Honeywell

GX-Series Control Panel
Installation and Setup Guide

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INTRODUCTION

This manual gives full instructions required to install and program a GX-Series control panel and associated peripherals.

The GX-Series provides the following features:

Features	GX-48	GX-520
Zones	16-48	16-520
Outputs (400mA) 8-24	8-24	8-260
Trigger Outputs on Flying Lead (100mA)	6	6
Power Supply Unit (PSU)	2.5A	2.5A
RS485 Databuses	1	4
Telecom onboard	Yes	Yes
RS232 Interface for online PC	RS232	RS232
Printer Interface	RS232	RS232
Ethernet option	Yes	Yes
Groups	8	32
Keypads	8	32
Multi-user	Yes	Yes
Door Control Modules (DCM's) with 2 x wiegand interfaces	4	32
DCM Controlled doors	8	64
Access control groups (user templates)	50	100
Weekly Timer Schedules	19	67
Annual Holiday Schedules	16	32
Users	100	999
Links (Outputs)	64	256
Remote software update	Yes	Yes
Upload/Download	Yes	Yes
Remote service	Yes	Yes
Network downloader	Yes	Yes
Alarm monitoring	Yes	Yes
Graphics mimic	Yes	Yes
TouchCenter	1	4
Mimic panel	Yes	Yes
SMS (Short Message Service / Texting)	Yes	Yes

Table 1-1. GX-Series General Information

TERMINOLOGY GLOSSARY

Term	Meaning	Term	Meaning
DCM	Door Control Module	RIO	Remote Input Output Module
Engineer	Security System Installer	Set / Setting	Arm(ed) / Arming
ent	Enter key	Unset / Unsetting	Disarm(ed) / Disarming
esc	Escape key	User Type	User (Authority) Level
PA	Personal/Panic Attack		
Prox Reader	Proximity card reader		
Prox tag	Proximity card		

SECTION 1: QUICK SETUP

To quickly set arm up a GX-Series control panel for programming follow these simple steps:

1. Connect a 1k • resistor across each of the zones on the panel and any RIO's (if connected).
2. Ensure that the tamper return loop — the terminals marked as **AUX TAMP/GND** on the PCB — is a complete loop.
3. Connect a keypad to the AB LINE terminals on the control panel.

Control Panel (Line 1)	Keypad
B1	B
A1	A
-	-
+12V	+

Table 1-2. Terminal Connections

4. Connect a 680 • End Of Line (EOL) resistor across the A and B terminals of the keypad.
5. Ensure that the keypad is installed on the wall (**see Keypad Installation Procedure, Section 4**).
6. Connect the battery.
7. Connect the AC wiring to the control panel.
8. Switch on the AC power and remove the protective cover from the PCB battery.
9. The following sequence of events occur:
   - the keypad buzzer and control panel horn (if installed) activate for 10 - 20 seconds,
   - flashing *************** is displayed on the keypad,
   - the sounders stop and the keypad displays become blank,
   - the green power LED lights and the following displays on the keypad

Configuring
Please Wait

   - the default banner is then displayed on the keypad.

GX   <XXX>   <VY. YY>
01:01   SUN 01 JAN

   where: XXX is the panel type
   Y.YY is the panel software revision

10. The system is now ready to be programmed. Refer to Section 6 System Operation for programming details.
11. Default User code is 12345
    Default Engineer (Installer) code is 112233

SECTION 2: SYSTEM ARCHITECTURE

16 zones on board

PSTN (comm 1)

on board telecom area **GX Series**

Trigger Header

8 outputs on board plus 6 outputs on trigger header

Audio Interface Module (1) ‡

RS232 Serial Port (comm 6)

Line 1 Line 2 Line 3 Line 4

Lines 2, 3 and 4 have the same configuration

RS485 line

‡ Not Evaluated by UL.

CABLE RUN 1 KM (MAX)

* NOTE:
Valid addresses for the keyprox are:
Line 1 (0, 1 & 2).
Line 2 (0, 1, 2, & 3).
This sets the address for both the keypad and card reader parts of the keyprox.

* Certain keypad and max addresses can be replaced by a combined keyprox unit.

NOTE:
The Ethernet module can only be connected to line 1.

If an Ethernet module is attached, keypad address B cannot be connected to line 1 (address B is shown as 15 on the system).

* Keypad Mk 7

Touch Center CP041

* Keypads Mk 7

4 outputs

RIO C072

8 zones

Twisted Pair Screened Cable

Touch Center CP041

DCM C080/81

DCM C080/81

GX-001-V4

	GX-48	**GX-520**
Lines	1	4
Keypads	8	8 per line
Touch Center	1	1 per line
DCM's	4	8 per line
RIO's	4	15 (line 1) 6 (lines 2, 3, 4)

Figure 2-1. GX-Series System Configuration

Mounting the Control Cabinet

To mount the control cabinet, perform the following steps:

✓ **Do not attempt to remove the knockouts after the circuit board has been installed**

Step	Action
1.	Before mounting the circuit board, remove the metal knockouts for the wiring entry that you will be using.
2.	Using fasteners or anchors (not supplied), mount the control cabinet to a sturdy wall in a clean, dry area that is not readily accessible to the general public. The back of the cabinet has 4 holes for this purpose.

UL To provide certificated burglary service for UL installations, refer to the special requirements and *Figure 2-3. Cabinet Attack Resistance Considerations* to follow.

Installing the Cabinet Lock

To install the lock, see Figure 2-2 and perform the following steps:

Step	Action
1.	Remove cabinet door, then remove the lock knockout from the door. Insert the key into the lock.
2.	Position the lock in the hole, making certain that the latch will make contact with the latch bracket when the door is closed.
3.	When correctly positioned, push the lock until it is held securely by its snap tabs.
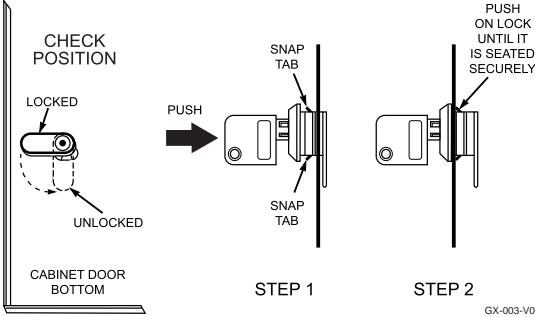
Figure 2-2. Installing the Lock

Mercantile Premises Listing Guidelines

- The panel door must be supervised. Mount the clip-on tamper switch (supplied) to the cabinet's right side wall and wire it to the cover tamper on the PCB. See Figure 2-4 for the location of the PCB terminal block.
- All wiring between the transformer and panel must be run in conduit. Remaining wires do not need to be run in conduit.
- All unused knockouts must be plugged using the disc plugs and carriage bolts (supplied), as indicated in Figure 2-3.
- Fasten the cabinet door to the cabinet backbox using the 15 one-inch-long Phillips-head screws (supplied) after all wiring, programming, and checkout procedures have been completed.
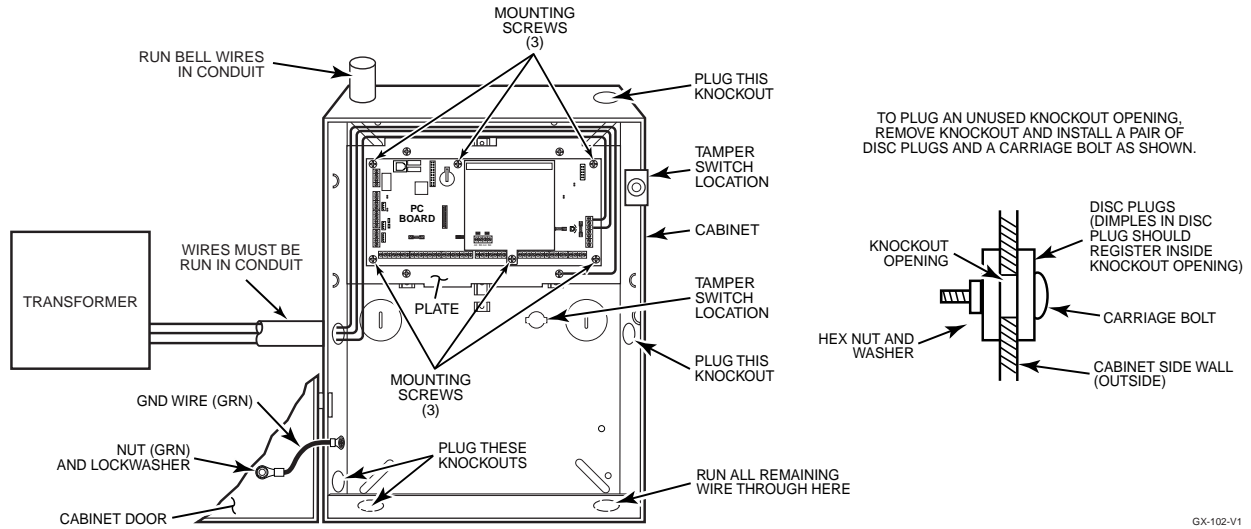
Figure 2-3. Cabinet Attack Resistance Considerations

Mercantile Safe and Vault Listing Guidelines

• Follow the guidelines given above for Mercantile Premises listing.

• For safe and vault installations, a shock sensor (not supplied) that is listed for protection of sheet metal enclosures, as well as an additional tamper switch, must be installed on the cabinet backbox to protect the cabinet from being removed from the wall. These devices must also be wired to the cover tamper on the PCB. See Figure 2-4 for the location of the PCB terminal block.

Installing the PCB in the Control

To install the circuit board in the cabinet, perform the following steps:

Step	Action
1.	Confirm the Mounting Plate is installed securely in the cabinet.
2.	Place the board flat and secure to the mounting plate with the six accompanying screws. (See Figure 2-3)

NOTE: Make sure that the mounting screws are tight.

Use shielded wire or keep wiring away from the microprocessor (center) section of the PC board. Use the mounting plate brackets on the left and right sidewalls of the cabinet for anchoring field wiring using tie wraps (Figure 2-3). These steps are important to minimize the risk of panel RF interference with television reception.

The 7 transistorized outputs on the GX-Series can be configured to open collectors by setting the dip switch SW3 to the OFF position. Table 2-1 shows which outputs are controlled by which switches.

Note: Output 2 on RIO 0 (relay output) is not affected. This is a form C relay that can switch up to 1 amp at 24 volts DC.

(SW3)	RIO	Output
1	0	1
2	0	3
3	0	4
4	1	1
5	1	2
6	1	3
7	1	4

Table 2-1. SW3 Transistorized Output Control

TABLE 3 - COMMUNICATION STATUS

LED (LED 1) STATE	INDICATION
LED Off	No DC supply
On - 01s, Off- 0.9s	Normal Communication
Single pulse at end of call	Normal Communication
Flashing at end of alarm call	Failed Communication
On during alarm monitoring, Remote Servicing and SMS	Normal Communication
Flickering during alarm monitoring, Remote servicing and SMS	Poor Communication
Flashes in time with ringing signal	Line Ringing
Pulses as each digit is dialed	Normal indication when making a call

The on-board Telecom Module monitors the PSTN line under normal idle state conditions. LED 1 indicates the communications status.

TABLE 4 - ETHERNET COMMUNICATION STATUS

LED STATE	INDICATION
LED 1 ON	Ethernet Module connected to Ethernet
LED 2 ON	Communication between Control Panel and PC
LED 2 OFF	No Communication on RS232 line
LED 2 Flashes	Ethernet Module sending or receiving data

TABLE 2 - RS232 CONNECTIONS

9W-D	SIGNAL NAME
PIN 5	GROUND
PIN 8	RTS
PIN 7	CTS
PIN 3	Rx
PIN 2	Tx
PIN 4	SHORT TO PIN 6
PIN 6	SHORT TO PIN 4

TABLE 1 - TRIGGER HEAD ‡

PIN	CONNECTION	OUTPUT ADDRESS	MAX. OUTPUT
1	+12V	N/A	100 mA
2	NOT USED	N/A	N/A
3	NOT USED	N/A	N/A
4	TRIGGER 6	0006	100 mA
5	TRIGGER 5	0005	100 mA
6	TRIGGER 4	0004	100 mA
7	TRIGGER 3	0003	100 mA
8	TRIGGER 2	0002	100 mA
9	TRIGGER 1	0001	100 mA
10	NOT USED	N/A	N/A
11	NOT USED	N/A	N/A
12	0V GND	N/A	N/A

NOTE 1: RS485 DATA BUS LINES MUST USE DAISY CHAIN WIRING BETWEEN MODULES.

NOTE 2: EACH END OF THE RS485 DATA BUS MUST BE TERMINATED WITH A 680 OHM RESISTOR ACROSS THE A&B WIRES. IF THE PANEL DOES NOT FORM ONE END OF THE BUS, REMOVE THE LINK TO DISABLE THE 680 OHM RESISTOR.

NOTE 3: WIRING METHOD, SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE [ANSI/NFPA70], LOCAL CODES, AND THE AUTHORITIES HAVING JURISDICTION.

NOTE 4: FOR MORE INFORMATION, REFER TO THE FOLLOWING DOCUMENTS:
QUICK INSTALLATION INSTRUCTIONS (P/N 800-05372 REV A)
INSTALLATION INSTRUCTIONS (P/N 800-05928 REV A)

NOTE 5: FOR UL INSTALLATIONS, 26AWG CABLE (MINIMUM) IS REQUIRED FOR TELECO CONNECTIONS.

‡ NOT EVALUATED BY UL.

IC: 573F-GXSERIES

BACKUP LITHIUM BATTERIES ARE TO BE REPLACED BY TRAINED SERVICE PERSONNEL ONLY.

Memory backup battery replacement:
1. Remove memory backup battery with a small flat head screwdriver.
2. Replace with good battery.
3. Reconnect mains supply.
4. Reconnect 12V battery.

WARNING: TO PREVENT RISK OF SHOCK DISCONNECT TELEPHONE LINES AT TELCO JACK BEFORE SERVICING THIS UNIT.

ALTERNATE PHONE LINE CONNECTION FOR RJ11 CONNECTORS ‡

MEMORY BACKUP BATTERY

TRIGGER HEAD (SEE TABLE 1)

LK3 RS485 LINE 2, 680 Ω TERMINATION (NOTE 2)
ENGINEER SOCKET (RS485 LINE 1)
LK5 RS485 LINE 1, 680 Ω TERMINATION (NOTE 2)
LED 1 (FOR TELECOMS)
LED 2 (FOR TELECOMS)
ENGINEER SOCKET (RS485 LINE 2)
RS232 PORT SOCKET FOR CABLE A234

MICRO PROCESSOR

2×RS485 EXPANSION CARD INTERFACE

RS-485 EXPANSION MODULE GX-520 ONLY

PULL-UP (DIP) SWITCHES
SW 3
RIO SWITCH

RS485 EXPANSION MODULE STANDOFF

SPI PROGRAM HEADER

JUMPER MUST BE INSTALLED

DO NOT PLACE JUMPER OVER 2 PINS. DEVELOPMENT PURPOSE ONLY

ALL CIRCUITS ARE POWER LIMITED EXCEPT THE OUTPUT OF 1451 TRANSFORMER AND THE BATTERY.

MODEL 1451 TRANSFORMER

INPUT RATING 120VAC, 60 Hz 1.0A MAX CONNECT TO A DEDICATED CIRCUIT

12V 7AH BATTERY CAPACITY IS REQUIRED FOR EMERGENCY STANDBY FOR AT LEAST 4 HOURS

FOR UL INSTALLATIONS TWO 12V 7AH BATTERIES ARE REQUIRED

NOTE: MAXIMUM LOAD FOR LOUD SPEAKER IS 100 mA DC WITH SPEAKER IMPEDANCE OF 8Ω

NOTE: MAINTAIN 1/4" SEPARATION OF POWER LIMITED AND NON-POWER LIMITED CIRCUITS

TAMPER SWITCH FOR EXAMPLE ON EXTERNAL SIREN

LOUND SPEAKER 8-32Ω

BLACK / WHITE / BLUE / BLUE / AC

SEE DETAIL BELOW

OFF WALL TAMPER
BATTERY STARTUP
LOUD SPEAKER HORN OUTPUT VOLUME CONTROL

LK2 / LK4

AUX TAMP / GND

LD TAMPER 1 / LD TAMPER 2 / –BAT / +BAT

**TB6 / **TB5

SWITCHED 0V OUTPUTS

†12V POWERED LOAD, EG; SIREN, WARNING LAMP, ELECTRONIC LOCK, ETC. FOR ALL SWITCHED 0V OUTPUTS

**NOTE: FOR TB5 AND TB6: TOTAL MAXIMUM CURRENT DRAW FOR THE SWITCHED AUX OUTPUTS = 400mA.

RELAY OUTPUT
POWERED DETECTOR
AUX 3

*TB4 / *TB3 / *TB2 / *TB1

16 ON-BOARD ZONES

ZONES 1-8 (RIO 0 LINE 1)
ZONES 1-8 (RIO 1 LINE 1 SWITCH SW3-8 OFF)
OR
ZONES 1-8 (RIO 1 LINE 0 SWITCH 3-8 ON)

* FOR TB1 - TB4: USE EOL RESISTOR (1KOHM) P/N 300-02343 SUPPLIED IN SAP0166 PACKAGE FOR UL INSTALLATIONS.

* NOTES: FOR TB1 - TB4: USE EOL RESISTOR (1KOHM) P/N 300-02343 SUPPLIED IN SAP0166 PACKAGE FOR UL INSTALLATIONS. TOTAL MAXIMUM CURRENT DRAW FOR THE +12V AUX OUTPUTS = 1A.

INCOMING TELEPHONE LINE
PREMISES TELEPHONE (NOTE 5)
RED — RING / GREEN — TIP / GREY — RING / BROWN — TIP

DATA BUS CONNECTION FOR PERIPHERAL MODULES (MK7 KEYPAD, TOUCHCENTER, RIO EXPANDER, ETHERNET MODULE (LINE 1 ONLY) DOOR CONTROL MODULE)

RS485 LINE 1 (NOTE 1)
B1 / A1 / GND / +12V

RS485 LINE 2 (NOTE 1)
B2 / A2 / GND / +12V

RS232 CONNECTION TO PC SERIAL COM PORT
TX / RX / CTS / RTS
TX, RX, CTS, RTS PANEL TERMINALS

9-WAY D-TYPE CONNECTOR (FEMALE) (SEE TABLE 2)

LINE B A / PHONE B A

TAMPER SWITCH (OPTIONAL)
ALARM CONTACT
ZONE WIRING (FOR ALL ZONE PAIRS) (TYPICAL)
1 K Ω

UL Applications: Proprietary, Commercial Central Station, Local Mercantile Burglar Alarm, Access Control Unit, Standard Line Security, Dual Line Transmission via PSDN and DACT

DETAIL

DOOR AND REAR TAMPER (CONNECT AS SHOWN)
LID TAMPER 1 / LID TAMPER 2

GX-SOC-V4

GX SERIES SUMMARY OF CONNECTIONS

Figure 2-4. PCB Layout

RS485 Expansion Module (GX-520 only)

The RS485 Expansion Module is attached to the GX-520 to give 2 extra RS485 (AB) lines.

GX-005-V1

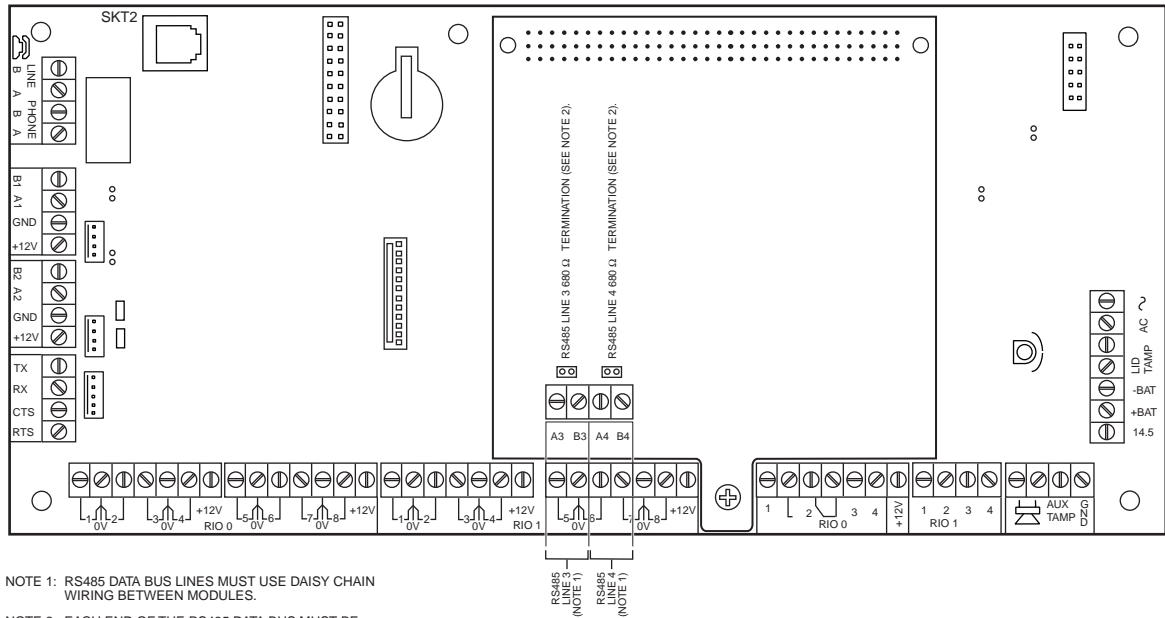**Figure 2-5. RS485 Expansion Module**

Transformer Installation Instructions

Use the supplied 1451 Transformer. This transformer provides 18VAC/72VA secondary winding for powering the control and has a manually resettable circuit breaker mounted inside a protective metal enclosure. To connect the 1451 transformer to the control, perform the following steps (refer to Figure 2-6):

Notes: 1. Make sure the circuit breaker that controls the circuit providing power to the control unit is in the OFF position.
2. The 120VAC circuit that the transformer is connected to should be dedicated to powering the control unit, should provide power continuously for 24 hours, and should not be controlled by a wall switch.
3. All circuits are power limited except the output of the 1451 transformer and the battery.

Step	Action
1.	Remove the front cover.
2.	Mount the 1451 transformer enclosure to the wall near the control panel. The enclosure has four mounting holes on its back surface for this purpose.
3.	Identify the circuit breaker or fuse controlling the circuit furnishing power to the control unit. Make sure it is in the OFF position.
4.	Run 120VAC wiring from the circuit breaker or fuse to the enclosure in conduit. **A dedicated circuit must be used.**
5.	Use wire nuts to splice the 120VAC wires to the transformer's white and black primary leads.
6.	Connect the earth ground post on the back of the enclosure to a good earth ground.
7.	Run 16AWG wire in conduit from the enclosure to the control panel.
8.	Route the wire through a knockout on the left-hand side of the control unit's enclosure. Tie-wrap it to a tie wrap loop near the knockout to separate it from other power-limited wiring.
9.	Use wire nuts to splice the transformer blue 18VAC secondary leads to the 16AWG wire. Connect the 16AWG wire at the control panel to the AC terminals on the control panel. See Figure 2-4 for exact location of the AC connections on the PCB.
10.	Replace the front cover of the enclosure and fasten it with the screws supplied.

Connecting the Control Unit to Earth Ground

To connect the system to earth ground, perform the following steps:

Step	Action
1.	Connect the earth ground post inside the transformer enclosure to a good earth ground (use grounding methods specified in the National Electric Code).
2.	Use a green nut (supplied) to secure the green ground wire to the ground post. The earth ground wire should be the only wire under this nut.
3.	Run 16AWG wire from this post through conduit into the control unit enclosure.
4.	Take a ring terminal harness and cut it in half. Connect the wire end of the ring terminal harness with a wire nut to the 16AWG wire from the conduit and take the ring terminal end and place it under the mounting plate screw. See Figure 2-6.
5.	Take the other end of the ring terminal harness and insert the bare wire end into the ground (GND) terminal block on the main PCB and place the ring end under the mounting plate screw. See Figure 2-6.
6.	To ground the cabinet door to the cabinet take the ring terminal harness and place both ends on the mounting post on the door and cabinet and secure it with a washer and green nut. See Figure 2-6.
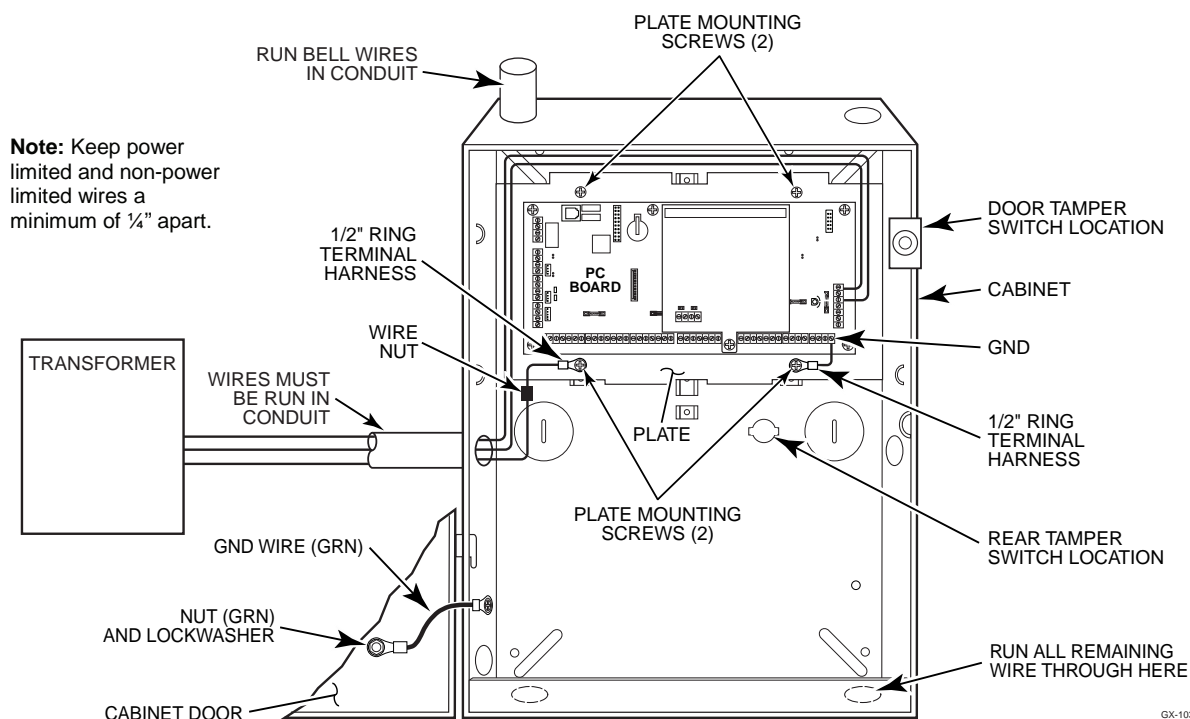


Figure 2-6. Installing the Control

Power Requirements

The GX-Series uses 1451 power supply as the primary power source. Because the system power is distributed over the RS-485 buses, it is important to keep the voltage drops along the buses to a minimum. Good installation practices will go a long way toward minimizing both the effect of the voltage drops and the need for adding an external power unit.

Where additional power is needed, an Electronic Security Devices (ESD) SPS-6E power supply can be introduced at sections of the bus. The power supply will provide power for its associated device and for additional sections of the RS-485 bus, as well.

Connecting the GX-Series to the PSTN

Connect incoming phone line and handset wiring to the main terminal block (via an RJ31X jack) as shown in Figure 2-7. Wire colors represent the colors of the cable to the RJ31X jack. MX-8000 or 685 dialers are for supplementary central station use. Computer is the primary central station.
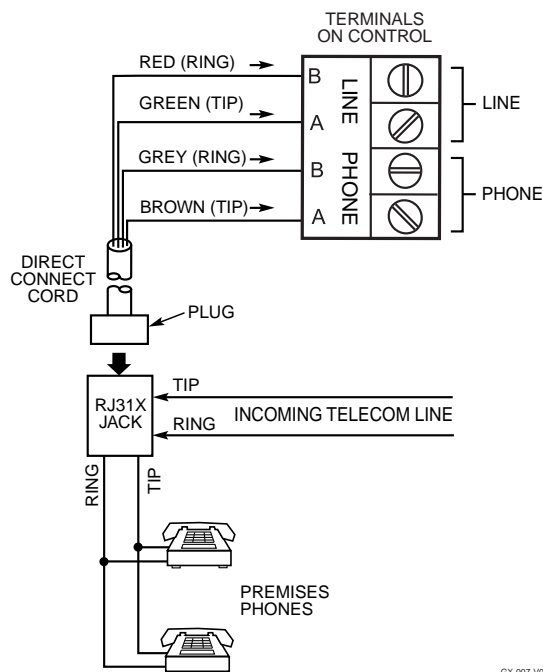
Figure 2-7. Connecting the GX-Series to the PSTN (Incoming Telephone Line)

Connect the on-board Telecom Module to the PSTN as shown in the diagram.

Notes:
1. Terminals 1 and 2 must be hard-wired to LINE A (Tip) and B (Ring) terminals on the GX-Series PCB. The connection is polarity independent.
2. It is strongly recommended that the GX-Series panel is the only device on the line.
3. Audio module not evaluated by UL.

Note: If a Digital Subscriber Line (DSL) is used, a suitable filter must be used for the phone line.

Line Monitoring

Under normal idle state conditions, the on-board Telecom Module monitors the PSTN line.

PSTN LED (Green): If a telephone line fail is detected by the Audio Interface this LED will flash repeatedly at: 200ms ON/200ms OFF. When the telephone line fail condition clears this flashing LED will then go OFF.

LED Flash Rate (seconds)	Meaning
OFF	No DC supply
ON - 01s, OFF - 0.9s	Normal Communication
09 ON / 0.1 OFF	Very poor communications

Table 2-2. Communications Status

Stand-By Battery

The GX-Series control panels can accommodate up to 2 x 17 Ah batteries. Ensure that the battery connector leads on the control panel Powers Supply Unit (PSU) are connected to the correct terminals on the battery.

CAUTION: There is a risk of explosion if the battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

Control Panel	Battery
-BAT	-ve terminal
+BAT	+ve terminal

Table 2-3. Battery/Control Panel connections

NOTES: **12V 7AH battery capacity is required for emergency standby for at least 4 hours.**
Two 12V 7AH batteries are required for standby power in UL installations.
Accommodation of 2 x 17 Ah batteries not evaluated by UL.
When connecting batteries in parallel:
- Battery normally need not be replaced for at least 3 years.
- Use batteries from the same manufacturer and with the same voltage and capacity rating.
- Use batteries with approximately the same age and state of charge.
- Use cables provided, and observe polarity!
- It is recommended that all batteries be replaced at the same time, even if only one battery has become weak.

Battery Start-up

The system can be powered up via the **Battery Start-up** jumper if there is no AC power. To do this, short out the Battery Start-up jumper for the duration of the configuration process only. Never leave the Battery Start-up connected or else deep discharge of the Stand-by Battery will occur.

Power Monitoring Characteristics: Low battery level: 11.2V
Deep discharge protection: 10.2V
Overvoltage protection: 14.7V

Internally the PSU is split in two in order to ensure sufficient current is always available for stand-by battery recharge. The PSU capacity is broken down as follows:
- Battery: 1.25A
- Control PCB: 0.25A
- AUX +12V: 1.00A
The PSU is available for zones/outputs and peripherals.

Memory

The GX-Series control panel has a built-in memory chip with its own battery backup on the main PCB. This allows the panel to retain the system configuration, programming details and the event log for up to a year when both the mains power and standby battery have been disconnected. The memory backup battery must be kept in place to retain the memory during a mains failure. Re-apply power, this is known as a **warm start**.

To completely erase the system memory and return to the default settings, place a piece of thin card between the retaining clip and the memory backup battery then remove all power to the PCB for one minute. Re-apply power and remove the card. This is known as a **cold start**.

The memory backup battery should be replaced every 5 years, by a trained installer only.

Memory backup battery replacement:
1. Remove memory backup battery with a small flat head screwdriver.
2. Replace with a good battery.
3. Reconnect mains supply.
4. Reconnect 12V battery.

CAUTION: There is a risk of explosion if the battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.
Do not overstress the retaining clip when removing and installing the backup battery. The clip must maintain a firm pressure on the backup battery at all times.

**Replacement Batteries:** Panasonic CR2025; or Varta Batteries CR2025.

RS485 Data Communication Bus (AB Lines)

Communication between the GX-Series control panels and the modules attached to the system takes place on the AB lines. The communication protocol is RS485 format. The control panel constantly monitors the modules attached to it. A break in the communication from any of the modules generates a module tamper alarm.

RS485 Wiring Configurations

The system **must** be wired in a daisy-chain configuration. That is the **A** line from the previous module is connected to the **A** terminal of the current module and then on to the **A** line of the next module. The RS485 (**AB**) line must have a 680 • resistor installed across the **A** and **B** terminals of the last module on the line. If two lines are connected, both ends must be terminated with 680 • resistors and the appropriate link (LK3 or LK5) removed.
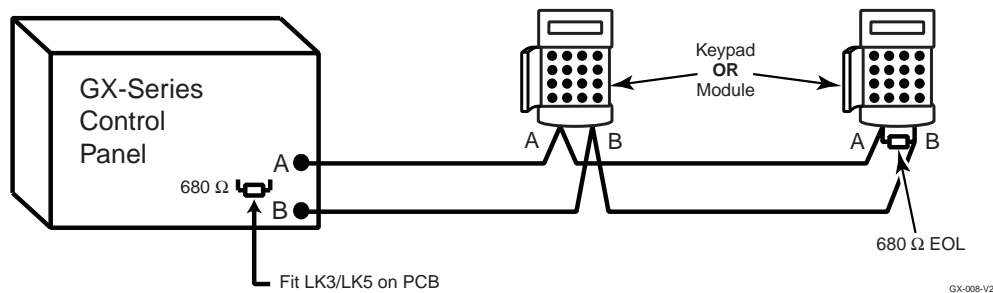
Figure 2-8. Daisy Chain Configuration

Each **AB** line can run in two directions from the control panel.
- Remove link LK3 (RS485 line 1) or link LK5 (RS485 line 2).
- Run two lines from the A and B terminals of the line.
- Terminate both Ends of Line (EOL) with a 680 ohm resistor.

NOTE: It is permissible to have different configurations on each line. For example, line 1 – Daisy chain; line 2 - twin AB daisy chain.
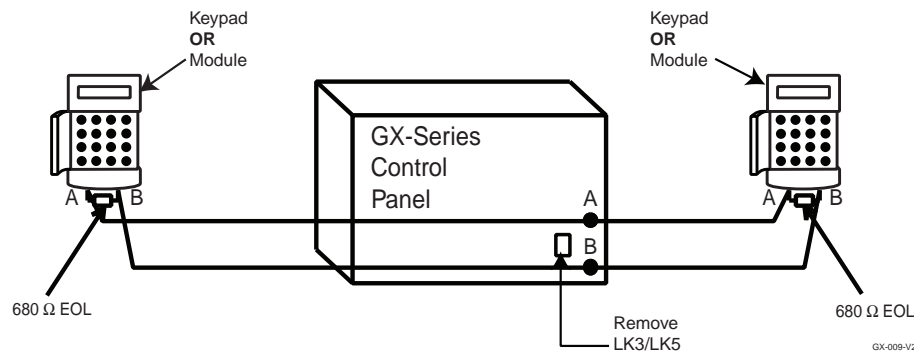
Figure 2-9. Twin AB Line Daisy-Chain configuration

RS485 Wiring Recommendations

To ensure that the system communicates at the maximum level of efficiency, the following recommendations **must** be adhered to:

1. The maximum number of devices on each line is shown in Table 2-5:

	GX-48 (Line 1 only)	**GX-520 (Lines 1-4)**
Keypads	8	8 per line
Touch Center	1	1 per line
RIO's	4	
DCM	4	8 per line
RS232	1	1 (line 1 only)
Telecoms	1	1 (line 1 only)
Printer	1	1 (line 1 only)
Ethernet	1	1 (line 1 only)

Table 2-4. Communication Devices

2. Minimum wire gauge for field wiring circuits is 22AWG.
3. The system **must** be wired in a daisy-chain configuration. Spur and star configurations **must not** be used as they reduce the immunity to electrical interference.
4. The cable used must screened twisted pair (Part No **W002**) to connect the RS485 (**AB**) line. This would be CAT5 or Belden 8723 equivalent.
5. Shielded twisted pair cable, where used, is connected to the cabinet ground rod on the GX-Series control panel using the P-clip and nut supplied (refer to Figure 2-10).
6. The RS485 (**AB**) line must have a 680 • resistor installed across the **A** and **B** terminals of the last module on the line. If twin lines are connected, both ends must be terminated with 680 • resistors and the appropriate link on the control panel PCB must be removed (refer to Figure 2-9).
7. There must only be a single **AB** pair of wires in each of the cables.
8. Supply voltage to the devices is 12 VDC.
9. The power supply in the GX-Series control panel and remote power supplies **must not** be connected in parallel.
10. The 0 V of all remote power supplies should be connected in common to the 0 V of the GX-Series control panel.
11. Ensure that any extension loudspeakers are not wired in the same cable as an **AB** pair of wires.
12. Where possible, ensure that the **AB** cable is at least 30cm away from any other cables.
13. Where possible, ensure that the **AB** cable does not run parallel to other cables for extended distances (maximum 5 meters).
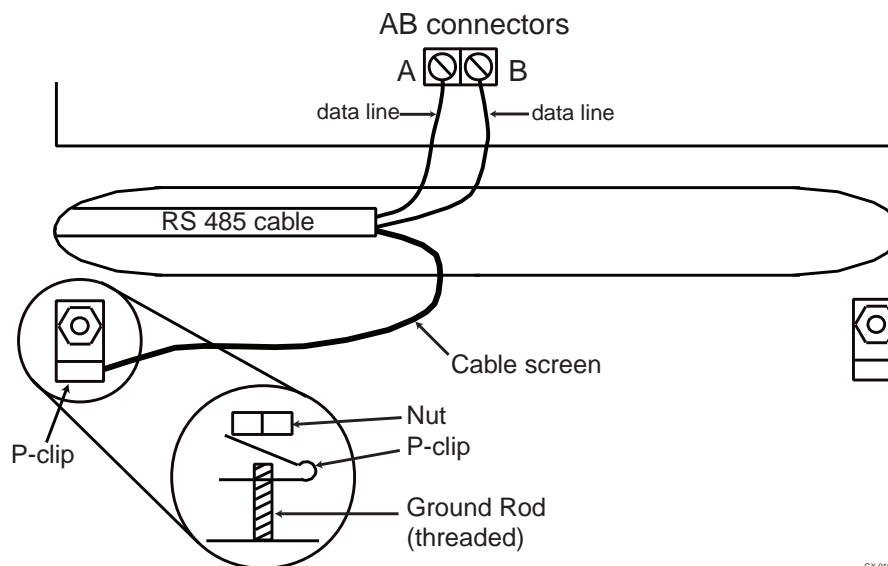
Figure 2-10. Connection of cable screen using P-Clip

Zones

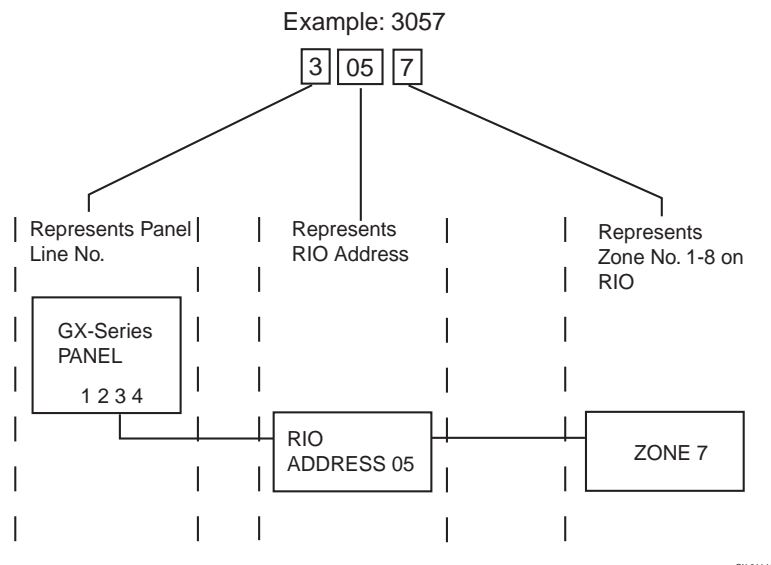The default setting for the zones on the GX-Series are as follows:

Zone 1001 = Final

Zone 1002 = Exit

All remaining zones = Intruder

Zone Addresses

Each zone has a four digit address; **1004**, **4136**. The address is made up of three reference numbers as shown in the following figure:

Example: 3057

┌─┐┌──┐┌─┐
│3││05││7│
└─┘└──┘└─┘

| Represents Panel
Line No. | | Represents
RIO Address | | Represents
Zone No. 1-8 on
RIO |

┌──────────┐
│ GX-Series │
│ PANEL   │
│   │
│ 1 2 3 4 │
└──────────┘

┌──────────┐
│ RIO   │
│ ADDRESS 05│
└──────────┘

┌──────────┐
│ ZONE 7   │
└──────────┘

GX-011-V2

Figure 2-11. Zone Addresses

For example, zone **3057** is the detector connected to line **3**, RIO **05**, zone **7**.

