit entry, keys **[10]**, **[11]**, **[12]**, **[BYP]**, **[MEM]** and **[TRBL]** correspond to hexa digits A, B, C, D, E and F, respectively.

The **[2ND]** key's value is "skip" (empty). It is ignored by the panel, so to avoid reporting a specific condition to the central, enter **[2ND][2ND]** after the report address for that condition.

Also, when programming 3 digit account codes and 1 digit alarm codes (3-1 reporting), use **[2ND]** in lieu of the first digit.

All report codes are assigned to a system account, whether or not partitioning is activated. Arm/disarm reports are assigned to System "A" when partitioning is "off", or to the system account to which they belong, based on code priority assignment, when partitioning is activated.

Panel	"A" Partition Zones	"B" Partition Zones	Total Possible Zones
748, 748ES	1-6, 13-18, 13 = (Keypad 1)	7-12, 19-24, 19 = (Keypad 2)	24
738	1-6, 13 (Keypad 1)	7-12, 19 (Keypad 2)	14
728	1-6	7 (Keypad 1), 8 (Keypad 2)	8

Trouble and special report codes are always assigned to System "A".

Arming codes/Disarming codes (Addresses **088-119**) **SECTION 07- 14**

System access codes can be programmed to generate hexa report codes that communicate the identity of the **user** arming/disarming the control panel to the central monitoring station. Each user code can be assigned an arm/disarm report code. **(*Esploa*d and the master code can be assigned a report code at addresses 188/189 - see special report codes, page 24.)**

Zone alarm codes (Addresses **120-143**) **SECTION 15- 20**

Alarm report/zone restoration codes will be sent to the monitoring station if each zone is assigned a code during panel programming. These codes identify which zone is generating an alarm or returning to normal status after an alarm.

Zone restoration codes (Addresses **144-167**) **SECTION 21- 26**

If trouble conditions occur and are reported, once normal status is re-established, a "restoration" code can be transmitted to the central to indicate that the "trouble" situation has been rectified. Codes should be assigned to the trouble conditions that should be reported upon restoration.

Trouble codes: (Addresses **168-175**) **SECTION 27- 28**

8 trouble status codes can be reported to the central: max. auxiliary current, bell disconnect/max. bell current, battery disconnected/low voltage, no AC/low AC or power failure for software versions 1.4 and beyond, program change (indicates that someone has initiated "installer" or Esploa programming), timer loss, fire loop trouble, and test report. (Several trouble conditions will also be displayed on the keypad.) Codes should be assigned to the trouble conditions that should be reported.

Trouble restoration codes (Addresses **176-183**) **SECTION 29- 30**

If trouble conditions occur and are reported, once normal status is re-established, a "restoration" code can be transmitted to the central to indicate that the "trouble" situation has been rectified. Codes should be assigned to the trouble conditions that should be reported upon restoration.
Note: All Tamper/Wire Faults must be restored before a restoration code is transmitted.

Special codes (Addresses **184-193**) **SECTION 31 - 33**

These codes are assigned to report 10 special status conditions.

Panic 1	Panic alarm will be reported to the central. (keys **[1]** and **[3]** pressed for 2 seconds)
Panic 2	Panic alarm will be reported to the central. (keys **[4]** and **[6]** pressed for 2 seconds)
Panic 3	Panic alarm will be reported to the central. (keys **[7]** and **[9]** pressed for 2 seconds)
Partial arming	Will be reported if system is armed with zones bypassed.
Arming with Esploadl auto arming	When Esploadl is used to arm the system, or when system arms itself automatically following a period without movement, a special report code will be generated.
Arm with master code	Using the master code to arm the system will generate a special report code.
No movement/ late to close	When the system is not armed, if there is no movement in the protected area for a designated time period, or if the system has not been armed at its usual time, a special report code will be generated.
Tamper report	The hexa digit entered for this report code will replace the first digit of all zone alarm report codes when tamper "trouble" occurs. This identifies zone location of the tamper "trouble" to the central. (auto-generated codes) If the *Zone Doubler* is activated, the tamper zone location reported represents a pair of zones.
Disarm with Esploadl	Using Esploadl to disarm the system will generate a special report code.
Disarm with master code	Using the master code to disarm the system will generate a special report code.

Two digit hexa codes should be assigned to the trouble/special conditions that should be reported. All digits from 1 - F are valid.