Zone Addressing with On-board RIO Switch (Line 0 Switch)

The RIO switch (SW3, dipswitch 8) controls the ordering of the on-board RIO's. This dipswitch must be set before powering up the panel. Setting the switch to **ON** sets the on-board RIO1 to operate on line 0 and allows a RIO addressed as 1 to be connected to line 1, giving a total of 15 RIO's on a GX-520. The RIO switch only needs to be activated if the maximum number of RIO's will be used.

NOTE: The RIO switch is not functional on other panel variants. It defaults to the Switch off configuration.

Switch off (default)

When the switch is set to this mode, the on-board RIO's configure to the following addresses:

| On-board RIO0 | Zone address range: 1001-1008 | Outputs: 1001-1004 |
| On-board RIO1 | Zone address range: 1011-1018 | Outputs: 1011-1014 |

Switch on

When the switch is set to this mode, the on-board RIO's configure to the following addresses:

| On-board RIO0 | Zone address range: 1001-1008 | Outputs: 1011-1014 |
| On-board RIO1 | Zone address range: 0011-0018 | Outputs: 0011-0014 |

Panel	On-Board RIO Address Range	Total on-board Zones	Max No. of External RIO's (Line 1)	Valid External RIO Addresses (Line 1)	Total Zone Addresses (Switch ON)
GX-48	1001 - 1008, 1011 - 1018 (switch off)	16	4	2-5	48
GX-520	1001 - 1008, 1011 - 1018 (switch off)	16	15	2 - 9, A - F	520
	1001 - 1008, 0011 - 0018 (switch on)	16	14	1 – 9, A - F	520

Table 2-5. Zone Address Ranges

Wiring Zones

The zones on GX-Series panels can be Double Balanced (default) or End of Line. Zones can be programmed with different resistance ranges for zone status activation (see **Parameter 51.46 = Parameters.Zone Resistance**). Refer to Table 2-7 (Double Balanced) or Table 2-9 (End of Line) for details of the zone resistance and resulting conditions. The system default is Option 9, giving fault monitoring on 1k double balanced wiring.

NOTE: The circuit debounce time (the period the zone must remain in a state to register a change in condition) is 300 milliseconds by default.

	Option 01 - 1k	**Option 03 – 2.2k**	**Option 05 – 4.7k**	**Option 07 – 5.6k**	**Option 09 - 1k Fault**
Tamper S/C	0 – 800	0 – 1800	0 – 3700	0 -1400	0 - 800
Low Res	800 – 900	1800 – 2000	3700 – 4200	1400 – 2800	800 - 900
Normal	900 – 1200	2000 – 2500	4200 – 5500	2800 – 8400	900 -1200
High Res	1200 – 1300	2500 – 2700	5500 – 6500	8400 – 9800	1200 - 1300
Open	1300 – 12000	2700 – 12000	6500 – 19000	9800 – 12600	1300 - 3500
Fault	-	-	-	-	3500 - 4500
Masked	12000 – 19000	12000 – 15000	19000 – 22000	12600 – 22000	4500 - 19000
Tamper O/C	19000 – infinity	15000 – infinity	22000 – infinity	22000 – infinity	19000 - infinity

Table 2-6. Double Balanced Zone Resistance and Conditions

Option 09 - 1k Fault Double-balanced (default)

The wiring in Figure 2-12 should be used if the detector uses combined fault and mask signaling. A mask condition is generated if an alarm and fault are signaled at the same time. Alternatively, if the detector has separate fault and mask indications then the wiring in Figure 2-13 should be used.
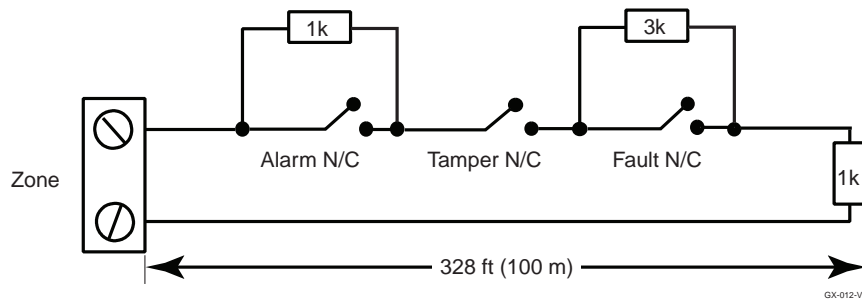
Figure 2-12. Option 09 - Double balanced 1k Fault Monitoring Wiring
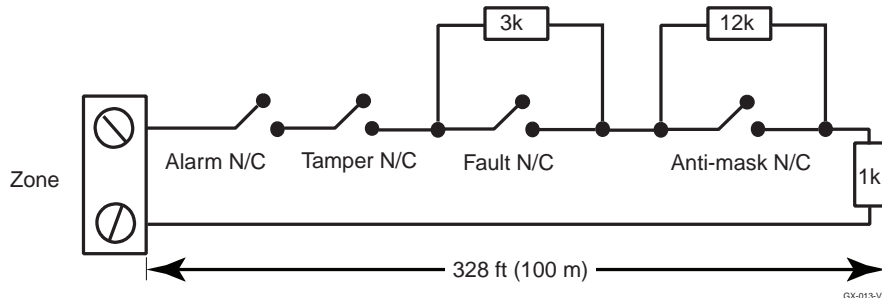
Figure 2-13. Option 09 - Double balanced 1k Fault/Mask Monitoring Wiring

NOTES: For UL Installations, use 1K Ohm single EOL resistor configurations; the maximum loop impedance is 100 Ohms.
N/C = Normally Closed.

When this wiring mode is employed, only one detector which can report fault conditions should be connected to the zone. A maximum of two detectors or contacts of any type should be connected to a zone when this mode is selected. It is recommended that zone cable lengths are kept below 328 feet (100 m) in this configuration.

NOTE: The recommended maximum cable run from a zone to a detector is 1640 feet (500 m) in all other configurations.

|	Option 02 - 1k	Option 04 – 2.2k	Option 06 – 4.7k	Option 08 – 5.6k	Option 10 -1k Fault
Tamper S/C	0 - 800 0 – 1800	0 – 3700	0 – 1400	0 - 800	
Low Res	800 – 900	1800 – 2000	3700 – 4200	1400 – 2800	800 - 900
Normal	900 – 1200	2000 – 2500	4200 – 5500	2800 – 8400	900 - 1200
High Res	1200 – 1300	2500 – 2700	5500 – 6500	8400 – 9800	1200 - 1300
Fault	-	-	-	-	1300 - 4500
Masked	1300 – 12000	2700 – 12000	6500 – 19000	9800 – 19000	4500 - 19000
Open	12000 – infinity	12000 – infinity	19000 – infinity	19000 – infinity	19000 – infinity

Table 2-7. End of Line Zone Resistance and Conditions

Option 10 - 1k Fault End-Of-Line
The wiring in Figure 2-14 should be used if the mode is end-of-line. Fault and mask indications can only be signaled if the detector has separate fault and mask indications.
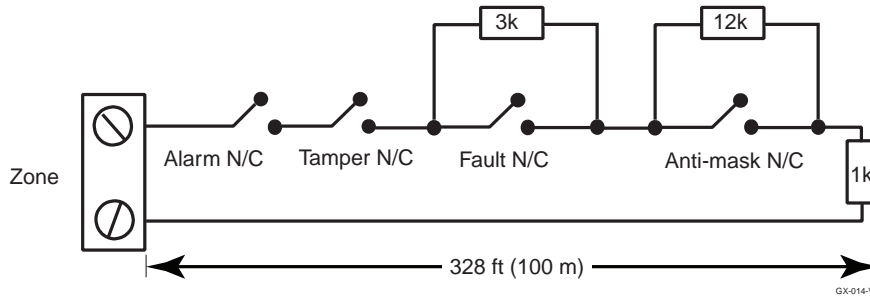
Figure 2-14. Option 10 - End of Line Zone/Detector wiring

When this wiring mode is employed, only one detector which can report fault conditions should be connected to the zone. A maximum of two detectors or contacts of any type should be connected to a zone when this mode is selected. It is recommended that zone cable lengths are kept below 100m in this configuration.

NOTE: The recommended maximum cable run from a zone to a detector is 1640 feet (500 m) in all other configurations.

Wiring Multiple Detectors
Multiple detectors can be wired into a single zone when using preset 1 as shown in Figure 2-15. The maximum number of detectors that can be connected to a single zone is ten.
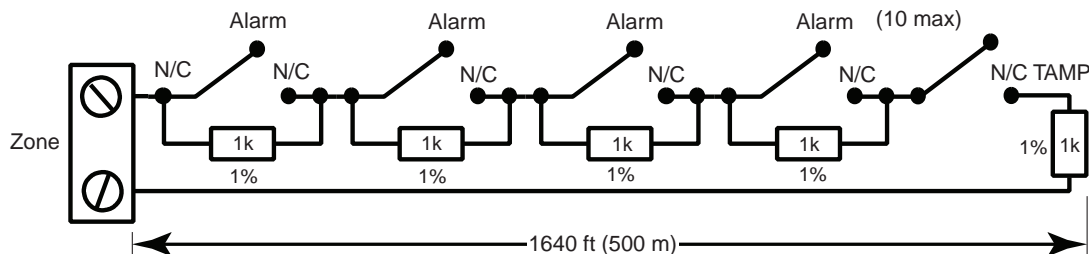
Figure 2-15. Zone to Multiple Detector Wiring

Wiring Keyswitches

Latching or spring loaded keyswitches can be used to set (arm) and unset (disarm) the GX-Series panels; option 52 = PROGRAM ZONES has provision to accommodate both types of transition. If the keyswitch latches, the transition from 1 k• to 2 k• initiates the setting (arming) procedure of an unset (disarmed) system, the transition from 2 k• to 1 k• instantly unsets (disarms) a set (armed) system. If the system is already set (armed), then the transition from 1 k• to 2 k• has no effect. If the system is unset (disarmed), the transition from 2 k• to 1 k• has no effect. This is programmed as a * Keyswitch in the PROGRAM ZONES option. If the keyswitch is spring-loaded (returns to its normal position), the transition from 1 k• to 2 k• initiates the setting (arming) procedure of an unset (disarmed) system and instantly unsets (disarms) a set (armed) system, the transition from 2 k• to 1 k• - the return to the normal position - has no effect. This is programmed as a Keyswitch in the PROGRAM ZONES option.

Wiring Terminator Buttons

Zones programmed as Push-Set (terminator) buttons can be open going closed (2 k• to 1 k•) or closed going open (1 k• to 2 k•). The first activation of the terminator button initializes its status to the system.

NOTE: The first activation of a terminator may not set (arm) the system as this can be the initialization routine. If the system continues setting (arming), push the button again. The system will set (arm) on the second push. This initialization only occurs on the first setting (arming). All subsequent setting (arming) routines set (arm) on the first push of the terminator. The wiring of the terminator and keyswitch zone type is shown in Figure 2-16:
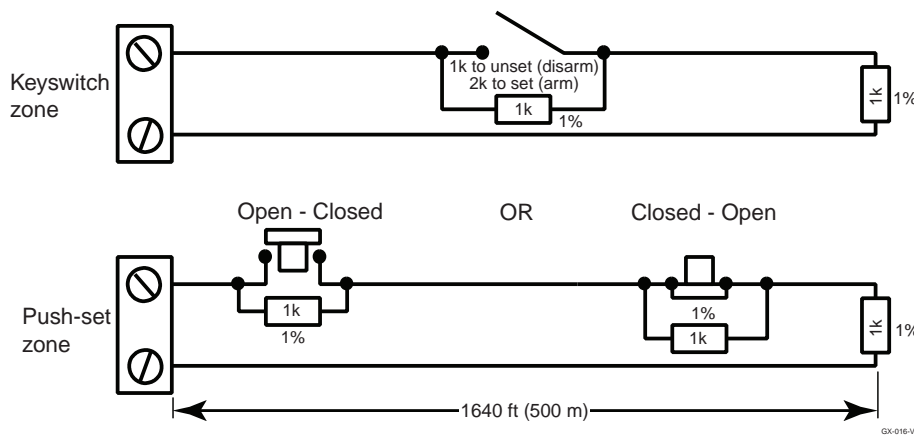
Figure 2-16. Terminator and Keyswitch Zone Wiring

Outputs

The GX-Series control panel on-board outputs are detailed in the Table 2-9:

NOTE: The maximum current draw for the +12V AUX outputs is 1A, and for the switched AUX outputs is 400mA (see TB1 – TB6 in Figure 2-4.) The total maximum load for output addresses 1001, 1003 – 1004 and 1011 – 1014 = 400 mA.

Output Address		Default Function	Type	Rating	Normal State (with 3k3 pull-up)
Default	Line 0 Enable				
1001	1001	Bells	Transistorized	12V, see note above	Positive
1002	1002	Strobe	Single Pole Change Over Relay (SPCO)	30V, 1A	De-energized
1003	1003	PA	Transistorized	12V, see note above	Positive
1004	1004	Reset	Transistorized	12V, see note above	Positive
1011	0011	Set	Transistorized	12V, see note above	Positive
1012	0012	Intruder	Transistorized	12V, see note above	Positive
1013	0013	Confirm	Transistorized	12V, see note above	Positive
1014	0014	Reset	Transistorized	12V, see note above	Positive

Table 2-8. Outputs

Output Applications

The outputs on the GX-Series panels, with the exception of the SPCO relay output, are transistorized outputs; negative applied (positive removed) by default. These can switch up to 400mA and can be used to drive the necessary output devices.

NOTE: The polarity of each output can be changed using option **53 = PROGRAM OUTPUTS**
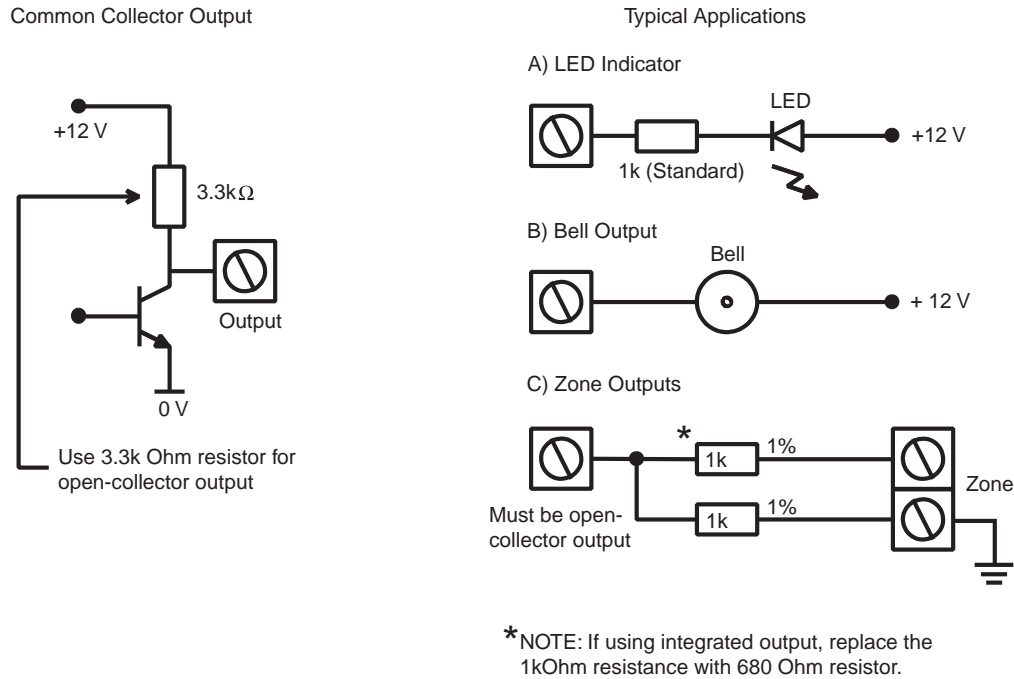
Figure 2-17. Output Configuration and Typical Applications

Note: For the appropriate 3.3kΩ pull-up resistor refer to DIP switch SW3 (Table 2-1).

The relay output is a single pole change over (SPCO); this can be used to drive output devices that require a clean set of contacts, isolated from the output voltage.
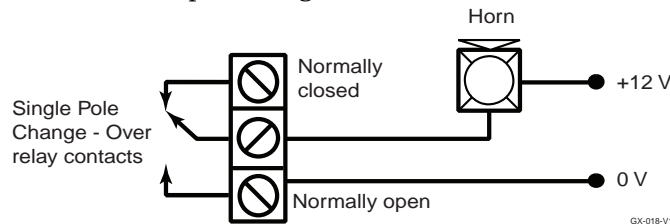
Figure 2-18. Single Pole Change–Over Relay Output Configuration and Typical application

Trigger Header

The Trigger Header on the GX-Series is a set of pins that consist of programmable outputs for an external communication module. The connection is via an optional ribbon cable.

Trig 1-6

There are six trigger outputs that can be used as communication triggers, but can also be used for any other purpose. By default these outputs are programmed as positive. They are designed to sink current (to 0V) not source current (from 12V). The functions of these outputs are shown in Table 2-9:

Output Address	Default function	Current (mA)
0001	Fire	100
0002	Panic	100
0003	Intruder	100
0004	Set (Arm)	100
0005	Omit (Bypass)	100
0006	Confirm	100

Table 2-9. Trigger Output functions

The function of the trigger outputs can be programmed in menu option **53 = Program Outputs**.

NOTE: Not evaluated by UL.

Supply

A 100 mA, 12V output is also provided.
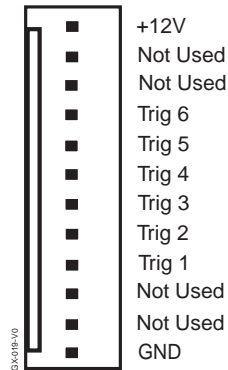
Figure 2-19 Trigger Header

SPI Header

The SPI (Serial Peripheral Interface) key is an engineering peripheral used for copy/overwriting programming data and carrying out software upgrades.

Fitting the SPI Key

The SPI key is inserted directly on to the GX-Series control panel.

CAUTION: Always power down the panel BEFORE removing or connecting the SPI key. Failure to do so may result in damage to the SPI key. Never "hot-plug" the SPI key.

The SPI Key has a 10-way connector. These locate on to the 10 pins of the SPI Program Header (see Figures below).

NOTE: The SPI Key should only be inserted in the direction shown in Figure 2-19.
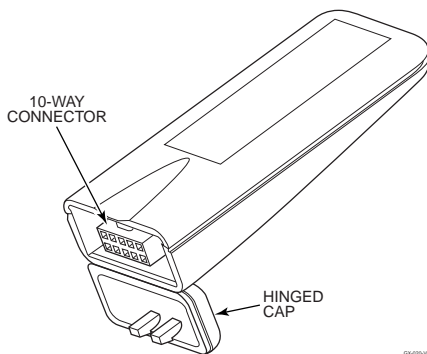
Figure 2-20. SPI Key
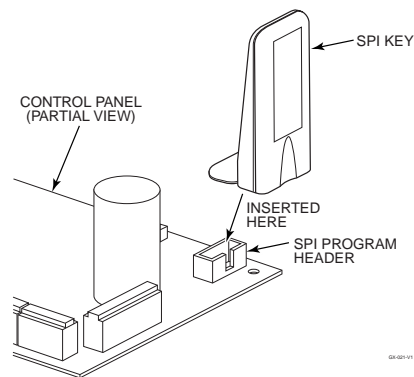
Figure 2-21. Location of SPI Key on Program Header

1. Release the hinged cap to expose the 10-way connector.
2. Plug the SPI Key on to the Program Header on the GX-Series control panel.

Removing the SPI Key

CAUTION: Always power down the panel BEFORE removing or connecting the SPI key. Failure to do so may result in damage to the SPI key. Never "hot-plug" the SPI key.

1. Remove the SPI Key from the Program Header on the GX-Series control panel.
2. Secure the hinged cap to protect the 10-way connector.

SECTION 3: PERIPHERALS

General

The following peripherals can be connected to the GX-Series panel:

All bus lines: Mk7 Keypad; TouchCenter; Door Control Module (DCM); Remote Input Output module (RIO).

Bus line 1 only: Ethernet.

Wiring

The following table shows the wiring between the GX-Series panel and the different peripherals.

Panel	Keypad	Touch Center	RIO & DCM	Audio Interface
+12V	+	+	Vin	+12V
GND	-	-	-	GND
A	A	G	A	A
B	B	Y	B	B

Table 3-1. Peripheral Wiring to GX-Series Panel

NOTE: Do not connect +12V terminals between panels and remote power supplies.

Configuring

New peripherals will be configured onto the system at system power up or on leaving programming mode. Changes to peripheral addresses will only take effect when the peripheral is re-powered.

Addressing

The address on most peripherals is set by either jumpers or a rotary switch. These must be set before the system is powered up. Table 3-2 shows the available peripheral addresses.

Peripheral	Line	VALID ADDRESSES
Mk7 Keypad	1 2 3-4	0-2, B-F 0-6, F 0-6, F
TouchCenter [1]	1 2 3-4	0-2 0-3 0-3
RIO	1 2 3-4	2^2-9 & A-F 0-9 & A-F 0-9 & A-F
DCM	1 2 3-4	0-7 0-7 0-7
Ethernet	1	(B)

Table 3-2. GX-Series Peripheral Addresses

NOTES: 1.   A single TouchCenter can be installed on each bus line.
          2.   If RIO 2 on-board is set to line 0 (Dip SW 8) then the first external RIO can use address 1 to give an extra 8 zones where needed.

Connecting the RIO

The RIO can only be connected to the system while engineer mode is accessed. The RS485 (**AB**) line of the GX-Series RIO **must** be wired in parallel (daisy-chain configuration) with the RS485 (**AB**) line of any keypads connected to the system. The RIO requires 12 VDC and 40 mA. This can be supplied from the

control panel power supply or from a remote power supply if the distance causes a large voltage drop on the cable.

Connect the RIO terminals as follows:

+12 V (either control panel, keypad or remote power supply);
–0 V or ground (either control panel, keypad or remote power supply);
A to the **A** terminal of the previous module (or control panel if RIO is the first on the line);
B to the **B** terminal of the previous module (or control panel if RIO is the first on the line).

NOTE: If the RIO is the last module on the line, connect a 680 Ω EOL resistor across the **A** and **B** terminals.

Configuring the RIO

The added RIO is configured into the system on exiting from engineer mode. If the message **XX Mod Added [<],[>] To View** is displayed, the system has recognized that a new module is present. Press the **A>** or **<B** keys to confirm that the RIO has been added. If this message is not displayed or the RIO is not on the list of added modules, then the RIO is not communicating with the control panel or has been set to the same address as the RIO already connected to the system. The flash rate of the red LED (LED1) on the RIO indicates the status of the communication with the control panel - refer to **Table 3-3.**

Flash Rate (seconds)	Meaning
0.1 ON / 0.9 OFF	Normal communications
OFF	No DC supply
1.5 ON / 1.5 OFF	RIO has not been configured into system
0.2 ON / 0.2 OFF	RIO has lost communication with system
0.9 ON / 0.1 OFF	Very poor communications

Table 3-3. RIO LED Flash Rates

RIO Zones

The GX-Series RIO has eight programmable zones. These default to **INTRUDER**. Each zone is Double Balance monitored with a 1 k• resistor in series with the zone detector and a 1 k• (1%) resistor in parallel across the detector switch. The change to 2 k• (1%) resistance registers the zone as open/alarm.

RIO Outputs

The RIO has four transistorized outputs. Each output is connected to +12 V via a 3.3k• pull-up resistor (refer to Table 3-4). When an output is activated, the load is switched to the negative supply voltage (ground or 0 V) of the RIO. The total current available from the RIO outputs 1 - 4 is 700 mA. The default functions and pull-up resistors of each RIO output, when connected to a GX-Series are shown in Table 3-4.

Output No.	Function	Maxium Load	Pull-up Resistor
1	Bells	400 mA	R1
2	Strobe	100 mA	R3
3	PA (Personal Attack)	100 mA	R5
4	Reset	100 mA	R7

Table 3-4. RIO Output Default Functions

Ethernet Module

NOTES: For UL installations use a DTK-MRJ45C5E Ethernet surge protector.
In UL 1076 compliant systems, the Ethernet module must be used as the primary means of communication.
In UL installations, do not use an Ethernet card in wireless LAN or WAN configurations.

The Ethernet Module is an optional add-on to the GX-Series control panel. It is a highly intelligent and compact module, combining alarm signaling, remote servicing and integrated facilities over Ethernet LAN and/or WAN. The Ethernet Module connects to 10 Base T Ethernet networks both supporting UDP/IP and TCP/IP protocols. The Ethernet module supports the following features:

- Full alarm signaling on SIA
- Microtech protocol signaling with Event Monitoring Software
- Remote servicing via remote servicing software
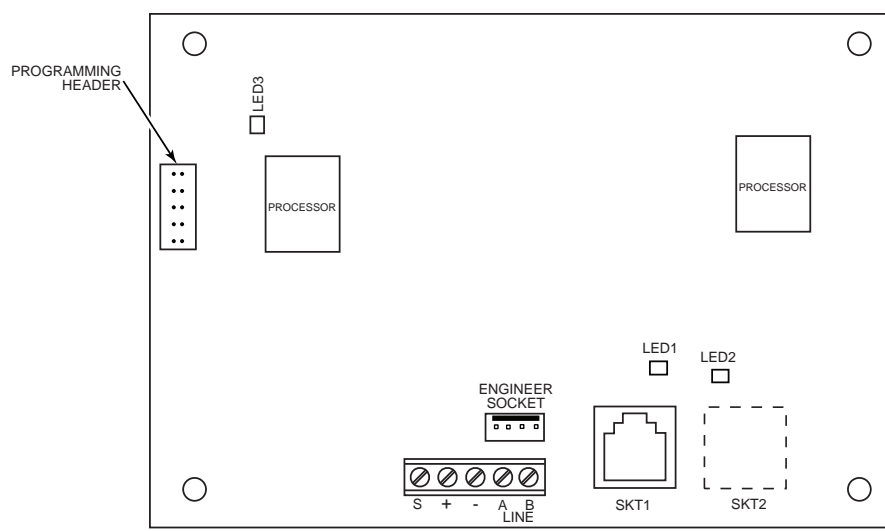
Figure 3-4. Ethernet PCB Layout

NOTES: The position of components on the Ethernet PCB may vary with different hardware revisions.
For UL installations, use LAN for all Ethernet connections.

Configuring the Ethernet Module

The added Ethernet Module is configured into the system on exiting from engineer mode and is allocated keypad address 15 (B). If the message **XX Mod Added [<],[>] To View** is displayed, the system has recognized that a new module is present. Press the **A>** or **<B** keys to confirm that com 4 has been added. If this message is not displayed or the Ethernet Module is not on the list of added modules, then the Ethernet Module is not communicating with the control panel. The flash rate of the red LED (LED3) on the Ethernet Module indicates the status of the communication with the control.

Ethernet Communication

The green LED (LED1) is illuminated when the Ethernet Module is connected to Ethernet. The amber LED (LED2) flashes when the Ethernet Module is sending or receiving data. For further information regarding the Ethernet Module, refer to **Ethernet Module, Installation Instructions (800-07482).**

Remote Servicing Suite

Remote Servicing Suite (RSS) is an advanced PC based application that allows full remote servicing of GX-Series systems. Functions include configuration and programming, control and diagnostic servicing. RSS also includes an Event Monitoring application. Event Monitoring is an advanced, high performance software program that allows a PC to receive and store detailed event and alarm information from GX-Series control panels.

Minimum PC requirements for RSS package, for both Primary and Back-Up Central Station Receivers
Operating system: Windows XP, Vista
Processor: P4 2.4Ghz minimum
Memory: 512MB minimum
Hard Disk: 170GB minimum
Monitoring Software: Revision Level V5.33.xxx (Where xxx are feature upgrades and bug fixes)

Operating RSS Software on the Primary or Backup Computer
1. Open the Frontshell + Commserver program.
2. Enter a user name and password [defaults are manager and password, respectively].
3. Double click on the required account name, and the V6 application opens up.
4. Return to the Start Menu and open the Event Monitor.

The RSS package is defaulted to show 100 screen events. To view more than 100 events, open the Setup Menu, and then System Parameters. Enter a password and then enter the desired value for "Screen Events."

During RSS operation, if the computer stops receiving event messages and "line fail" appears, or the monitor turns black and the computer resets, the secondary computer must be used.

To set up the backup computer:
1. Power on the backup computer.
2. Open the RSS software as described above.
3. Remove the Ethernet/PSTN line from the primary computer and plug it into the backup computer.

NOTES: The backup computer must have the same or greater system requirements as the primary computer. The same revision RSS software must be used on both the primary and backup computers.

Performing a System "snapshot" on RSS Software
1. Follow steps 1 - 3 above for operating RSS software.
2. Open the Connect Menu in the V6 application.
3. Select Dial and enter a password or click OK.
4. Once connection is made, open the Communication Menu and open Online Keypad. Online Keypad will refresh in about five seconds.

UL NOTES:

In UL approved systems the monitoring equipment must use a UL listed uninterruptible power supply (UPS).

To backup the monitoring computer, plug the computer's AC wire into the UPS.

For UL installations, PC monitoring stations *and* for UL294 installations Data processing equipment and office appliance and business equipment used as central supervisory station equipment must meet the below standards:

UL 114: Standard for Office Appliances and Business Equipment

and

UL 478: Standard for Information Processing and Business Equipment

or

UL 60950: Standard for Information Technology Equipment

UL Installation Requirements

UL   This system is required to be installed with applicable UL Installation Standards, such as UL827.

Commercial Burglary Requirements
The following requirements apply to all UL Commercial Burglary installations:
1. All groups must be owned and managed by the same person(s).
2. All groups must be part of one building at one street address.
3. The audible alarm device(s) must be placed where it/they can be heard by all groups.
4. The control cabinet must be protected from unauthorized access. This can be done by installing a tamper switch on the cabinet door (supplied).

UL609 Local Mercantile Premises

1. All zones must be configured for single EOLR supervision detection.
2. Attach a Listed door tamper switch (supplied) to protect the cabinet door. Wire the supplied tamper switches to the terminal block labeled lid tamper on the main control board. See SOC label for wiring details. Lid tamper zone on the panel is defaulted enabled.
3. Entry delays must not exceed 45 seconds, and exit delays must not exceed 60 seconds.
4. All unused knockouts must be plugged (use the supplied disc plugs and carriage bolts).
5. Must be used with a Listed burglar alarm sounding device/housing. Depending on the application, a compatible listed sounding device enclosure may also be required.

UL365/UL1076 Police Station Connected Burglar Alarm

Follow the instructions for UL609 local installations given above.

For Systems without Line Security:

- You may use the control panel's main dialer alone, or the E080-2 Ethernet Module alone.
- Program either the dialer or the E080-2 Ethernet Module to send Burglary Alarm, AC Failure, Low Battery, Communicator Test Reports, Closing Acknowledge signal, Telco Line Failure to report via Ethernet, Heartbeat Failure to report via Dialer, and Opening/Closing Reporting.

For Systems with Line Security:

- The dialer must be used in conjunction with the E080-2 Ethernet Module.
- Program both the dialer and the E080-2 Ethernet Module to send Burglary Alarm, AC Failure, Low Battery, Communicator Test Reports, Closing Acknowledge signal, Telco Line Failure to report via Ethernet, Heartbeat Failure to report via Dialer, and Opening/Closing Reporting.

UL1610 Central Station Burglary Alarm

Follow the instructions for UL365 local installations stated above, and follow the additional guidelines below.

Note: UL Listed Bell is not required for UL1610 Central Station Installations.

Dual Line Transmission:

- Both the control panel's dialer and the E080-2 Ethernet Module are required for Dual Line Transmission.
- Program both the dialer and the E080-2 Ethernet Module to send Burglary Alarm, AC Failure, Low Battery, Communicator Test Reports, Closing Acknowledge signal, Telco Line Failure to report via Ethernet, Heartbeat Failure to report via Dialer, and Opening/Closing Reporting.

SECTION 4: KEYPADS

Two types of keypad can be installed on the GX-Series: The Mk7 Keypad and the Touch Center keypad. Both types of keypad are described in this section.

The GX-Series Mk7 Keypad

General

The GX-Series Mk7 keypad has the following features:

- a 2 x 16 alphanumeric character backlit display
- 16 backlit push buttons as shown in Figure 4-1
- internal horn
- power indicator LED
- multi-function LED
- Lid tamper
- Off-wall tamper
- Address switch
- RS485 serial connector
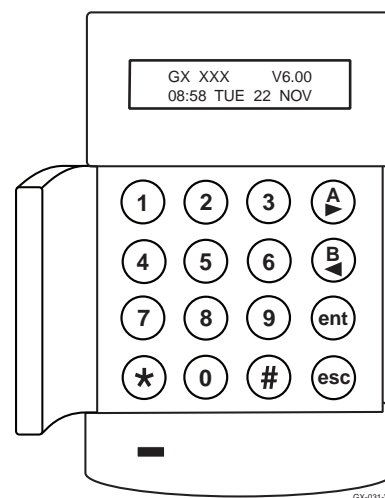
Figure 4-1. GX-Series Mk7 Keypad

Power Consumption

The GX-Series Mk7 keypad requires a 12 VDC supply – from the control panel or a remote power supply. The current consumption of the keypad is:

Mode	Current Draw
Nominal (backlight OFF)	35 mA
Backlight ON	70 mA
Maximum Alarm Current	90 mA

Table 4-1. Keypad Current draw

Wiring the Keypad

A 16-way rotary address switch is used to address GX-Series LCD keypads. The address switch assigns a hexadecimal address value to the keypad.

NOTE: Any change to the keypad address must be made when the power is disconnected from the keypad

Addressing

Addresses are set by means of a rotary switch on the PCB. Each keypad must be assigned a unique address for its line. It is possible to add additional keypads at any unused comms module addresses (B, C, D and E) as detailed below. These must be standard keypads. An engineer keypad can also be used at address F.

NOTE: On Line 1, keypad addresses B, C, D and E are not available if the Ethernet, ISDN, RS232 or Telecom modules respectively are installed.

Keypad Installation Procedure

1. To attach the keypad to the wall, the back plate must first be removed from the front plate. To do this, insert a suitable tool into both openings at the bottom of the keypad and turn the tool gently.

CAUTION: When the keypad is separated, make sure that the anti-static precautions are taken with the keypad PCB to avoid damage from ESD (electro static discharge).

Connections to the terminals are:

Connector Terminals	GX-Series Keypads
A	A line to panel
B	B line to panel
+	12 VDC input
−	0 V

Table 4-2. Keypad Terminal Connections

2. Use the backplate as a template, and mark the locations for the three attachment screws in the required position.
3. If it is a new installation, use the keyhole slot at the top of the backplate and the two elongated holes at the bottom.
4. If you are using a wall-run cable for the keypad (A, B, +12V, 0V) position the cable behind the back plate in the cable channels provided. The cable can be run in from either the top or the bottom of the back plate. Use a sharp tool to remove the plastic from the top or the bottom of the cable guides on the back plate skirting.

CAUTION: Use of any screws other than No. 6 pan-head can damage the keypad moldings.

5. Make sure that the keypad wiring is fed through the large opening on the keypad backplate, then position the keypad base on the wall and attach it securely with the three No. 6 pan-head screws.
6. If an off the wall tamper is required, using a No. 6 pan-head screw, secure the breakaway wall tamper, indicated in Figure 4-2, to the wall. Make sure that the tamper knockout is still connected to the backplate molding.
7. Connect the A, B and power wires to the correct terminals of the removable, four-way connector block.
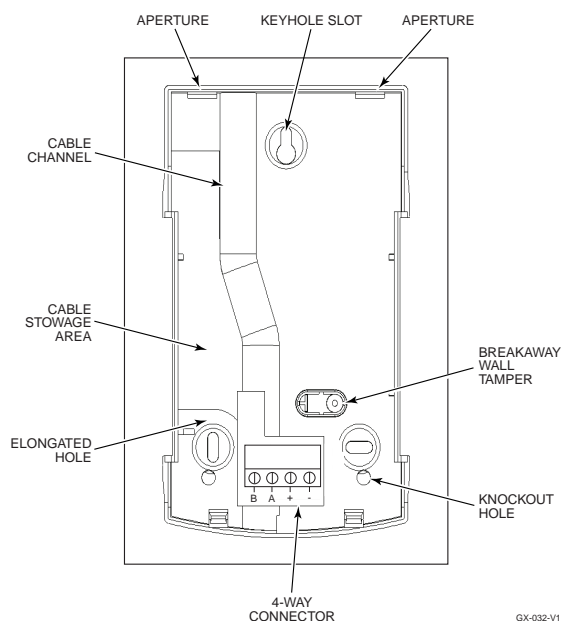
Figure 4-2. GX-Series Mk7 Keypad Backplate Installation

8. Make sure that the power is disconnected then set the keypad to the required address using the 16 way rotary switch on the PCB.
9. To re-assemble the keypad, connect the four-way connector block onto the pins on the keypad PCB. Attach the keypad front plate to the back plate by inserting the two clips on the top of the keypad front plate into the two apertures at the top of the keypad back plate, then gently push the bottom of the keypad front plate into the back plate until it snaps securely into place. Ensure the front and back sections of the keypad are securely fixed at all points of the keypad perimeter.

NOTE: The keypad door can be re-orientated to allow opening from either the left or right-hand sides. However, installing or removing the door must only be done when the front plate is detached from the back plate. Attempting to remove or install the door, when the keypad is assembled, may cause damage to the keypad moldings.

Volume Control

Where installed, the Mk7 keypad has a volume control switch marked VOL at the bottom right-hand corner of the PCB. Make sure the keypad is powered up and adjust to the desired volume (+ or -) for buzzer functions. Refer to **Appendix F** for keypad part numbers with volume control function.

Adding a Keypad to the System

When adding a keypad to an existing system, the following points must be considered:
1. Ensure that the keypad to be added has a unique address from the other keypads on the system.
2. Ensure that the keypad has a valid address.
3. Connect the keypad to the system - refer to the Keypad Installation Procedure.

NOTE: A new keypad can only be configured into an existing GX-Series system from engineer mode.

4. Access engineer mode.
5**.** Connect the RS485 (AB) line of the keypad in parallel with the RS485 (AB) line of the existing keypads.
6. Connect + and – terminals of the keypad to a power supply.
7. Exit engineer mode - engineer code **+ esc**:
8. The Mk7 keypad displays the message **1 MOD. ADDED — esc=CONTINUE.** Press the **esc** key; the keypad returns to the unset (disarmed) banner.

NOTE: If this message is not displayed, the keypad is not communicating with the control panel and has not been configured into the system. In this case all connections and addresses should be rechecked.

9. The keypad is now configured into the system.

Removing a Keypad from the System

A keypad can only be removed from an existing GX-Series system from engineer mode:
1. Access engineer mode.
2. Disconnect the keypad.
3. Exit engineer mode. The message **1 MOD. MISSING — [<],[>] to View** is displayed
4. Press the **A>** or **<B** key. The message **KEYPAD XX — * =REMOVE MODULE** is displayed.
5. Press the * key to acknowledge and accept that the keypad has been removed. The keypad returns to the unset (disarmed) banner.

Self Diagnostics

The keypad has a self diagnostic feature that is used to test the operational status of the inputs and outputs of the keypad. The test is started by disconnecting the power from the keypad, then reapplying the power while pressing the **ent** key. The test routine commences immediately. Each test lasts approximately four seconds. The test is terminated by removing the power.

- Keypad address is displayed.
- Keypad buzzer is activated and a bell symbol is displayed.
- Power LED is illuminated and an AC (∼) and LED (☼) symbol is displayed.
- Keypad keys are displayed. Each key press is confirmed by the buzzer sounding and the key display being highlighted.
- To return keypad to operational mode remove and reapply power.

Keypad Operation

Number Keys

1 2 3
4 5 6
7 8 9
0
GX-033-V0
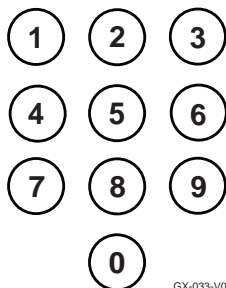
The number keys are used to enter the Personal Identification Number (PIN) which identifies users to the GX-Series and permits access to the system options. The PIN Code is a 5 or 6 digit number.

	Default Code
Engineer (Installer)	112233
Remote User	543210
Master Manager	12345

Table 4-3. Default Codes

The number keys are also used, once access to the system has been gained, to select and modify options.

View Keys

A ▶

B ◀

GX-034-V0

These keys are used to initiate GX-Series system setting (arming). Pressing the **A>** or **<B** key immediately after a valid PIN has been entered starts one of the routines for setting (arming) the system. The **A>** key initiates the full setting (arming) routine. The **<B** key starts the part setting (arming) routine.

Once the system has been successfully accessed the **A>** key can be used to step forward through the GX-Series menu options and the **<B** key to step backward.

The **A>** and **<B** keys can also be re-programmed for different functions.

Enter Key

ent

GX-035-V0

The **ent** key is used to:
- Access the menu options
- Confirm the programming selections

Escape Key

esc

GX-036-V0

The **esc** key cancels any modification made to the current option and returns to the previous option level. Successive pressing of this key returns the user to the banner display.

The **esc** key also aborts the setting (arming) routine if pressed during the exit time.

Pound Key

#

GX-037-V0

The **#** key is used:
- as a toggle key, which enables or disables the programming features of the GX-Series options [for example, enabling the OMIT (Bypass) attribute of a zone];
- to give additional information on the programming options [for example pressing the **#** key while in option **22=DISPLAY LOG** shows details of the user number, descriptor and keypad used to cancel alarms or unset (disarm) the system];
- to activate the Duress and PA outputs; enter a valid user code followed by two presses of the **#** key, then the **ent** key to activate the duress alarm.

Star Key

✱

GX-038-V0

The * key is used:
- to correct or erase PINs in the **CODES** option and alpha-numeric descriptors in the **TEXT** option;
- to start printing from the current event when viewing option **22=DISPLAY LOG;**
- to display the set (armed) status of the groups.

When Show Status (refer to option 58.6=KEYPADS.Show Status) is enabled, pressing the * and **#** keys simultaneously when the normal banner is displayed indicates the group set (arm) status.

R = Ready to Set (Arm) [all active zones in group closed]
F = Faulted [at least one of the active zones in the group is open]
S = Set (Arm)
P = Part Set (Part Arm)
L = Locked Out
- = Group not assigned to keypad
Note: The **Show Status** indicates the set (armed) conditions of groups when the system is set (armed) [keypad blank] or unset (disarmed) [normal banner]. **Show Status** does not operate while engineer mode is accessed.

Pressing the * and **#** keys again toggles the display to show the status of the groups individually. To move between each group, press the * and **A>** or the * and **<B** keys simultaneously. Pressing the * and **#** again returns the keypad to the banner display.

Multiple Group Systems

The larger GX-Series systems have more than eight groups; these are displayed on the keypad in blocks of eight groups. Press the **A>** or **<B** key to display each of the group blocks.

Note: Only up to eight groups should be set at the same time.

Power LED

The green power LED indicates the status of the AC power supply and the stand-by battery.

Power LED	AC Status	Battery Status
ON	AC OK	Battery OK
Slow Flash	AC Fail	Battery OK
Quick Flash	AC Fail/OK	Battery Low

Table 4-4. AC/Battery Status Indicator

NOTE: It is advised that a suitably rated stand-by battery is installed on the system in order to provide continued protection in the event of a mains failure. The battery is not included.

Display

The GX-Series Keypads have a 2 x 16 character backlit display used to display programming information and system status.

```
GX   XXX    V6.00
08:58 Tue 22  NOV
```
GX-096-V1

The GX-Series TouchCenter

General

The GX-Series TouchCenter connects to the RS485 data bus of the GX-Series panels. The TouchCenter combines a clear graphical display with simple touch-screen control, providing an easy user interface.
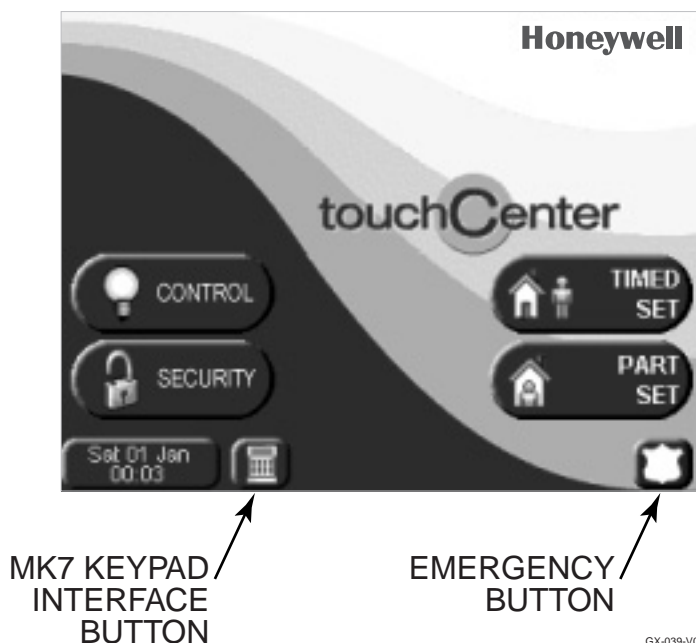
Figure 4.3 Homepage Screen

TouchCenter Installation Procedure

1. Remove the mounting plate from the TouchCenter by pushing it towards the bottom of the keypad.
2. Locate the mounting plate over the mounting surface such that the opening of the mounting plate is aligned with the cable.
3. Pass the cable through the opening of the mounting plate.
4. Secure the mounting plate to the mounting surface using the four screws supplied.
5. Connect the wires to the TouchCenter terminals as per the following table:

GX-Series Terminals	TouchCenter Terminals
A	G
B	Y
GND	-
+12V	+

Table 4-5. TouchCenter Terminal Connections

6. Mount the TouchCenter to the mounting plate by locating the four elongated holes over the locations on the mounting.

Configuring a TouchCenter

To configure a new TouchCenter do the following:

1 - Set an Address

On first power up, the TouchCenter will immediately prompt for a bus address. This should be any valid address that is not shared with any other keypad on the same RS485 (AB) Line. The default address is usually acceptable.
Or

If the address has previously been set and the address prompt does not appear, re-power the keypad and within five seconds of power up, press the Console mode button then press the **ent** button to change the address.

2 - Register with the Control Panel
Once the address has been selected, the control panel must be repowered or, if another keypad is already configured, exit from Engineer mode and the new TouchCenter will be registered. The Home Page will be displayed and the keypad is ready to use.

NOTE: Refer to the control panel literature for valid addresses. One TouchCenter can be installed on each GX-Series RS485 line.

Set-up Menu
The TouchCenter has a number of configuration settings which are set up directly within the keypad. To access these settings, the TouchCenter must be in communication with the GX-Series Panel. The panel must be in Engineer's mode. Proceed as follows:
1. From the home screen press the **SECURITY** button and then enter the Authorization code. This is the Engineer PIN of the control panel. The Security screen is displayed.
2. Press the **MORE CHOICES** button to enter the More Choices screen.
3. Press the **KEYPAD SETUP** button to enter the Setup screen.
4. Press the **KEYPAD TEST** button. From this screen, the following options are available;

Self Diagnostics
A series of diagnostic tests are provided that allows verification of correct operation of the TouchCenter and its connection to the GX-Series system. There are three diagnostic tests:
- LCD Display Test
- Audio Test
- LED Test

Address
This allows the RS485 address to be changed. A change to this will require reconfiguration of the TouchCenter with the control panel.

TouchCenter - Operation
For general operation refer to the on-screen information and to the separate user's guide. For programming of the control panel, all options can be accessed via the virtual terminal mode, which emulates a standard installer keypad. To access the terminal mode, press the terminal keypad icon in the lower left corner of the Home Page.

NOTE: The TouchCenter memory card slot has not been investigated by UL.

Specifications
Mechanical
Dimensions:
Width: 7.17 in (182mm)
Height: 5.04 in (128mm)
Depth: 1.34 in (34mm)
Weight: 1.1 lb (500g) (approx)

Electrical
Operating Voltage: 12 VDC
Current Drain:
Backlight OFF, Sound ON: 120mA
Backlight ON, Sound OFF 150mA
Backlight ON, Sound ON: 170mA
Standby: 105mA

SECTION 5: ACCESS CONTROL

NOTE: For UL294 applications all panic hardware must be UL listed.

Door Control Modules (DCMs) can be added onto the GX-Series bus lines to add fully integrated access control. Each DCM allows two Wiegand readers to be connected to control two separate doors; each door with an exit button or one door with an entry and exit reader.

Group Based Access Control

Access control works best when **Group Mode** is enabled. Each access reader can then be programmed to control access to a particular group (or area/subsystem) within the building. Only users who have access privileges to that group will be granted access via that reader.

User and Access Templates

Every user on the system must be allocated an access template. An access template is a list of **groups** and **time schedules** that will dictate which groups a user is able to gain access to and also the times that the user can gain access. This method means that if there are multiple doors leading into one group or area, then a user will be given access to all those doors in one move. This reduces programming time and complexity. The Access Template to be used for each user is chosen within each user's options in menu **42.1.11 = Template**. There are multiple access templates available (dependant on panel variant) and each one is fully customizable.

Access Templates are programmed in menu **45.7 = Access Templates**. In each Access Template each group on the system must be allocated a time schedule as required. If no schedule is allocated to a particular group (default) in the list then users will have full access through any doors leading to that group. When a schedule is allocated, access will be granted during the OFF periods of the schedule and denied during the ON periods. Time schedules are programmed in menu **65 = Timers**.

Time Schedules

A Time schedule is a weekly list of on and off times and can be used to control the security of any object to which it is assigned. When a timer is **ON** it forces a **secure** state [system set (armed), access denied etc]. When a timer is in the **OFF** state, it causes an **unsecure** state [system unset (disarmed) or access allowed etc]. Up to 28 on or off times can be programmed into each weekly schedule. Up to 67 schedules are available dependant on panel variant. For each time schedule, it is possible to allocate one of 32 Holiday Calendars. A Holiday Calendar is a list of 20 holiday periods, each with a start and end date, which suspend normal timer operation. During a holiday period, one of two things can happen.
1. The timer is frozen in its current state (on or off) and will resume operation from the next event when the holiday period finishes.
2. An alternate time schedule can be appointed to be used for the duration of the holiday period.

Door Control Module

Door Control Modules (DCMs) can be added onto the GX-Series bus lines to add fully integrated access control. Each DCM allows up to two Wiegand readers to be connected to control two separate doors; each door with an exit button or one door with an entry and exit reader.

UL | For UL installations, use Rosslare Enterprises Model AY-L10 reader (Honeywell P/N OP30HONR).
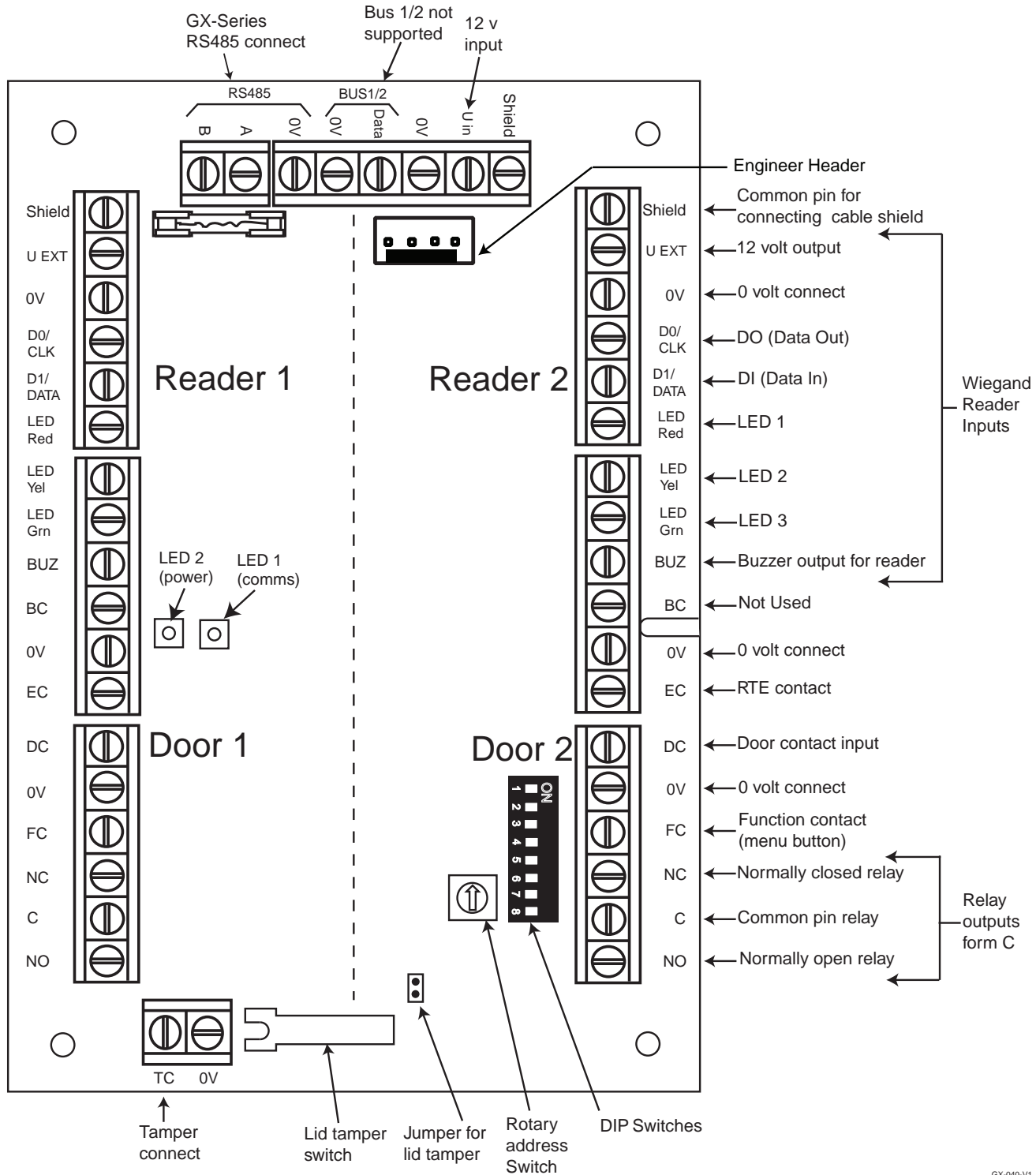
Figure 5-1. Door Control Module PCB

NOTES:
1. If only one door is being connected, then always use the connections for Door 1 (Left Side) and terminate the inputs with a 1K resistor.
2. When door readers are being connected for entry and exit to the same door, then connect the entry reader to Door 1 and connect the exit reader to Door 2.

Inputs

The DCM includes the following sensing inputs:

Door Contact (DC)

This input is a normal alarm zone input that has the same functionality as a normal security zone type. It uses normal 1k/2k double balanced zone wiring.
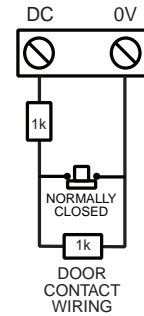
Request To Exit Contact (EC)

This input is a normally open contact. When activated it will allow the door to unlock for the programmed duration. Additionally, the door can be held unlocked indefinitely by holding the EC closed. In this case, the relay activates only for the programmed duration but the door propped alarm is held off. This can be achieved, for example, by using a keyswitch wired in parallel with the normal EC button.
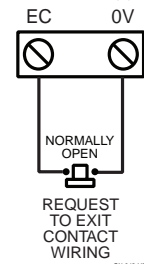
Function Contact

This uses normal 1k/2k double balanced zone wiring. It has the function of initiating a pre-programmed menu option following a valid card. The normal use is to activate the arming (setting) procedure via the reader but any menu option can be programmed.
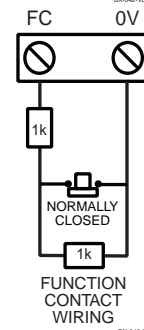
Tamper Inputs

The tamper circuits for both readers should be wired to the same tamper terminals on the DCM. The two circuits are wired in parallel, each with its own series resistor as follows:

The reader tamper is double-balanced.

- Reader 1 - 5.6k•
- Reader 2 - 12k•
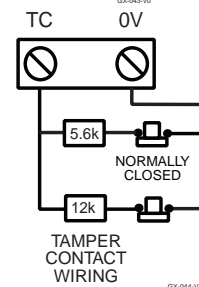
Connecting a Wiegand Device

A standard Wiegand card reader or keypad can be connected to the DCM. The keypad can operate in 4-bit and 8-bit burst mode.

Wiegand Reader Inputs

The wires from the Reader are connected to the Wiegand Reader Inputs (see Figure 5-1). Refer to separate Reader instructions for method of wiring the Reader to the DCM.

Buzzer Output

This activates the buzzer on the reader to indicate card read, access granted and card rejected. The output is open collector and can switch up to 100 mA.

LED Output
LED output 3 is used to drive a reader LED. It is open collector and can switch up to 100 mA. LED outputs 1 and 2 are not used. The LED gives a visible indication on the reader of car read and access granted.

Relay Output
This is a relay output which is activated upon any valid card read or RTE button operation in order to temporarily unlock the door. The relay can switch up to 1 A @ 30VAC.

Installation and Mounting
The DCM can be supplied installed in a standard plastic RIO box or within a Power RIO box.

Mounting the RIO Box
1. If necessary, remove the DCM PCB from the box to allow access to the screw holes.
2. Fix the base to the mounting surface, using the screw holes provided.
3. All cables must be brought into the enclosure base via the cable entry points. There are six cable entry holes for the entry of alarm cables.
4. Attach the RIO box lid with the four thread forming screws provided.

Wiring the Reader to the DCM
The wires from the Reader are connected to the Wiegand Reader Inputs (see Figure 5-1). Refer to separate Reader instructions for method of wiring the Reader to the DCM.

Addressing with DIP Switches
The DCM must be given a unique address before it is connected to a power supply. The DCM can be addressed with the DIP switches. The addressing works in a binary mode. The following table shows each DIP switch with related address number. Switches 4 to 8 must be left in the off position.

Address	Switch			
	1	2	3	4-8
0	OFF	OFF	OFF	OFF
1	ON	OFF	OFF	OFF
2	OFF	ON	OFF	OFF
3	ON	ON	OFF	OFF
4	OFF	OFF	ON	OFF
5	ON	OFF	ON	OFF
6	OFF	ON	ON	OFF
7	ON	ON	ON	OFF

Table 5-1. DIP Switch Addressing

Connecting the DCM to GX-Series System
The DCM **must** be wired to the GX-Series RS485 (**AB**) line in parallel (daisy-chain configuration). The DCM requires 12VDC. See Figure 5-1 for a diagram of the connections.

NOTE: If the DCM is the last module on the line, connect a 680 Ω EOL resistor across the **A** and **B** terminals.

Configuring the DCM
The added DCM is configured into the system on power up of the control panel or when exiting from engineer mode. The flash rate of the green comms LED (LED1) on the DCM indicates the status of the communication with the control panel. A short flash once per second indicates good communications. LED 2 when lit indicates that there is power to the DCM.

Specifications

Physical

Weight (RIO): 0.6 lb (270g) approx.
Dimensions (RIO Box): 5.91 in x 6.38 in x 1.54 in (150mm x 162mm x 39mm)

Electrical

Nominal supply voltage: 12V DC
Current draw, Typical: 40mA Typical
Current draw, Maximum (2 readers): 130 mA

SECTION 6: SYSTEM OPERATION

```
TERMINOLOGY NOTES:  ENGINEER = INSTALLER
                    SET / SETTING  = ARM / ARMED / ARMING
                    UNSET / UNSETTING = DISARM / DISARMED / DISARMING
                    OMIT = BYPASS
```

Menu Options

General

The GX-Series provides various menu options for modifying the functional performance of the system. There are two menu structures:

1. Full Menu — only accessed by authorized users including the master manager code and by the engineer (installer).

2. Quick Menu — a selection of options from the full menu. The quick menu is the default menu access for all user codes (type 2.3 and above), except master manager and engineer.

The Full Menu

The full menu has a hierarchy of 5 structures contained within it. Each structure is accessible by an increased type of user code.

The Quick Menu

The quick menu offers type 2.3 and above users a selection of up to 10 options, numbered 0 – 9. The options available from the quick menu can be modified to the user's requirement via option **59 = QUICK MENU**.

Quick Menu	Full Menu						
	User (Type 2.3)	**User (Type 2.4)**	**User (Type 2.5)**	**Manager (Type 3.6)**	**Engineer (Type 3.7)**	**Engineer (Type 3.7)**	**Engineer (Type 3.7)**
0 = Omit Zones (Bypass Zones)	10 = Setting (Arming	20 = Display	30 = Test	40 = Modify	50 = Engineer 1	60 = Engineer 2	70 = Engineer 3
1 = Forced set (Forced bypass)	11 = Omit Zones (Bypass Zones)	21 = Display Zones	31 = Walk Test	41 = Time/Date	51 = Parameters	61 = Diagnostics	71 = Program Key
2 = Chime	12 = Timed Set (Arm)	22 = Display Log	32 = Outputs	42 = Codes	52 = Program Zones	62 = Full Test	
3 = Display Zones	13 = Part Set (Part Arm)	23 = System		43 = Dlight Saving	53 = Program Outputs	63 = Options	
4 = Display Log	14 = Forced set (Forced bypass)	24 = Print		44 = Trace	54 = Links	64 = Assemble Zone	
5 = Print	15 = Chime	25 = Access Doors		45 = Timer Control	55 = Soak	65 = Timers	
6 = Walk Test	16 = Instant Set (Instant Arm)			46 = Group omit (Area bypass)	56 = Communication	66 = Pre-Check	
7 = Time/Date	17 = Silent Part			47 = Remote Access	57 = System Print	67 = Remote Reset	
8 = Codes	18 = Home Set (Home Arm)			48 = Eng Access	58 = Keypad	68 = Menu Access	
9 = Dlight Saving	19 = All Set (All Arm)				59 = Quick Menu	69 = Access Control	

Table 6-1. Quick and Full Menu Options Reference

Menu Access

Only valid codes (type 2.3 and above) can access the menu options. Access to the user options is assigned by the Engineer (refer to options **42 = CODES** and **68 = MENU ACCESS**). Users cannot view or access options for which they are not authorized; this includes options in the Quick Menu.

NOTE: Menu options **51 – 67 (ENGINEER 1** and **ENGINEER 2)** can be assigned additional access to user type 2.3 - 3.6, by the Engineer.

There are two methods of selecting menu options:
1. Direct Access: **Code + ent + option number + ent**.
2. Menu Driven Access: **Code + ent + A> (to select menu level) + ent;**
   A> key (to select menu option) + ent.

Direct Access

Entering a valid menu option number while in the menu immediately moves to that option. For example, pressing **52** (type 3.7 only) when the keypad is displaying **22 = DISPLAY LOG** moves directly to option **52 = PROGRAM ZONES**; Pressing **10** while accessing the **PROGRAM ZONES** option moves directly to **10 = Group** (group mode must be first enabled in option 63.1). The option number entered must be valid for the type of the menu structure that is currently being accessed.

Menu Driven Access

Menu driven access allows the engineer (and users) to enter the menu and, by using the **A>** and **<B** keys, navigate through the available options. The options are accessed by pressing the **ent** key. If you press and hold the **A>** key it will scroll forward through the options and if you press and hold the **<B** key it will scroll backwards through the options.

Keypad Menu Timeout

Once the user menu has been accessed (irrespective of user type), if there are no key presses for two minutes, then the keypad timeout occurs; the system returns to the banner text.

NOTE: This feature does not apply when the system is in the **Walk Test** option. If no zones are tested or no key presses occur for 20 minutes when **Walk Test** is selected, then the keypad timeout occurs. In Menu **Option 66 (Pre-check**) there is also a 20 minute timeout after the last zone has been activated.

Engineer (Installer) Mode

To program the GX-Series control panel, the system must be in Engineering mode. This allows access to the Engineer menu options **50 = ENGINEER 1, 60 = ENGINEER 2 and 70 = ENGINEER 3**.

Accessing Engineer (Installer) Mode

User Authorized Access

Entry to the engineer mode is authorized by a user with access to menu option **48.1.1 =Eng Access.System Access.Engineer**. The user selects this option and presses key **1** to enable engineer access. The engineer code must then be entered within five minutes of the option being enabled. A single entry of the Engineer code directly accesses the mode. If the code is not entered within the five minute period, the Engineer code is invalid and has no effect. Once the Engineer mode has been accessed, there is no time limit on the period that the Engineer can remain in the mode. On accessing Engineering mode, any group that is set (armed) becomes inaccessible to the Engineer. The set (armed) groups cannot be assigned to zones, outputs and any other functions permitting group allocation. When the Engineer code is entered three things happen:
- All system tampers become isolated.
- The Engineer is given access to the full menu.
- The banner message is changed to indicate Engineer mode.

Exiting from Engineer (Installer) Mode
To exit from Engineer mode and return to the normal banner enter, carry out the following operation:
1.   Return to the Engineer banner.
2.   Enter the Engineer code.
3.   Press the **esc** key.

The GX-Series carries out the following checks:
1.   That there are no module or zone tampers. If there are any module or zone tampers the exit procedure is aborted.
2.   That it is communicating with all of the attached modules. If any modules are reported as missing from the system, the GX-Series prompts the Engineer to remove each of the missing modules by pressing the * key. If the Engineer does not remove the missing modules, the exit procedure is aborted.
3.   That all of the access doors are closed. If any of the access doors are open, then the exit procedure is halted until all of the doors are closed.
4.   That there are no power failures on the GX-Series system, such as AC fail or battery fail.

Aborting the Exit Engineer Mode Procedure
If the **esc** key is pressed at any point while Engineer mode is being exited, before the normal banner is displayed, the exit procedure is aborted and the system remains in Engineering mode.

Multi User Access
The GX-Series allows multi-user access. A maximum of 16 users can simultaneously carry out tasks on the system.

SETTING (ARMING) OPTIONS

Setting (Arming) the System Using a PIN

Full Setting (Full Arming)
Enter: **USERCODE + A>**

If groups are enabled and the user code has been assigned group choice then the keypad displays the set (armed) status of the available groups:

R = Ready
F = Fault (group is unset (disarmed) and at least
    1 zone is open)
P = Part Set (Part Arm)
S [flashing] = selected for setting (arming)
S [steady] = already set (armed)
L = Group is locked out and cannot be
    unset (disarmed)
- = Group is not available to the user

```
SET      A12345678
Groups   RRSRSSSS
```
GX-062-V0

Pressing the keys for the groups toggles the **R (**Ready**)** to an **S (**Set flashing**)**.

```
SET      A12345678
Groups   SSSRR---
```
GX-063-V0

NOTE: On systems with more than eight groups, the groups are displayed in blocks of eight. Each block can be viewed by pressing the **A>** or **<B** keys.

Once the required groups have been selected press the **ent** key to begin the setting (arming) procedure. If groups are not enabled or the user does not have group choice, entering the user code followed by the **A>** key immediately starts the setting (arming) procedure.

```
TIMED            060
■■■■■■■■□□□□□□□□
```
GX-064-V0

The keypad displays the exit time countdown. At the end of the exit time, or when the setting (arming) procedure is terminated by a **FINAL** or **PUSH-SET** zone closing, the **ENTRY/EXIT HORN** outputs and keypad buzzers become silent for four seconds, then emit two long tones to confirm that the system is set (armed). The message **SYSTEM IS SET** appears briefly before the keypad display changes back to the normal day banner.

Part Setting (Part Arming)
Enter: **CODE + <B**

```
ENT  to  Continue
001    +CU-BATT
```
GX-066-V0

This is identical to the **Full Setting** procedure, except the keypad display indicates that the system is being **Part Set (Part Armed)**. Only the zones which have the **Part** attribute enabled (refer to option **52.5 = PROGRAM ZONE.Part**), are included.

Cancelling the Setting (Arming)
The full and part setting routines can be aborted by pressing the **esc** key (on the keypad used to begin setting) before the system sets (arms).

Unsetting (Disarming) the System Using a PIN

During the disarming procedure, initiated by the opening of **FINAL** or **ENTRY** zone on a set (armed) group, the system is unset (disarmed) by entering the user code followed by the **A>** key.

- If the user does not have group choice, all of the groups assigned to the code are instantly unset (disarmed).
- If the user has group choice only the group that the **FINAL** or **ENTRY** zone is assigned to is unset (disarmed); all of the other groups remain set (armed). The system displays the set status of the remaining groups and prompts for the required groups to be unset. To unset the required groups press the relevant number keys — the **S** or **P** (Set or Part Set) changes to flashing **U** — and then press the **ent** key.
- When the system/group is unset (disarmed) three short beeps are emitted to advise the user that the system/group is unset.

Engineer Unsetting (Installer Disarming)

The Engineer (Installer) can only disarm a system that was set (armed) using the Engineer code. The Engineer code cannot be used to disarm a system that was set by a user code.

Keyswitch Setting (Arming) Options

Zones programmed as **KEYSWITCH** can be used to full set, part set and disarm the system. Refer to option **52 = PROGRAM ZONE**.

Setting (Arming) the System with a Keyswitch

The **KEYSWITCH** starts the setting (arming) procedure of each of the groups assigned to the keyswitch zone. At the end of the exit time, or when the setting procedure is terminated by a **FINAL** or **PUSH-SET** zone closing, the **ENTRY/EXIT HORN** outputs and keypad buzzers become silent for four seconds, then emit two long tones to confirm that the system is set.

NOTE: If the **KEYSWITCH** has its **Part** attribute enabled (refer to option **52 = PROGRAM ZONE**) then the **KEYSWITCH** part sets the system.

Unsetting (Disarming) the System with a Keyswitch

Activating the **KEYSWITCH** when the group that it is assigned to is set instantly disarms the group. All other groups which have been "starred" to the **KEYSWITCH** are not affected and remain set.

Setting (Arming) the System with Proximity Cards

For access control readers, a function button or triple swipe will be required to activate the card function. If the card user has a keypad assigned, the function will be shown as the assigned keypad. If the card user has no keypad assigned then all keypads in the group assigned to the card user will show "Press any Key". If a key is pressed the keypad containing the key to be pressed will show the card held function. If no keys are pressed all keypads in the group(s) allocated to the card will show the card held menu function. If the card user has group choice all groups available to the user will be displayed on the keypad. The user must select the groups to be set/unset/part set using the appropriate number keys, as per normal PIN users. If the card user has no group choice then the card held setting (arming) function will commence automatically.

Unsetting (Disarming) the System with Proximity Cards

The system or groups can be unset (disarmed) using proximity cards with the access control readers.

If the unsetting (disarming) procedure has been started by activating a Final or Entry zone then, swiping the card will unset (disarm) the system. If the card user has group choice then, only the group assigned to the Final or Entry zone will be unset (disarmed). All other groups available to the user will be displayed on the programmed/selected keypad.

NOTE: The reader module must have common groups to the proximity card user to allow the card held function to be activated.

Cancelling and Resetting Alarms and Alerts

Following an alarm, sounders and strobes are activated. When a fault condition occurs in the unset (disarmed) state, an alert condition is activated. This consists of an intermittent beep at the keypad and/or a visual alert on the keypad. Following each alarm activation, the alarm must be cancelled and the GX-Series reset. The activation is cancelled by entry of any valid user code (type 2.2 and above) assigned to the group that has alarmed or by presentation of a valid proximity card to a reader. The alarm sounders, Bell and Strobe outputs are silenced and the keypad displays information on the zones or faults that have been activated. Use the **A>** and **<B** keys to scroll through multiple activations.

If the user code entered is not of a sufficient level to reset the GX-Series, the keypad displays the message **CALL MANAGER RESET REQUIRED** or **CALL ENGINEER RESET REQUIRED** (parameter **51.63 = Banner Alerts** must be enabled), depending on the type of alarm and level of reset required.

The GX-Series is reset by entering a valid user code assigned to the group that has alarmed, with the appropriate reset level for the type of alarm that has activated — **System**, **Tamper** or **PA** (refer to option **51.6 = PARAMETERS.System Reset**, **51.7 = PARAMETERS.Tamper Reset** and **51.22 = PARAMETERS.PA Reset or 51.65 = PARAMETERS.Reset Levels**). The keypad displays information on the zones that have been activated during the alarm.

NOTE: If a tamper alarm has activated (zone or module) then the system cannot be reset until the tamper condition is restored.

On the next setting (arming) of the GX-Series, if any of the zones that were opened during the previous alarm have not closed since the alarm activation, then the system is prevented from setting. The addresses of the open zones are displayed on the keypad; there is no sounder activation. Closing the zones permits the setting procedure to start.

NOTE: This is not the same as open zones being indicated on the keypad; these are accompanied by rapid tones on the **Entry/Exit Horn**.

Recording of Events

During any given set (armed) period, there is no limit to the number of signals sent from individual activations. However, no more than three events from any single source will be recorded in the event log.

Resetting Using Alarm Cause Code

If enabled in menu option 51.72, when a reset is required, an alarm cause code must be entered to reset the system.

If there are multiple alarm causes and/or multiple groups require to be reset, then the alarm cause code only has to be entered once. The user enters the most appropriate code as determined on site. The cause code values should be determined in conjunction with the Alarm Receiving Center (ARC).

Overriding of Faults and Tampers

Whenever a user logs in, the display shows any unrestored faults and tampers. If the condition cannot be cleared and restored, then to enable the system to be set, an option to override the condition is included. When a user tries to set (arm) the system, the system displays any conditions and allows the user to scroll through multiple conditions. If the user has the authority to override the condition, the following display accompanies the condition;

```
ENT   to   Continue
001     +CU-BATT
```
GX-066-V0

If the user cannot override the condition, the **ENT to Continue** will not be displayed.

The user can override each authorized condition, by pressing the **ent** key while the condition is displayed on the keypad. Each and every condition is individually displayed and overridden.

Pressing **ent** overrides the condition for one set (armed) period only. Pressing **esc** returns to the previous banner. When setting (arming) the system with an overridden fault or tamper condition, the display indicates the overridden function in place of the set (armed) mode by showing the override message as detailed in the override menu function. The Override condition is logged, and will last for one set (armed) period only. When all the groups that are affected by the override condition become unset (disarmed), the override status is cleared. An override restore is logged at unset.

If, during a setting (arming) attempt, there are conditions that haven't restored and cannot be overridden, then the system will not set. The display shows the **CALL MANAGER RESET REQUIRED** banner with a short beep every 30 seconds.

Setting (Arming) Features

The GX-Series control panels provide a range of features to assist the user in setting (arming) and unsetting (disarming) the system, to minimize the possibility of error when carrying out these procedures.

Show Set Status

When **Show Status** is enabled (refer to option **58.6 = KEYPAD.Show Status**), pressing the * and **#** keys simultaneously when the normal banner is displayed indicates the group set (armed) status.

F = Fault
R = Ready
S = Set (Armed)
P = Part Set (Part Armed)
L = Locked Out
- = Group is not available to the user

```
SET        A12345678
Groups     RRSRLPFP
```

Group Block

NOTE: The Show Status indicates the set (armed) conditions of groups when the system is set (armed) [keypad blank] or unset (disarmed) [normal banner]. Show Status does not operate while Engineer mode is accessed.

Pressing the * and **#** keys again toggles the display to show the status of the groups individually. To move between each group, press the * and **A>** or the * and **<B** keys simultaneously.

```
08:58  TUE  22  NOV
A1U Group A1
```

GROUP A1 IS UNSET
GX-068-V0

Pressing the * and **#** keys again returns the keypad to the banner display.

Multi-group Systems

The GX-520 panel has 32 groups, which are displayed on the keypad in blocks of eight groups, subdivided into A, B, C and D. Press the **A>** or **<B** key to display each of the group blocks.

Exit Time

Once the setting (arming) routine starts, outputs programmed as **Entry/Exit Horn** emit a continuous tone. The keypad used to set (arm) the system indicates the time, in seconds, remaining before the system sets.

Exit Time Reset

If any zones are open when setting (arming) starts or are opened during the setting routine, the sounder begins to pulse rapidly; zones types other than **Final**, **Exit**, **Entry** or **Push-Set** (and **Secure Final** or **Part Final** when acting as a **Final**), indicate on the setting (arming) keypad the number of zones open. The **A>** or **<B** keys can be used to view the open zone types and addresses. Closing the zones resets and restarts the exit time.

Omitted (Bypassed) Zones

If zones are omitted (bypassed) when the system starts setting, this is indicated on the keypad. The keypad indicates how many zones are omitted.

Expiration Warning

During the last 25% of the programmed exit time outputs programmed as **Entry/Exit Horn** begin to pulse rapidly, indicating that time is running short.

System Set (Armed) Indication

At the end of the exit time the **Entry/Exit Horns** become silent for four seconds. This allows the door to be locked and secured and gives the detectors time to settle before the system finally sets. Two long tones are emitted to confirm that the system has set. If all groups are set (armed) the keypad briefly displays the message **SYSTEM IS SET** before returning to the normal banner.

Group Logic Setting (Arming) Restriction

If **Setting Logic** has been assigned to a group (refer to **63.1.2 = OPTIONS.Groups.Setting Logic**), the set (armed) status of the groups must satisfy the conditions defined in the option to permit the group to set. If the **Setting Logic** conditions are not satisfied, then the group cannot set. If multiple groups are being set simultaneously, but one group is restricted due to the programmed **Setting Logic**, the remainder of the groups set. The restricted group does not set; there is no warning or indication given.

If the programmed **Setting Logic** results in none of the selected groups being allowed to set, a warning message is displayed on the keypad. This message does not appear if at least one group sets.

```
2 Groups not set
[<],[>] to view
```
GX-069-V0

Entry Time

The system begins the unsetting (disarming) routine whenever a **Final** or **Entry** zone activates. The **Entry/Exit horns** pulse slowly indicating that the entry time countdown has started. The user must go directly to the keypad, using the agreed entry route, and unset (disarm) the system before the entry time expires. When 75% of the entry time has elapsed the **Entry/Exit horns** pulse rapidly, indicating that time is running short.