COMMUNICATOR FORMATS (Address **194**)

Contact I.D. event codes

Ademco Contact ID (all codes reported) (key **[10]**)

All report codes are preprogrammed in this **DTMF** reporting format. There is no need to program values for addresses **088**-**193**. Contact ID event codes are listed below:

CONTACT ID EVENT CODES

CODE	DEFINITION	REPORTING ADDRESS	CODE	DEFINITION	REPORTING ADDRESS
100:	AUXILIARY ALARM	185	321:	BELL 1 TROUBLE	169, 177
110:	FIRE ALARM	122, 146,186	351:	TELCO 1 FAULT	183
120:	PANIC ALARM	184	373:	FIRE LOOP TRBL	174, 182
130:	BURGLARY	120 to 167	401:	O/C BY USER	088 to 119, 189, 193
144	SENSOR TAMPER	180,191	404:	LATE TO O/C	190
300:	SYSTEM TROUBLE	168, 176	407:	REMOTE ARM DWNLD	188, 192
301:	AC LOSS	171, 179	570:	BYPASS	187
302:	LOW SYSTEM BATT	170, 178	602:	PERIODIC TEST	175
305:	SYSTEM TIME RESET	173	625:	TIME DATE RESET	181
306:	PROGRAM CHANGED	172			

Ademco Contact ID (selected codes reported) (key **[9]**)

Select certain report codes to be reported by entering any value other than **[2ND][2ND]** at the required addresses. The preprogrammed Contact ID report code for that event will then be reported. Default value of all addresses is **[2ND][2ND]**.

Ademco Express (key **[8]**)

This high speed reporting format communicates events in 2 seconds.

DTMF - no handshake (**[TRBL]** key)

This format can be used in reporting situations where a central station receiver is not connected to the telephone number. It's useful for personal reporting where a "handshake" is not required. (In "double reporting" mode, first central station number can be connected to a receiver, while second can be used for personal reporting using "no handshake" format. The panel will make two attempts to call the "no handshake" number.

Standard pulse formats (Ademco slow, Silent Knight, Sescoa, Radionics) are programmable with keys **[2ND]** to **[7]**.

PROGRAMMABLE OUTPUT (PGM) TYPE AND OPTIONS
Program type (Address **195**) **SECTION 33**

Each PGM output can be programmed as normally open (N.O.) or normally closed (N.C.).
Regular N.O. - solid state switch momentarily conducts to negative (30mA) upon an event or events.
Regular N.C. - solid state switch momentarily opens circuits from ground upon an event or events.
Timed N.O. or N.C. - solid state switch changes state for the amount time programmed in address **254** upon event or events (see special timing functions page 20).

"**OR**", "**AND**", "**EQUAL**"
Each PGM output can operate upon one event or multiple events. In the case of the latter, the output can be programmed to operate when the events are logically:
"**OR**" Event 1 or Event 2 (example: key **[1]** OR **[4]** on keypad)
"**AND**" Event 1 and Event 2 (example: keys **[1]** AND **[4]** on keypad - not limited to events specified))
"**EQUAL**" Event 1 exactly equals Event 2 (limited to the events specified)

Typical PGM (Programmable Output) programming
PGM 1 addresses: **196**__/__**198**__/__ PGM 2 addresses: **197**__/__**199**__/__ (***738***, ***748***, ***748ES***)

FUNCTION	DESCRIPTION	TYPE	HEXA PROG. Address ***196/197***	HEXA PROG. Address ***198/199***
** Ground start Pulse (Timed N.O.)	* Provides **3 sec.** pulse before communication attempt.	5	5/2	[**2ND**]/8
Push key **[1]** and **[2]** (Regular N.O.)	Provides output when keys **[1]** and **[2]** are pressed simultaneously.	1	5/8	[**2ND**]/6
System armed (Regular N.C.)	Output removed when system armed.	9	2/B	[**2ND**]/8
Strobe output (Regular N.O.)	Provides latching output on alarm, until disarmed.	1	2/C	[**2ND**]/2
Fail to communicate (Timed N.O.)	* Provides output upon fail to communicate for **2 minutes**.	5	2/6	[**2ND**]/4
2nd telephone line relay (Regular N.O.)	Provides output after one failed communication attempt.	[**2ND**]	7/A	[**2ND**]/E
Kiss off (Timed N.O.)	* Provides **3 sec.** output after signal received at monitoring station.	5	7/D	[**2ND**]/8
Time output (Timed N.O.)	* Provides **3 sec.** output every day at 8PM.	6	2/3	1/4
Fire reset (Timed N.C.)	* ([**TRBL**] + **[11]**) Provides **4 sec.** to reset detectors after alarm	[**BYP**]	5/3	2/[**2ND**]

***Times must be programmed at address 254.**
****Not permitted on UL listed systems.**

Note: For other PGM operations, i.e. home automation, programmable controller, false alarm reduction, etc., use ***Espload*** software to provide programming codes (over 1000 options available). (If **other** programming options are needed, fax requests to technical support department at 514-491-2313.)

SYSTEM OPTIONS (Default = **"off"** for addresses **200-242**)
Code priority (Addresses **200** to **204**)
Key **[1]** represents user code 1, **[2]** = 2, **[3]** = 3, **[4]** = 4, **[5]** = 5, **[6]** = 6, **[7]** = 7, **[8]** = 8, **[9]** = 9, **[10]** = 10, **[11]** = 11, **[12]** = 12, **[BYP]** = 13, **[MEM]** = 14, **[TRBL]** = 15, and key **[2ND]** = 16.

If partitioning is disabled (Address **206**, key **[8]** "off")
Address **200**: Lighted keys indicate which user codes can activate "stay" arming.
Address **202**: Lighted keys indicate which user codes can activate "auto bypass (away)" arming.
Address **204**: Lighted keys indicate which user codes can "bypass" zones.

If partitioning is enabled (Address **206**, key **[8]** "on")

Address **200**: Lighted keys indicate which user codes are assigned to System "A".
Address **202**: Lighted keys indicate which user codes are assigned to System "B".
Address **204**: Lighted keys indicate which user codes can "bypass" zones.

TLM options (Address **206**, key **[2ND]** and key **[1]**)

The system verifies existence of a telephone line every 4 seconds. After successful tests, the dialer LED (green light) flashes briefly on the control panel. If the test fails, LED illuminates four seconds "on", then four seconds "off". TLM trouble will be activated when less then 3 volts are detected in 4 consecutive tests. **Note:** When the dialer detects a telephone ring, the TLM flashing stops for 1 minute.

TLM TABLE (TLM = Telephone Line Monitor)

KEY [2ND]	KEY [1]	
OFF	OFF	— TLM is disabled (default)
OFF	ON	— TLM generate a trouble only
ON	OFF	— generates an alarm if armed
ON	ON	— silent alarm becomes audible

(address **206**, key **[9]** has to be **OFF**)

There are three options for TLM use.
(1) Line test failure can generate a trouble indication.
(2) Line test failure can generate a trouble indication and an alarm when the system is armed.
(3) Line test failure will cause silent or panic zones to switch to audible mode.

Arming using PS1 or keyswitch (Address **206**, key **[2]** and key **[3]**)

The PS1 bedside remote arming module or keyswitch can be used to stay arm, full arm, or disarm the system. The PS1 keyswitch is enabled at address **206**, key **[3].**
Key **[2]** "off": PS1 or keyswitch "regular" arms system. Key **[2]** "on": PS1 or keyswitch "stay" arms system*****.

*****Note: if partitioning is enabled (address **206**, key **[8]** "on") PS1 arms system "A" only. Use of PS1 is not recommended for partitioned systems.

Call Back (Address **206**, key **[4]**)

For extra security the panel can be programmed to call the PC back when communication is attempted by the PC. The panel will first answer the call, then Esploud and the panel will verify identification codes. The panel will then hang up and call the PC back and establish communications. Esploud automatically goes into the “wait for call mode” ready to answer when the panel calls back. The identification codes are verified again before allowing access to the panel.

Related features: “PC download telephone number” **060-067**.

Auto Arm

On Time: (Address **206**, key **[5]**)

The panel may be programmed to arm at the same time every day. Program both the hour and minute (addresses **245, 246**) for arming. (This will also be the "auto test report" time, if enabled.) A late closing code may be programmed (address **190**).

*Related features: Auto arm regular/stay add. **210**, key **[2]**, Auto arm report code add. **188** (**SECTION 32**)*

Also see "Special timing functions" page 20.

No Movement: (Address **206**, key **[6]**)

If zone activity is not detected for a programmed period (address **253**) while disarmed, the panel can auto arm and/or send a "no movement" report (address **190**). Also see "Special timing functions" page 20.

Touch tone options (Address **206**, key **[7]**)

Tone (key **[7]** = "on") **or** pulse dialing can be programmed. If "pulse" is chosen for a central station phone number, "tone" dialing can be programmed for the other number. [**BYP**] ("switch from pulse to tone") should be entered in the second phone number during programming.

Partitioning (Address **206**, key **[8]**)

Partitioning is activated at address **206,** key **[8]** "on". The panel's fully programmable zones (plus 2 remote keypad zones) can be divided into two systems.

***Partition "on"** (address **206**, key **[8]** "on")* Addresses **240** and **242**:

Panel	"A" Partition Zones	"B" Partition Zones	Total Possible Zones
748, 748ES	1-6, 13-18 (13 = Keypad 1)	7-12, 19-24 (19 = Keypad 2)	24
738	1-6, 13(Keypad 1)	7-12, 19 (Keypad 2)	14
728	1-6 (See note)	7 (Keypad 1), 8 (Keypad 2)	8

Notes re: ***728***

The designation for zones **1, 2, 3**, **4**, **5** and **6** can be changed to zones **7, 8, 9**, **10**, **11** and **12** respectively so that they form part of system “B”.

Zones **1** and **2** will be swapped with zones **7** and **8**.

Zones that are not selected (light "on") are common to both systems and will be armed only if the panel is fully armed.

Note: When partitioning is not activated (address **206,** key **[8]** "off") any zones selected at addresses **240** and **242** will be armed upon "stay" arming. **See also "Partitioning" pages 15-16**.

Keypad display:
Both systems are displayed on the keypad at the same time. In partitioning mode, when System "A" is armed, the **[STAY]** key flashes. If System "B" is armed, the **[AWAY]** key flashes.
If both systems are armed, both of these keys will flash.

Silent alarm (Address **206**, key **[9]**)
Key **[9]** "off":

Zones defined as "silent" at address **216** and keypad panic zones will not cause an audible alarm, however, the keypad **"armed"** light will flash and the alarm condition will remain until a valid user code is entered.