Timeout (Slow Entry)

If the entry time expires before a valid code is entered to unset (disarm) the group, a full alarm occurs. This is recorded in the event log as a **Timeout** against the group which was in the process of being unset.

Straying from the Entry Route

If, during the entry routine, the user strays from the agreed entry route and activates a zone in a protected area, a full alarm occurs.

Abort Time

Should the user exceed the entry time or stray from the entry route a full alarm occurs. However the activation of the intruder output can be delayed to allow time for the user to abort the remote signaling. The **Abort Time** parameter can also be programmed so that an **Intruder** alarm is activated immediately when the entry time expires or a zone is activated, but entry of any valid code cancels the alarm and deactivates the **Intruder** outputs without the need for a system reset.

Abort Setting (Arming) Message

Zones that are open or opened during the exit period are indicated to the user by a rapid audible tone from the entry/exit horns. The keypad displays the open zones and then prompts the user to abort the setting (arming) by pressing the **esc** key. This message is designed to prevent users from re-entering the building, closing the open zones, allowing the system to set (arm) and trapping the user in the building.

Fail to Set (Arm)

An output type **(Option 53-Program output 40, Fail Set)** is available that activates if a full set (arm) has not occurred after a programmed period of time (determined by **Option 51-Parameter 35, Fail to Set**) from the start of the setting (arming) procedure.

Power Failure While System is Set (Armed)

When power is restored to the system, following a complete mains (AC) and standby battery (DC) power failure, the system attempts to return to the set (armed) status — full or part — prior to the power failure. The system begins the setting (arming) procedure. If there are no zones open that prevent the system from setting, at the end of the programmed exit time, the appropriate groups and parts are set.

Menu Options 11-19

Option 11 – Omit (Bypass) Zones [Quick Menu Option 0]

Code + ent + 11 + ent + A> or <B to select zone + # +

A> or <B to select zone + # + ...

ent (to set) or esc (to select another option)

This option allows zones to be temporarily removed (omitted/bypassed) from the system. Once a zone has been omitted it does not generate an alarm condition (including tamper). The omitted zones are reinstated automatically when the system is unset (disarmed) or manually when the zone omit option is disabled.

On selecting the **Omit Zones** option, the first zone that has the omit attribute enabled is displayed (refer to option **52 = PROGRAM ZONE**). If there are no omittable zones, then the message **NO ENTRIES** is displayed.

Press the **A>** or **<B** keys to view other omittable zones. Press the **#** key to toggle the omit status of the required zone. The display indicates the new omit status.

NOTE: A zone is omitted from the system as soon as it is selected.

This process is continued until all the required zones have been omitted:
- pressing the **ent** key starts the timed setting (arming) routine. The number of zones omitted from the system are displayed during the exit time countdown;
- pressing the **esc** key returns to the **11 = OMIT ZONES** without starting the setting routine.

On returning to the banner (normal or engineer) the keypad displays the message **ZONES OMITTED**.

Omitted zones remain omitted for one set (armed) period only or until they are manually reinstated to the system.

Outputs programmed as **Zone Omit** (mode programmed as follow) are activated as soon as the zone is omitted and remains active until the zone is reinstated.

There are five zone types which vary from the standard **Omit Zones** operation:
- **Vibration Zones** — if the omitted zone is a **Vibration** zone, then all zones (in all groups) programmed as this type are block omitted. The **Vibration** zones remain omitted until they are manually reinstated. Unsetting (disarming) the system does not reinstate **Vibration** zones.
- **ATM1/2/3/4 Zones —** a single **ATM** zone type can be omitted for the duration of the period entered in the **ATM Timeout** parameter (option **51.39**). The **ATM Delay** parameter (option **51.38**) determines the delay before **ATM** zones are omitted following the entry of one of the ten **ATM Codes.**

Entry of a code allows the user to omit one of the **ATM** zone types. Once omitted, the initiating keypad indicates the number of minutes remaining until the selected **ATM** zones are reintroduced to the system. A warning is given ten and five minutes before the zones are reinstated. The omit time may be extended indefinitely by re-entering an **ATM Code**. Outputs programmed as **ATM1/2/3/4** are active when the respective **ATM** zone type is omitted, and remain active until the zone type is reinstated. Refer to option **52 = PROGRAM ZONES** for details on the operation of **Vibration** and **ATM** zone types.

Manually Reintroducing Omitted (Bypassed) Zones to the System
Selecting the **OMIT ZONES** option; using the **A>** or **<B** keys, select the omitted zone to be reinstated. Press the **#** key toggle the omit status of the required zone. The display indicates the new omit status.

Normal Setting (Arming) with Omitted (Bypassed) Zones
Initiate the full or part setting routine. The system starts to set (arm); the display indicates that zones have been omitted. The zone remains omitted until the system is unset (disarmed) (with the exception of **Vibration** and **ATM** zones).

Option 12 – Timed Set (Arm)

This option, when entered, starts the setting (arming) routine. The **Entry/Exit Horns** emit the expiry warning using the programmed exit time (0-300 seconds). The system sets at the end of the exit time or earlier if a **Final Zone** is opened and closed, key **0** is pressed — if programmed as an exit terminator — or if a push-set terminator is operated. The option displays the time remaining until the system sets or the number of open zones preventing the system from setting (arming). Opening a zone during the exit routine resets the exit timer. Pressing the **esc** key prior to the system setting aborts the setting routine.

NOTE: The factory default setting allows the timed setting (arming) routine to be initiated by entering a valid type 2.3 (or above) user code and pressing the **A>** key. By default the **A>** key is assigned the function Timed Set (Arm). The **A>** key can be reprogrammed by the engineer to perform another function, or to start the setting (arming) routine without a code being entered.

Option 13 – Part Set (Part Arm)

This option operates exactly as the **Timed Set** option with the exception that only those zones that have the part attribute enabled (refer to option **52 = PROGRAM ZONES**) are set (armed). All zones have the part attribute enabled by default. Therefore selecting **PART SET** from the factory will set (arm) all zones. The part attribute of the zones must be disabled if they are not to be included in the part set.

NOTE: The factory default setting allows the part setting routine to be initiated by entering a valid type 2.3 (or above) user code and pressing the **<B** key. By default the **<B** key is assigned the function Part Set (Arm). The **<B** key can be reprogrammed by the engineer to perform another function, or to start the part setting routine without a code being entered.

Option 14 – Forced set (Forced bypass) [Quick Menu Option 1] {Not for UL installations}

Forced set (Forced bypass) **allows a timed set (arming) of the system when there are zones that are open at the point of selecting the option**. The open zones must have the omit attribute enabled (refer to option **52 = PROGRAM ZONES**). This option is only available if the **Forced** parameter (option **51.26**) is enabled; otherwise, the selection is invalid and the keypad displays the message **Option not available**. When the **Forced set (Forced bypass)** option is entered, the keypad displays the number of zones that have been omitted (manually by option **11 = OMIT ZONES** and automatically by the **Forced set (Forced bypass)**) and the setting (arming) routine begins. If there are any open zones that do not have the omit attribute enabled, the keypad displays the number of open zones that are not omittable and prompts the user to view them. The non-omittable zones must be closed before the setting routine can continue.

Option 15 – Chime [Quick Menu Option 2]

The Chime option allows the user to switch the chime facility on and off. Any zones that have the chime attribute enabled (refer to option **52 = PROGRAM ZONES**) momentarily operate **Entry/Exit Horns** when opened; 2 long tones are emitted.

Option 16 – Instant Set (Instant Arm)

Selecting this option immediately sets (arms) all zones. No sounder or exit time is involved.

NOTE: The zones must be closed to allow the system to set. If any zones are open, then the exit time reset feature (detailed previously) is activated.

Option 17 – Silent Part

Selecting this option sets (arms) all zones that have the part attribute enabled. It starts a normal timed exit procedure but exit sounders are not activated. In the event of an alarm occurring during a **Silent Part** set (arming) (e.g. fire alarm), normal operation will be re-instated. When group mode is enabled (Menu option 63.1), setting (arming) of a group using **Silent Part** set will not affect the operation of any of the other group setting options.

NOTE: The zones must be closed to allow the system to silent set (arm). If any zones are open, then the **Exit Time Reset** feature (detailed previously) is activated. Unsetting (disarming) from Menu option 17 will still give a double beep.

Option 18 – Home Set (Arm) [Stay]

The **Home Set** option either fully sets or part sets the system. The system is:
- fully set (armed) if the exit time is manually terminated via a **Final** or **Push-Set** zone operation;
- part set (armed) if the exit time is allowed to expire.

Option 19 – All Set (Arm) [Away]

All Set allows a timed set (arming) of groups assigned to the user code without offering the choice of which groups are to be set. No group choice is offered. The groups that are set (armed) when this option is selected is determined by the keypad group restriction (refer to option **58.7 = KEYPADS.Groups**):
- If there is no keypad group restriction then all of the groups assigned to the user are set (armed) — as long as there is at least one common group assigned to the keypad.
- If there is a group restriction on the setting (arming) keypad, then only the groups that are common to both the user and the keypad on which the menu option is selected are set. For example, a user assigned groups 1, 2, 3, and 4 selecting the **All Set** option on a keypad assigned groups 2 and 3 will only set (arm) groups 2 and 3.

Display Options

Option 21 – Display Zones [Quick Menu Option 3]

Selecting and entering the **Display Zones** option shows the first zone on the system. Other zones may be viewed by pressing the **A>** and **<B** keys or by entering the zone number directly. The top line displays:
- the address;
- the group assigned — if the group mode is enabled. Only the zones assigned to the user's group are displayed.
- the zone function alternating with the status — open, closed, high resistance, low resistance, tamper short or tamper open circuit or masked.

The bottom line shows:
- the zone descriptor (if used);
- Pressing the **#** key changes the bottom line to show the circuit resistance in Ohms, if using a hardwired RIO and the RIO (not zone) voltage. Pressing the **#** key returns the bottom line to the zone descriptor.
- Pressing the **#** key twice gives the maximum (+) and minimum (-) zone resistance for a particular day. The scroll keys (**A>** and **<B**) scroll between the stored values for the past 14 days.

A printout of all the zones is available from this option by pressing the * key; pressing the **esc** key aborts the printout.

NOTE: A serial printer must be connected to the GX-Series panel via a printer interface module, an RS232 interface module, or the on-board RS232 serial port. {Not evaluated by UL.}

Option 22 – Display Log [Quick Menu Option 4]

The GX-Series event log is viewed using this menu option. The GX-48 can store 1000 events whereas the GX-520 can store 1500 events. The alarm log uses a FIFO (First In, First Out) method to log and store alarms. The control panel differentiates between mandatory and non-mandatory events. All events are logged, however when the log becomes full, non-mandatory events are dropped first. The log will always contain at least 500 mandatory events (assuming 500 or more mandatory events have been generated).

NOTE: The number of events logged from any one source during any set/unset (armed/disarmed) period is controlled by parameter 51.48 (Alarm Limits).

If group mode is enabled (refer to option **63 = OPTIONS**) and the user code has group choice (refer to option **42 = CODES**), then the available groups are displayed for selection. Press the number of the groups to be displayed, the **N** below the selected group changes to a flashing **Y**. When all the required groups are selected press the **ent** key to access the log; only the events in the selected groups are displayed.

Once the event log is accessed, the most recent event is displayed. The **<B** key steps backwards in time through the log, while the **A>** key moves forward in time. Holding down either key quickly steps through the dates until the required date is found. When a selected date is on display the events of that day and previous days can be viewed by repeatedly pressing the **<B** key; events on subsequent days are viewed by repeatedly pressing the **A>** key.

The event log is wrapped round from beginning to end. The message **START** or **END** (depending on whether the **A>** key or the **<B** key is being pressed) is briefly displayed when the wraparound is passed through. The following information is detailed in the event log:
- time - time that event occurred;
- date - day and date that event occurred;
- event - information about the type of event that occurred. Certain events are displayed with a + (positive — indicating that the event started or was activated) or – (negative — indicating that the event ended or was terminated) symbol;
- user - alternates between the name and number of the user who initiated the event. If the event is one that is not associated with a user code, for example, an alarm activation or a Final zone closing, then no user information is displayed.

Pressing the **#** key while viewing the log can reveal additional information about certain event types:
- User events reveal the keypad, user type and user group involved in the event;
- Alarm events reveal the zone descriptor, if programmed.
- REM CALL event displays the Remote Station ID for the Remote Servicing Software which has made the connection with the panel.

```
┌─────────────────────────────┐
│ 10:24  SUN  01  JAN         │
│ K10    L7                   │
└─────────────────────────────┘
```

K = KEYPAD ─────────────── LEVEL OF USER CODE
AB LINE ─────────────
KEYPAD ADDRESS ─────────────   GX-097-V0
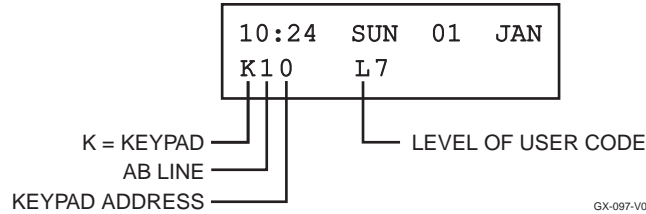
NOTES: 1. Where two identical events occur within 1 second, only one is logged.

2. Only the first occurrences of high resistance and low resistance events on each day are logged. Subsequent activations are ignored until midnight of the same day. This is to prevent the log from being filled with high and low resistance activations from a faulty zone.

The event log can be printed while accessing the **Display Log** option. Pressing the * key while displaying an event starts the printout from the displayed event and prints forward to the most recent event. The **esc** key aborts the print out.

NOTE: A serial printer must be connected to the GX-Series panel via a printer interface module, the RS232 interface module, or the RS232 serial port.

Option 23 – System

This option provides a quick overview of the system configuration; two lines of information are displayed at a time - the **A>** and **<B** keys are used to scroll through the entire list:
- Groups   use the **A>** and **<B** keys to scroll through groups **A1–8**, **B1–8**, **C1–8** and **D1–8**
- Group status   **U** = Unset (disarm), **S** = Set (arm), **P** = Part set (Part arm) and **L** = Locked-out for each of the groups displayed;

NOTE: Enabling the **Show Status** option (refer to option **58 = KEYPADS**) allows the group set (armed) status to be displayed from the normal banner [when the system is set (armed) or unset (disarmed)] by pressing the * and # keys simultaneously.

- Type   GX-48 or GX-520
- Version   version of software in GX-Series panel;
- RIOs   installed includes the on-board RIOs;
- Codes   used includes the manager, engineer and remote codes;
- Keypads installed 1-8 (GX-48), 1–32 (GX-520)
- Comms modules   1-7 (Telecom, RS232, ISDN, Ethernet, Int Telecom, Int RS232);
- Printer   0–1 (Printer Interface Module);
- DCM Modules   gives the number of Door Control Modules on the system;
- MUX Modules   gives the number of MUX Modules on the system
- Panel location   up to 16 characters of text entered in **System Text** parameter (option **51.15.2**).

Option 24 – Print [Quick Menu Option 5]

NOTE: A serial printer must be connected to the GX-Series panel via an on-board RS232 serial port.

This option has two sub-menus:
1 = Printer Module
2 = INT RS232 1
Each of these two sub-menus allows one of the four listed options below to be printed. Only information corresponding to the groups assigned to the user is printed.

1 = Codes

Prints user number and name, type and groups assigned;

NOTE: Only the manager can print out the user PINS; the **Print Codes** parameter (option **51.23**) must be enabled (default is disabled).

2 = Zones

Prints address, function, group (if group mode is enabled), status, descriptor (if assigned), status of the chime, omit and part attributes, the RIO voltage and the zone resistance in Ohms;

3 = Log

Prints all events in the log, starting with the most recent and working backwards;

4 = All

Prints codes, zones and log details respectively.

The required option is selected by pressing the appropriate key **1-4**. The printing begins immediately and can be aborted by pressing **esc**.

Option 25 – Access Doors

This option displays information about the DCM readers with users connected to the system. There are 4 options:

1 = View All

This option displays the access log but with no filter. All events are displayed.

NOTE: If the Access mode has not been enabled (refer to option **69.1 = Mode)** the message **No Entries** is displayed on entering this option.

2 = User

This option shows all events for the selected user. Managers can see all the users. Individual users can only see their own events.

3 = Reader

Accessing this option when the access mode is enabled (option 69.1) and there are DCM modules connected to the system displays the address and descriptor details of the first DCM module on the system. Press the **A>** and **<B** keys to view details of the other DCM modules on the system. If there are no DCM modules attached to the system the message **None Detected** is displayed.

4 = Date

This option allows a specific date to be entered in the format DD/MM/YY. This forces the display to go to a specific date.

Access Log

Access events are transmitted using Contact ID, SIA and Alarm Monitoring formats. Access events transmitted are listed in Table 6-2. The GX-Series Access Log is capable of recording 1,000 events.

Event	Description	SIA Code	Contact ID Code	Module Number	User ID
Access Granted	Valid card presented and validated	DG	421	Yes	Yes
Invalid Card	Card presented has not been programmed onto system	DD	422	Yes	No
Card Rejected	Valid card presented, but rejected for some reason	DK	422	Yes	Yes

Table 6-2. Access Log Events

Access Log Information

The access log contains a reason why the door will not operate. These can be:

- Not Grp Match
- Reject Grp Set
- Illegal Time

The keypad display in the access log also shows user information:

```
01:00   THU 26 APR
USER   001   Rejct
```
GX-070-V0

Press the **#** key to view the reason for rejection:

DCM ADDRESS
LINE NUMBER — READER NUMBER
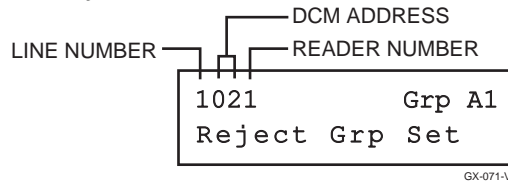
```
1021          Grp A1
Reject Grp Set
```
GX-071-V0

The line number for proximity card readers is in the format, for example 0013:

00 = not required

1 = line number 1

3 = Address number 3.

Access Log Print and Store Option

The Access Doors (Log) is printed on-line and stored in the event memory.

The Access Door Log print displays in the format of the Event Log and allows information to be accessed.

The format is as follows:

HH:MM_XXXXXXXXXX_USR_NNN_UUUUUU_MYYYY_—_ (39 character display)

Where:

HH:MM = time in hour:minutes (5 characters). The date will be printed only at the beginning of every day, that is midnight.

XXXXXXXXXX = access message (10 character) Valid, Invalid Card, Reject Card

USR = User (3 characters)

NNN = User number to which proximity card is assigned (3 characters)

UUUUUU = User descriptor (6 characters)

M = Proximity reader address (1 character)

YYYY = DCM physical address- (5 characters: e.g., M1072 = line 1, reader address 07, reader 2)

- (dash) = unused character slot

__ (underscore) = this represents a space and is not printed or displayed in the access log.

For example: A valid card read at DCM 1072 from the card held by user 020, name Albert, at 13:48 would be:

13:48 Valid USR 020 Albert M1072 –

Descriptor

The descriptor is a maximum of 16 characters entered in the **DCM Parameters** (**69.3.1**).

Engineer Mode

On accessing the **Access Doors** option in Engineering mode, each on-line DCM module displays its address by lighting the appropriate LEDs. To help the engineer identify each of the DCM modules, the keypad displays a graphic representation of the DCM module address. By matching the   (LED off) and ■ (LED on) image to the LEDs on the DCM, the engineer can identify each DCM module on the system.

Access Log

The GX-Series system has a 1000 event log for the recording the access activations. This log is shared by all readers on the system and operates on a first-in-first-out basis for overwriting events when the log is filled.

To display the events in the access log select option **25 = ACCESS DOORS**; use the **A>** or **<B** keys to select the required DCM address then press the **ent** key. The first event that occurred on the selected DCM is displayed along with details of the time, date and DCM number.

To view the log press the **A>** key to move forward in time through the events or the **<B** key to move backwards. Press the **esc** key to return to the DCM address display. To view the log of another DCM, use the **A>** or **<B** key to select the required address. To escape from the **Access Doors** option, press the **esc** key.

```
TIME AND DATE
OF EVENT

        ┌─────────────────────┐
        │ 02:25    SUN    OCT │
        │ USR032    Valid     │
        └─────────────────────┘

USER NUMBER                 EVENT TYPE
                                GX-072-V1
```
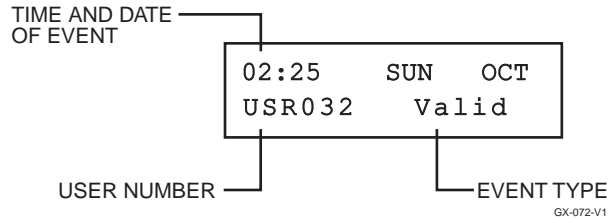
Press the # key for typical additional information:

```
┌─────────────────────┐
│ READER01    GrpA1   │
│ Reject Grp Set      │
└─────────────────────┘
        GX-073-V0
```
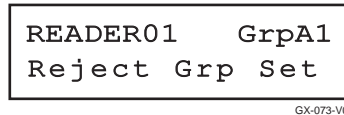
NOTE: See Appendix D for Event Log Messages.

Access Events Print-Out

The access events can be printed out as they occur to an on-line printer. To print the access events ensure that option **51.28 = PARAMETERS.On-Line Print** is enabled. Select option **51.29= PARAMETERS.On-Line Level** and enter **2** to print out all system events including the DCM events or **3** to print out only the DCM events.

NOTE: A serial printer must be connected to line one of the GX-Series panel and the printer must remain on-line (ready to print) at all times.

Test Options

NOTE: Test frequency of the control panel and all accessories once per year.

Option 31 – Walk Test [Quick Menu Option 6]

31 = Walk Test

```
31 = Walk Test
    ├─ 1 = View ─────── 1 = Zones Untested
    │                   2 = Zones Tested
    │
    └─ 2 = Activate ─── 1 = Silent ──────── 1 = Test all Zones
                        │                   2 = Selected Zones
                        │
                        2 = Audible ─────── 1 = Test All Zones
                                            2 = Selected Zones
```
GX-049-V0
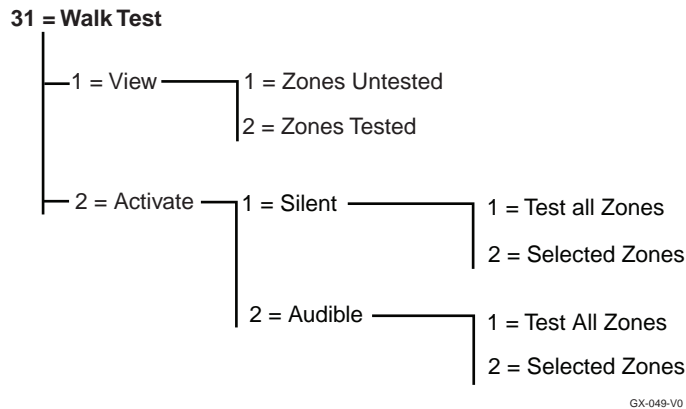
Figure 6-1. Walk Test Menu

31.1 = View

This option allows the user to log on to any keypad to view which zones have been tested and which zones have still to be tested.

1 = Zones Untested

If this option is selected then the first zone that has not been tested will be displayed. Pressing the **A>** or **<B** keys scrolls through all the untested zones.

2 = Zones Tested

If this option is selected then the user can view those zones already tested.

31.2 = Activate

This option allows a Walk Test to be carried out silently or audibly.

1 = Silent

This option allows the user to do a Walk Test that does not produce any audible sound. It will be completely silent. The Walk Test offers two methods of testing zones:

1 = Test all Zones

This option initiates a Walk Test that includes all zones that have the omit attribute enabled (refer to option **52 = PROGRAM ZONES**). When selected, the Walk Test starts immediately. The message **NO ENTRIES** is displayed if all zones are non-omittable when selecting All Zones. Non-omittable zones are not included in this test and remain active throughout the test.

2 = Selected Zones

This option allows the user to select any zones, irrespective of function type, for walk testing. As many zones as necessary may be added to the list before starting the test. On entering this option the details of the first zone are displayed. Each zone required for test can be selected using the **A>** or **<B** keys or by entering the zone number. Press the **#** key to toggle the test status of each zone in the Walk Test: the test status of the zone changes to **TEST** if it is included in the test and **# = TEST** if it is not. When all the required zones have been selected, press the **ent** key to start the Walk Test. Press the * key to include all zones in the Selected Zones Walk Test, without having to individually select the zones. Once all zones are selected, the **#** key can be used to remove selected zones from the test.

NOTE: PA, PA Silent, PA Delay, PA Silent Delay and **Fire** are not included in the test when the * key is used to include all zones.

The response times of the zone circuits are reduced to 20 msecs for the duration of the Walk Test to facilitate the detection of loose connections or damaged wiring. Once the Walk Test has started, opening a zone (or a zone that is open at the start of the test) activates outputs programmed as **Entry/Exit Horn**. If a single zone is open, the keypad displays the address and function of the zone. If multiple zones are open, then the keypad indicates how many zones are open; the open zones can be viewed by pressing the **A>** or **<B** keys.

NOTE: The **Walk Test** option does not display the status of the zones. If an open zone is included in the Walk Test, the **Entry/Exit Horn** will activate as soon as the test is started and remains active until the zone is closed.

While the Walk Test is active the message **WALK TEST ACTIVE / ESC to abort** is displayed; press the **#** key to view all zones that have been walk tested so far. To return to the Walk Test press the **#** key again.

2 = Audible

This option allows the user to do a Walk Test that **does** produce an audible sound. The Walk Test works in the same way as the Silent Walk Test.

Ending the Walk Test

To terminate the Walk Test, press the **esc** key. The test will terminate automatically if no zones are activated for 20 minutes.

The results of the test can be viewed by accessing the event log (refer to option **22 = DISPLAY LOG**). The start of the Walk Test is indicated by the display **WALK TEST +**; each zone that was tested is recorded (the activation of each zone is recorded only once during the test — even if it was opened several times); the end of the test is indicated by **WALK TEST –**.

Option 32 – Outputs

Outputs are tested by function: for example, when **01 = BELLS** is selected, then all outputs programmed as **Bells** are activated. Refer to option **53 = PROGRAM OUTPUT** for a full description of each output function.

On selecting the **Outputs** option, output function type **01 = BELLS** is offered for selection. Press the **A>** or **<B** keys to move to the required output function type. Alternatively, the function type number can be entered directly, for example entering **13** selects **SECURITY**. To test the selected output function, press the **ent** key. The **ent** key can be used to toggle the function **ON** and **OFF** as required. To exit from the **Outputs** option, press the **esc** key.

Users

User types 2.5 & 3.6 only have access to **01 = BELLS** and **02 = STROBE** of the **Output** option. Only the Engineer has access to all the output types.

Option 41 – Time/Date [Quick Menu Option 7]

The **Time/Date** option can be accessed and modified by type 3.6 codes, the Engineer and the remote code. If any groups are locked, then the time and date cannot be modified.

Modifying the Time and Date

The **Time/Date** option allows the system time and date to be modified. On entering this option the display prompts for selection **A = TIME B = DATE**. Press the **A>** key to select the time option; this allows a new time to be entered. The time must be a valid four digit number — in the 24 hour format (hh:mm). The entry, if valid, will be accepted immediately and the display is returned to the selection screen. Press the **<B** key to select the date option; this allows a new date to be entered. The date must be a valid 6 digit number - in the day, month and year format (dd/mm/yy). The date entry, if valid, will be accepted immediately and the display is returned to the selection screen.

NOTE: The time and date can be modified when groups are set (armed).

Adjusting the Clock Speed

Variations in the accuracy of the clock speed can be compensated by pressing the **#** key while the **A = TIME B = DATE** selection screen in the **Time/Date** menu is displayed. The keypad prompts for the **Adjustment/ Week**, in seconds, to be entered; the range is 0 – 120 seconds. If the clock needs to gain time, enter the required number of seconds. If the clock needs to lose time, enter the required number of seconds and press the * key; the * slows the clock speed.

Option 42 – Codes [Quick Menu Option 8]

The **Codes** option is used to assign, modify and delete the codes that allow users to operate and access the system. The **Codes** option is divided into three sub-menus:

   1 = User Codes - sub-divided into up to 11 menus (depending on panel used and whether the group and MAX mode options are enabled in Menu 63) that determine all of the access information for users who are requiring PINs. This option also assigns MAX details to user numbers;

   2 = PIN Warning - determines the warning period given to users prior to the programmed **PIN Change** date (refer to option **51.42 = PARAMETER.PIN Change**);

   3 = Card Users - determines the proximity cards on the system for various users.
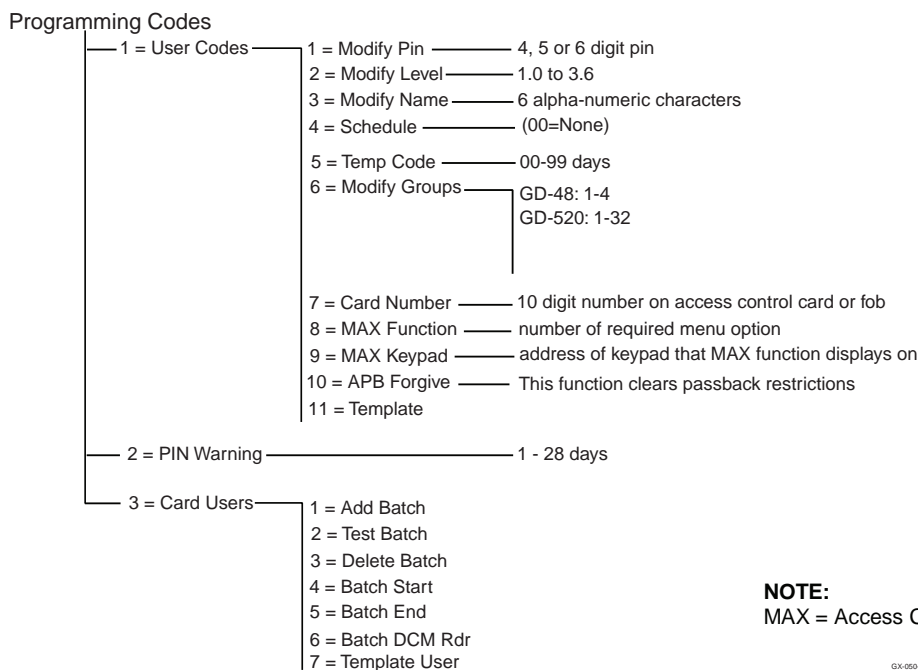
Figure 6-2. Programming Codes

Default Codes

The GX-Series system provides four default codes: Manager, Installer (Engineer), Remote and Authorization User. Refer to the following table:

Panel	No. of Codes	Manager Default PIN	Manager User No.	Installer (Engineer) Default PIN	Installer (Engineer) User No.	Remote Default PIN	Remote User No.	Authorization* Default PIN	Authorization* User No.
GX-48	100	12345	98	112233	99	542310	100	-	97
GX-520	1000	12345	998	112233	999	543210	1000	-	997

Table 6-4. Default Codes

* The authorization code is a secondary system manager code but is not programmed by default.

Engineer Code

- Engineer access is enabled via menu 48.1. This menu is only available to type 3.6 users.
- The engineer code can only modify the engineer PIN.
- The engineer code cannot assign, modify or delete the manager or user codes;
- On accessing engineering mode, any group that is set (armed) becomes inaccessible to the engineer. The set (armed) groups cannot be assigned to zones, outputs and any other functions permitting group allocation;
- While engineer mode is accessed, all tampers are disabled, however, all constantly alert zone types — **PA** zone types, **24 Hour**, **Security**, **Fire** — remain active.
- The engineer banner is shown on all keypads while engineer mode is being accessed; the message **ENGINEER MODE** is displayed;

Entry to the engineer mode **must be** authorized by a valid type 3.6 user (Manager; refer to option **48 = ACCESS AUTHORIZATION**). The engineer code must then be entered within five minutes of the option being enabled. A single entry of the engineer code directly accesses engineer mode, without activating an engineer tamper alarm; **ENGINEER MODE** is displayed on the keypad. If the engineer code is not entered within the five minute period, the code is invalid and an **Insufficient Access Rights** message is displayed on the keypad. Once the engineer mode has been accessed, there is no time limit on the period that the engineer can remain in the mode.

NOTE: Dual entry of the engineer code in a system requiring user authorization does not give access to engineer mode.

ATM User Codes {Not for UL installations}

ATM (Automatic Teller Machine) user codes work in conjunction with ATM zone types (refer to Menu Option **52.48-51=Program Zones ATM1-4**). ATM user codes cannot be used as normal user codes for setting (arming) / unsetting (disarming), etc., 94 to 96 user codes for each GX-48 and 986 to 995 user codes for each GX-520 that are dedicated as ATM users.

Exiting from Engineer Mode

1. Return to the engineer banner.
2. Enter the engineer code.
3. Press the **esc** key.

The GX-Series begins the exit engineer mode procedure by checking the integrity and security of the system:

- **CHECKING FOR TAMPERS** — the panel calculates that the standby battery connected to it is capable of operating the system for the required period (as entered in the **Standby Battery** parameter — refer to option **51.37**). The system then verifies that there are no tamper conditions present on the panel, the modules or the zones.
- **SYSTEM MODULES** — if there are no tamper conditions the GX-Series checks the number of modules connected to the system:

- If no modules have been added or removed, **"NO MODULES ADDED, ESC TO CONTINUE"** is displayed. Pressing **esc** returns the system to the normal banner.
- If modules have been removed they are reported as missing; the engineer is prompted to view the missing modules and to remove them from the system by pressing the *; a warning is given before the module is removed. Press the **ent** key to confirm the removal of the module. Once all missing modules are removed, the GX-Series reports the previous and current number of modules connected to the system, before returning to the normal banner.
- If modules have been added, the GX-Series reports the previous and current number of modules connected to the system, before returning to the normal banner.

If the **esc** key is pressed at any time during the exit engineer mode procedure, the procedure is aborted and the GX-Series returns to the engineer mode. This return may take several seconds to complete.

Manager Code

The manager is authorized to modify the manager PIN — the manager PIN cannot be deleted — and assign the access features to the code.

If authorized via menu option 48.2 the manager is also authorized to:

- program the **User Code** options of each of the user codes;
- allocate other codes to the manager type (3.6);

NOTE: The manager PIN can be reset to the default code (12345) by the engineer and remote code using the **Reset Mgr** (**Manager**) parameter (refer to option **51.21**).

The manager code defaults to group choice when groups are enabled. The manager is able to toggle the group choice option on and off (using the * key) as required. The manager code defaults to accessing the full menu (options 11 – 48). To access the quick menu (options 0 – 9), remove the * assigned to the manager in the **Modify Level** option.

Programming Codes

Each PIN user has access to modify their own PIN. Users do not have access to user codes other than their own. The only exception to this is the manager code.

42.1 = User Codes

Enter option **42=Codes** and select option **1=User Codes**. Press the **ent** key; details of the first user (**User 001**) are displayed. The following typical information is displayed on the keypad.
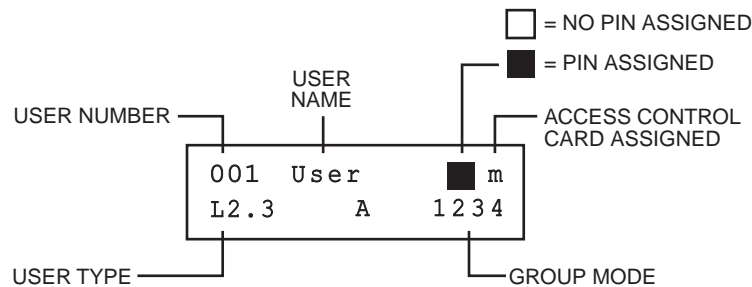
Each of the users can be displayed using the **A>** and **<B** keys, or a specific user can be selected by entering the required user number (e.g., 023, 069). When the required code is displayed, press the **ent** key to select the user codes modification options; **1=Modify PIN** is displayed. The available modification options can be viewed by pressing the **A>** or **<B** keys; press the **ent** key to select the required option. The options are detailed in the following paragraphs:

STANDARD USER ACCESS

1 = Modify PIN

The PIN identifies each user to the GX-Series panel and permits the user to operate the system. The **Modify PIN** option allows a PIN to be assigned to the user or an existing PIN to be modified. The PIN must be a four, five or six digit number that is unique to the system.

NOTE: PIN size is dependent upon programming of parameter **51.66=Min Pin Size**.

If a duplicate PIN is assigned, the message **DUPLICATE ENTRY** is displayed; the PIN is not assigned to the user. As each digit is entered it appears on the lower line of the display. Pressing the * key erases the last digit displayed; continued pressing of the * key will erase all of the digits. When the correct PIN has been assigned press the **ent** key to accept the programming. If a MAX/No. has been previously assigned the display will prompt: **delete max no. A = YES, B = NO** and return to the previous menu level. When a PIN has been assigned to a user number, a solid box (∎) is displayed on the top line of the user number details screen.

AUTHORIZED MANAGER ACCESS

Deleting a PIN

Existing PIN entries can be completely erased by using the * key instead of a digit entry. When there is no PIN assigned to a user number a hollow square ( ) is displayed on the top line of the user number details screen.

Assigning Dual Codes

To program a user code as a **Dual Code,** press the **#** key while the **Modify PIN** option is selected. The # displays at the start of the assigned user PIN (**#1314**). When a PIN has been assigned as a dual code two solid boxes (∎∎) are displayed on the top line of the user number details screen.

NOTE: The Master Manager code can not be assigned as dual.

Dual Codes Operation

Entry of a single dual code can not gain access to the menu, set (arm) or unset (disarm) the system. The message **NO ACCESS – ADDITIONAL CODE** is displayed. A second dual code must be entered within 60 seconds of the first dual code to access the menu, set (arm) or unset (disarm) the system. Dual codes can be different types, the highest type entered is granted access to the system — whether it is entered first or second.

A single entry of a dual code - without a second dual code entry within 60 seconds - is recorded in the event log as an **Illegal Code**; all outputs programmed as **Illegal Code** are activated.

Dual Focus

If a MAX (proximity card) number for the same user has a # assigned the dual function only works between the PIN and the proximity card of the same user.

2=Modify Level

Each user is assigned an access level which determines the menu options available to the user. The programmable levels are from 1.0 - 2.5.

3.6 is assigned to the manager.

3.7 is assigned to the engineer — this is fixed and cannot be assigned to user codes.

3.8 is assigned to the remote code. This is fixed and cannot be assigned to the engineer or user codes. The remote code can only be used via the remote servicing software.

On selecting this option, enter the level to be assigned to the user and press the **ent** key to accept the programming and return to the previous menu level.

Level		Access Availability
1.0†	Guard	Entered into event memory – no other option
2.1†	Cleaner	Can only set (arm) the system and change own PIN
2.2†	Caretaker	Can only set (arm) and unset (disarm) the system and change own PIN
2.3	Users	Menu options 11 - 19
2.4	Users	Menu options 11 - 25
2.5	Users	Menu options 11 - 32
3.6‡	Manager	Menu options 11 - 48
3.7‡	Engineer	Menu options 11 - 71
3.8‡	Remote	Menu options 11 - 71
† No access to menu functions ‡ The manager, engineer and remote codes (the last three codes on the system) have fixed types which cannot be reprogrammed. **NOTE:** All levels except guard can change their own PIN.		

Table 6-6. User Access Levels

Duress Code

If the **#** key is pressed while the **Modify Level** option is accessed, then the current user code is assigned as a Duress Code. Entry of a **Duress Code** at any time activates any output programmed as **Duress** (refer to option **53 = OUTPUTS**). There is no limit to the number of codes that can be assigned as **Duress Codes**. Entry of any valid user code followed by **##** is also a duress code.