Key **[9]** "on":

Silent zones/panics generate only a report (no flashing red LED on keypad, no need to "reset" the silent alarm).
Silent delay zones generate an entry delay beep, and a report at the end of the entry delay.
Zone restore is always reported on zone close.
Memory display and auto zone shut-down (when enabled at address **206**, key **[TRBL]**) are always active for silent zones.
Silent alarms can be monitored by a PGM output. (Silent flag is cleared on reporting or disarm.)
On split reporting, silent zones/panic are reported to Telephone #1.
The Contact ID report for all zones is "burglary".

Dialing pulse rates (for Esplod) (Address **206**, key **[10]**)
This selection reflects the ratio between pulse time and "quiet" time. Select Pulse Europe for a 1:2 ratio, Pulse USA for 1:1.5. (Key **[10]** = "on")

Reporting options
Regular reporting (Address **206**, key **[11]** and key **[12]**)
To activate central station reporting, the feature must be enabled and all required reporting codes must be assigned a value other than **[2ND][2ND]**.

To establish communication, the communicator takes the telephone line and waits for a dial tone. If a dial tone is identified, the communicator will dial the second central station telephone number. If a connection is made, system report will take place and the communicator will hang-up upon completion. If for any reason, communication is interrupted, the communicator will redial the central and report only the events that were not reported during the interrupted attempt.

During a communication attempt, the communicator waits for a dial tone for up to 8 seconds (versions 0.97B, 1.04 and 1.4 onward). (In previous versions, the communicator waits up to 16 seconds for a dial tone.) Even if a dial tone is not found, **the communicator will dial the central station.*** (See * page 28) After 60 seconds, if communication has not been established, the dialer will hang up, wait 5 seconds and try the first number. This sequence will be repeated 8 times, switching back and forth between the 1st and 2nd number. (Regular reporting dialing procedure: **2,1,2,1,2,1,2,1**, "communicator report failure").

*This feature is useful for PBX systems, which do not provide a dial tone. You can program the dialing sequence required to get a line on a PBX system, and this sequence will be added before the central station number. If there is a time delay between dialing and getting a line, this can be programmed into the dialing sequence using the **[MEM]** ("pause") key.

After 8 unsuccessful attempts, the redial sequence ends and "communicator report failure" will be displayed as a trouble on the keypad (key **[7]** "on"). When the **next** reportable event occurs, (even if it is not programmed to report to the central), the communicator will again try to establish communication. If successful, all events stored in the event buffer that have not yet been reported will be communicated to the central.

Split reporting (Address **206**, key **[11]** "on", key **[12]** "off")
All "system" reports (i.e. trouble reports, arm/disarm reports, etc.) are sent to Telephone #2, until an alarm is generated. Following alarm generation, all activity, including alarm and restoration reports, is sent to Telephone #1 until the system is disarmed. When there is an alarm, any **ongoing** communication (upload/download or reporting to Telephone #2) will immediately be stopped and the panel will dial Telephone #1.

"System" reports dialing procedure: (2,2,2,2,2,2,2,2, "communicator report failure")
Alarm reports dialing procedure: (1,1,1,1,1,1,1,1, "communicator report failure")

Double reporting (Address **206**, key **[11]** "on", key **[12]** "on")
The panel will transmit all reports to both programmed telephone numbers. If, after 8 attempts using either number, communication is not established, "communicator report failure" will be displayed by key **[7]**.

Double reporting dialing procedure: (2,2,2,2,2,2,2,2, "communicator report failure")
(1,1,1,1,1,1,1,1, "communicator report failure")

Note: To stop communication attempts until the next reportable event, press [ENTER] + installer code + **[STAY]**.

Answering machine override (Address **206**, key **[BYP]**)
Select this option when an answering machine is connected on the same line as the panel. (Key **[BYP]** "on" = enabled). The panel will answer the line and look for a modem in the following sequence:

1) One or two ring signals.
2) The ring signal is stopped.
3) Within 60 seconds of the last ring, the panel is ready to answer on a new ring signal.
4) For more than two ring signals, the panel will answer only for the preprogrammed number of rings (address **000**).
5) After 60 seconds the panel resets the ring counter and 60 second timer.

Note: This function is enabled at address 000 for software versions 1.4 and beyond.

Bell squawk (Address **206**, key **[MEM]**)
Option: (0.5 sec.) on arming (once) and disarming (twice). (Key **[MEM]** "on" = enabled)

Auto zone shutdown (Address **206**, key **[TRBL]** "on")
Key **[TRBL]** "on" = zones that initiate 4 consecutive alarms during the same armed period will be automatically bypassed. (Zones must be bypass-enabled at addresses **236** and **238**.) After a zone has been bypassed, the panel can send a "partial arming" report to the central (if programmed to do so at address **187**).

Note**:** Once auto zone shutdown has been enabled, it will either be activated after 4 "zone closure" restoration reports or 4 "bell cut-off" restoration reports, depending on which type of alarm restoration code has been activated at address **208**, key **[BYP]**.

Call PC when event buffer is full (Address **208**, key **[2ND]**)
Key **[2ND]** "on" = system will dial the PC telephone number programmed in **SECTION 00** and **01** (address **060** to **067**) to upload the contents of the event buffer to the PC. (Espload must be in "wait for call" mode).