Quick Menu

All of the user codes default to the quick menu. This menu is made up of a selection of ten options (0 – 9) from the full menu options 11 – 68. Access to the quick menu is controlled by the user type. Any user can be upgraded from the quick menu to the full menu by assigning a * to the user while the **Modify Type** option is accessed. Therefore a user with type * **2.5** would have access to the full menu from options 11 – 42. No code can access both menus.

The engineer can reprogram the options contained in the quick menu (refer to option **59 = QUICK MENU**).

NOTE: The master manager code defaults to the full menu.

The engineer can determine the menu option access type (refer to option **68 = MENU ACCESS**); this allows users to access menu options that their code types are not, by default, authorized to access.

3 = Modify Name

This option allows a name to be assigned to the user (maximum 6 characters). Each of the user codes default to the name **USER**. The engineer (**ENG**) and manager (**MGR**) are fixed and cannot be reprogrammed. On selecting the **Modify Name** option, a section of the alpha-numeric characters that can be assigned to the user name is displayed on the bottom line of the keypad; the cursor flashes on the letter **L**. Press the * key to erase the characters of the default or previous name. When the previous name has been erased, use the **A>** or **<B** keys to move the cursor to the first character of the name and press the **ent** key; the selected character appears on the top line. Continue this process until the name is completed.

The **#** key moves between upper and lower case characters and the system library. The alpha-numeric characters and library words can be selected by entering the character or word reference number (refer to **Appendix A — Library**) or by pressing the **A>** or **<B** keys.

When the user name is completed, press the **esc** key to accept the programming and return to the previous menu level.

4 = Schedule

This option allows the user's PIN code access to the panel menu options for setting (arming) and unsetting (disarming). The PIN code only operates during the OFF period of an assigned weekly schedule which is created in **option 65.1**. If a user attempts to use his PIN code during the **ON** periods of his assigned schedule, then an illegal code event is logged and any outputs programmed as illegal code are activated.

Setting this option to **00=None** means that PIN codes are always operational.

NOTE: This option **does not** control card access through doors at all. This is now controlled by templates and is allocated to a user in option **42.11=Template.**

5 = Temporary Codes

Temporary Codes allows a PIN to be temporarily allocated to a user. On selecting this option, enter the number of days (0 – 99) that the code is to remain active. The default setting of **0** indicates that the code is permanent. A temporary code expires and is removed from the codes list at midnight after the assigned number of days. A code that has been assigned as a **Temporary Code** is indicated on the user code display by a **^** between the user number and the user name, for example **001^USER**.

NOTE: The Manager, Engineer, or Remote codes cannot be assigned as **Temporary Codes**.

PIN Change

If a user is assigned the **PIN Change** feature in the **Temporary Code** option, the user must assign a new PIN after a predetermined period — refer to option **51.42 = PARAMETERS.PIN Change** — otherwise the user PIN expires and is no longer operational.

To program a user code to prompt for a PIN change, select the **Temporary Code** and press the ***** key instead of entering a number of days for a temporary code; press the **ent** key to accept the programming and return to the previous menu level. A code that has been assigned as a PIN Change code is indicated on the user code display with a ***** between the user number and the user name, for example **001*USER**. The Manager, Engineer, or Remote codes cannot be assigned as **PIN Change Codes**.

If the value entered in the **PIN Change** parameter is **0** then the code is assigned as a permanent PIN — a warning message is briefly displayed to indicate that a **PIN Change** will not be requested. However, if **PIN Change** is within the range 1 – 12, then the number entered is number of months after which the code must be changed, otherwise it expires.

NOTE: The PIN expires on the first day of the following month.

A notification (1 – 28 days) that the PIN needs to be changed can be assigned using the **PIN Warning** option (refer to option **42.2).** This prompts the user to assign a new code whenever the expiring code is entered during the PIN Warning period [except when the system is unsetting (disarming)]. The new PIN **must** be four to six digits and **must** be different from any current PIN including the user's existing one. The new PIN must be re-entered and, if confirmed, the user is returned to the banner. If the **esc** key is pressed or the new PIN entered is invalid, the user may continue to use the panel as normal; the next entry of the PIN will prompt for the PIN change.

NOTE: If the user has not assigned a new PIN by the end of the **PIN Warning** period, then the code is erased on the next unsetting (disarming) of the system.

6 = Modify Group

This option determines the system groups that the user has access to and operational control over. The **Modify Groups** option is only available when the group mode is enabled.

Multi-group Systems

The larger GX-Series panels have 32 groups; these are displayed on the keypad in blocks of eight groups, subdivided into A, B, C and D. Press the **A>** or **<B** key to display each of the group blocks.

Press keys 1 – 8 to assign the relevant groups in each block to the user.

Code has been enabled (refer to option **63.1 = OPTIONS.Groups**); the system defaults to groups disabled.

On selecting the **Modify Groups** option, the groups currently allocated to the user are displayed. All users default to group 1. Pressing the group number toggles the group assigned to the user; pressing **2** and **3** assign groups 2 and 3 to the user; pressing **1** (when group 1 is already assigned) removes group 1 from the user code. To assign group choice to the user, press the * key. When the required groups have been assigned to the user, press the **ent** key to accept the programming and return to the previous menu level.

Group Block	Physical Groups
A1-8	1-8
B1-8	9-16
C1-8	17-24
D1-8	25-32

Table 6-7. Groups

Group Options

Single Group A user can be assigned to any single group. In this case the type 2.2 and above user can only access, set (arm) and unset (disarm) the single group.

Multiple Groups Users can be allocated to more than one group in which case access and operation is collective; the user cannot choose to operate on a single or combination of the assigned groups.

Group Choice Users can be allocated more than one group but also have the choice of which of the allocated groups to view, set (arm) or unset (disarm). Pressing the * key while assigning groups to the user assigns the group choice feature.

NOTES: 1.   The Manager, Engineer and Remote codes have fixed access to all system groups; this cannot be reprogrammed.
2.   The Manager, Engineer and Remote codes are assigned group choice by default. The Manager can have the group choice feature removed; the Engineer and Remote codes have fixed group choice.
3.   Users authorized to access Option **42 = CODES**, can only assign the groups that have been assigned to their user code; A user who does not have access to group 4, cannot assign group 4 to another user code.

7 = Card Number

The Card Number contains one of the following:

- the serial number from an access control card
- the 10 digit number etched onto the proximity card
- the decrypted code of cards self learned into the system for use with the access control reader.

These numbers identify the proximity card to the system and references it to the user to which it has been assigned.

By default card number is empty. To enter the required number:
1.   Enter the unique 10 digit number laser etched onto the proximity card.
2.   Press the **ent** key to save the programming and return to the previous menu level.

NOTES: A card number can be assigned to a user code that does not have a PIN allocated to it. All other options assigned to this user are valid for the card button programmed.

For access control cards, when the serial number is not printed on the card, the card number can be learned using the **add batch** menu (**42.3.1**).

8 = MAX Function (Access Control Function)

The card button can be assigned a single menu option. The user must be authorized to access the menu option assigned to the MAX (proximity card) - either by the user level assigned or menu option **68 =**

Menu Access. The default option is **Not Used**. A new option is assigned by pressing the **A>** or **<B** key until the required option is displayed or by entering the option number directly and then pressing the **ent** to accept the selection.

9 = MAX (Access Control Function) Keypad

The menu option assigned to the MAX card (proximity card) can be limited to operate on a single keypad. On selecting this option the display shows *** ***, indicating that a keypad has not been specified. To specify a keypad, press the **#** key. The address of the first keypad on the system is displayed. Use the **A>** or **<B** key to select the required keypad and press the **ent** key to accept the selection.

NOTE: The address of the keypad that is currently being used is indicated by a black square flashing over the first digit of the keypad address.

Assigning Dual Functions to MAX (proximity card) Numbers

If a card has a # assigned to the number, then any card-held function will only work in conjunction with the PIN from the same user, provided that the PIN has a # assigned also. The Dual Focus function will work in either order, but if the card is presented first, it will simply enable the PIN to gain access to the normal menu (see option **42 = Codes** for programming).

If a user's card number is assigned a *, then the card becomes Dual access. This means that it will not open the door on its own; it needs another PIN or card as well (see option **42 = Codes** for programming).

10 = APB (Antipassback) Forgive

This function, if selected, clears all antipassback restrictions for the selected user.

11 = Template

Every user on the system must be allocated an access template. Multiple users can be assigned the same template. An access template is a list of **groups** and **time schedules** that will govern card access through doors. This method means that if there are multiple doors leading into one group or area, then a user will be given access to all those doors in one move. This reduces programming time and complexity. The templates are created in **option 45.7** which are in turn made up from the weekly schedules created in **option 65.1**.

42.2 = PIN Warning

This option determines the number of days notification before the **PIN Change** expiration date (refer to option **51.42 = PARAMETERS.PIN Change**) that the user is prompted to assign new code on entry of the expiring PIN. The default period is **28** days, with a programmable range of **1 – 28**. If the user does not assign a new code by the end of the **PIN Warning** period, then the code is erased on the next unsetting (disarming) of the system.

NOTE: The **PIN Warning** ends on the last day of the month, the PIN expires on the first day of the following month.

42.3 = Card Users

This option determines the proximity cards on the system for various users. There are seven options:

1 = Add Batch

This option starts enrollment and displays the user/card for each presentation. When batch enrolling (auto assigning of cards to users), the panel increments the user number, starting from **Batch Start.** It does this for every new card presented at the DCM assigned in Batch DCM.

2 = Test Batch

This option checks the card number stored at the panel for the current card presented at the **Batch DCM.** It can also be used to go directly to the user programming details that are assigned to the presented card.

3 = Delete Batch

This option removes MAX (proximity) card numbers from enrollment. A warning is given before deletion.

4 = Batch Start

This option determines the user number where enrollment starts.

5 = Batch End
This option determines the user number where enrollment ends.

6 = Batch DCM Rdr
This option determines the DCM reader used for enrollment. Pressing the * key returns the system to the default of any reader.

7 = Template User
This option chooses a user to be a template whose access authority and non-unique attributes are applied to other users on the system when using the **1 = Add Batch** function.

Option 43 - Dlight Saving [Quick Menu Option 9]

Daylight Savings time by default begins on the second Sunday in March and ends on the first Sunday in November. The default values can be viewed and modified here.

The operation of the **Daylight Savings Time** option is as.follows: At 02:00 hours on the **Start** date, the system clock advances to 03:00 hours. At 02:00 hours on the **End** date, the system clock goes back to 01:00 hours.

The **Start** and **End** dates can be reprogrammed by authorized user codes. Press the **A>** key to modify the **Start** date or the **<B** key to select the **End** date. The new date must be a valid four digit number in the month/day format (MM/DD).

Option 44 – Trace

This option provides a record of the most recent alarm activation. The **Trace** option records the details of the setting (arming) and unsetting (disarming) of the system immediately before and after the alarm activation and the first five events occurring during the alarm activation. This information is maintained in the trace until the next alarm activation. On entering the option pressing the **A>** and **<B** keys steps through each of the seven trace entries.

Pressing the **#** key while viewing the **Trace** option displays additional information about certain events – user events reveal the keypad, user level and current group; alarm events reveal the zone descriptor if programmed.

The currently displayed trace can be printed out by pressing the * key; pressing the **esc** key aborts the printout.

NOTE: A serial printer must be connected to the GX-Series panel via the on-board serial port, a printer interface module or an RS232 interface module.

Option 45 – Timer Control

45.1 = View

This option allows the weekly schedules programmed in **option 65.1** to be viewed:

1 = Weekly Schedule
Use the **A>** and **<B** keys to scroll through each of the programmed schedules and on/off times.

2 = Timer Outputs
This option allows the **Timer- A** and **Timer-B** outputs with on/off times, allocated in option **65.2**, to be viewed.

3 = Autoset
Use the **A>** and **<B** keys to scroll through the groups to select one (optional) and also to view the time schedule allocated per group.

4 = Lockout
Use the **A>** and **<B** keys to scroll through the groups to select one (optional) and also to view the time schedule allocated per group.

> **NOTE:** The programmed times cannot be modified using this option. All of the programmed timers - **Weekly Schedule**, **Timer Outputs**, **Autoset and Lockout** - can be printed out using option **57.11 = SYSTEM PRINT.Timers**.

45.2 = Holidays

This function allows up to 32 holiday periods to be allocated. A **Start** and **End** date is entered for each holiday period using the **1=Modify Dates** option, and the groups that are affected by the programmed holiday periods are assigned using the **2 = Assign Groups** function. The operation of all timers for the assigned groups is suspended during these dates; the last operation of the **Timers** before the start date remains in operation until the first operation after the **end** date. For example, a code which has been allocated the **Timer A period** in the **CODES** option (**42.1.4.1**) will be inoperative during the programmed holiday period if the **Timer A** is in the **On** time when the holidays starts.

1 = Modify Dates

On selecting this option, the first holiday period with **1=Name and 2=Modify Dates** options are displayed. Upon selection of **2=Modify Dates**, the **Start** and **End** dates for holiday period **1** are displayed; an arrow (**>**) points to the **Start** date. If no dates have been entered for this period, then the display shows * */* *. To program the **Start** date, press the **ent** key; the date display changes to **>DD/MM<**; enter a valid four digit number and press the **ent** key to accept the selection; the year is not required, only the day and months (dd/mm).

Press the **#** key to move to the **end** date and follow the procedure for programming the **Start** date. The **#** key toggles between the **Start** and **End** dates for each holiday; the arrow (**>**) indicates which date is currently selected.

To remove a programmed date, press the * key. The date display returns to * */* *.

Use the **A>** or **<B** key to move between the different holiday periods or enter the number of the holiday period (**1 – 10**) to be programmed.

The holiday periods can only be programmed by the master manager and engineer. Users can access this option, however, they can only view the programmed holiday dates.

2 = Assign Groups

This function determines which of the groups are affected by the programmed holiday periods.

On selecting the **Assign Groups** option, the groups currently assigned to the programmed holiday periods are indicated by a **Y** below the group; an **N** is displayed below the unassigned groups. All groups default to **Y**. Pressing the group number toggles the group status. When the required groups have been assigned to the holidays, press the **ent** key to accept the programming and return to the previous menu level.

Multi-group Systems

The larger GX-Series panels have 32 groups; these are displayed on the keypad in blocks of eight groups, subdivided into A, B, C and D. Press the **A>** or **<B** key to display each of the group blocks.

Press keys 1 – 8 to assign the relevant groups in each block to the user.

45.3 = Early Open

If the **Early Open** option (**45.3.2**) is enabled, the **Lockout OFF** time (refer to option **65 = TIMERS**) for the following day is brought forward by the number of minutes (0 – 240) programmed in parameter **44 = Early Open**. This allows the system to be manually unset (disarmed) earlier than normal.

1 = Early Times

If the **Timer** is set to off, the operation of the **Timer** is suspended; this option cannot be used to alter the programmed times. The timer defaults to **0 = Off**. To switch the timer on, select change the setting to **1=On**.

The Timer Status can also be altered through menu option **65.1** by the engineer only.

On selecting the option, the early opening status of the groups is displayed; early opening enabled is indicated by a **Y** below the group; an **N** is displayed below the groups that are not programmed to open early. All groups default to **N**.

NOTE: Only the engineer can enable early opening for individual groups, but global enable must be done first.

2 = Early Open

Type 3. 6 Users and Engineer when Groups are Disabled

If groups have not been enabled on the system, the programming of the **Early Open** option is identical for type 3.6 users and the engineer; the option permits early opening to be disabled or enabled:

0 = Disabled (default) — early opening not permitted;

1 = Enabled — early opening permitted.

Select the required status and press the **ent** key to accept the programming and return to the previous menu.

Engineer Mode with Groups Enabled

If groups have been enabled (option **63 = OPTIONS + early open permitted**), then the groups can be individually enabled to permit early opening.

45.4 = Timers

This option allows each of the programmed weekly timer schedules to be switched on and off as required. If a timer schedule is set to off, the operation of the **timer** is suspended; this option cannot be used to alter the programmed times. All timer schedules default to **0 = Off**. To switch the timer schedule on, select the required timer and change the setting to **1 =On**.

The Timer Status can also be altered through menu option 65.1 by the engineer only.

On selecting the option, the early opening status of the groups is displayed; early opening enabled is indicated by a **Y** below the group; an **N** is displayed below the groups that are not programmed to open early. All groups default to **N**.

NOTE: Only the engineer can enable early opening for individual groups, but global enable must be done first.

45.5 = Late Work

The **Late Work** option — if programmed as **1 = Enabled** — authorizes an **Autoset Extension** in advance of the prewarning period (refer to option **65.3 = TIMERS.Autoset**);

NOTE: Additional extensions can be authorized by entry of a valid code during the subsequent autoset prewarning periods.

45.6 = Weekend Work

The **Weekend Work** option allows a valid user code to authorize the system to unset (disarm) at the weekend. There are two options:

1 = Program Days

This option allows the weekend day option to be selected.

1 = Weekend Day

On selecting this option the programmed **Weekend Day** is displayed; the default is **0 = OFF**. Use the **A>** or **<B** keys to select the required day or days and press the **ent** key to accept the programming and return to the previous menu level:

0 = OFF
1 = SAT
2 = SUN
3 = BOTH (Saturday and Sunday)

The selected **Weekend Day** remains active for one occurrence only. The **Weekend Day** returns to the default of **OFF** immediately following the assigned day. The **Weekend Day** must be allocated each time the function is required.

If the **Weekend Day** is programmed other than **0 = OFF** (default), on the next occurrence of the programmed **Weekend Day**, the **Timers** adopt the times assigned in **Pattern day** from option **65.1.6**. For example, this allows a Sunday to use the Autoset and Lockout Timers from Monday to Friday.

NOTE: Parameter **51.41 = Weekend Work** must be enabled (default is **Disabled**) to allow the **Weekend Day** to be selected by the user.

2 = Pattern Day

Option not available. See Option 65.1.6

2 = Assign groups

This option assigns the groups that will be unset (disarmed) at the weekend.

NOTE: The GX-520 panels have 32 groups; these are displayed on the keypad in block of eight groups, sub-divided into A, B, C and D. Press the **A>** or **<B** key to display each of the group blocks.

45.7 = Access Template

An access template defines when and where a user is allowed access. For each access template, a schedule is given to each group (area) to define when access to each group is possible. Up to 100 templates are available per system. There are two options for each template:

1 = Name

A name of up to 12 characters can be allocated to each template.

2 = Schedules

The schedules programmed in Menu option 65, Timers, are allocated to each group with the selected access template under this option. Group mode has to be enabled in menu option 63.1 to allocate a weekly schedule to a group.

Option 46 – Group omit (Area bypass)

This option allows a 3.6 type code to block omit all the omittable zones that are open at the end of the confirm time in a group or multiple groups. All zones in the required groups that have the omit attribute enabled (refer to option **52.4 = PROGRAM ZONES.Omit**) are omitted (bypassed) when this option is selected. Groups can be omitted and reinstated without setting (arming) and unsetting (disarming) the system.

On selecting the **Group omit (Area bypass)** Option the groups assigned to the user code and keypad are displayed as well as the omit status of each group (**Y** below the group indicates that it is omitted, **N** indicates that it is not omitted). To omit a group, press the required key. The letter beneath the group number changes from **N** to **Y**. To reinstate the group, press the key to toggle from **Y** to **N**.

NOTE: 1. The type 3.6 user must have group choice to enter Group omit (Area bypass).
2. The zones in the selected groups are omitted from the system as soon as the group is selected.

On returning to the banner (normal or engineer) the keypad displays the message **ZONES OMITTED**. Omitted zones remain omitted for one set (armed) period only or until they are manually reinstated to the system.

Outputs programmed as **Zone Omit** (mode programmed as reflex (follow) are activated as soon as the zone is omitted and remains active until the zone is reinstated. If the output mode is programmed as latch, then the **Zone Omit** outputs activate when the system is set (armed) and remain active until the system is unset (disarmed) — reinstating the omitted zones.

Option 47 – Remote Access

This menu option permits control of all site initiated remote connectors. The menu structure for this option is shown below.

```
47 = Remote Access

    1= Service ──────── 0 = Int Telecoms ──── 0 = Direct Access
                                               1 = Call back-1 to 5 = Call back-5

                        1 = Not Used

                        2 = Ethernet ──────── 0 = Direct Access
                                               1 = Call back-1 to 5 = Call back-5

                        3 = Not Used

    2 = Send Alarms (Option not Available)

    3 = Call Galaxy (Option not Available)

    4 = Auto service ── 1 = Mode ──────── 0 = Off
                                          1 = Timed
                                          2 = Instant
                                          3 = Confirm

                        2 = Timers ─────── 1 = Start Time
                                           2 = End Time
                                           3 = Sync Schedule 000 (0-365) days
                                           4 = Schedule Reset ──────── 0 = Off
                                                                       1 = Auto Reset
                                                                       2 = Manual Reset

                        3 = Terminate Idle ── Idle Time 10 (0-60 mins)

                        4 = Conn Retry ──── 1 = Retry Interval 30 (0-60) mins
                                            2 = Retry Duration 06 (0-24) hours
                                            3 = Redial Mode ──────── 0 = Off
                                                                     1 = Retry
                                                                     2 = Direct

                        5 = Control Upload ── 1 = Eng Prog
                                              2 = User Prog
                                              3 = Either

                        6 = Remote Maint ── 1 = Schedule 000 (0-365) days
                                            2 = Advice ──────── 1 = Code Only ──── 0 = Disabled
                                                                                   1 = Enabled

                                                                2 = Code + Notice ── 0 = Disabled
                                                                                     1 = Enabled

                                                                3 = No Code/Notice ── 0 = Disabled
                                                                                      1 = Enabled

                        7 = Service Pin

                        8 = Send Panel ID ── 0 = Disabled
                                             1 = Enabled

                        9 = Delay Time 03 (3-10) secs
```

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Figure 6-3. Remote Access Structure

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47.1 Service

This option enables type 3.6 users to control the access mode of the remote servicing package. There are several options available for increased flexibility and security.

0 = INT Telecoms

This option selects the on-board telecoms as the communication device.

0 = Direct Access

On selecting this option, a 40 minute access period is enabled on the GX-Series panel; remote servicing software can directly access the system during this period. Once access to the panel has been gained, it can be maintained indefinitely; there is no maximum duration. On terminating the remote servicing connection to the panel, the access period remains valid for an additional 15 minutes.

1 – 5 = Call Back 1 – 5

A maximum of five numbers can be preprogrammed by the engineer (refer to option **56.1.12 = COMMUNICATIONS.Telecom.Remote Access**). On selecting one of the numbers (1 – 5) followed by the **ent** key, the GX-Series panel dials out to the preprogrammed telephone number associated with the **Call Back** number.

If the number selected does not have a preprogrammed telephone number, the system prompts for a number **1** to be entered. Enter the required telephone number and press the **ent** key; the panel then dials out to the telephone number entered.

NOTE: The PC that the panel is dialing to **must** have remote servicing software running in the **Waiting for Call-Back** mode.

1 = NOT USED

2 = Ethernet

0 = Direct Access

See INT Telecoms description.

1 – 5 = Call Back 1 – 5

See INT Telecoms description (except menu option 56.4.03 replaces 56.1.12).

3 = NOT USED

47.2 Send Alarms

Option not available

47.3 Call GX-Series

Option not available

47.4 Auto Service

The GX-Series panels can be programmed to automatically initiate communications to remote servicing software, under three circumstances:

- If any site programming has changed the panel will automatically send the new programming to the downloader.
- On a predetermined schedule the panel can activate an automatic periodic upload.
- On a predetermined schedule the panel can activate an automatic remote routine inspection.

NOTE: The Auto Service function works for both the Internal Telecoms and Ethernet module.

The following sub options allow the engineer to select the mode of the automatic communication in each of the three situations. These options are not available to users.

1 = Mode

This selects the mode of the automated connection following a change to the panel programming. There are four modes:

0 = Off

In this mode the panel will not automatically initiate a remote servicing call even if the panel programming has changed. This is the default setting.

1 = Timed

In this mode, following modification to panel programming, a remote servicing call will be initiated automatically between a programmed **start time** (option 47.4.2.1) and **end time** (option 47.4.2.2). To avoid traffic congestion the panel selects a random time between the start and end times to initiate the call. Once the connection is made, the new panel programming will be uploaded to the remote servicing package.

2 = Instant

In this mode, following modification to panel programming, the connection to the remote servicing package is initiated immediately, using call back number 1, on exiting engineering mode. Once the connection is made, the new programming will be uploaded to the remote servicing package.

3 = Confirm

In this mode, when engineering mode is exited following a change to the panel programming, a message is displayed at the keypad to asking whether a remote connection should be initiated. This must be authorized by an appropriate user type before the call is made.

Once authorized, a two minute delay period is initiated. During this period, the engineer can initiate or cancel the call.

If connection is initiated the panel uploads the new panel programming to the remote servicing package.

2 = Timers

This option selects the mode for automatic schedule to start a periodic upload. There are four further options:

1 = Start Time

This is the start time of the off-peak window during which the panel can initiate an automated remote servicing call. The default is 01:00.

2 = End time

This is the end time of the off-peak window of the automated remote servicing call. The default is 06:00.

3 = Sync Schedule

If this option is programmed, after a period equal to the number of days entered (0-365), the panel will automatically carry out an automatic connection to the remote servicing application and upload the latest panel programming during the off-peak window time programmed in menu **47.4.2.1=Start Time** and **47.4.2.2=End Time**. The default number of days is 0 which disables the option.

4 = Schedule Reset

The schedule reset option controls the way in which the **Sync Schedule** operates. There are three further options:

0 = Off

The panel will never initiate a remote servicing connection. This is the default setting.

1 = Auto Reset

This option resets the **Sync Schedule** timer after an automated connection.

2 = Manual Reset

This option resets the **Sync Schedule** timer after a copy of site data whether done automatically or manually.

3 = Terminate Idle

This option allows a timeout period to be programmed into the panel which terminates a remote connection after the programmed period of activity. This is programmable within the range 0-60 minutes. After termination the panel records in the event log the message REM ABORT to indicate that the connection was unexpectedly terminated. The default timeout period is 10 minutes.

4 = Conn. Retry
If the attempt to initiate a remote servicing call fails, the panel can be programmed to do repeat dial attempts. There are three further options:

1 = Retry Interval
The dial attempts can be programmed to occur from 0-60 minutes. Setting the value to 0 disables the feature. The default setting is 30 minutes.

2 = Retry Duration
The length of time that the panel tries to do a remote servicing call can be programmed from 0-24 hours. Setting the value to 0 disables the feature. The default setting is 6 hours.

3 = Redial Mode
In the event of a remote servicing session terminating unexpectedly, the panel enters one of the three programmable modes that follow.

0 = Off
The panel does not try to re-establish a connection.

1 = Retry
The panel initiates a remote servicing call to re-establish a connection. The retries will be as per option 47.4.4.1 (Retry Interval) and 47.4.4.2 (Retry Duration).

2 = Direct
The panel access mode changes to allow direct access for 30 minutes. This mode operates as per option **47.1=Service** when **Direct Access** is selected.

5 = Control Upload
This option controls whether a connection is established when only engineer or user programming data is uploaded. This feature has three options.

1 = Eng Prog
Only initiates a connection when engineering programming has been modified.

2 = User Prog
Only initiates a connection when user programming has been modified.

3 = Either
Initiates a connection when either engineering or user programming has been modified.

6 = Remote Maint
This option controls the mode for automatically initiating communications for remote routine inspection and panel programming is uploaded. There are two sub-options that control this:

1 = Schedule
This option controls the schedule for the initiation of communication for remote routine inspection. The schedule can be set from 0-365 days. The default is 0 days which disables the function.

2 = Advice
This option controls the method by which communication is initiated. It can be initiated automatically by the schedule programmed above or manually by user entry of the Service PIN code, with or without a notification message. There are three options. The default value for each is disabled.

1 = Code Only
Entry of a Service PIN code automatically initiates a remote servicing connection to call back number 1.
The Service PIN code can only be modified by remote users. When the Service PIN code is entered, it resets any scheduled connection timers.

2 = Code + Notice
This enables the remote servicing notification timer, and display of remote servicing notification. The remote service notification message is not displayed if the system is set (armed). It only becomes active when the panel is unset (disarmed). The message **REMOTE CALL INIT, A=SP PIN ENTER** is displayed on the keypad after entry of a valid manager type user code.

3 = No Code/Notice

This enables a remote servicing session without the need for a Service PIN code and the panel's remote servicing notification message. This option uses the start and end times programmed in menu 47.4.2.1 and 47.4.2.2 respectively.

7 = Service Pin

This is a 6-digit numeric Service PIN code (default 987654), which initiates an automated call to the Remote Servicing application. The Service PIN code can only be changed from Remote Servicing and sending the Service PIN code to the panel via the **Send Remote Access Start Code**. The Service PIN code cannot be the same as any other user codes on the system.

This option is only available when option 47.4.6.1 (schedule) is greater than 0 and when option 47.4.6.2.1 (code only) is enabled.

8 = Send Panel ID

When a remote servicing connection is established, this option allows panel identification and authentication. When enabled, the following sequence of events occurs. Once a remote servicing connection is established, whether panel or PC initiated, the panel delays for a period as determined by **Delay Time** for incoming information from the remote servicing package.

If a valid control character is received by the panel within the delay period, the panel transmits an identity string. If no character is received during the delay period the call is terminated.

9 = Delay Time

This is the time that the panel delays for incoming information from the remote servicing package. The delay time can be set from 3-10 seconds. The default is 3 seconds.

Option 48 – Engineer (Installer) access

This option allows access to be authorized for engineers for system programming and for managers in order to add/delete/change all user codes.

48.1 = System Access

This option allows system programming of the GX-Series panel and is sub-divided into **1 = Engineer** and **2 = Manager**.

48.1.1 = Engineer

The engineer code is programmed as dual by default. This prevents the engineer from accessing engineer mode unless authorized to do so by a valid code. To gain access to the engineer menu a type 3.6 user must enter their code, and enable the **Engineer Access** option. This provides a five minute period during which a single entry of the engineer code provides access to engineering mode without causing a tamper alarm. Once the engineer mode has been accessed, there is no time limit on the access period.

If the **Engineer Mode** option has not been enabled, or the code is not entered within the five minute period, then the Engineer code is invalid and has no effect.

If the PIN is programmed without the **#**, the **Engineer Access** option does not require to be enabled to allow the engineer to gain access to engineer mode. The engineer code requires to be entered twice. The first entry activates a tamper alarm which is cancelled by the second entry.

NOTE: Dual entry of the engineer code in a system requiring user authorization does not give access to engineer mode.

When a manager gives authorization, from menu 48.1, for engineer access, the access is limited to one visit only. When the engineer returns the system to user mode, the authorization is still valid for five minutes. After this time it must be granted again by the manager.

48.1.2 = Manager

This option allows type 3.6 manager codes to be enabled for user code adding/deleting/changing. This option can only be enabled by the authorization code. However, this option is not used by default. Manager codes are always authorized. It can be enabled, if required, to comply with standards in certain regions. An authorization code must be assigned in Menu 42 Codes, before the function is enabled.

48.2 = SIA Access

This option allows access to the SIA alarm signaling format and has two levels of access.

48.2.0 = Full Access

This option allows a SIA level 4 user to send commands to the GX-Series control panel. The user can reset/disarm the panel after an alarm signal.

48.2.1 = Limited access

This option only allows up to SIA level 3 access but excludes resetting of the panel after an alarm signal.

Engineer 1
Option 51 – Parameters

This option allows the engineer to modify the system functions. Options can be selected using the **A>** or **<B** keys or by entering the two digit parameter number and pressing the **ent** key. The selected options can then be programmed by using the **A>** key to increase or the **<B** key to decrease the values assigned to the parameter; pressing the **ent** key accepts the new value and returns to the previous menu level. Any parameters that differ from this procedure are indicated in the following paragraphs. The parameters also prompt the engineer on which keys to press.

For example, press:

- **1** then **6** parameter **16 = Soak Time** selected;
- **ent** currently soak time is displayed along with the programmable range **07 (1–14) days**;
- **08** value of the required soak time, the display shows the new value **08 (1–14) days**;
- **ent** accept the programming and return to **16 = Soak Time** displayed.

NOTE: Default settings must be changed before programming in Menu Option 55 – Soak.

Assigning Parameters to Groups

Several of the parameters allow separate values to be assigned to the groups on the system. If groups have been enabled, the relevant parameters prompt for a group to be selected; when selected, the value is assigned to the group parameter using the procedure outlined in the previous example.

The parameters that permit group selection are indicated in the following paragraphs.

	Parameter	Groups	GX-Series		Parameter	Groups	GX-Series
01	Bell Time	✓	✓	39	ATM Timeout	not available	✓
02	Bell Delay	✓	✓	40	Not Used	not available	not available
03	Abort Time	✓	✓	41	Weekend Work	not available	✓
04	Exit Time	✓	✓	42	PIN Change	not available	✓
05	Entry Time	✓	✓	43	Not Used	not available	not available
06	System Reset	✓	✓	44	Early Open	not available	✓
07	Tamper Reset	✓	✓	45	High Security	not available	✓
08	No. Re-arms	✓	✓	46	Res. Select	not available	✓
09	Omit All	✓	✓	47	Set Confirm	not available	✓
10	Key '0'	not available	✓	48	Alarm Limits	not available	✓
11	Local Part	✓	✓	49	Confirm Time	not available	✓
12	Banner	not available	✓	50	Not Used	not available	not available
13	PA Delay	✓	✓	51	Not Used	not available	not available
14	KEY/SW Level	not available	✓	52	Not Used	not available	not available
15	System Text	not available	✓	53	Not Used	not available	not available
16	Soak Time	not available	✓	54	Keypad Access	not available	✓
17	Restart	not available	✓	55	Confirm	not available	✓
18	Stop Set	not available	✓	56	Force Restore	not available	✓
19	Part Alarm	✓	✓	57	Bell Extend	not available	✓
20	Power Delay	✓	✓	58	Power Alarm	not available	✓
21	Reset Mgr.	not available	✓	59	Part Tone	not available	✓
22	PA reset	✓	✓	60	Not Used	not available	not available
23	Print Codes	not available	✓	61	Activity Mon	not available	✓
24	Exit Alarm	✓	✓	62	Lockout	not available	✓
25	Global Copy	not available	✓	63	Banner alerts	not available	✓
26	Forced	not available	✓	64	Set Override	not available	✓
27	cct Debounce	not available	✓	65	Reset Levels	not available	✓
28	Online print	not available	✓	66	Min Pin Size	not available	✓
29	Online level	not available	✓	67	Level Format	not available	✓
30	Video	✓	✓	68	Line Fail	not available	✓
31	Delay Alarm	✓	✓	69	Alert Inds	not available	✓
32	Show Alarms	not available	✓	70	SWDC Set Dly	not available	✓
33	Secure Code	not available	✓	71	MF BL Enable	not available	✓
34	Comfort Time	not available	✓	72	Max Alm Cause	not available	✓
35	Fail To Set	✓	✓	73	Guard Unset	not available	✓
36	Battery Size	not available	✓	74	Back-up Link	not available	✓
37	Standby Time	not available	✓	75	Back-up Timer	not available	✓
38	ATM Delay	not available	✓				

Table 6-8. System Parameters

01 = Bell Time
The duration of the **Bells** output activation is programmable within the range **0–30** minutes; the default is **15**. Assigning a value of **00** minutes sets the **Bell Time** to infinity.

This parameter can be assigned a different value for each group.

The Entry/Exit Horn is subject to the Bell Time parameter in both the set (armed) and unset (disarmed) conditions.

02 = Bell Delay {Not for UL installations}
The delayed activation of the bell is programmable within the range **0–20** minutes; the default is **0**. The **Bell Delay** is overridden by a communications failure (either a **Comms Fail** on the Communication Module or by the activation of a **Line Fail** zone used to monitor an external dialer or communicator); an alarm condition in either of these conditions results in instant bells activation.

This parameter can be assigned a different value for each group.

03 = Abort Time
The abort function delays the activation of a full intruder alarm condition following an entry alarm. This parameter has 2 sub-options:

> **1 = Abort Time**
> The abort time is programmable within the range **0-300** seconds and can be assigned a different value for each group. The abort time will be initiated:

- whenever a zone that is not on the entry route (**Final, Entry** and **Exit** zones) is activated — a user strays from the entry route;
- a valid code is not entered before the entry time expires.

The abort operation can be modified by adding a ***** or **#** to the programmed time. The **standard** abort operation is as follows:

- For entry route deviation, the signaling of an intruder alarm is delayed.
- If a valid code is entered before the entry time expires:
  (1) The intruder is not signaled.
  (2) The system does not require a system reset.
- If a valid code is not entered before the entry time expires or an entry timeout condition occurs:
  (1) The intruder is signaled at the end of the entry time.
  (2) The Abort timer starts on expiration of the entry time.
- If a valid code is entered within the programmed abort time:
  (1) If an abort output/channel is allocated to the alarmed group:
      a) The Abort signal is sent.
      b) The intruder condition is not restored.
      c) Intruder restore is not signaled.
  (2) If there is no abort output allocated to the alarmed group:
      a) The intruder condition is restored.
      b) Intruder restore is signaled.
- If the programmed abort time is allowed to expire without a valid code being entered, then the system requires a system reset. The panel cannot be set (armed) until this occurs.

NOTE: If reduced resets (51.55.3) is enabled, the alarm will be reset by the user code, if the alarm is unconfirmed.

Modified Abort Operation
Pound # abort alters the standard operation so that the signaling of the intruder condition is delayed until the end of the abort time. If the system is unset (disarmed) during the entry time or abort time, no alarm conditions will be signaled.

Star * abort alters the standard operation so that if a user strays from the entry route within the entry time, the intruder is signaled as soon as the entry deviation occurs.

2=Bell Delay
This option is either enabled or disabled. When enabled, it will hold off the start of any bell delay time programmed in parameter **03**, until the end of the abort time programmed above.

04 = Exit Time
This parameter determines the time allowed to leave the premises via the exit route before the system sets (arms). The **Exit Time** is programmable within the range **0–300** seconds; the default is **120** seconds.

Infinite Exit Time
Assigning a value of 000 seconds sets the **Exit Time** to infinity; an Exit terminator activation (**Final** or **Push-set** zone) is required to complete the setting (arming) of the system. The infinite **Exit Time** is normally used with a **Push-set** zone to terminate the setting (arming) and an **Entry** zone to start the unsetting (disarming) procedure.

NOTE: If the system is programmed to **Autoset** and the **Exit Time** is programmed to **000,** the **Exit Time** will be set to 60 seconds for the **Autoset** — there is no requirement for a **Push-Set** zone to be activated.

Setting (Arming) Multiple Groups
This parameter can be assigned a different value for each group. If more than one is group is being set (armed), the longest exit time is adopted for all setting (arming) groups.

05 = Entry Time
This parameter determines the entry time allowed to users when unsetting (disarming) the system. The **Entry Time** is programmable within the range **0–300** seconds; the default is **45**. Assigning a value of 000 seconds sets the **Entry Time** to infinity.

This parameter can be assigned a different value for each group.

NOTE: A **Final** zone assigned a * when programming the function will double the programmed **Entry Time** for the group to which it is allocated.

06 = System Reset
This option allows the engineer or the remote code to determine the type that can reset the system following an intruder alarm. The default type is **3.6** — manager; the programmable range is:

- **2.3–2.5** for the user
- **3.6** for the manager
- **3.7** for the engineer

This parameter can be assigned a different value for each group.

NOTE: This option is affected by reduced resets, menu option (51.55.3).

The panel only requests Engineer Level Reset if alarms have been signaled, via the Communication Module and appropriate type reset is set to 3.7. If no signal is transmitted, the reset will automatically reduce to type 3.6. This feature is only active when the DTMF signaling format is selected.

NOTE: This option can also be programmed from parameter 65 = Reset Levels.

07 = Tamper Reset
This option allows the engineer or the remote code to determine the code type that can reset the system following a tamper. The default type is **3.7** — engineer; the programmable range is:

- **2.3–2.5** for the user
- **3.6** for the manager
- **3.7** for the engineer

This parameter can be assigned a different value for each group.

NOTE: This option is affected by reduced resets, menu option (51.55.3).

08 = No. Re-Arms

The **Number of Re-arms** parameter determines the number of times that an armed system can re-arm the bells following an alarm activation. The default setting is **9** (infinite) with a programmable range of **0 – 9**, where **9** is infinite re-arm. If the option is enabled, then the system re-arms at the end of the programmed confirm time - only if all zones are closed or are open and can be omitted, or if the Omit all force is enabled.

The intruder output remains active until a system re-arm occurs.

Zones that are open at the end of the bell time must be omittable (**Omit** attribute enabled); the re-arm will omit these zones. The complete zone circuit, including the tamper facility, is omitted. Refer to menu option **52 = PROGRAM ZONES** for details on enabling the zone omit attribute.

NOTE: If an open zone is not omittable, then the system will not re-arm, unless parameter **09 = Omit All** is set to 2.

09 = Omit All

This option determines if activated zones can be omitted at re-arm as described above.

    0 = Disabled

    1 = Omit All When set to 1 (enabled), omits any omittable zones that are open at re-arm. The complete zone circuit including tamper is omitted.

    2 = Force. Same as **Omit All** but omits zones whether omittable or not.

    Refer to menu option **52 = PROGRAM ZONES** for details on enabling the zone omit attribute.

10 = Key "0"

Key **0** on the keypad can be assigned to operate as a **Push-set** zone function; this will terminate the timed setting (arming) procedure. When the option is set to **1** (enabled), pressing key **0** during the exit time completes the setting (arming) of the system. The default is **0** (disabled).

NOTE: Key **0** must be pressed only on the keypad used to start the setting (arming) procedure.

11 = Local Part

When the **Local Part** parameter is set to **0** (disabled - default setting) the **Intruder** outputs are disabled when the system is part set (part armed); the programmed bell delay is overridden. This is normally used to prevent the communicator from dialing the Alarm Receiving Center (ARC).

If the **Local Part** parameter is set to **1** (enabled) the **Intruder** outputs activate if an alarm condition occurs when the system is part set (part armed).

Option **2** (**SIA part off**) is identical to option **1** with the exception that when the alarm format of the telecom module is set to **SIA** then the part setting (arming) and unsetting (disarming) of the system is not signaled to the ARC.

This parameter can be assigned a different value for each group.

12 = Banner

This option can be used to customize both the top and bottom lines of the banner display. Press **1** to select the **TOP LINE** or **2** to select the **BOTTOM LINE**; the display is written using the alpha-numeric assembly method:

- ***** erases characters;
- **#** selects upper case, lower case or library;
- **A> <B** selects alphabet character/words;
- **000–500** selects alphabet character or words;
- **ent** positions selected characters/words;
- **esc** accepts the programming and returns to the previous level; exits from the option.

The banner is displayed when the system is in the normal mode [set/unset (armed/disarmed)].

13 = PA (Personal Attack) Delay

This parameter determines the delay between the activation of a **PA Delay** or **PA Delay Silent** zone and the alarm sounding and signaling a PA via the communicator. The **PA Delay** is programmable within the range **1–60** seconds; the default is **60**.

This parameter can be assigned a different value for each group.

14 = Key/SW Level
This parameter assigns a code type to zones programmed as **Keyswitch**. The **Keyswitch** zone can be used to reset and disarm the system, tamper and PA alarms - depending on the reset type assigned to each of these parameters. The default type is **3.6** - manager; the programmable range is:

- **3.7** for the engineer
- **3.8** for the remote code

15 = System Text
This parameter allows two text strings to be assigned to the system: press **1** to select the **System ID** or **2** to select the **Panel Location**.
1. System ID — 16 character identification of system. This is used when connecting Remote Servicing software.
2. Panel Location — 16 character message of where control is installed.

The text is written using the alpha-numeric assembly method:

- ***** erases characters;
- **#** selects upper case, lower case or library;
- **A> <B** selects alphabet character/words;
- **000–538** selects alphabet character or words;
- **ent** positions selected characters/words;
- **esc** accepts the programming and returns to the previous level; exits from the option.

16 = Soak Time
This parameter determines the number of days that zones can be soak tested for; the programmable range is **1 – 14** days; the default is **7**.

NOTE: Default settings must be changed before programming in Menu Option 55 – Soak.

17 = Restart
This parameter has three options:

1 = Restart
This option re-configures the system without the need to remove and reconnect the power. The system displays a **WARNING!!! ent=RESET SYSTEM**, press the **ent** key to reconfigure the system. The keypad display becomes blank for a few seconds, then displays the message **Configuring Please Wait**. When configuration is complete the banner returns to the normal display (day mode). The **Restart** option configures any modules that have been added to the system but gives an alarm if there are any tampers open or if any modules are reported as missing.

NOTES: 1. This parameter exits engineer mode. It is, however, recommended that the exit engineer mode sequence is used when adding or removing modules from the system.
2. Outputs are momentarily reset during the restart. If the system has a communications requirement, put it on test before using the restart.

2 = Defaults
This option not available.

3 = Language
This option chooses the language shown on the keypad display. These are: 1 = English (US), 2 = Espanol (US), 3 = Portuguese (US), 4 = Francais (US). Pressing **ent** changes the display immediately.

18 = Stop Set
This parameter, when set to **1** (enabled), prevents the system from set override if there is a communication or power fail condition at the time of starting the setting (arming) procedure. If the condition is the result of an open **Line Fail** or **AC Fail** zone, then the system can not be set (armed) until the zone is closed or omitted (bypassed). The **Stop Set** parameter is set to **0** (disabled) by default.

NOTE: Battery Low will also prevent the system from setting (arming).

19 = Part Alarm

When the **Part Alarm** parameter is set to **1** (enabled — default setting) the **Bells** and **Strobe** outputs activate if an alarm condition occurs when the system is part set (part armed).

When the **Part Alarm** parameter is set to **0** (disabled) the **Bells** and **Strobe** outputs are disabled when the system is part set.

NOTE: The **Horn, Entry/Exit** and **Intruder** outputs are not affected by this parameter.

This parameter can be assigned a different value for each group.

20 = Power Delay

This parameter determines the delay between the activation of **AC Fail** outputs following a mains failure to allow the power to return before signaling the fault. The **Power Delay** is programmable within the range **0–600** minutes; the default is **10**. (A value of **10** is required for UL installations.)

This parameter can be assigned a different value for each group.

21 = Reset MGR

This parameter should only be used if the Master Manager code is lost or must be replaced. On selecting the **Reset MGR** parameter, a warning message is displayed: **WARNING!!! ENT=Code Change**; press the **ent** key to erase current code and reset it to the default of **12345**.

22 = PA Reset

This option allows the engineer or the remote code to determine the code type that can reset/disarm the system following a PA activation. The default type is **3.6** — manager; the programmable range is:

- **2.3–2.5** for the user
- **3.6** for the manager
- **3.7** for the engineer

This parameter can be assigned a different value for each group.

The panel only requests Engineer Level Reset if alarms have been signaled, via the Communication Module and appropriate type reset is set to 3.7. If no signal is transmitted, the reset will automatically be reduced to type 3.6. This feature is only active when the DTMF signaling format is selected.

23 = Print Codes

The **Print Codes** option, when set to **1** (enabled), allows the manager to print a list of the PINS for each of the users. The option defaults to **0** (disabled).

24 = Exit Alarm

If the **Exit Alarm** parameter is set to **1** (enabled), any zone other than **Final**, **Exit**, **Entry** or **Push-Set** (or **Secure Final** or **Part Final** when acting as a **Final**) that is opened during the exit time causes a full alarm condition to be activated. The default is **0** (disabled).

NOTE: This option must be used only when specified.

This parameter can be assigned a different value for each group.

If the **Exit Alarm** parameter is enabled, any zone that is open when the Autoset begins (at the end of the pre-warning period) causes an immediate full alarm condition to be activated.

If the **Exit Alarm** parameter is disabled, any zone open when the Autoset begins (at the end of the pre-warning period) results in an "urgent" bleeping from the **Entry/Exit Horns**. If the open zones are not closed by the end the time assigned in parameter **35 = Fail To Set**, a full alarm is activated along with any outputs programmed as **Fail-Set**.

25 = Global Copy

The **Global Copy** parameter changes all zones within the selected range to the function and parameters of the first zone in the range. On selection of the parameter, a warning message is displayed indicating that the zone functions will be altered — **WARNING!!! ENT=ZONE CHANGES**: press the **ent** key to continue or

the **esc** key to abort the programming. The address and function of the first zone on the system are displayed:

- **Copy Start:** Use the **A>** or **<B** key to select the first zone in the range to be copied and press the **ent** key. The function of this zone will be copied to all subsequent zones in the range;
- **Copy End:** Use the **A>** key to move to the last zone in the range to be copied.

Press the **ent** key to copy the zone function to the selected range.

26 = Forced
The **Forced** parameter enables or disables Menu option **14 = FORCED SET (Forced Bypass)**. If the parameter is set to **1** (enabled) the user can force the system to set (arm), automatically omitting (bypassing) any omittable zones that are open at the time of setting (arming). If the parameter is set to **0** (disabled), option **14 = FORCED SET (Forced Bypass)** is not available to the user; the message **Option not available** is displayed. The parameter defaults to **0** (disabled).

NOTE: It is recommended that **Final**, **Entry** and **Push-Set** zones have the omit (bypass) attribute disabled.

27 = CCT Debounce
The **cct Debounce** parameter determines the response time of the zones (how long they must remain open before registering as changing state). The **cct Debounce** is programmable within the range **20–1000** milliseconds (**0.02–1** second); the default is 300 msecs. All entries are rounded up to the nearest 20 msecs.

NOTE: The value programmed in this option is the value allocated to the SYSTEM selection when programming zone response time in option 52.

28 = Online Print
This parameter is used to select the print mode required when connecting a serial printer to the GX-Series panel; there are two options:

0 = disabled (default): system only prints specific details at the user's request. The printer can be connected and disconnected at any time as required;

1 = enabled: this option switches the printer to **on-line** mode and requires that a printer be continuously connected to the system. Events are printed as and when they occur. The events printed are controlled by parameter **29 = Online Level**.

NOTE: If **Online Print** is enabled, the event log and other options will not be printed at the user's request. The parameter must be disabled to permit all other print options to operate.

29 = Online Level
The **On-line Level** parameter determines the level of events that are printed when parameter **28 = Online Print** is enabled:

0 (default) - basic print [setting (arming), unsetting (disarming), alarms]
1 - full print excluding access events [setting (arming), unsetting (disarming), alarms, modifications, technical details].
2 - full print including access events [all logged events].
3 - MAX (access control) events only [only card events].
4 - Basic Print plus access events [option 0 + access events].

30 = Video
This parameter determines the number of activations that must occur on any of the zones programmed as **Video**, in a single set (armed) period, before a full alarm occurs; there is no time limit on the period between activations. The **Video** parameter is programmable within the range **1–9** activations; the default is **2**. The video output occurs on every activation but a full alarm does not occur until the programmed number of activations is reached. The **Video** zones activation counter is reset when the system is unset (disarmed).

NOTE: The activations of the **Video** zones are cumulative - the counter is incremented each time any **Video** zone in the group is activated.

This parameter can be assigned a different value for each group.

31 = Delay Alarm
This parameter determines the delay between the activation of an **Intruder Delay** zone and the alarm sounding or a **Log Delay** zone being recorded as opening in the event log. The **Delay Alarm** is programmable within the range **0–3000** seconds; the default is **60**.

If a second **Intruder Delay** zone opens followed by the first zone closing, the **Delay Alarm** time continues to count from the activation of the first zone. The **Delay Alarm** timer is reset only when all delay type zones return to the closed state.

This parameter can be assigned a different value for each group.

32 = Show Alarms
If the **Show Alarms** parameter is enabled, the first alarm activation is immediately displayed on all the keypads when an alarm condition occurs. Normally alarm messages are not displayed until the alarm is cancelled by entry of a valid code. Parameter **51.63**, **Banner Alerts** must be enabled to view alarms on the keypad banner.

    0 = disabled (default)
    1 = enabled

NOTE: This parameter will only function when at least one group is unset (disarmed).

33 = Secure Code
Once this parameter has been selected, the engineer code is randomly changed each day at 08:00 hours. The service engineer must be informed of the "code of the day" by head office. The random code that is generated is dependent on the local engineer code; therefore each area, company, branch or even system can have a unique secure code.

Either the engineer or remote user code can select the **Secure Code** parameter. On selecting this parameter the secure code equivalent to the current engineer code must be entered to confirm the selection. Only the remote user code (or a cold start - erasing all programming details) can cancel it.

Select **1** to enable **Secure Code**, or **0** to disable the parameter; the default is **0** (disabled).

34 = Comfort Time
The **Comfort Time** parameter permits a period of time to be allocated when the values assigned to the entry and abort time parameters and the number of wrong code attempts are doubled; the programmable range is **0–14** days; the default is **0**. This allows new or unfamiliar users to become accustomed to the system without causing false alarm activations. At the end of the **Comfort Time** the system returns all the affected parameters to the programmed values.

35 = Fail to Set
This parameter determines the period of time that a zone must remain open, following the start of the setting (arming) procedure, before the **Fail Set** outputs activate. The programmable range is **0–999** seconds; the default is **360**.

NOTES: 1.   The **Fail to Set** countdown time begins as soon as the setting (arming) procedure is started.
           2.   The **Fail to Set** time should be at a minimum 5 seconds longer than the **Exit Time** (option 51.04), to allow for the setting (arming) period to expire.

This parameter can be assigned a different value for each group.

36 = Battery Size
Enter the size of the standby battery on the control Panel PSU. The programmable range is **0–99**Ah; the default is **0**.

37 = Standby Time
Enter the value (in hours) that the system is required to run on standby battery if there is a mains fail. The programmable range is **0–99** hours; the default is **0**.

The Control Panel PSU calculates the battery run time from the programmed **Battery Size** (parameter **36**) and the load current. If the programmed **Standby Time** exceeds the calculated battery run time, a **STANDBY TIME LOW** message is displayed on the keypad on attempting to exit engineer mode. Exiting engineer mode is prevented until a **Standby Time** that is less than the calculated battery time is entered or a larger battery is installed in the system and the new battery size is entered in the **Battery Size** parameter.

To view the latest battery **Standby Time** refer to Option **61.1.4=Diagnostics.Latest.PSU Comms.**

NOTE: The calculated battery run time has a 10% safety margin built in.

38 = ATM Delay
This parameter determines the period of time before the selected **ATM** zone type is omitted following the entry of one of the **ATM** codes. The programmable range is **0–30** minutes; the default **ATM Delay** is **5**.

39 = ATM Timeout
This parameter determines the period of time that the selected **ATM** zone type is omitted following the entry of one of the **ATM** codes. The programmable range is **1–90** minutes; the default **ATM Timeout** is **30**.

40 = Datelock
Option not available

41 = Weekend Work
This parameter is used to enable or disable menu option **45.6 = TIMER CONTROL.Weekend Work**. If the parameter is set to **1**, the engineer can assign a **Pattern Day** and the user can authorize **Weekend Working**.

If the parameter is set to **0** (disabled — default setting), the message **Option not available** is displayed on selecting menu option **45.6**, **Weekend Work**.

42 = PIN Change
This parameter defines the expiration period of user codes allocated the **PIN Change** attribute (refer to option **42 = CODES**). The **PIN Change** parameter is programmable within the range **0–12** months; the default is **0**. The user PIN must be changed before the assigned **PIN Change** month ends. On entering the expiring user code a warning that the code is due to expire and a prompt to assign a new code is given to the user. The period of this warning message is determined by the **PIN Warning** option (refer to menu option **42.2 = CODES. PIN Warning**).

The default value is **0** - this means that although codes have been allocated the expiration attribute, they do not expire.

43 = Timer Access
Option not available.

44 = Early Open
This parameter determines the number of minutes before the **Lockout OFF** time that the system can be manually unset (disarmed) when the **Early Open** option (refer to menu option **45 = TIMERS**) is switched on. The **Early Open** parameter is programmable within the range **0–240** minutes; the default is **0**.

45 = High Security
This option allows RIO zones to be monitored for Constant Voltage Tampers. A constant voltage tamper is activated if a zone detector is replaced by a constant voltage source, for example, a battery. This feature can either be enabled or disabled. Only RIO zones are affected by this feature.

The High Security feature is disabled by default in the RIO, so must be turned on by the panel for this feature to be activated. The feature can be turned on from the panel via Parameter 45 (High Security). The default value for this parameter is disabled. If enabled, all RIOs on the system are affected.

46 = Resistance Select
RIOs, revision 1.2 and above, allow the zones to be programmed with different resistance preset values for zone status activation. This feature allows selection of End Of Line or Double Balanced zone resistance types. The on-board zones can also be modified using this feature.

The "EOL/Dbl. Bal." resistance types are selectable from this option. The system default value is 1k Fault (Double Balanced). There are 10 preset pre-programmable resistance configurations:

1 = Preset 1 (BAL); 2 = Preset 1(EOL); 3 = Preset 2 (BAL); 4 = Preset 2 (EOL); 5 = Preset 3 (BAL);

6 = Preset 3 (EOL); 7 = Preset 4 (BAL); 8 = Preset 4 (EOL); 9 = 1K Fault (BAL); 10 = 1K Fault (EOL).

The tables that follow shows the resistance windows for each type:

NOTE: For UL 1076 installations, use 1K Ohm Single EOL configuration for all protective zones. Use EOL resistor P/N 300-02343 supplied in SAP0166 package.

	Option 01 - 1k	Option 03 – 2.2k	Option 05 – 4.7k	Option 07 – 5.6k	Option 09 - 1k Fault
Tamper S/C	0 – 800	0 – 1800	0 – 3700	0 -1400	0 - 800
Low Res	800 – 900	1800 – 2000	3700 – 4200	1400 – 2800	800 - 900
Normal	900 – 1200	2000 – 2500	4200 – 5500	2800 – 8400	900 -1200
High Res	1200 – 1300	2500 – 2700	5500 – 6500	8400 – 9800	1200 - 1300
Open	1300 – 12000	2700 – 12000	6500 – 19000	9800 – 12600	1300 - 3500
Fault	-	-	-	-	3500 - 4500
Masked	12000 – 19000	12000 – 15000	19000 – 22000	12600 – 22000	4500 - 19000
Tamper O/C	19000 – infinity	15000 – infinity	22000 – infinity	22000 – infinity	19000 – infinity

Table 6-9. Preset value limits (ohms) - double balanced

	Option 02 - 1k	Option 04 – 2.2k	Option 06 – 4.7k	Option 08 – 5.6k	Option 10 -1k Fault
Tamper S/C	0 – 800	0 – 1800	0 – 3700	0 – 1400	0 - 800
Low Res	800 – 900	1800 – 2000	3700 – 4200	1400 – 2800	800 - 900
Normal	900 – 1200	2000 – 2500	4200 – 5500	2800 – 8400	900 - 1200
High Res	1200 – 1300	2500 – 2700	5500 – 6500	8400 – 9800	1200 - 1300
Fault	-	-	-	-	1300 - 4500
Masked	1300 – 12000	2700 – 12000	6500 – 19000	9800 – 19000	4500 - 19000
Open	12000 – infinity	12000 – infinity	19000 – infinity	19000 – infinity	19000 – infinity

Table 6-10. Preset value limits (ohms) - end of line

When a preset is selected, this will be the zone resistance range used by every zone on the system. Each zone on the system can be further customized to a specific preset by using menu option 52.9, Resistance Select.

47 = Set Confirm
This parameter allows the system to emit a short double beep when the system/group has set (armed). There are three options:
> **0 = Off**
> No indication.
> **1 = Alert on Set**
> A double beep when the system has set (armed).
> **2 = Alert on Comm** {Required for UL installations}
> A double beep after a successful signal to the ARC that setting (arming) has occurred.

48 = Alarm Limits
This parameter allows the user to program the maximum number of alarms, per group, which may be transmitted to an Alarm Receiving Center in any set (armed) period. There are three options:
> **1 = No of Alarms**

This is the total number of zone activations logged in any one set (armed) period. The selectable values are **0-10** where **0** is unlimited. {A value of 0 is required for UL installations.}

2 = Unset Limit

This is the number of activations logged from any one zone in any one unset (disarmed) period. The selectable values are **0-7.** The default is **3**.

Fire alarms are not restricted by this parameter.

3 = Set Limit

This is the number of activations logged from any one zone in any one set (armed) period. The selectable values are **0- 7.** The default is **3**.

Fire alarms are not restricted by this parameter.

NOTE: This feature only affects Contact ID, SIA and Microtech communication formats.

49 = Confirm Time {Not for UL installations}

This option is the maximum time between two separate zones for a confirmed alarm to be generated up to a maximum of **99** minutes, which is equivalent to the complete set (armed) period, with a default of **30** minutes.

50 = NOT USED

51 = NOT USED

52 = NOT USED

53 = NOT USED

54 = Keypad Access

This option allows the keypad to unset (disarm) the system. There are two options:

1 = Always

2 = Except Entry: Except when entry time is running. This ensures that users are unsetting (disarming) using a proximity card (portable device).

55 = Confirm

This option controls how confirmed alarms are generated. It controls the operation of confirm outputs plus the signaling of confirmed alarms. There are three options:

1 = Operation: This option controls when confirmed alarms can be triggered. An entry timeout alarm will never contribute to a confirmed alarm. There are three options:

1 = Before Entry. Confirmed alarms can be triggered before starting entry time only.

2 = Except entry (UK). Confirmed alarms can be triggered any time except during the entry delay period.

3 = Always (EU). Confirmed alarms are always enabled.

2 = Entry Timeout: This option controls whether exit type zones can cause confirmed alarms, after an entry timeout.

0 = Disable Exits. Exit type zones will only cause unconfirmed intruder alarms. They will not contribute to the two activations required for a confirmed alarm.

1 = Enable Exits. After the expiration of the entry delay, activation of an exit type zone will be identical to an intruder zone.

3 = Reduce Reset: This option allows user reset following an unconfirmed alarm.

0 = Off. Full system reset is required for any intruder alarm.

1 = On Unconfirmed. The system can be reset by user, if the alarm is unconfirmed. If the alarm is classed as confirmed, a full system reset will be required.

56 = Force Restore

This option dictates when intruder restore signals are transmitted.

1 = Unset/Unconfirm: On unset (disarming) or at the end of the confirmed time if the alarm is not confirmed.

2 = System Reset: Sent when the system is fully reset.

57 = Bell Extend

If enabled, this parameter extends the bell time if the system cannot rearm. For example, if the zone is still open and cannot be omitted. The bell time can be extended up to 30 minutes maximum. The Default is 0, no extension.

58 = Power Alarm

If enabled, this parameter allows the Bells, Strobe and Horn outputs to activate when there is an AC fail and the system is set (armed). The default is 0.

59 = Part Tone

When enabled, this parameter changes the setting tone for a part set (part arm). The new tone is **on 2 secs, off 0.1 sec.**

60 = NOT USED

61 = Activity Mon.

This parameter allows zone activity to be checked. If zones programmed for zone activity checks are not activated within the programmed time period and/or number of set/unset (arm/disarm) cycles a zone masked fault is indicated at the panel. Six different combinations of check criteria are available for each zone.

Each criteria type can be programmed to check the number of days, the set/unset (arm/disarm) cycles or both. Default value is both.

1 = Mode

The mode can be set to one of three options: Max Period, Max Unsets or Either.

2 = MAX Period

The time period that zone activity is checked can be set to between 1 and 28 days. Default is 14 days.

3 = MAX Unsets

This is the number of programmable set/unset (arm/disarm) cycles that must take place before a zone masked fault is indicated at the panel. The number of set/unset (arm/disarm) cycles can be programmed from 1 - 10. The default is 7.

62 = Lockout

This parameter prevents code guessing on the GX-Series system.

1=Lockout

This parameter determines the number of invalid code attempts, which can be tried before keypad lockout occurs. Keypad lockout prevents any entry via all keypads associated to the groups assigned to the keypad where the invalid attempts were made. The lockout lasts for 90 seconds. Each subsequent invalid attempt causes a further 90 second lockout to occur. Entry of a valid code will reset the lockout counter. Lockout can be programmed between 0 and 10. Default is 6. Setting to 0 disables the function.

2=Tamper

This parameter determines the number of invalid code attempts, which can be tried before system tamper occurs. Lockout tamper can be programmed between 0 and 21. Default is 15. Setting to 0 disables the function.

63 = Banner Alerts {Required for UL installations}

This parameter determines whether system alerts are displayed on the GX-Series keypad banner. If enabled system events will be indicated on the display. The default value for this parameter is disabled.

64 = Set Override

This parameter determines the type of user that can override specific fault events to set (arm) the system. The default values are shown in the following table:

Fault Type	User Type Override Level
System	2.1
Tamper	3.6
PA (Personal Attack)	2.1
Line Fail	3.6
General Fault	2.1
Power Fail	2.1

Table 6-11. User Type Override Level

A different value can be programmed for each group.

65 = Reset levels

This parameter determines the type of user that can reset specific fault types. The default values are shown in the table below:

Fault Type	User Type Reset Level
System	3.6
Tamper	3.7
PA (Personal Attack)	3.6
Line Fail	3.7
General Fault	3.7
Power Fail	3.6

Table 6-12. User Type Reset Level

NOTE: This parameter affects and is affected by parameters 51.6 (System Reset), 51.7 (Tamper Reset) and 51.22 (PA Reset). If the parameter reset level is changed at 51.65 then this change is reflected at 51.6, 51.7 and 51.22.

66 = Min Pin Size

This parameter determines the minimum size of each user code. This can be set from four to six digits. The default is five digits.

67 = Level Format

This parameter determines the format used for user code authorization levels.

> **1 = EN.GX-Series (Default)**
>
> Uses new EN GX-Series user types 1.0 to 3.8.
>
> **2 = GX-Series**
>
> Uses standard GX-Series levels 0-8.

68 = Line Fail

This parameter allows the programming of the period between the panel being alerted by a communication module of a Line Fail condition, and the user being alerted of the alarm condition. This value can be programmed between 0 and 1800 seconds. The default is 50 seconds.

NOTE: The communication module may take up to 40 seconds to alert the panel of a Line Fail condition. This time is in addition to the programmed time of 0-1800 seconds.

This parameter affects all communication modules on the system.

69 = Alert Inds

This parameter allows the alert audio indication to be switched off. The default is **1 = Audio only**.

> **0 = No Indication**
> **1 = Audio Only**
> **2 = Visual Only** (only when parameter 63 enabled)
> **3 = Audio/Visual** (only when parameter 63 enabled) {Required for UL installations}

70 = SWDC Set Dly

When enabled, this parameter delays the indication of open zones at the start of a set (arm) sequence while the Switch DC output (53.08) is active; this includes keypad text and sounders.

If there are no outputs programmed as Switch DC then there will be no delay at the start of the set (arming).

71 = MF BL Enable

When enabled, this parameter allows the panel to send a SIA event when the battery is low and there is a mains power failure. When the event is sent, the **Power Delay** time set in parameter 51.20 stops immediately.

72 = Max Alm Cause

This option defines the range of valid cause codes, as agreed with the Alarm Receiving Center. When this function is enabled, a cause code must be entered by the user when a reset of the system is required.

This parameter can be disabled by setting the alarm cause code to 000.

73 = Guard Unset

If set to **1 = Enabled** this option allows a type 2.1 user code to unset (disarm) the system if an alarm has occurred. The user code becomes type 2.4 after 3 minutes of the alarm but after 60 minutes returns to type 2.1. The user code can set (arm) the system at any time provided there are no outstanding resets required.

74 = Backup Link

If the Ethernet fails to report, this parameter, when enabled, allows the communication to revert to Telecoms.

75 = Backup Timer

This is the time that the backup link is active. The time can be set from 0-300 seconds. The default is 90 seconds.

Option 52 – Program Zones

This option is used by the engineer to modify the programming of the zones on the system. The option also allows the attributes of the zone to be changed. The programmable options are shown in the table that follows:

	Attributes	Description
1	Function	assign zone type
2	Descriptor	16 character (max.) alpha-numeric description
3	Chime	enabled = momentarily chime effect if zone opened while unset (disarmed)
4	Omit	enabled = zone can be omitted (bypassed)
5	Part	enabled = zone included in part setting (part arming) of system
6	Resp. Time	Modify circuit debounce time
7	Custom SIA	Select SIA event
8	Activity Mon.	Selects criteria for zone activity checking
9	Res. Select	Selects resistance range for zone
10	Group	assign zone to a single group on the system
Note: Groups only appear if the Group option is enabled (refer to option 63.1 = OPTIONS.Groups).		

Table 6-13. Zone Attributes

Selecting Zones

On entering the option, the first zone on the system is displayed; the zone address, function and group assigned are displayed on the top line, the descriptor is displayed on the bottom line. Pressing the # key toggles the descriptor to reveal the status of the chime, omit and part attributes. If the attribute is enabled, the initial attribute letter is displayed, if it is disabled, a dash (–) is shown. For example, chime, part and omit enabled display as **COP**, if omit is disabled the display would be **C – P**.

From the display of the first zone, any zone on the system can be displayed by pressing the **A>** or **<B** keys or by entering the address of a specific zone.

The zone is selected for programming by pressing the **ent** key; the first zone programming attribute **1=Function** is displayed.

Attributes

The attributes can be stepped through by pressing the **A>** or **<B** keys or directly selected by pressing the attribute number (**1–8**). Once the required attribute is on display, press the **ent** key to gain access for modification.

Once the attribute has been assigned press the **ent** key to save the programming and return to the attribute selection level.

Pressing the **esc** key at any time when assigning attributes **1** and **3–10** to a zone aborts the programming and returns to the attribute selection level. Pressing the **esc** key when assigning a descriptor to a zone saves the assigned alphanumeric text and returns to the attribute selection level.

1 = Function

Entering the **Function** attribute displays the address and the current function of the selected zone along with the zone function reference number. The zone functions can be stepped through, forwards or backwards, using the **A>** and **<B** keys. Alternatively a zone function can be directly selected by entering the zone function reference number, for example, entering the **19** displays zone function **19 = FIRE**.

Once the required zone function is displayed, it is assigned to the zone by pressing the **ent** key.

2 = Descriptor
Each zone can be assigned with an alpha-numeric descriptor of up to 16 characters. This descriptor is assembled from the character set and/or library options. On selecting the **Descriptor** attribute, the currently assigned descriptor (blank by default) is displayed on the top line - an underscore shows where the next character will be positioned, and a selection of the alphabet is shown on the bottom line - the cursor flashes on the letter **L**.

Press the * key to erase the characters already assigned to the descriptor.

The **A>** or **<B** keys can be used to move the alphabet left or right until the required character is positioned underneath the flashing cursor. When the required character is in position press the **ent** key to copy the character to the descriptor in the top line. Repeat this procedure to assemble the required zone descriptor.

Text Case and Library

On entering the **Descriptor** attribute the alpha-numeric characters are all presented in upper case. Pressing the **#** key toggles the characters to lower case.

Pressing the **#** key when the lower case alphanumeric characters are displayed toggles to the library words.

The words can be viewed using the **A>** or **<B** keys or directly selected using the reference number - refer to **Appendix A - Library**. When the required word is displayed, press the **ent** key to copy it to the descriptor.

NOTE: Library words are a maximum of 12 characters and upper case only.

3 = Chime
If the **Chime** attribute is set to **1** (enabled) the zone will chime momentarily whenever it is opened while the system is unset (disarmed). The **Chime** attribute defaults to **0** (disabled) for all zone functions.

The **A>** or **<B** keys can be used to toggle the status of the **Chime** attribute — pressing **1** or **0** will also select the required status; press the **ent** key to accept the programming.

NOTE: The **Chime** option (full menu option **15**, quick menu option **2**) must be enabled if the zones are to chime when opened.

4 = Omit (Bypass)
If the **Omit** attribute is set to **1** (enabled) the zone can be omitted from the system by using one of the omit functions (**11 = OMIT ZONES**, **14 = FORCED SET**, **46 = GROUP OMIT**). The **Omit** attribute defaults to **0** (disabled) for all zone functions.
The **A>** or **<B** keys can be used to toggle the status of the **Omit** attribute - pressing **1** or **0** will also select the required status; press the **ent** key to accept the programming.

5 = Part
If the **Part** attribute is set to **1** (enabled) the zone will be included in the setting (arming) procedure when one of the part setting options is used to set (arm) the system (**13 = PART SET**, **17 = INSTANT PART**). The **Part** attribute defaults to **1** (enabled) for all zone functions except zones programmed as **09 = Keyswitch**.

The **A>** or **<B** keys can be used to toggle the status of the **Part** attribute - pressing **1** or **0** will also select the required status; press the **ent** key to accept the programming.

6 = Resp. Time
This function is only applicable to zones on RIO rev 1.2 and Smart PSU rev 0.7 and above.

This option allows the user to select, either Fast (10ms), System (default value programmed in **51 – Parameters, Option 27**) or Slow (750ms), for each zone.

7 = Custom SIA
This option allows a different SIA mnemonic to be allocated to the selected zone. The default is the standard SIA mnemonic for the zone type selection. The default mnemonic can be reselected by pressing the * key.

The table that follows shows the list of available customizable mnemonics:

No	Event text	Description	Alarm	Closed	Omit	Unomit	Troub	Tr. Res	Test	Tamp
1	Default									
2	AT/R Power	AC Trouble, AC Restoral	AT	AR	BB	BU	BT	BJ	BX	TA
3	BA/R Burglary	Burglary Alarm, Burglary Restoral	BA	BR	BB	BU	BT	BJ	BX	TA
4	DG/D Access	Access Granted, Access Denied	DG	DD	BB	BU	DT	DJ	BX	TA
5	FA/R Fire	Fire Alarm, Fire Restoral	FA	FR	FB	FU	FT	FJ	FX	TA
6	GA/R Gas	Gas Alarm, Gas Restoral	GA	GR	GB	GU	GT	GJ	GX	TA
7	HA/R Holdup	Holdup Alarm, Holdup Restoral	HA	HR	HB	HU	HT	HJ	BX	TA
8	KA/R Heat	Heat Alarm, Heat Restoral	KA	KR	KB	KU	KT	KJ	BX	TA
9	LT/R Line Fail	Line Trouble, Line Restoral	LT	LR	BB	BU	BT	BJ	BX	TA
10	MA/R Medical	Medical Alarm, Medical Restoral	MA	MR	MB	MU	MT	MJ	BX	TA
11	PA/R Panic	Panic Alarm, Panic Restoral	PA	PR	PB	PU	PT	PJ	BX	TA
12	QA/R Assist	Emergency Alarm, Emergency Restoral	QA	QR	QB	QU	QT	QJ	BX	TA
13	RO/C Relay	Relay Open, Relay Closed	RO	RC	BB	BU	BT	BJ	BX	TA
14	SA/R Sprinklr	Sprinkler Alarm, Sprinkler Restoral	SA	SR	SB	SU	ST	SJ	BX	TA
15	TA/R Tamper	Tamper Alarm, Tamper Restoral	TA	TR	TB	TU	BT	BJ	TX	TA
16	WA/R Water	Water Alarm, Water Restoral	WA	WR	WB	WU	WT	WJ	BX	TA
17	YT/R Battery	Battery Alarm, Battery Restoral	YT	YR	BB	BU	BT	BJ	BX	TA
18	ZA/R Freezer	Freezer Alarm, Freezer Restoral	ZA	ZR	ZB	ZU	ZT	ZJ	BX	TA

Table 6-14. Customizable Mnemonics

NOTE: If two zones, programmed as Custom SIA, activate within the confirm time window, whether it be in the SET (ARMED) or UNSET (DISARMED) condition, then a CONFIRM is logged.

8 = Activity Mon.

This attribute allows a zone to be checked for activity during a set (armed) time period or set/unset (arm/disarm) cycles. The options are:

- 0 = None
- 1 = Type1
- 2 = Type2
- 3 = Type3
- 4 = Type4
- 5 = Type5
- 6 = Type6

The default option is 0 = None.

If the zone does not activate at least once within the programmed criteria a zone masked fault is indicated at the panel. The fault is logged as a masked event which indicates that the zone has been inactive for the programmed period. See Option **51.61=Parameters.Activity Monitoring.**

9 = Res. Select

This option allows the zone resistor configuration to be selected from a pre-defined value.

- 00 = System (follows the system default as programmed in parameter 51.46 = Zone Resistance)
- Option 01 = Preset 1 - 1k (double balanced)
- Option 02 = Preset 1 - 1k (end-of-line)
- Option 03 = Preset 2 – 2.2k (double balanced)
- Option 04 = Preset 2 – 2.2k (end-of-line)
- Option 05 = Preset 3 – 4.7k (double balanced)
- Option 06 = Preset 3 – 4.7k (end-of-line)
- Option 07 = Preset 4 – 5.6k (double balanced)
- Option 08 = Preset 4 – 5.6k (end-of-line)
- Option 09 = 1k Fault (double balanced)
- Option 10 = 1k Fault (end-of-line)

The values assigned by each of the options are shown in tables 10 and 11, Parameter 51.46=Zone Resistance.

10 = Group

NOTE: The **Groups** attribute is only available if groups have been enabled on the system (refer to option **63 = OPTIONS**).

The **Group** attribute allows the zone to be assigned to a single group on the system. All zones default to **Group A1**.

On selecting the **Group** attribute, the group that the zone is currently assigned to is displayed. All zones default to group **A1**. Press the number of the group that the zone is to be reassigned to and press the **ent** key.

Multi-group Systems

The larger GX-Series panels have 32 groups; these are displayed on the keypad in blocks of eight groups, subdivided into A, B, C and D.

Use the **A>** or **<B** key to select the required group (**A1–D8**). When the end of a block is reached, the next block of eight groups is displayed; use keys **1–8** to assign the relevant group in the current block to the zone; press the **ent** key to accept the selection.

Star (*) Group Function
Certain zone functions have an additional **Group** attribute feature that allows the other groups to be affected by their operation. This feature is assigned by pressing the ***** key when allocating the group to the zone.

On pressing the ***** key the display indicates the group currently assigned to the zone and prompts for other groups to be added, for example **1* 1 – – – – – – –**, pressing **4** and **7** assigns **1 * 1 – – 4 – – 7 –**.

Final, Secure Final, Part Final Keyswitch and Push Set Zones

If the star * group feature is assigned a zone programmed as **Final**, **Secure Final**, **Part Final** or **Push Set**, then closing the zone when setting (arming) multiple groups terminates the setting (arming) procedure for all groups assigned to the zone.

Refer to the zone functions for further information on the operation of these zone functions.

Exit Zones

The star T group feature can be assigned to a zone programmed as **Exit**. This allows an **Exit** zone to be activated in a group which is not currently being unset (disarmed) without activating an **Intruder** alarm condition.

Refer to the zone functions for further information on the operation of this zone function.

System Alarms
The GX-Series panels have tamper and alarm monitoring circuits which are not programmable. These circuits maintain the integrity of the system and all correspond to **Group A1**.