Enable keypad Panic signals (Address **208**)
Key **[1]** "on" = Panic 1 (keys **[1]** and **[3]**) enabled
Key **[2]** "on" = Panic 2 (keys **[4]** and **[6]**) enabled
Key **[3]** "on" = Panic 3 (keys **[7]** and **[9]**) enabled

Keypad Panic options (Address **208**)

Key **[4]** "off" = Panic 1 silent	Key **[5]** "off" = Panic 2 silent	Key **[6]** "off" = Panic 3 silent
Key **[4]** "on" = Panic 1 audible	Key **[5]** "on" = Panic 2 audible	Key **[6]** "on" = Panic 3 fire

Silent operation (Address **206**, key **[9]**)
When panic keys (**[1]** and **[3]**, **[4]** and **[6]**, **[7]** and **[9]**) are pushed simultaneously for 2 seconds, a single confirmation beep is sounded, codes programmed at addresses **184**, **185**, and **186** are transmitted and the alarm latches, flashing the keypad **"armed"** light until reset by a user code.

Audible operation
When panic keys are pushed in addition to alarm codes being transmitted, the alarm output (bell, siren) will activate until reset by a user code or until the bell cut-off time (address **250**) expires.

Fire operation
Same as audible operation except that bell/siren output will be pulsed (intermittent "on"/"off")

"One key" arming enable (Address **208**)
Key **[7]** "on" = Pushing key **[10]** will "full" arm system for 2 seconds.
Key **[8]** "on" = Pushing key **[11]** will "stay" arm system for 2 seconds.

User/access code length (Address **208**)
Key **[9]** "off" = 6 digit user/access codes and installer code.
Key **[9]** "on" = 4 digit user/access codes and installer code.

Tamper/wire Fault Definitions (Address **208**)
Note: If key **[10]** and key **[11]** are both "off", this means that tamper and wire faults will not be recognized. "See Loop configuration" pages 9, "Tamper/wire Fault Definition and Options", page 12, and "Tamper/wire Fault Definition table" in the "Programming Guide".

Beep on exit delay (Address **208**)
Key **[12]** "on" = the keypad will sound on exit delay. (Frequency of intermittent beeps increases during the last 10 seconds of the exit delay period.)

Zone restore transmission (Address **208**)
Key **[BYP]** "off" = If zone is closed, restoration will be transmitted after "bell time out" period (address **250**).
Key **[BYP]** "on" = Restoration code transmitted as soon as zone is closed.

Zones with EOL resistors (Address **208**, key **[MEM]**)
See "Loop configuration and Options" pages 9.

Always report disarm (Address **208**)
Key **[TRBL]** "off" = always report disarm codes (regular "opening" and "closing" reports)
Key **[TRBL]** "on" = report disarm code only after alarm.

Exclude AC from Trouble Display (Address **210**, key **[2ND]**)
Key ="on": AC failure will not light the **[TRBL]** key when **[TRBL]** key is pressed.
May still be viewed as trouble condition by pressing

Zone disabled (Address **210**, key **[1]**)

Used in conjunction with zone 3 (zone 12 for software versions prior to 0.98) when programmed as a **fire** zone.
Key ="on": burglar alarm zone associated with **fire zone** is disabled so that a wire fault on the **fire** zone (**fire** trouble) will not cause an alarm on the associated burglar zone.

Panel	Fire Zone	Associated Zone
728, 728L	3	6 (ATZ)
738	12 (ATZ)	9
748	12	24 (ATZ)

ARMING OPTIONS

Auto arm (Address **210,** Key **[2]**)

Key ="off": when system auto arms (on time or "no movement"), "regular" arming will take place. (if all zones are closed).
Key ="on": when system auto arms (on time or "no movement"), "**STAY**" arming will take place. (if all zones are closed). If zone PARTITIONING is programmed (address **206**, key **[8]**), System "A" will arm. See also "Special timing functions" page 20.

Regular arming (Address **210**, key **[3]**)

Key ="off": system will not arm with a zone in alarm condition unless "auto bypass (away)" arming is used.
Key ="on": system will automatically "auto bypass (away)" arm when regular arming code is entered. Zones will be bypassed if so enabled at addresses **236** and **238** and "partial arm" code will be sent (if programmed at address **187**.)

Arming inhibit on battery failure/low voltage (Address **210**, key **[4]**)

Key ="on": system will not arm if Battery Failure / Low Voltage is present.

Arm inhibit on "Tamper/wire Fault" (Address **210**, key **[5]**)

Key ="on": system will not arm if Tamper fault is present. MUST BE RESET BY INSTALLER BEFORE SYSTEM CAN BE ARMED AGAIN.

No tamper bypass (Address **210**, key **[6]**)

Key ="off": Device tamper will not follow zone bypass.
Key ="on": Device tamper will follow zone bypass.

Only bypass code reported on bypass arming (Address **210**, key **[7]**)

Key ="off": when system is armed with zones bypassed, partial arming code (address **187**) will be transmitted, followed by the arming code (addresses **88**-**103**).
Key ="on": when system is armed with zones bypassed, only partial arming code (address **187**) will be transmitted.

Advanced Technology Zoning (ATZ) (Address **210,** key **[8]**)

Key ="on": Enabled (When enabled permits two zones per circuit. See zone configurations, page 9a, 10-12.) (Not available on 718 and 748ES Panels)
Key ="off": Single zone per loop.

Note: This function is enabled at address 208 for software versions prior to 0.98.

Audible Trouble Warning (Address **210,** Key **[9]**)

Key ="off": Trouble conditions cause intermittent **audible** trouble warning on keypad. To silence, push **[TRBL]** + **[CLEAR]**. (software versions 0.98 and beyond)

Keypad zone supervision *(Applies only to software versions 1.4 and beyond)****

Keypad zone supervision permits the system to verify the presence of a keypad. When a keypad is not detected, the keypad zone is regarded as "open". A maximum of two keypad zones can be supervised using this feature.

Keypad 1 zone supervision (Address **210**, key **[11])**
Keypad 2 zone supervision (Address **210**, key **[12]**)
("on" = enabled) ("off" = disabled)

When activating zone supervision for only one keypad, by turning "on" either key **[11]** or **[12]**, the other keypad zone supervision "activation" key must be disabled. (Ex.: if key **[11]** is "on", key **[12]** must be "off".)

When connecting more than two keypads on one system, all keypads that are not using a keypad zone must have their keypad zone terminal shorted.

******Keypad zone supervision should be used only on keypads with software versions 4.0 onward and/or the Esprit 640 LCD keypad, with keypad zone supervision enabled (Address 32, key [3] "on".***

ZONE DEFINITION (Addresses **212-242**)

Note: Addresses **214, 218, 222, 226, 230, 234, 238** define zones 13-24, which are not available on the 718, 728L and 728.
On the 738, only zones 13 and 19 are used.
Default definition of all zones is "Delay 1", unless otherwise programmed at addresses **220-234**.

Zone definition is assigned during "feature selection" programming. Turning zone key "on" or "off" at addresses **212**-**242** assigns a particular definition to the zone. (See Programming Work Sheets.)

Slow/fast (Addresses **212, 214**)
"Open" zone status of a slow zone (keys "off") and alarm will only be communicated after a programmed time period between 15 and 4000 milliseconds has elapsed. (Slow response time programmed at address **251**.) Fast zones (keys "on") provide detection after 20 milliseconds if a zone is opened.

Silent/audible (Addresses **216, 218**)
Silent zones (keys "on") report alarms without triggering bells/sirens.
Audible zones (keys "off") will trigger a bell or siren upon alarm generation.

24 hour - fire/regular (Addresses **220, 222**)
"24 hour" zones (keys "on") generate alarms whenever the zone is open, even if the system is not armed. Zone 3 becomes a fire zone when defined "24 hour". (Zone 12 for software versions prior to 0.98). The fire zone should always be connected with a **green** (1K OHM) EOL resistor. If there is a line short in the fire zone, a fire alarm will be generated. If the line is "open", a fire trouble report (if assigned at address **182**) will be sent to the central, and trouble indicator **[11]** and fire zone key **[3]** illuminate on the keypad. (Key **[12]** for software versions prior to 0.98). Alarms in a fire zone generate an intermittent output signal, regardless of system arming status. ("24 hour/fire" zone definition takes priority over "instant", "follow", "stay", Delay 1 and Delay 2 definition.)

Instant (Addresses **224, 226**)
"Instant" zones (keys "on") will immediately generate an alarm when opened while the system is armed. There is no entry delay.

Follow (Addresses **228, 230**)
"Follow" zones (key "on") are "instant" zones that switch to "delay" definition during entry delay.

Delay 2 (Addresses **232, 234**)
One of two different zone delays (delay 1 and delay 2) can be assigned to each zone. Zones activated at these addresses are assigned "Delay 2" definition. The length of zone entry delays is programmed at addresses **248**-**249**. Any zones that are not activated at addresses **220-234** are assigned "Delay 1" zone definition.

Note: When more than one zone definition is selected, zone definition priority will be assigned in this order (1) 24 hr., (2) instant, (3) follow, (4) delay 2 and (5) delay 1.

Bypass-enabled (Addresses **236, 238**)
"Bypass-enabled" zones (keys "on") are zones that can be bypassed during "manual bypass" arming, "away" arming and auto zone shut-down. The fire zone cannot be bypassed.
Note: If a zone should not be bypassed, turn "off" its corresponding zone key.

System Assignment (Addresses **240, 242**)
Zones selected at these addresses are no longer "common zones", if partitioning is activated. When partitioning is deactivated, zones selected at these addresses will be armed upon "stay" arming. (See partitioning, page 26-27, for further explanation.)
*Related programming: "Partitioning enabled, address **206**, key **[8]."***

Note: Address **242** should not be programmed for the 718, 728L, and 728 unless the "zone swap" feature is required.