Zone	Alarm	Description
0001	CUBATT	Control unit battery low
0002	CUAC	Control unit AC fail
0003	LID TAMPER	Control unit lid tamper
0004	AUX TAMPER	Control unit tamper return

Table 6-15. Control Panel Alarms

	Zone Function			Zone Function
01	Final		27	Remote Access
02	Exit		28	Video
03	Intruder		29	Video Exit
04	24 Hours		30	Intruder Delay
05	Security		31	Log Delay
06	Dual		32	Set Log
07	Entry		33	Custom-A
08	Push Set		34	Custom-B
09	Keyswitch		35	Exitguard
10	Secure Final		36	Mask
11	Part Final		37	Urgent
12	Part Entry		38	PA Unset
13	PA		39	Keyswitch Reset
14	PA Silent		40	Bell Fail
15	PA Delay		41	Intr Low
16	PA Delay Silent		42	Intr High
17	Link		43	PSU Fault
18	Spare		44	Not Used
19	Fire		45	Not Used
20	Tamper		46	Not Used
21	Bell Tamper		47	Vibration
22	Beam Pair		48	ATM-1
23	Battery Low		49	ATM-2
24	Line Fail		50	ATM-3
25	AC Fail		51	ATM-4
26	Log		52	Alarm Extend

Table 6-16. Available Zone Functions

01 Final {Not for UL installations}

Zones programmed as **Final** initiate the unsetting (disarming) procedure and terminate setting (arming) procedure; opening the **Final** zone when the system or group is set (armed) starts the entry timer; opening and then closing the **Final** zone during the exit procedure sets the system or assigned groups, providing all the zones are closed. The opening (**+**) and closing (**–**) of **Final** zones during the setting (arming) and unsetting (disarming) procedures are recorded in the event log. Pressing the ***** key when programming a **Final** zone doubles the entry time of the group.

Opening a **Final** zone during the exit time is reported on the keypad as an open zone; the **Entry/Exit Horns** bleep rapidly to indicate that the zone is open.

NOTE: The termination feature of a **Final** zone can be extended to terminate the setting (arming) of multiple groups by pressing the ***** key when assigning a group to the zone. Refer to the **Star * Group Function**.

02 Exit

Zones that protect the entry and exit routes are programmed as **Exit**. During the setting (arming) and unsetting (disarming) procedures **Exit** zones have a non-alarm operation. If the **Exit** zone is activated while the system is set (armed) - without the unsetting (disarming) of the group being initiated - an **Intruder** alarm condition is activated.

Opening an **Exit** zone during the exit time is reported on the keypad as an open zone; the **Entry/Exit Horns** bleep rapidly to indicate that the zone is open.

NOTE: The **Exit** zone can be assigned to multiple groups by pressing the ***** key when assigning a group to the zone. This allows an **Exit** zone to be activated in a group which is not currently being unset (disarmed) without activating an **Intruder** alarm. Refer to the **Star * Group Function**.

03 Intruder
The **Intruder** function is inactive when the system is unset (disarmed). When the system is set (armed), activation of an **Intruder** zone causes a full alarm activation that requires to be reset with a code authorized for **System Reset** – refer to option **51.6 = PARAMETERS.System Reset** and option **51.55.3 = PARAMETERS.Confirm.Reduce Reset.**

All zones are programmed as **Intruder** by default; this includes the zones on RIOs that are added to the system at a later date.

04 24 Hours
The **24 Hours** zone function is continuously operational. In the unset (disarmed) state, activation of the zone function generates a local alarm condition (the **Intruder** outputs are not activated). If the zone is activated while the system is set, the **24 Hours** function operates the same as an **Intruder** function and results in a full alarm condition. The **24 Hours** zone function requires a system reset following an activation in both the set (armed) and unset (disarmed) conditions.

05 Security
The operation of the **Security** zone function is identical to the **24 Hours** zone function, except a **Security** zone activation in the unset (disarmed) state generates a local alarm (**Horn** outputs activated) that does not require a system reset; any valid code (type 2 or above) cancels the alarm and resets the system. An activation in the set (armed) state generates a full alarm that requires a system reset. The activation (**+**) and restoration (**–**) of **Security** zones is recorded in the event log.

06 Dual (Double Knock) {Not for UL installations}
The operation of the **Dual** (Double Knock) function is identical to the **Intruder** function, with the exception that an alarm condition is activated only when there have been two activations from any **Dual** zones (assigned to the same group) within a 20 minute period while the system is set.

07 Entry
This function initiates the unsetting (disarming) procedure in the same way as a **Final** zone. However, during the setting (arming) routine an **Entry** zone operates as an **Exit** zone type. This function is normally used in conjunction with a **Push Set** zone, which acts as the exit terminator for the setting (arming) procedure.

Pressing the * key when programming an **Entry** zone doubles the entry time of the group.

Opening an **Entry** zone during the exit time is reported on the keypad as an open zone; the **Entry/Exit Horns** bleep rapidly to indicate that the zone is open.

08 Push Set {Not for UL installations}
This zone function is used to terminate the setting (arming) routine. The system sets when the **Push Set** zone, usually a push button, is activated. The **Entry/Exit Horn** stops immediately the button is pressed; the system sets after four seconds, allowing the doors to settle to the closed state. The **Push Set** zone remains inactive until the next setting (arming) routine.

NOTE: The **Push Set** zone can be either 1kΩ going to 2kΩ or 2kΩ to 1kΩ - refer to **Installation Manual (II1-0033), System Architecture** for wiring details. The first time that the **Push Set** is used to terminate the setting/arming, the button will require to be pressed twice; the first press identifies the normal status of the button to the system.

Activating a **Push Set** zone during the exit time is not reported on the keypad as an open zone; the **Entry/Exit Horns** bleep rapidly to indicate that the zone is open.

NOTE: The termination feature of a **Final** zone can be extended to terminate the setting (arming) of multiple groups by pressing the ***** key when assigning a group to the zone. Refer to the **Star * Group Function**.

09 Keyswitch

The **Keyswitch** function allows a zone to be used as an on/off switch for the system or assigned groups. Operating a **Keyswitch** zone when the system is unset (disarmed) starts the timed full setting (arming) routine, therefore the exit time is applicable. The system sets when the exit time expires or a **Final** or **Push Set** is activated.

NOTE: Assigning a # to the keyswitch zone function will cause the Instant setting (arming) routine to be activated. In this case the exit time is not applicable. If a Keyswitch Zone has its omit attribute enabled, activation of the Keyswitch will force set/arm the assigned groups. Only zones with the omit attribute enabled will be omitted.

When the keyswitch is activated twice during the exit time of an autoset, the autoset is temporarily cancelled for a few seconds, then it restarts the exit time causing the panel to reset.

Operating a keyswitch zone type during the pre-warn period of an autoset will start a Force Set. If you then activate the switch again (i.e. unset (disarmed) with keyswitch) before the panel sets, the pre-warn continues on the autoset.

NOTE: When the keyswitch is activated the second time to take panel back into pre-warn, it can be up to 10 seconds before the pre-warn tones at the keypad start up again.

If the system is set, operating a **Keyswitch** immediately unsets (disarms) the assigned groups; there is no entry time countdown.

The **Part** attribute of the **Keyswitch** function defaults to **0** (disabled); the standard **Keyswitch** function full sets the system. To part set/arm the system using the **Keyswitch**, the **Part** attribute must be enabled.

NOTE: The operation of a **Keyswitch** zone can be extended to the setting (arming) and unsetting (disarming) of multiple groups by pressing the * key when assigning a group to the zone. Refer to the **Star** * **Group Function**.

The standard programming of the **Keyswitch** function requires a momentary change from 1kΩ to 2kΩ to both set (armed) and unset (disarm) the system. If the **Keyswitch** connected has a latching mechanism, press the * key when assigning the function; the display indicates **09=KEYSWITCH** has been assigned. The * **Keyswitch** operation is as follows: 1kΩ to 2kΩ sets the system; 2kΩ to 1kΩ unset (disarms) the system.

The **Keyswitch** function can also be programmed to reset alarms - refer to option **51.14 = PARAMETERS.Keyswitch Level**. If the **Keyswitch** is assigned a sufficient type to reset the alarm condition, the alarm is cancelled and immediately reset when the **Keyswitch** is used to unset (disarm) the system following an alarm activation.

NOTE: The activated zones are not displayed on the keypad when a **Keyswitch** is used to reset/disarm the alarm.

10 Secure Final {Not for UL installations}

This zone has dual functionality depending on whether the system is set (armed) or unset (disarmed). When the system is setting (arming), set (armed) or unsetting (disarming) the operation is identical to the **Final** zone function. When the system is unset (disarmed), the operation is identical to the **Security** zone function.

Pressing the * key when programming a **Secure Final** zone doubles the entry time of the group.

Opening a **Secure Final** zone during the exit time is reported on the keypad as an open zone; the **Entry/Exit Horns** bleep rapidly to indicate that the zone is open.

The termination feature of a **Secure Final** zone can be extended to terminate the setting (arming) of multiple groups by pressing the * key when assigning a group to the zone. Refer to the **Star * Group Function**.

11 Part Final {Not for UL installations}

This zone has dual functionality depending on whether the system is full set (full armed) or part set (part armed). When the system is full set the zone operation is identical to the **Final** zone function. When the system is part set the zone operation is identical to the **Intruder** zone function.

Pressing the * key when programming a **Part Final** zone doubles the entry time of the group.

Opening a **Part Final** zone during the exit time is reported on the keypad as an open zone; the **Entry/Exit Horns** bleep rapidly to indicate that the zone is open.

12 Part Entry

This zone has dual functionality depending on whether the system is full set (full armed) or part set (part armed). When the system is full set the zone operation is identical to the **Exit** zone function. When the system is part set the zone operation is identical to the **Entry** zone function.

Pressing the * key when programming a **Part Entry** zone doubles the entry time of the group.

13 PA

The **PA** (Personal Attack) function is continuously operational. Activation of this zone type overrides the **Bell Delay** parameter and causes an instant full alarm condition that requires to be reset with a code authorized for **PA Reset** — refer to **Option 51 – PARAMETERS, 22 = PA Reset**; the **Intruder** outputs are not activated by **PA** zones.

NOTE: If a **PA** zone is open, it is indicated on the keypad whenever a valid code is entered. The group that the open **PA** is assigned to cannot be set (armed) until it is closed.

14 PA Silent

The **PA Silent** function is identical to the **PA** function, with the exception that there is no audible or visual indication of the activation; that is, no bells or strobes are activated. Only the **PA** output (normally channel 2 on the digital communicator) signals the alarm. The activation (**+**) and restoral (**–**) of **PA Silent** zones is recorded in the event log.

NOTES   1.   At the time of setting (arming), any PA Silent zones that are currently open are reported to the user.
2.   The tamper facility on the PA zone remains active while engineer mode is accessed.
3.   Engineer mode cannot be exited if a **PA Silent** zone is open.

15 PA Delay

The **PA Delay** function is identical to the **PA** function, with the exception that the **PA** output activation can be delayed for up to 60 seconds; this is determined by option **51.13 = PARAMETER.PA Delay**. During the period of delay the **Entry/Exit Horns** activate to remind the user that the PA delay is counting down; entering a valid code or closing the **PA Delay** zone aborts the alarm.

NOTES   1.   If a PA Delay zone is open, it is indicated on the keypad whenever a valid code is entered. The group that the open PA Delay is assigned to cannot be set (armed) until it is closed.
2.   The tamper facility on the PA zone remains active while engineer mode is accessed.

16 PA Delay Silent

The **PA Delay Silent** function is identical to the **PA Delay** function, with the exception that there is no audible or visual indication of the activation; that is, no bells or strobes are activated. Only the **PA** output (normally channel 2 on the digital communicator) signals the alarm. The activation (**+**) and restoral (**–**) of **PA Delay Silent** zones are recorded in the event log.

NOTES   1.   At the time of setting (arming), any PA Delay Silent zones that are currently open are reported to the user.
2.   The tamper facility on the PA zone remains active while engineer mode is accessed.

17 Link

This zone type has no operational function; it is designed to be used as a source of a link - refer to option **54 = LINKS**. The activation (**+**) and de-activation (**–**) of **Link** zones is recorded in the event log.

18 Spare

The **Spare** function allows any zones that are not being used to be ignored by the system; the resistance readings from the circuit - including the tamper conditions - do not activate an alarm condition.

NOTE: It is recommended that all unused zones are programmed as **Spare** and that a 1kΩ 1% resistor is connected across each of these zones.

19 Fire {Not for UL installations}

The **Fire** function is continuously operational. When activated, a **FIRE** zone overrides the **Bell Delay** parameter and activates an instant alarm (**Bell**, **Strobe** and **Fire**). The keypad buzzer and control panel horn output, if installed, emit an interrupted tone (one second on, 0.5 seconds OFF), easily distinguishable from all other alarm conditions. Any valid code entry cancels the **Fire** activation.

20 Tamper

The **Tamper** function is continuously operational. When a **Tamper** zone is activated (1kΩ to 2kΩ), a tamper alarm is generated; this requires to be reset by a code authorized for **Tamper Reset** - refer to option **51.7 = PARAMETERS.Tamper Reset**. If a tamper condition (open or short circuit) occurs, a tamper alarm is also generated.

21 Bell Tamper

This function is identical to the operation of the **Tamper** function but is dedicated to bells, sirens and other modules or output devices requiring tamper protection.

22 Beam Pair

This function is only operational when two consecutively addressed zones programmed as **Beam Pair** are open in the set condition; the activation is identical to the **Intruder** function. The system cannot set (arm) if a single **Beam Pair** is open.

NOTE: Beam Pair zones must be consecutively addressed; the first **Beam Pair** zone must have an even number address, the second **Beam Pair** must have the next address (an odd number). For example, valid **Beam Pair** addresses are **1036 & 1037**, **2018 & 2031** - in this case, RIO **202** has not been connected, therefore zone **2031** is the next address to **2018**.

23 Battery Low

This function is used to monitor the voltage output of a standby battery connected to a power supply. The activation (**+**) and de-activation (**–**) of **Battery Low** zones is recorded in the event log.

24 Line Fail

The **Line Fail** function is used to monitor the communication line that a remote signaling device is connected to for communications failure.

When the system is in the unset (disarmed) state, the first activation of a **Line Fail** zone causes a local alarm and the message **COMMS FAILURE** is displayed, subsequent **Line Fail** activations do not sound the local alarm; the only indication is the keypad display.

When the system is set (armed), activation of the **Line Fail** zone overrides the **Bell Delay** parameter; on unsetting (disarming) the system a local alarm is generated and the keypad gives an indication that **Line Fail** zone has activated. If an alarm condition occurs while the **Line Fail** is active, an instant full alarm is generated.

If the **Line Fail** zone is active at the point of setting (arming), a warning message is displayed; the user can choose to continue or abort the setting (arming) procedure. It is also possible to prevent the system setting (arming) if the **Line Fail** is active by enabling the **Stop Set** parameter (option **51.18**).

25 AC Fail

This function is used to monitor a remote power supply. In the event of a power failure the **AC Fail** zone is activated; the activation (**+**) and de-activation (**–**) of the zone is recorded in the event log.

26 Log

This zone type has no operational function; it is designed to record the activation of a zone in both the set (armed) and unset (disarmed) state. The activation (**+**) and de-activation (**–**) of **Log** zones is recorded in the event log.

27 Remote Access

This function is used to disable remote servicing of the GX-Series panel. When the **Remote Access** zone is active the Remote Servicing software is prevented from gaining access to the GX-Series panel.

28 Video

This function is identical to the **Intruder** function, with the exception that the cumulative number of activations from **Video** zones, before a full alarm is generated, is programmable. The number of activations required is determined by the **Video** parameter (option **51.30**); the range is **1–9**. The activation count is incremented when any **Video** zone in the group activates; the count is reset to zero when the group is unset (disarmed).

29 Video Exit

The **Video Exit** function is identical to the **Video** function, with the exception that the user can activate the zone during setting (arming) and unsetting (disarming) without incrementing the **Video** activations count. The **Video** output is not activated during setting (arming) and unsetting (disarming).

30 Intruder Delay

The **Intruder Delay** function is identical to the **Intruder** function, with the exception that the full alarm activation can be delayed for up to 50 minutes (0–3000 seconds); this is determined by the **Delay Alarm** parameter (option **51.31**). The **Intruder Delay** zone must remain open for the period of the **Delay Alarm** parameter; while the zone is open the **Entry/Exit Horns** activate to remind the user that the **Delay Alarm** is counting down. Unsetting (disarming) the system or closing the **Intruder Delay** zone aborts the alarm and resets the timer.

If a second **Intruder Delay** zone opens followed by the first zone closing, the **Delay Alarm** time continues to count from the activation of the first zone. The **Delay Alarm** timer is reset only when all delay type zones return to the closed state.

31 Log Delay

The **Log Delay** function operation is identical to the **Log** function, with the exception that the recording of the zone activation can be delayed for up to 50 minutes (0–3000 seconds); this is determined by the **Delay Alarm** parameter (option **51.31**). Closing the **Log Delay** zone resets the timer and aborts the recording of the event in the log.

32 Set Log

The **Set Log** function is identical to the **Log** function, with the exception that zone activations are only recorded in the event log during the set (armed) period.

33 Custom A

The **Custom A** function allows a zone to be assembled. The functionality of the zone; when it activates; the outputs activated; if it sets (arms) or unsets (disarms) the systems; if it logs, are assigned using menu option **64 = ASSEMBLE ZONE**. Once the **Custom A** zone has been created, it can be assigned to as many zones as required.

34 Custom B

This function is identical in operation and assembly to **Custom A**.

35 = Exit Guard

The **Exitguard** function allows a zone to be used to omit (bypass) other zones on the system. This is useful for permitting access via doors programmed as **24 Hours** or **Security**.

The **Exitguard** zone must be the source of a link (refer to option **54 = LINKS**); the destination of the **Exitguard** link is either a zone address or an output type.

When opened, the **Exitguard** omits the zone entered as the link destination; an alarm is not activated if the **Exitguard** zone is open while a zone that it is omitting is open. If the destination zone is opened while the **Exitguard** zone is closed, an alarm activation occurs; opening the **Exitguard** omits the zone and silences the output types assigned to the link destination. Closing the **Exitguard** zone while the destination zone is still open does not result in an alarm activation; closing the destination zone deactivates the link and returns the zone to its normal operation.

NOTE: The **Exitguard** function cannot be used as a link source to activate a link destination output.

Programming Example:
- Zone 1014 = An on/off keyswitch programmed as **Exitguard.**
- Zone 1015 = A door contact programmed as **Security.**
- Output type **Link A** = An output wired to a local horn and programmed as **Link A**.

NOTE: Exit Guard zones do not omit zones open when the exit guard zone is activated, even if they are subsequently closed.

Operation: The **Security** door contact (**1015**) can be omitted at any time by operating the **Exitguard** keyswitch (1014). If the door (1015) is opened without first being omitted, then the **Link A** horn activates and needs to be reset by operating the keyswitch (1014).

Link	Source	Destination
1	Zone = 1014	Zone = 1015
2	Zone = 1015	Output = Link A
3	Zone = 1014	Output = Link A

Table 6-17. Exit Guard Zones

36 Mask
The **Mask** function is designed to be used with detectors capable of reporting that their field of view has been blocked or masked. The **Mask** function is identical to the **Security** function, with the exception that the **Mask** output is activated instead of **Security**.

NOTE: This zone type is independent from the mask zone state which can be detected for zones supporting the masked feature.

37 Urgent
The **Urgent** function is continuously operational; it is identical to the **Intruder** function, with the exception that it activates a full alarm condition (including the Intruder outputs) in any set (armed) or unset (disarmed) condition.

38 PA Unset
This **PA Unset** function is identical to the **PA Silent** function, with the exception that it is only operational when the system is unset (disarmed); the function is inactive when the group is set (armed).

39 Keyswitch Reset
The **Keyswitch Reset** function allows alarms to be cancelled and the system to rearm without unsetting (disarming) the GX-Series. The type of reset authorization is determined by the **Keyswitch Level** (option **51.14**). The type required to reset **Intruder**, **PA** and **Tamper** alarms is determined by the **System Reset**, **Tamper Reset** and **PA Reset** parameters (option **51.06**, **51.07** and **51.22**) respectively.

This function is designed to permit a remote signal, for example REDCare's Return Path Signaling feature, to reset the system following an alarm condition.

40 Bell Fail
This zone type is intended for bells which have diagnostic capabilities and failure outputs. If activated, this zone causes a fault condition.

41 Intr Low
This zone type assigns a low priority to a zone in the event of an intruder alarm. The event is logged as low priority in the event log.

42 Intr High
This zone type assigns a high priority to a zone in the event of an intruder alarm. The event is logged as high priority in the event log.

43 PSU Fault
This zone type triggers a general fault output and logs a PSU fault in the event log. The fault is signaled to the ARC as **YP** when using SIA format and **314** when using CID format.

44-46
Not used.

47 Vibration

The **Vibration** function is continuously operational and is designed for use with vault sensors. **Vibration** zones can be block omitted (block bypassed) using menu option **11 = Omit Zones**. If the zone selected to be omitted from the system is a **Vibration zone**, then all zones programmed with this function are omitted.

NOTES 1. All **Vibration** zones in all groups are omitted when any **Vibration** zone is omitted. The user code does not have to have access to all of the groups.
2. **Vibration** zones remain omitted until a single **Vibration** zone is manually reinstated. The unsetting (disarming) of the system does not reinstate omitted **Vibration** zones.

48-51 ATM-1, ATM-2, ATM-3 & ATM-4

There are four **ATM** (Automatic Teller Machine) zone types. These zone functions are continuously operational and are designed for the special maintenance and restocking requirements of ATM's.

A single **ATM** zone type can be omitted for the duration of the period entered in the **ATM Timeout** parameter (option **51.39**). The **ATM Delay** parameter (option **51.38**) determines the delay before the selected **ATM** zones are omitted once selected by an ATM code. Each of the zones **ATM-1** to **ATM-4** zones activates a corresponding **ATM** output.

NOTE: The relevant **ATM** outputs are activated as soon as the **ATM Delay** expires.

On entering an ATM code, the system prompts for one of the **ATM** zone types to be selected; to select the **ATM** zone type to be omitted use the **A>** or **<B** key or enter the number of the **ATM** zone type. Once the zone is selected, the keypad indicates the **DELAY ACCESS** - the number of minutes remaining until the **ATM** zones are omitted. Once the zone is omitted, the initiating keypad indicates the **ACCESS TIMEOUT** – the number of minutes remaining until the selected ATM zones are reintroduced to the system. The **Entry/Exit Horns** sound a warning ten and five minutes before the zones are reinstated.

The omitted **ATM** zone type can be reinstated at any time, or the omit period can be extended by the ATM user code. Enter the ATM code and press the **ent** key; the system prompts for **1 = RESET ACCESS** or **2 = ABORT ACCESS**. Press 1 to restart the **ATM Timeout** or **2** to reinstate the omitted **ATM's**.

NOTE: Only one ATM zone type may be omitted at any time.

52 Alarm Extend

The **Alarm Extend** function is identical to the **Urgent** function, with the exception that if the zone is open (and has not been previously omitted) at the end of the bell duration (refer to option **51.1 = PARAMETERS.Bell Time**) it immediately activates another full alarm condition. **Alarm Extend** zones can only be omitted by option **11 = OMIT ZONES**.

Option 53 – Program Outputs

This option is used by the engineer to modify the programming of the outputs on the system. The option also allows the attributes of the outputs to be changed. The programmable options are:

	Attributes	Description
1	Output Function	Assign output type
2	Output Mode	1 = Latch - requires valid code to reset 2 = Reflex (Follow) - follows activation status of zones 3 = Pulse (001 - 3000 secs) - activates for programmed period
3	Output Polarity	0 = POS - 12V going to 0V in activation 1 = NEG - 0V going to 12V in activation
4	Diag. Recording	Assigns output to be active during Diagnostic Test
5	Descriptor	Assigns a descriptor of up to 12 characters for each output
6	Lighting	1 = Control (0=OFF, 1=Toggle, 2=Trigger) 2 = Show Status (0=OFF, 1=ON)
7	Output Groups	Assign groups to the output
Note: Groups only appear if the Group option is enabled (refer to option 63.1 = OPTIONS. Groups).		

Table 6-18. Output Attributes

Selecting Outputs

RIO Outputs
On entering the option, the first output on the system is displayed; the output address, function and mode are displayed on the top line, the polarity and assigned groups are displayed on the bottom line.

From the display of the first output, any output on the system can be displayed by pressing the **A>** or **<B** keys or by entering the address of a specific output.

The output is selected for programming by pressing the **ent** key; the first output programming attribute **1=Op Function** is displayed.

Trigger Header Outputs {Not Evaluated by UL}
There are six trigger outputs that can be used as communication triggers, but can also be used for any other purpose. The output address and default function of these outputs are as follows:
0001 - Fire
0002 - Panic
0003 - Intruder
0004 - Set
0005 - Zone Omit
0006 - Confirm

Keypad Outputs
The keypad outputs are fully programmable. The address of the keypad output is the keypad address prefixed with a star, for example the output for keypad 06 is ***06**. The function of keypad outputs default to **Entry/Exit Horn**.

The valid addresses of the keypads on each of the panels and the respective output addresses are indicated in the following table:

Panel	Line	Address	Output Addresses
GX-48	1	0 – 2, B, C, D, E & F (NOTE)	10-12, 15-19
GX-520	1	0 – 2, B, C, D, E & F (NOTE)	10-12, 15-19
	2	0 – 6 & F	20-26, 29
	3	0 – 6 & F	30-36, 39
	4	0 – 6 & F	40-46, 49

Table 6-19. Addresses of Valid Keypad Outputs

It is possible to add additional keypads at any unused comms module addresses (B, C, D and E) as detailed in the following NOTE. These must be standard keypads. An engineer keypad can also be used at address F.

Control Horn (*99)

The control unit horn output - addressed as *** 99 -** is fully programmable.

Attributes

The attributes can be stepped through by pressing the **A>** or **<B** keys or directly selected by pressing the attribute number (**1–4**). Once the required attribute is on display, press the **ent** key to gain access for modification.

Once the attribute has been assigned press the **ent** key to save the programming and return to the attribute selection level. Pressing the **esc** key at any time when assigning attributes aborts the programming and returns to the attribute selection level.

1 = Output Function

Entering the **Output Function** attribute displays the address and the current function of the selected output along with the output function reference number. The output functions can be stepped through, forwards or backwards, using the **A>** and **<B** keys. Alternatively, a function can be directly selected by entering the function reference number, for example, entering **16** displays output function **16 = FIRE**.

Once the required output function is displayed, it is assigned to the output by pressing the **ent** key.

2 = Output Mode

Each output function defaults to a specific, logical output mode. However, the output mode of each function can be modified to meet special requirements: when reprogrammed, the new mode applies to all outputs assigned to that function. The output modes are:

> **1 = Latch**: the output remains active until a valid code is entered.

> **2 = Reflex (Follow)**: the output follows the activity of the triggering event, for example, the **Set** output follows the setting (arming) and unsetting (disarming) of the group.

> **3 = Pulse**: the output remains active for the programmed pulse time 1-3000 seconds (50 mins).

Programming the Output Mode

Select the required mode using the **A>** or **<B** keys or by selecting the number **1 – 3**. Once the required mode is on selected, press the **ent** key to accept the programming. If assigning the **Pulse** output mode, enter the pulse time (001 – 3000 seconds) and press the **ent** key.

3 = Output Polarity

The **Output Polarity** determines the normal operational state of the output. All outputs are referred to having positive (**0 = POS**) or negative (**1 = NEG**) polarity. An output programmed as positive polarity is 12 V in the normal condition and goes to 0 V when activated. A negative polarity output goes from the normal condition of 0 V to 12 V in the active state. All outputs except **SET (09)** default to positive output mode.

NOTE: The **Switch DC** output is a positive polarity output, however, the normal condition is 0 V, going to 12 V when activated. The output mode is normally **Pulse**.

4 = Diag Recording

When this attribute is enabled, the selected output will be switched on during the diagnostic test (see Option **61.2.3=Diagnostics.Historical.Record**).

This test can also be carried out remotely.

5 = Descriptor

This attribute assigns a descriptor of up to 12 characters for each output.

6 = Lighting

This attribute allows the state of certain panel outputs to be controlled by the user from the Touch Center. There are two options:

1 = Control

Each lighting output can be controlled by setting to **0=OFF**, **1=Toggle** or **2=Trigger.**

If the **Control** is set to **Toggle** or **Trigger** for an output, it will be controllable via the TouchCenter whose group map contains the output's group. If the Control is set to **OFF** it cannot be controlled or viewed by the TouchCenter.

2 = Show Status

The status can be either **0=OFF** or **1=ON**. When set to ON the light shows the state of the output.

7 = Output Groups

NOTE: The **Groups** attribute is only available if groups have been enabled on the system (refer to option **63 = OPTIONS**).

The **Group** attribute allows the output to be assigned to the groups on the system; an output can be assigned to more than one group. All outputs default to all groups on the system.

On selecting the **Output Groups** attribute, the groups that the output is currently assigned to are displayed. Press the relevant number keys to toggle the status of the group and press the **ent** key; if the group number is displayed on the top line, then the group is assigned to the output; if a dash (–) appears in place of the group number, the group has been removed from the output.

The output will activate if triggered by an event in any of the groups assigned to that output, unless output group status has been programmed.

Multi-group Systems

The GX-520 panel has 32 groups; these are displayed on the keypad in block of eight groups, subdivided into A, B, C and D:

Group Block	Physical Groups
A1-8	1-8
B1-8	9-16
C1-8	17-24
D1-8	25-32

Table 6-20. Output Groups

Use the **A>** or **<B** key to select the required group (**A1–D8**). When the end of a block is reached, the next block of eight groups is selected; press keys **1–8** to toggle the status of the relevant group in the current block to the output; press the **ent** key to accept the selection.

Group Status

This group attribute offers an additional feature that makes the operation of the output conditional on the set (armed) status of each of the system groups. An output assigned **Group Status** only activates if the set (armed) conditions of the programming are met, for example, an **Intruder** output used to trigger a communicator can be programmed to activate only if groups **2** and **4** are set (armed) and group **3** is unset (disarmed).

```
Groups   12345678
STATUS >-SUS----
```
GX-098-V0

To assign the **Group Status** conditions, press the * key when selecting the groups: an arrow (**>**) is displayed on the bottom line as well as the current **Status**. Press the relevant number keys to toggle the status of the groups and press the **ent** key to accept the programming. The available group status conditions are:

S = Set (armed) — group must be set (armed) to allow output to activate;

U = Unset (disarmed) — group must be unset (disarmed) to allow output to activate;

– = Set (armed) or unset (disarmed) — output activation is independent of the group status.

Output Functions

The following table shows all the outputs and the zone functions and conditions that result in their activation.

Output Functions		Bells	Strobe	PA	Intruder	Tamper	24 Hrs	Reset	Switch DC	Set	Engineer	Spare	Ready	Security	AC Fail
	Zone Function	01	02	03	04	05	06	07	08	09	10	11	12	13	14
01	Final	S	S	-	S	T	-	X	-	-	-	-	A	-	-
02	Exit	S	S	-	S	T	-	-	-	-	-	-	A	-	-
03	Intruder	S	S	-	S	T	-	-	-	-	-	-	A	-	-
04	24 Hours	S	S	-	S	T	A	-	-	-	-	-	A	A	-
05	Security	S	S	-	S	T	-	-	-	-	-	-	A	-	-
06	Dual	S	S	-	S	T	-	-	-	-	-	-	A	-	-
07	Entry	S	S	-	S	T	-	-	-	-	-	-	A	-	-
08	Push Set	-	-	-	-	T	-	X	-	-	-	-	-	-	-
09	Keyswitch	-	-	-	-	T	-	X	X	S	-	-	-	-	-
10	Secure Final	S	S	-	S	T	-	X	-	-	-	-	A	U	-
11	Part Final	S	S	-	S	T	-	X	-	-	-	-	A	-	-
12	Part Entry	S	S	-	S	T	-	-	-	-	-	-	A	-	-
13	PA	A	A	A	-	T	-	-	-	-	-	-	A	-	-
14	PA Silent	-	-	A	-	T	-	-	-	-	-	-	A	-	-
15	PA Delay	A	A	A	-	T	-	-	-	-	-	-	A	-	-
16	PA Delay Silent	-	-	A	-	T	-	-	-	-	-	-	A	-	-
17	Link	?	?	?	?	?T	?	?	?	?	?	?	?	?	?
18	Spare	-	-	-	-	T	-	-	-	-	-	-	-	-	-
19	Fire	A	A	-	-	T	-	-	-	-	-	-	-	-	-
20	Tamper	S	S	-	S	A	-	-	-	-	-	-	A	-	-
21	Bell Tamper	A	S	-	S	A	-	-	-	-	-	-	A	-	-
22	Beam Pair	S	S	-	S	T	-	-	-	-	-	-	A	-	-
23	Battery Low	-	-	-	-	T	-	-	-	-	-	-	-	-	-
24	Line Fail	-	-	-	-	T	-	-	-	-	-	-	-	-	-
25	AC Fail	-	-	-	-	T	-	-	-	-	-	-	-	-	A
26	Log	-	-	-	-	T	-	-	-	-	-	-	A	-	-
27	Remote Access	-	-	-	-	T	-	-	-	-	-	-	-	-	-
28	Video	S	S	-	S	T	-	-	-	-	-	-	A	-	-
29	Video Exit	S	S	-	S	T	-	-	-	-	-	-	A	-	-
30	Intruder Delay	S	S	-	S	T	-	-	-	-	-	-	A	-	-
31	Log Delay	-	-	-	-	T	-	-	-	-	-	-	-	-	-
32	Set Log	-	-	-	-	T	-	-	-	-	-	-	-	-	-
33	Custom-A	?	?	?	?	?T	?	?	?	?	?	?	?	?	?
34	Custom-B	?	?	?	?	?T	?	?	?	?	?	?	?	?	?
35	Exit Guard	L	L	L	L	LT	L	L	L	L	L	L	L	L	L
36	Mask	S	S	-	S	T	-	-	-	-	-	-	A	-	-
37	Urgent	A	A	-	A	T	-	-	-	-	-	-	A	-	
38	PA Unset	-	-	U	-	T	-	-	-	-	-	-	U	-	
39	Keyswitch Reset	-	-	-	-	T	X	-	-	-	-	-	-	-	-
40	Bell Fail	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41	Intr Low	S	S	-	S	T	-	-	-	-	-	-	A	-	-
42	Intr High	S	S	-	S	T	-	-	-	-	-	-	A	-	-
43	PSU Fault	-	-	-	-	T	-	-	-	-	-	-	-	-	-
44-46	Not Used	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47	Vibration	A	A	-	A	T	-	-	-	-	-	-	A	-	-
48	ATM-1	A	A	-	A	T	-	-	-	-	-	-	A	-	-
49	ATM-2	A	A	-	A	T	-	-	-	-	-	-	A	-	-
50	ATM-3	A	A	-	A	T	-	-	-	-	-	-	A	-	-
51	ATM-4	A	A	-	A	T	-	-	-	-	-	-	A	-	-
52	Alarm Extend	A	A	-	A	T	-	-	-	-	-	-	A	-	-

Key:

S = Activates when system is set (armed)

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L = Switches output off if linked to destination output

T = Activates if zone resistance is less than value for tamper s/c or greater than value for tamper o/c

O = Activates when zone is omitted (bypassed)

Table 6-21. Output Activations per Zone

Output Functions / Zone Function		Batt Low 15	Fire 16	Horn 17	E/E Horn 18	Part Set 19	Confirm 20	Line Fail 21	Video 22	Comm Fail 23	Batt Test 24	Wrong CD 25	Alert 26	DLYD Fire 27	No Re-arm 28
01	Final	-	-	S	SXE	-	-	-	S	-	-	-	-	-	S
02	Exit	-	-	S	SXE	-	S	-	S	-	-	-	-	-	S
03	Intruder	-	-	S	SXE	-	S	-	S	-	-	-	-	-	S
04	24 Hours	-	-	S	A	-	-	-	S	-	-	-	-	-	S
05	Security	-	-	S	A	-	-	-	S	-	-	-	-	-	S
06	Dual	-	-	S	SXE	-	S	-	S	-	-	-	-	-	S
07	Entry	-	-	S	SXE	-	-	-	S	-	-	-	-	-	S
08	Push Set	-	-	-	X	-	-	-	-	-	-	-	-	-	-
09	Keyswitch	-	-	-	-	X	-	-	-	-	-	-	-	-	-
10	Secure Final	-	-	A	X	S	-	S	-	-	-	-	S	-	
11	Part Final	-	-	A	SXE	X	S	-	S	-	-	-	-	S	-
12	Part Entry	-	-	A	XE	X	S	-	S	-	-	-	-	S	-
13	PA	-	-	A	-	-	-	-	-	-	-	-	-	A	-
14	PA Silent	-	-	A	-	-	-	-	-	-	-	-	-	A	-
15	PA Delay	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	PA Delay Silent	-	-	A	A	-	-	-	-	-	-	-	-	A	-
17	Link	?	?	?	?	?	?	?	?	?	?	?	?	?	?
18	Spare	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	Fire	-	A	A	A	-	-	-	V	-	-	-	-	A	A
20	Tamper	-	-	A	A	-	-	-	S	-	-	-	-	-	S
21	Bell Tamper	-	-	A	A	-	-	-	S	-	-	-	-	-	S
22	Beam Pair	-	-	S	SXE	-	-	-	S	-	-	-	-	-	S
23	Battery Low	U	-	-	-	-	-	-	-	-	-	-	-	-	-
24	Line Fail	-	-	-	U	-	-	A	-	-	-	-	-	-	-
25	AC Fail	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	Log	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	Remote Access	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	Video	-	-	S	SXE	-	S	-	S	-	-	-	-	-	S
29	Video Exit	-	-	S	SXE	-	S	-	S	-	-	-	-	-	S
30	Intruder Delay	-	-	S	SXE	-	-	-	S	-	-	-	-	-	S
31	Log Delay	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	Set Log	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33	Custom-A	?	?	?	?	?	?	?	?	?	?	?	?	?	?
34	Custom-B	?	?	?	?	?	?	?	?	?	?	?	?	?	?
35	Exit Guard	L	L	L	L	L	L	L	L	L	L	L	L	L	L
36	Mask	-	-	S	SXE	-	-	-	S	-	-	-	-	-	S
37	Urgent	-	-	A	A	-	-	-	-	-	-	-	-	-	A
38	PA Unset	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	Keyswitch Reset	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40	Bell Fail	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41	Intr Low	-	-	S	SXE	-	S	-	S	-	-	-	-	-	S
42	Intr High	-	-	S	SXE	-	S	-	S	-	-	-	-	-	S
43	PSU Fault	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44-46	Not Used	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47	Vibration	-	-	-	-	-	-	-	-	-	-	-	-	-	-
48	ATM-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
49	ATM-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
50	ATM-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
51	ATM-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
52	Alarm Extend	A	A	-	A	T	-	-	-	-	-	-	A	-	-

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L = Switches output off if linked to destination output

T = Activates if zone resistance is less than value for tamper s/c or greater than value for tamper o/c

O = Activates when zone is omitted (bypassed)