SYSTEM TIMES

Auto Test report time

ADDRESS	RANGE
244	001 to 255 days, (000 = disabled)
245	000 to 023 hours
246	000 to 059 minutes

Auto arm/report options

1) Report the code programmed at address **175** after the number of days programmed at address **244**. (To disable, program address **244 = 000**.)
2) Auto arm the system (on time) if enabled at address **206**, key **[5].**
3) Send a "late to close" code programmed at address **190**. (If the system is not armed at this time and if address **253** ("no movement" time) is disabled by programming the value 000.)
4) If address **253** is not programmed 000, the report codes for "no movement" and "late to close" will be the same.(Also see "Special timing functions" page 20.)

Exit delay (Address **247**)
Range 001 to 255 seconds, (*default 060).* Applied to all zones upon arming. (000 = disabled)

Entry delay 1 (Address **248**)
Range 001 to 255 seconds, (*default 045).* Applied to all zones **not** selected at addresses **220** to **234,** upon entry (000 = disabled).

Entry delay 2 (Address **249**)
Range 001 to 255 seconds, (*default 045).* Applied to all zones selected at addresses **232** and **234,** upon entry (000 = disabled).

Bell cut-off time (Address **250**)
Range 001 to 255 minutes, (*default 005 minutes)* (000 = disabled).

Normal circuit response time (Address **251**)
Range 001 to 255 X 15mSec., (*default 600 mSec).* Applied to all zones **not** selected "fast" at addresses **212** and **214**. (If selected "fast", circuit response time is 20 mSec) Maximum time 3.8 seconds.

AC report delay (Address **252**)
Range 001 to 255 minutes, (*default 030)* (000 = disabled) delay code reported at address **171.**

Time for "no movement" report (Address **253**)
Range 001 to 255 X 15 minutes, (*default 8 hours, 032)*. System will automatically arm after programmed number of minutes of inactivity if enabled at address **206**, key **[6]**, or will transmit code programmed at address **190**.(Maximum time 63.75 hours) Also see "Special timing functions" page 20.

Timed programmable output (PGM) (Address **254**)
Range 001 to 127 seconds or 128 (1 minute) to 255 (127 minutes) (add number of minutes to 128;
i.e. For 5 minutes = 128 + 5 = 133
For 127 minutes = 128 + 127 = 255
Applied to PGM 1 and 2 if selected at address **195**.(Maximum time, 127 minutes)

INSTALLER LOCK (Address **255**)
If **147** is programmed at address **255**, all installer programming will be locked and **will not** return to default values when the system is reset.

PANEL RESET TO FACTORY PROGRAMMING DEFAULTS
*(Note: Panel will not revert to default settings following reset when installer lock (address **255**) is enabled.)*

Power down reset
(1) Remove AC and battery to power down the unit.
(2) Connect a jumper between "reset jumper" pins.
(3 Connect AC or battery.
(4) Wait 3 seconds.
(5) Remove jumper.

To conduct a panel reset without powering down, the installer code is required.
Panel reset without power down
(1) Connect a jumper between "reset jumper" pins.
(2) Press **[ENTER]** + installer code + **[STAY]**.
(3) Remove jumper.

The factory default installer code will be reinstated and all panel programming for addresses **005** - **243** reverts to factory defaults.

WARRANTY

Warranty conditions for the ***ESPRIT*** may vary from country to country. Please consult your local dealer for complete warranty information. In all cases, the warranty does not cover malfunctions arising from installer error or failure to follow installation/operation instructions, nor does it apply to damages due to causes beyond the control of Paradox Security Systems, such as lightning, excessive voltage, mechanical shock or water damage.

LIABILITY

Under no circumstances shall Paradox Security Systems be held liable for any direct or indirect damages, loss of anticipated profits, loss of time, or any other losses incurred by the buyer in connection with the purchase, installation, operation or failure of this product.

WARNING

This security system should undergo frequent testing. However, despite regular testing, and due to, but not limited to, criminal tampering or electrical disruption, it is possible for this product to fail to perform as expected.

FCC WARNINGS

ESPRIT ***708/718/728L/728/738/748/748ES***

IMPORTANT INFORMATION

This equipment complies with Part 68 of the FCC rules. Inside the cover of this equipment is a label that contains, among other information, the FCC registration number of this equipment.

NOTIFICATION TO TELEPHONE COMPANY

Upon request, customer shall notify telephone company of particular line to which the connection will be made, and provide the FCC registration number and the ringer equivalence of the protective circuit.

FCC REGISTRATION NUMBER:	**5A7CAN-22633 - AL - E**
RINGER EQUIVALENCE NUMBER:	**0.0B**
USOC JACK:	**RJ31X (USA), CA31A (CANADA)**

TELEPHONE CONNECTION REQUIREMENTS

Except for telephone company-provided ringers, all connections to the telephone network shall be made through standard plugs and telephone company-provided jacks, or equivalent, in such a manner as to allow for easy, immediate disconnection of terminal equipment. Standard jacks shall be so arranged that, if plug connected thereto is withdrawn, no interference to operation of equipment at customer's premises which remains connected to telephone network shall occur by reason of such withdrawal.

INCIDENCE OF HARM

Should terminal equipment/protective circuitry cause harm to telephone network, telephone company shall, where practicable, notify customer that temporary disconnection of service may be required; however, where prior notice is not practicable, the telephone company may temporarily discontinue service if action is deemed reasonable in circumstances. In case of temporary discontinuance, telephone company shall promptly notify customer and will be given opportunity to correct the situation.

CHANGES IN TELEPHONE COMPANY EQUIPMENT OR FACILITIES

The telephone company may make changes in its communication facilities, equipment operations or procedures, where such actions are reasonably required and proper in its business. Should any such changes render customer's terminal equipment incompatible with the telephone company facilities, the customer shall be given adequate notice to effect the modifications to maintain uninterrupted service.

GENERAL

This equipment shall not be used on coin telephone lines. Connection to party line service is subject to state tariffs.

RINGER EQUIVALENCE NUMBER (REN)

The **REN** is useful to determine the quantity of devices that you may connect to your telephone line and still have all of those devices ring when your telephone number is called. In most, but not all areas, sum of the REN's of all devices connected to one line should not exceed five (5.0). To be certain of the number of devices that you may connect to your line, you may want to contact your local telephone company.

EQUIPMENT MAINTENANCE FACILITY

If you experience trouble with this telephone equipment, please contact facility indicated below for information on obtaining service or repairs. The telephone company may ask that you disconnect this equipment from network until problem is corrected or until you are sure that the equipment is not malfunctioning.

U.S. POINT OF CONTACT:

Paradox U.S.
1717 Minnesota Avenue
Winter Park, Florida
32789 USA 1-800-786-9321

FCC PART 15, WARNINGS **INFORMATION TO USER**

This equipment has been tested and found to comply with the limits for Class B digital devices, pursuant to Part 15 of FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to equipment intermittently, the user is encouraged to try to correct the interference by one or more of the following measures: (1) reorient or relocate the receiving antenna; (2) increase the separation between the equipment and receiver; (3) connect the equipment to an outlet on a circuit other than the one to which the receiver is connected, or (4) consult the dealer or an experienced radio/tv technician for assistance.

CAUTION:

Changes or modifications not expressly approved by PARADOX SECURITY SYSTEMS could void the user's authority to operate the equipment.

ATTACHMENT LIMITATION NOTICE ***ESPRIT 708/718/728L/728/738/748/748ES***

The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements. The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

CAUTION: Users should not attempt to make such connections themselves, but should contact the appropriate electrical inspection authority, or electrician, as appropriate.

The Load Number (LN) assigned to each terminal device denotes the percentage of the total load to be connected to a telephone loop which is used by the device, to prevent overloading. The termination on a loop may consist of any combination of devices subject only to the requirement that the total of the Load Numbers of all of the devices does not exceed 100. The Load Number of this unit is **7**.

Industry Canada certification is only applicable to installation of devices which include transformers approved by the Canadian Standards Association (CSA).

RESTRICTIONS CONCERNANT LE RACCORDEMENT DE MATÉRIEL

L'étiquette d'Industrie Canada identifie le matériel homologué. Cette étiquette certifie que le matériel est conforme à certaines normes de protection, d'exploitation et de sécurité des réseaux de télécommunications. Le Ministère n'assure toutefois pas que le matériel fonctionnera à la satisfaction de l'utilisateur.

Avant d'installer ce matériel, l'utilisateur doit s'assuré qu'il est permis de le raccorder aux installations de l'entreprise locale de télécommunication. Le matériel doit également être installé en suivant une méthode acceptée de raccordement. L'abonné ne doit pas oublier qu'il est possible que la conformité aux conditions énoncées ci-dessus n'empêchent pas la dégradation du service dans certaines situations.

Les réparations de matériel homologué doivent être effectuées par un centre d'entretien canadien autorisé désigné par le fournisseur. La compagnie de télécommunications peut demander à l'utilisateur de débrancher un appareil à la suite de réparations ou de modifications effectués par l'utilisateur ou à cause d'un mauvais fonctionnement.

Pour sa propre protection, l'utilisateur doit s'assurer que tous les fils de mise à la terre de la source d'energie électrique, des lignes téléphoniques et des canalisations d'eau métalliques, s'il y en a, sont raccordés ensemble. Cette précaution est particulièrement importante dans les régions rurales.

AVERTISSEMENT: L'utilisateur ne doit pas tenter de faire ces raccordements lui-même; il doit avoit recours à une service d'inspection des installations électriques, ou à un électricien, selon le cas.

"L'indice de charge (IC) assigné à chaque dispositif indique, pour éviter toute surcharge, le pourcentage de la charge totale qui peut être raccordée à un circuit téléphonique bouclé utilisé par ce dispositif. La terminaison du circuit bouclé peut être constituée de n'importe quelle combinaison de dispositifs, pourvu que la somme des indices de charge de l'ensemble des dispositifs ne dépasse pas 100." L'indice de charge de ce produit est **7.**

La certification d'Industrie Canada s'applique seulement aux installations d'appareils utilisant un transformateur approuvé par l'Association Canadienne de Normalisation (CSA).

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