Table 6-21. Output Activations per Zone

Output Functions		Timer-A	Timer-B	Walk Test	Zone Omit	Warning	Custom A	Custom B	Test	Reset RQD	Mask	Valid cd	Fail Set	Duress	Illegal Code
Zone Function		29	30	31	32	33	34	35	36	37	38	39	40	41	42
01	Final	-	-	U	O	A	-	-	-	S?	-	-	-	-	-
-02	Exit	-	-	U	O	A	-	-	-	S?	-	-	-	-	-
03	Intruder	-	-	U	O	A	-	-	-	S?	-	-	-	-	-
04	24 Hours	-	-	U	O	A	-	-	-	S?	-	-	-	-	-
05	Security	-	-	U	O	A	-	-	-	S?	-	-	-	-	-
06	Dual	-	-	U	O	A	-	-	-	S?	-	-	-	-	-
07	Entry	-	-	U	O	A	-	-	-	S?	-	-	-	-	-
08	Push Set	-	-	U	O	A	-	-	-	-	-	-	-	-	-
09	Keyswitch	-	-	U	O	A	-	-	-	-	-	-	UX	-	-
10	Secure Final	-	-	U	O	A	-	-	-	-	-	-	-	-	-
11	Part Final	-	-	U	O	A	-	-	-	-	-	-	-	-	-
12	Part Entry	-	-	U	O	A	-	-	-	-	-	-	-	-	-
13	PA	-	-	U	O	A	-	-	-	-	-	-	-	-	-
14	PA Silent	-	-	U	O	A	-	-	-	-	-	-	-	-	-
15	PA Delay	-	-	U	O	A	-	-	-	-	-	-	-	-	-
16	PA Delay Silent	-	-	U	O	A	-	-	-	-	-	-	-	-	-
17	Link	?	?	U?	O?	?	?	?	?	?	?	?	?	?	?
18	Spare	-	-	-	-	A	-	-	-	-	-	-	-	-	-
19	Fire	-	-	U	O	A	-	-	-	A?	-	-	-	-	-
20	Tamper	-	-	U	O	A	-	-	-	A?	-	-	-	-	-
21	Bell Tamper	-	-	U	O	A	-	-	-	A?	-	-	-	-	-
22	Beam Pair	-	-	U	O	A	-	-	-	-	-	-	-	-	-
23	Battery Low	-	-	U	O	A	-	-	-	-	-	-	-	-	-
24	Line Fail	-	-	U	O	A	-	-	-	-	-	-	-	-	-
25	AC Fail	-	-	U	O	A	-	-	-	-	-	-	-	-	-
26	Log	-	-	U	O	A	-	-	-	-	-	-	-	-	-
27	Remote Access	-	-	U	O	A	-	-	-	-	-	-	-	-	-
28	Video	-	-	U	O	A	-	-	-	S?	-	-	-	-	-
29	Video Exit	-	-	U	O	A	-	-	-	S?	-	-	-	-	-
30	Intruder Delay	-	-	U	O	A	-	-	-	S?	-	-	-	-	-
31	Log Delay	-	-	U	O	A	-	-	-	-	-	-	-	-	-
32	Set Log	-	-	U	O	A	-	-	-	-	-	-	-	-	-
33	Custom-A	?	?	?	O?	?	?	?	?	?	?	?	?	?	?
34	Custom-B	?	?	?	O?	?	?	?	?	?	?	?	?	?	?
35	Exit Guard	L	L	LO	L	L	L	L	L	L	L	L	L	L	L
36	Mask	-	-	-	-	-	-	-	-	-	SPE	-	-	-	-
37	Urgent	-	-	U	O	A	-	-	-	A?	-	-	-	-	-
38	PA Unset	-	-	U	O	A	-	-	-	U?	-	-	-	-	-
39	Keyswitch Reset	-	-	U	O	A	-	-	-	-	-	-	-	-	-
40	Bell Fail	-	-	-	-	A	-	-	-	-	-	-	-	-	-
41	Intr Low	-	-	U	O	A	-	-	-	S?	-	-	-	-	-
42	Intr High	-	-	U	O	A	-	-	-	S?	-	-	-	-	-
43	PSU Fault	-	-	U	O	A	-	-	-	-	-	-	-	-	-
44-46	Not Used	-	-	U	O	A	-	-	-	-	-	-	-	-	-
47	Vibration	-	-	U	O	A	-	-	-	A?	-	-	-	-	-
48	ATM-1	-	-	U	O	A	-	-	-	A?	-	-	-	-	-
49	ATM-2	-	-	U	O	A	-	-	-	A?	-	-	-	-	-
50	ATM-3	-	-	U	O	A	-	-	-	A?	-	-	-	-	-
51	ATM-4	-	-	U	O	A	-	-	-	A?	-	-	-	-	-
52	Alarm Extend	-	-	U	O	A	-	-	-	A?	-	-	-	-	-

Key:

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L = Switches output off if linked to destination output

T = Activates if zone resistance is less than value for tamper s/c or greater than value for tamper o/c

O = Activates when zone is omitted (bypassed)

Table 6-21. Output Activations per Zone

Output Functions		Max Tamp	Abort	Unset	Set Late	U/S Early	Pre-Warn	Autoset	DR Masked	Link A-O	RF Jam	RF Super	Bell Fail	Low volts	Lockout
Zone Function		43	44	45	46	47	48	49	50	51-65	66	67	68	69	70
01	Final	-	-	-	-	?	-	-	?	-	-	-	-	-	-
-02	Exit	-	-	-	-	?	-	-	?	-	-	-	-	-	-
03	Intruder	-	-	-	-	?	-	-	?	-	-	-	-	-	-
04	24 Hours	-	-	-	-	?	-	-	?	-	-	-	-	-	-
05	Security	-	-	-	-	?	-	-	?	-	-	-	-	-	-
06	Dual	-	-	-	-	?	-	-	?	-	-	-	-	-	-
07	Entry	-	-	-	-	?	-	-	?	-	-	-	-	-	-
08	Push Set	-	-	U?	S?	-	-	-	?	-	-	-	-	-	-
09	Keyswitch	-	U	-	-	?	-	-	?	-	-	-	-	-	-
10	Secure Final	-	-	-	-	?	-	-	?	-	-	-	-	-	-
11	Part Final	-	-	-	-	?	-	-	?	-	-	-	-	-	-
12	Part Entry	-	-	-	-	?	-	-	?	-	-	-	-	-	-
13	PA	-	-	-	-	?	-	-	?	-	-	-	-	-	-
14	PA Silent	-	-	-	-	?	-	-	?	-	-	-	-	-	-
15	PA Delay	-	-	-	-	?	-	-	?	-	-	-	-	-	-
16	PA Delay Silent	-	-	-	-	?	-	-	?	-	-	-	-	-	-
17	Link	-	?	?	?	?	?	?	?	?	?	?	?	-	?
18	Spare	-	-	-	-	?	-	-	?	-	-	-	-	?	-
19	Fire	-	-	-	-	?	-	-	?	-	-	-	-	-	-
20	Tamper	-	-	-	-	?	-	-	?	-	-	-	-	-	-
21	Bell Tamper	-	-	-	-	?	-	-	?	-	-	-	-	-	-
22	Beam Pair	-	-	-	-	?	-	-	?	-	-	-	-	-	-
23	Battery Low	-	-	-	-	?	-	-	?	-	-	-	-	23	-
24	Line Fail	-	-	-	-	?	-	-	?	-	-	-	-	-	-
25	AC Fail	-	-	-	-	?	-	-	?	-	-	-	-	-	-
26	Log	-	-	-	-	?	-	-	?	-	-	-	-	-	-
27	Remote Access	-	-	-	-	?	-	-	?	-	-	-	-	-	-
28	Video	-	-	-	-	?	-	-	?	-	-	-	-	-	-
29	Video Exit	-	-	-	-	?	-	-	?	-	-	-	-	-	-
30	Intruder Delay	-	-	-	-	?	-	-	?	-	-	-	-	-	-
31	Log Delay	-	-	-	-	?	-	-	?	-	-	-	-	-	-
32	Set Log	-	-	-	-	?	-	-	?	-	-	-	-	-	-
33	Custom-A	-	?	?	?	?	?	?	?	?	?	?	?	?	?
34	Custom-B	-	?	?	?	?	?	?	?	?	?	?	?	?	?
35	Exit Guard	-	L	L	L	L	L	L	L	L	L	L	-	L	L
36	Mask	-	-	-	-	?	-	-	?	-	-	-	-	-	-
37	Urgent	-	-	-	-	?	-	-	?	-	-	-	-	-	-
38	PA Unset	-	-	-	-	?	-	-	?	-	-	-	-	-	-
39	Keyswitch Reset	-	-	-	-	?	-	-	?	-	-	-	-	-	-
40	Bell Fail	-	-	-	-	?	-	-	?	-	-	-	-	-	-
41	Intr Low	-	-	-	-	?	-	-	?	-	-	-	-	-	-
42	Intr High	-	-	-	-	?	-	-	?	-	-	-	-	-	-
43	PSU Fault	-	-	-	-	?	-	-	?	-	-	-	-	-	-
44-46	Not Used	-	-	-	-	?	-	-	?	-	-	-	-	-	-
47	Vibration	-	-	-	-	?	-	-	?	-	-	-	-	-	-
48	ATM-1	-	-	-	-	?	-	-	?	-	-	-	-	-	-
49	ATM-2	-	-	-	-	?	-	-	?	-	-	-	-	-	-
50	ATM-3	-	-	-	-	?	-	-	?	-	-	-	-	-	-
51	ATM-4	-	-	-	-	?	-	-	?	-	-	-	-	-	-
52	Alarm Extend	-	-	-	-	?	-	-	?	-	-	-	-	-	-

Key:

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O = Activates when zone is omitted (bypassed)

Table 6-21. Output Activations per Zone

Output Functions		Vib Test	ATM1-4	Fault	Bell Test	Comms Test	Door Prop	Door Forced	Listen-In
Zone Function		71	72-75	76	77	78	79	80	81
01	Final	-	-	-	-	-	?	-	-
02	Exit	-	-	-	-	-	?	-	-
03	Intruder	-	-	-	-	-	?	-	?
04	24 Hours	-	-	-	-	-	?	-	-
05	Security	-	-	-	-	-	?	-	-
06	Dual	-	-	-	-	-	?	-	-
07	Entry	-	-	-	-	-	?	-	-
08	Push Set	-	-	-	-	S?	?	-	-
09	Keyswitch	-	-	-	-	-	?	-	-
10	Secure Final	-	-	-	-	-	?	-	-
11	Part Final	-	-	-	-	-	?	-	-
12	Part Entry	-	-	-	-	-	?	-	-
13	PA	-	-	-	-	-	?	-	?
14	PA Silent	-	-	-	-	-	?	-	?
15	PA Delay	-	-	-	-	-	?	-	?
16	PA Delay Silent	-	-	-	-	?	?	-	?
17	Link	?	-	-	-	-	?	?	-
18	Spare	?	-	-	-	-	?	-	-
19	Fire	-	-	-	-	-	?	-	?
20	Tamper	-	-	-	-	-	?	-	-
21	Bell Tamper	-	-	-	-	-	?	-	-
22	Beam Pair	-	-	-	-	-	?	-	-
23	Battery Low	-	A	-	-	-	?	-	-
24	Line Fail	-	A	-	-	-	?	-	-
25	AC Fail	-	A	-	-	-	?	-	-
26	Log	-	-	-	-	-	?	-	-
27	Remote Access	-	-	-	-	-	?	-	-
28	Video	-	-	-	-	-	?	-	-
29	Video Exit	-	-	-	-	-	?	-	-
30	Intruder Delay	-	-	-	-	-	?	-	?
31	Log Delay	-	-	-	-	-	?	-	-
32	Set Log	-	-	-	-	-	?	-	-
33	Custom-A	?	-	-	-	?	?	?	-
34	Custom-B	?	-	-	-	?	?	?	-
35	Exit Guard	L	-	-	-	-L	?	L	-
36	Mask	-	A	-	-	-	?	-	-
37	Urgent	-	-	-	-	-	?	-	-
38	PA Unset	-	-	-	-	-	?	-	?
39	Keyswitch Reset	-	-	-	-	-	?	-	-
40	Bell Fail	-	A	-	-	-	?	-	-
41	Intr Low	-	-	-	-	-	?	-	?
42	Intr High	-	-	-	-	-	?	-	?
43	PSU Fault	-	A	-	-	-	?	-	-
44-46	Not Used	-	-	-	-	-	?	-	-
47	Vibration	-	-	-	-	-	?	A	-
48	ATM-1	O	-	-	-	-	?	-	-
49	ATM-2	O	-	-	-	-	?	-	-
50	ATM-3	O	-	-	-	-	?	-	-
51	ATM-4	O	-	-	-	-	?	-	-
52	Alarm Extend	-	-	-	-	-	?	-	-

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S = Activates when system is set (armed)

P = Activates when system is Part set (Part armed)

U = Unset (disarmed)

A = Activated in any condition

- = No effect

? = Activation dependant on system programming

X = Activates during Exit Time

E = Activates during Entry

L = Switches output off if linked to destination output

T = Activates if zone resistance is less than value for tamper s/c or greater than value for tamper o/c

O = Activates when zone is omitted (bypassed)

Table 6-21. Output Activations per Zone

01 Bells (Latch)

The **Bells** output is activated on a full alarm event when the system is set (armed). This output is subject to the **Bell Time, Bell Delay** and **No. Rearm** parameters.

02 Strobe (Latch)

The **Strobe** output is activated on a full alarm event during the set (armed) state. This output is subject to the **Bell Delay**. The **Strobe** output follows the **Bell Time**, but latches on after the last rearm.

03 PA (Latch)

The **PA** output is activated whenever any of the **PA** zone types activate. The output is not subject to the **Rearm** parameter; it latches on remains active until a valid code, with the appropriate **PA Reset** level, is entered.

04 Intruder (Latch)

The **Intruder** output is activated on a full alarm event during the set (armed) state. Dependent upon the programming of parameter 51.56 **Force Restore** the intruder output restore is either subject to the Confirm Time Window + unset or entry of a valid code with the appropriate system reset level. Refer to the 51.56 **Force Restore** description for further details.

05 Tamper (Latch)

The **Tamper** output is activated whenever a circuit tamper or lid tamper occurs. The output is not subject to the **Rearm** parameter: it latches on and remains active until a valid code, with the appropriate **Tamper Reset** level, is entered.

The output is also activated on the first entry of the engineer code when accessing engineer mode.

NOTE: The **Tamper** output is not activated on the GX-Series 512 when engineer access is authorized by the user.

06 24 Hours

The **24 Hours** output is activated whenever a **24 Hour** zone is activated. The output is not subject to the **Rearm** parameter: it latches on and remains active until a valid code, with the appropriate **System Reset** level, is entered.

07 Reset (Latch)

The **Reset** output type is used as a control line output to latch, freeze and reset movement detector LEDs.

08 Switch DC (Pulse)

This **Switch DC** output is used to power detectors that require a momentary power interruption to reset them, for example, break glass or vibration detectors. This output reverses its polarity (changes from 0V to 12V) for the period of the **Pulse** output mode when the setting (arming) procedure has been initiated.

NOTE: When installing detectors that require to be powered from a **Switch DC** output, connect the positive lead of the detector to the 12V terminal of a power supply and the negative lead to **SwitchDC** output terminal. **Do not** change the **Output Polarity** to **1=Neg**: it must remain as positive polarity.

NOTE: The maximum output is 12 V at 400 mA total.

09 Set (Reflex)

The **Set** output is activated when the assigned groups on the system are set (armed). This output is a **Reflex** (follow) output and follows the set (armed) and unset (disarmed) status of the groups.

10 Engineer (Reflex)

The **Engineer** output is activated while the engineer mode is being accessed.

11 Spare (Latch)

The **Spare** output has function: it is used to designate outputs that are not being used on the system.

12 Ready (Reflex)

The **Ready** output is active when all zones in the system (group) are closed. This output activates in both the unset (disarmed) and set (armed) conditions.

13 Security (Latch)

The **Security** output is activated whenever a **Security** zone is activated. The output is not subject the **Rearm** parameter: it latches on and remains active until a valid code (type 2 or above) is entered.

14 AC Fail (Reflex)

The **AC Fail** output indicates the status of the AC (mains) power supply. The output activates when the AC supply fails or an **AC Fail** zone is activated. The output is reset when the AC supply is restored or the **AC Fail** zone is closed. The activation is delayed subject to the time entered in the **20=Power Delay** parameter.

15 Battery Low (Reflex)

The **Battery Low** output activates whenever the control unit stand-by battery falls below 10.2V or a **Battery Low** zone is activated. The output is restored when the voltage rises above 10.2V or the **Battery Low** zone is closed.

16 Fire (Latch) {Not for UL installations}

The **Fire** output is activated whenever a **Fire** zone is activated. The output is not subject to the **Rearm** parameter: it latches on and remains active until a valid code (type 2 or above) is entered.

17 Horn (Latch)

The **Horn** output is a general alarm output and is activated by most zone types in both the local and full alarm modes. For example, a **Fire** zone activation causes the **Horn** output to pulse on and off – on for 0.5 seconds, off for 0.1 seconds. The **Horn** output is subject to the **Bell Time, Bell Delay and No. Rearm** parameters.

18 E/E Horn (Latch)

The **Entry/Exit Horn** output has a dual function:
- in an alarm condition its function is identical to that of the **Horn** output;
- during the unsetting (disarming) and setting (arming) of the system it is used to provide an indication on the status of the system. The indication states are as follows:
  - General Alarm - ON 500 msecs. OFF 500 msecs.
  - Clear to Exit - Continuous
  - Exit interrupted - ON 100 msecs. OFF 100 msecs.
  - 75% Exit Time - ON 200 msecs. OFF 200 msecs.
  - Set - ON 600 msecs. OFF 600 msecs (twice)
  - Normal Entry - ON 800 msecs. OFF 200 msecs.
  - 75% Entry Time - ON 200 msecs. OFF 200 msecs.
  - Fire - ON 500 msecs. OFF 100 msecs.
  - Chime - ON 500 msecs. OFF 400 msecs (twice)

19 Part Set (Reflex)

The **Part Set** output is activated when the assigned groups on the system are part set (part armed). This output is a **Reflex** (follow) output and follows the part set and unset status of the groups.

20 Confirm (Latch)

The **Confirm** output is activated when there have been activations on two separate zones: the second activation must occur within the Confirm Time Window. The zones do not have to be in the same group, however, both groups must be assigned to the **Confirm** output to allow activation. Cross-group confirmation is controlled by the **Communications** programming in menu **56.1, Int Telecoms or 56.5, Ext Telecoms.** If signaling is by DTMF format, cross-group confirmation will occur on groups that share the same confirm channel. In all other signaling formats, cross-group confirmation will occur on groups that share the same account number.

NOTE: The **Confirm** output is used to give positive identification that a genuine intruder alarm condition has occurred and to minimize the possibility of false alarm activations.

21 Line Fail (Reflex)

The **Line Fail** output is activated whenever a **Line Fail** zone is active or the telecom module detects and sustains a line failure for more than 30 seconds.

22 Video (Pulse)

The **Video** output is activated by the **Video** zone when the system is set (armed). This output can be used to activate video recorder or video transmission systems.

23 Comm Fail (Latch)

The **Comm Fail** output is activated whenever there is a communication failure on the telecoms module telephone line. A fail to communicate event overrides the remaining **Bell Delay** period.

24 Batt Test

This output is activated when a battery load test is in progress. Refer to option **61.1.4 = Diagnostics.Latest.PSU Comms.**

25 Wrong CD

This output is activated whenever a wrong code alarm occurs. That is, when six wrong codes in succession are entered at the keypad. The output, by default pulses on for 90 seconds.

26 Alert (Latch)

The **Alert** output is activated when the control panel loses communication with one of the remote modules or keypads.

27 Fire Delay (Latch)

The **Fire Delay** output is activated whenever a **Fire** zone is activated. The activation of the output is delayed subject to the period determined by the **03=Abort Time** parameter. The **Fire Delay** output is not subject to the **Rearm** parameter: it latches on and remains active until a valid code (type 2 or above) is entered.

28 No Re-Arm (Latch)

The **No Rearm** output is activated on a full alarm event during the set (armed) state: it is subject to the **Bell Delay** parameter. The **No Rearm** output is similar to the strobe output, but it stays on at the end of the bell time, until unset (disarmed).

29 Timer A (Reflex)

The **Timer-A** output is controlled by the **Timer-A** option (refer to option **65=Timers A/B**) and activates in accordance with the programmed on and off times assigned to the function.

30 Timer B (Reflex)

The **Timer-B** output is controlled by the **Timer-B** option (refer to option **65=Timers A/B**) and activates in accordance with the programmed on and off times assigned to the function.

NOTE: If the TIMER A or B outputs are programmed as LATCH mode, then they can only be reset by a user code with access to all of the groups assigned to the relevant timer.

31 Walk Test (Reflex)

The **Walk Test** output is activated when a zone included in the walk test is tested (refer to option **31=Walk Test**).

32 Zone Omit (Reflex)

The **Zone Omit** ouput is activated as soon as a zone is omitted from the system by option **11=OMIT ZONES** or by option **54=LINKS**. If the **Output Mode** attribute is assigned as:
- **Reflex** (default) the output remains active until the zone is reinstated;
- **Latch** the output is reset on entry of a valid code.

33 Warning (Latch)

The **Warning** output is activated by the first occurrence of a high (1200-1300Ω) and low (800-900Ω) resistance reading on each of the system zones in a single 24 hour period: the activating zone is recorded in the log.

NOTE: The time period finishes at midnight, not 24 hours from first activation.

Subsequent high and low resistance readings from the same zone on the same day do not activate the output if it has been reset by a valid user code.

NOTE: If a low resistance reading is followed by a high resistance reading, the **Warning** output activates on the first occurrence of both activations.

34 Custom A (Latch)
The **Custom-A** output is activated whenever a **Custom-A** zone is activated.

35 Custom B (Latch)
The **Custom –B** output is activated whenever a **Custom-B** zone is activated.

36 Test (Pulse)
The **Test** output is activated at 12:00 hours each day for two seconds – the period of the **Pulse** can be altered. This output can be used to perform a daily test on an external dialer or communicator connected to the system.

37 Reset RQD (Latch)
The **Reset RQD** output is activated when a system, tamper or PA alarm has occurred that requires to be reset by the engineer (type 3.7) code. Refer to option **51=PARAMETERS** for details modifying the code types assigned to the **06=System Reset, 07=Tamper Reset** and **22=PA Reset** parameters.

38 Mask (Latch)
The **Mask** output is activated whenever the zone resistance values returned by the RIO to the panel fall within the range of the masked state (see Parameter 51.46, Zone Resistance). The output is not subject to the **Rearm** parameter: It latches on and remains active until a valid group code (type 2 or above) is entered.

39 Valid Code (Reflex)
The **Valid Code** output is activated by the entry of any valid code. If the **Output Mode** assigned is **Reflex** (follow), the output remains active while the user is accessing the menu and setting (arming) and unsetting (disarming) the system. Once the menu is exited or the system sets or unsets, the output is restored.

40 Fail Set (Latch)
The **Fail Set** is activated if the system (or assigned groups) fails to set (arm) within the time assigned in parameter **35=Fail to Set** – refer to option **51=PARAMETERS**.

41 Duress (Latch)
The **Duress** function is activated on entry of a **Duress Code** (any valid code followed by two #'s, or a code assigned as a **Duress Code** using menu option **42 – Codes**). The output is not subject to the **Rearm** parameter: it latches on and remains active until a valid code (type 2 or above) is entered.

42 Illegal Code (Latch)
The **Illegal Code** is activated 60 seconds after an entry of a single **Dual Code** or a code which is entered out with the **Timer A** and/or **Timer B** times assigned to it in menu option **42.1.4=CODES.User Codes.Schedule.**

43 NOT USED

44 Abort (Latch)
The ABORT output is activated when a valid code is entered during the Abort period on system entry.

45 Unset
The **Unset** output is activated each time the system (or group) is unset (disarmed). The default **output mode** attribute is programmed as pulse, for two seconds. This can be used to activate a buzzer to notify a user that the system has been unset, when using an RF fob.

46 Set Late (Latch)
The **Set Late** output is activated if the system has not been set (armed) by the programmed **Monitor** time – refer to option **65.3.1=TIMERS.Autoset.Status**.

47 U/S Early (Latch)

The **Unset Early** output is activated if the system has been unset (disarmed) before the programmed **Monitor** time – refer to option **65.3.1=TIMERS.Autoset.Status.**

48 Prewarn (Reflex)

The **Prewarn** output is active during the programmed prewarning period of the autoset function. The mode is **Reflex**. The **Prewarn** emits a constant tone if the autosetting of the system can be extended. If an extension is not possible, the **Prewarn** output pulses.

49 Autoset (Reflex)

The **Autoset** output is activated when the system has been set (armed) by the autoset function – refer to option **65.3=TIMERS.Autoset**. The default **Output Mode** attribute is programmed as Reflex, therefore the output remains active until the system unset (disarms).

NOTE: The **Set** is also activated when the system autosets.

50 DR. Masked

The DR. (detector) Masked output is activated when zones, programmed for zone activity checks, are not activated in the unset (disarmed) state within the time period or set/unset (armed/disarmed) cycles programmed in Parameter 51.61**.** The zones are programmed for activity in menu 52.8.

51 – 65 Link A – O (Reflex)

Link output types have no inherent function: they are designed for use with option **54 = LINKS** to provide the engineer with a means of activating a specific output address.

Link outputs can be activated by any of the link option sources. The operation of the **Link** output is dependent on the **Output Mode** and **Groups** assigned to the output. The **Groups** assigned to the **Link** must have at least one group common to the link output, if that output is to be activated. This feature can be used to multiply the number of different link outputs available on the system.

NOTE: When a zone function is the source of a **Link** output type, then a point to point link is available and is as effective as direct wiring.

66 NOT USED

67 NOT USED

68 Bell Fail

The **Bell Fail** output activates whenever a zone causes a fault condition.

69 Low Volts

The **Low Volts** output activates when the voltage of the AUX outputs drops below 10V.

70 Lockout (Reflex)

The **Lockout** output is active between the **ON** and **OFF** times assigned to the **Lockout Status** (option **65.3.6=TIMERS.Autoset.Lockout Status**). The **Lockout** output mode is **Reflex,** therefore it remains active until the lockout switches **OFF.**

71 Vibration Test (Pulse)

The **Vibration Test** function is used to test zones programmed as **Vibration.** This output is used in conjunction with **Precheck** (menu option **66 – Pre-Check: - Mode: 4 – Forced Check**). The Vibration Test output sends a five second positive removed pulse to the vault sensors. Any sensor not activated by the test is reported by the pre-check function and prevents the system from setting (arming).

72 – 75 ATM-1, ATM-2, ATM-3, ATM-4 (Reflex)

The relevant **ATM** output is activated when the respective **ATM** zone type is omitted (bypassed). This output is a **Reflex** output and follows the omit status of the **ATM** zone types.

76 Fault (Latch)

This output will activate any time there is a fault condition present on the panel and will clear when all the fault conditions have cleared.

The following fault types will activate the fault output:

Line fail (any module), ARC comms fail (any module), RF jam, RF low battery, RF supervision failure, Bell fail (from a bell fail zone), AC fail (panel, AC zone or power supply), Battery fail (panel, battery zone or power supply), Mask.

SMS signaling faults will not activate the fault outputs.

77 Bell Test

This output activates when Bell Test is selected via menu 32. This causes the bell and strobe output to activate. This output is normally used to activate a relay to cut power to the bell.

78 Comms Test (Pulse)

This output is used for remote routine inspection, via the downloader software. When a remote inspection is carried out, this output will activate for 10 seconds in order to trigger the test input of an external comms device.

79 Door Prop

This output activates when a door is held open for longer than the programmed time and an Open Timeout occurs (Option 69).

80 Door Force

This output activates when a door is forced open without authorization and an alarm occurs.

81 Listen-in

This output activates after an alarm activation and an audio transmission is in progress.

Option 54 – Links

The **Links** option offers a powerful method of interconnecting zones, output functions, codes, keypads, and MAX (access control) modules. The links table is constructed by creating a link between one of the source types and a valid destination type. Activating the source of a link activates the destination – this can be used to switch outputs on and off to omit zones, codes, keypads and MAX modules from the system.

The links function allows MAX destinations to be assigned a (*) star function. If the destination is programmed as MAX and the (*) star is allocated, the assigned MAX door relay will open for the duration the link is active. During this period no MAX alarms are generated if the door contact timeout is exceeded. The on-board horns are deactivated and the green open LED will be illuminated throughout.

When the link is deactivated the MAX horn sounds and the door relay remains open for the programmed relay duration period. - simulates an egress button activation.

If a max is disabled as the destination of a link, a card swiped at the max will still cancel an alarm or unset (disarm) the system. However it will not activate the relay or do a max function.
The number of links that can be assigned on the GX-48 system is 64 and the GX-520 system is 256.

Programming Links

On selecting the **Links** option, the details of **Link 01** are displayed. If no link has been assigned the screen displays **01 NOT USED.**

The details of each link can be displayed using the **A>** and **<B** keys, or a specific link can be selected by entering the required link number, for example **05, 29**. When the required link is displayed, press, the **ent** key to begin the programming procedure. The system prompts for the **Link Source** to be assigned. If groups are set (armed) then some sources and destinations will not be available for programming:

1. Press the **#** key to select the required link source from the available types (refer to Table 23. Link Source).

2. Press the **A>** or **<B** keys to select the actual link source (for example, the zone address or the user code number).

3. If the source is required to toggle the destination on and off, press the * key. The source is prefixed by a * on the display.

NOTE: The link destination is activated by the first operation of the source and then deactivated by the second operation.

4. Press the **ent** key; the source of the link is assigned and the keypad prompts for the link destination to be allocated.

5. Press the **#** key to select the required link destination from the available types (refer to Table 24. Link Destination).

6. Press the **A>** or **<B** keys to select the actual link destination (for example, the zone address or the output type). To cancel a link program the source as not used.

7. Press the **ent** key.

8. If the link destination is d). Output Type and Groups have been enabled (refer to option 63=OPTIONS) then each link must be allocated to at least one group (use the **A>** or **<B** key to move between the group blocks; press keys 1 – 8 to assign the relevant groups in each block) and press the **ent** key.

NOTE: The groups determine which of the assigned output type destinations the link activates.

9. The details of the assigned link are displayed.

NOTE: If the link is currently active, the source is separated from the destination by a **+** (plus) symbol. If the link is not active a **–** (negative) symbol is displayed.

10. Press the **A>** or **<B** key to move to the next link to be assigned and repeat steps 1 –9 or press the **ent** key to escape from the **LINKS** menu option.

Source Type	* Modifier	Example Display	Notes
a) Not Used	-		This link is not operational
b) Zone Address	Off	*1014	When the zone is opened the link is active.
			When the zone is closed the link is inactive.
	On	*1014	When the zone opens first time, the link is activated.
			When the zone opens a second time, the link is deactivated.
c) User Code	Off	*001	When the code is entered, the link is activated momentarily only. This option is only practical to trigger a destination event, for example, an output pulse.
	On	**001	When the code is entered first time, the link is activated.
			When the code is entered the second the link is deactivated.
d) Output Address	Off	#1014	When the output is on, the link is active.
			When the output is off, the link is inactive.
	On	*#1014	When the output turns on first time, the link is activated.
			When the output turns on second time, the link deactivates.
e) Link Timer	Off	LT01	When the Link timer times out, the link activates momentarily only. This option is only practical to trigger a destination event, for example, an output pulse.
	On	*LT01	When the Link timer times out, the link is activated.
			When the Link timer times out a second time, the link is deactivated.

Table 6-22. Link Source

Destination Type	* Modifier	Notes
a) Not used	-	The link is not operational.
b) Zone Address	-	When the link is active, the zone is omitted from the system.
c) User Code	-	When the link is active, the user's PIN and MAX (proximity) card are not operational.
d) Output Type	-	When the link is active, all outputs programmed with the selected function are activated.
e) Output Address	-	When the link is active, the specific output address is switched on. Please note that when using the output address as the destination, the deactivation of the link will switch the output off immediately, overriding any pulse time or latch mode of the output programming.
f) Keypad Address	-	When the link is active, the buttons on the keypad will not operate.
g) Latch Timer**	-	When the link is deactivated, the Link Timer starts to count down from the Latch timer value. Each subsequent activation of the link will restart the timer count down to this value. When the timer reaches zero the Link timer activates and it can trigger another link. If the link is continuously activated within the timer period, the counter will never reach zero and the Link timer will be held off. The application for this would be a link that didn't activate so long as another event continues to happen with the time period.
h) Reflex Timer**	-	The Reflex timers operate identically to the Latch timer except that the timer cannot be restarted while it is running. A Reflex timer destination will still start a Link Timer running in the same way as a Latch timer destination. An application for this would be a delayed action link.

Table 6-23. Link destination

**There are16 Link timers in the system. These Link timers are triggered by the Latch and Reflex timer destinations. Both the Latch and Reflex options operate the same set of Link timers. They just start the timers in different ways. A Latch timer can restart the Link timer while it is running. A Reflex timer cannot.

Option 55 – Soak

The **Soak** option allows selected zones to be put onto test for a period ranging from 1 – 14 days (refer to option **51.16=PARAMETERS.Soak Time**). Activations from a zone on the soak test do not cause alarms but are recorded in the event log and are reported to type 2 (and above) users on unsetting (disarming) of the system. The zone remains on soak test until the selected number of days has passed without any alarm activation, the zones then resume normal operation – that it, activations result in alarms being generated.

The **Soak Time** is reset to the full number of days if there is an alarm activation on any of the selected zones.

NOTE: The **Soak Time** starts when the first zone is put onto soak test; subsequent additions are only tested for the period remaining in the **Soak Time**. Parameter 51.16, Soak Time must be programmed before activating any zones in to the soak test. The period remaining decreases by one day each day at 0900 hours.

Activation of an Exit or Video Exit zone during the Entry time does not reset the soak test and period.

Programming Soak Zones

On selecting the **Soak** option, the address and function of the first zone on the system is displayed. Move to the required zone by pressing the **A>** or **<B** keys or by entering the zone address. To place the zone on the soak test press the **#** key; the keypad indicates that the zone is now **ON TEST**. Select other zones to be put on soak test in the same way. Once all the zones have been selected, press the **esc** key; the keypad briefly displays the number of days remaining in the **Soak Time** parameter before escaping from the **Soak** operation.

Option 56 – Communications

The **Communications** option is used to program the GX-Series Communication peripherals. This option has 7 sub menus, one for each of the communication peripherals. Each of these has its own set of sub menus as detailed in the following pages.

1 = Int Telecoms (Comm 1)

This section supports programming of the on-board Telecom module, for alarm signaling and remote servicing over PSTN.

2 = NOT USED

3 = NOT USED

4 = Ethernet (Comm 4)

This section supports programming of the Ethernet module for alarm signaling and remote servicing over an Ethernet LAN/WAN using both TCP/IP and UDP/IP protocols.

5 = NOT USED

6 = Int RS232 (Comm 6)

This section supports programming of the on-board RS232 port.

7 = NOT USED

1 = Internal Telecoms

1 = Int Telecoms

- 01 = Format
  - 1 = DTMF
    - 1 = Channels 1-16
      - 1 = Output Function
      - 2 = Output Mode
        - 1 = Latch
        - 2 = Reflex
        - 3 = Pulse
      - 3 = Output Polarity
      - 4 = Diag Recording (not available)
      - 5 = Descriptor (not available)
      - 6 = Lighting (not available)
      - 7 = Output Functions
    - 2 = Acct/Channel
  - 2 = SIA
    - 0 (0-4)
      - 1 = Trigger Events
        - 1 = Status
        - 2 = Groups
      - 2 = Group Settings
        - 1 = Telephone No.
        - 2 = Account No.
  - 3 = Microtech
    - 1 = Trigger Events
      - 1 = Status
      - 2 = Groups
    - 2 = Group Settings
      - 1 = Telephone No.
      - 2 = Account No.
  - 4 = Contact ID
    - 1 = Trigger events
      - 1 = Status
      - 2 = Groups
    - 2 = Ack Timeout
      - 1 = 30 seconds
      - 2 = 60 seconds
    - 3 = Group Settings
      - 1 = Telephone No.
      - 2 = Account No.
- 02 = Telephone No. 1 — 22 digits Max
- 03 = Account No. — 6 digits Max.
- 04 = Receiver
  - 1 = Single
  - 2 = Dual
  - 3 = Alternate
- 05 = Telephone No. 2 — 22 digits Max
- 06 = Dial Type
  - 1 = Tone
  - 2 = Pulse
- 07 = Autotest
  - 1 = Start Time
  - 2 = Intervals — 0 - 99 hours
  - 3 = Int. Test
    - 0 = Disabled
    - 1 = Enabled
  - 4 = Group Condition
- 08 = Engineer Test
- 09 = No. of Rings — 10 (1-20)
- 10 = Line Fail
  - 1 = Line Volts
    - 0 = Disabled
    - 1 = Enabled
  - 2 = Dial Tone
    - 0 = Disabled
    - 1 = Enabled
  - 3 = Incoming Call
    - 0 = Disabled
    - 1 = Enabled
- 11 = Fail to Comm
- 12 = Remote Access
  - 1 = Access Period
    - 1 = Off
    - 2 = All Unset
    - 3 = Any Set
    - 4 = Any Time
  - 2 = Mode
    - 1 = Direct Access
    - 2 = Manager Authorize
    - 3 = Call Back
- 13 = Call Home — Not Available
- 14 = Alarm Monitoring
  - 1 = Trigger (1-20)
  - 2 = Telephone No.
  - 3 = Account No.
- 15 = Backup module
  - 1 = Off
  - 2 = NOT USED
  - 3 = NOT USED
  - 4 = NOT USED
  - 5 = Ethernet
  - 6 = Int RS232 1
- 16 = Forced V.21
  - 0 = Disabled
  - 1 = Enabled
- 17 = SMS Paging
  - 1 = Mobile No.
  - 2 = Centre No.
  - 3 = Format
    - 1 = TAP
      - 1 = Status
      - 2 = Groups
    - 2 = UCP (SMS)
      - 1 = Status
      - 2 = Groups
    - 3 = UCP (Minicall)
      - 1 = Status
      - 2 = Groups
    - 4 = UCP (Numeric)
      - 1 = Status
      - 2 = Groups
  - 4 = Site ID
  - 5 = Password

GX-052-V1

Figure 6-4. Telecom Module Programming Structure

The on-board Telecom module allows two-way communication via the telephone network. This can be used:

- to transmit alarm and event signals to ARCs, (Alarm Receiving Centers), supporting a number of signaling formats.
- to remotely service the GX-Series control panel via a PC with Remote Servicing Software installed.

NOTE: When using the Telecom module as a digital communicator to signal alarms and events to ARCs or to a PC with Alarm Monitoring software installed, the **Format**, **Telephone Number 1** and **Account Number** required to be programmed. Programming of the remaining options is either optional or not required.

56.1.01 Format

The Telecom module provides 4 signaling formats:

- DTMF*
- SIA*
- Microtech*
- Contact ID

{*Not evaluated by UL.}

Once the format has been selected, the alarm and event triggers that the panel will transmit to the ARCs may be programmed.

1 = DTMF (Dual Tone Multiple Frequency)

When DTMF format is selected, the operation of the Telecom module is similar to that of a hardwired 8 or 16 channel communicator. The Telecom module transmits as an eight channel communicator if channels 9 - 16 are programmed as **Spare**.

NOTES: 1. DTMF is fast format
2. A battery low condition occurring on the GX-Series panel is always sent to the ARC as a code 8 in the status channel. This may cause problems for some ARCs. If a channel is assigned as **Battery Low**, then both the channel and the code 8 in channel 9 are transmitted.

Programming Channels

On selecting **DTMF**, the keypad displays **1 = Channels 1 – 16**. All 16 channels can be individually programmed. To access the **Channels** option press the **ent** key; the programming details of the first channel are displayed. Select the required channel using the **A>** and **<B** keys or by entering the channel number directly and press the **ent** key.
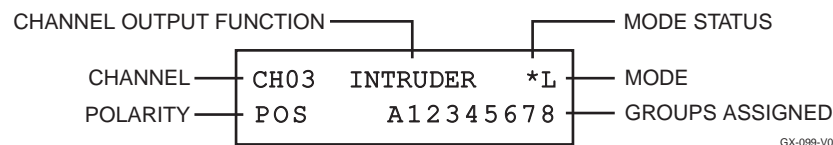
Channels 1-16

Each channel can be programmed with the following attributes:

1 = Output function

2 = Output mode

3 = Output Polarity

4 = Diag Recording

5 = Descriptor

6 = Lighting

7 = Output Groups

1 = Output Function

Any of the system output functions (see option **53 = Program Outputs**) can be assigned to each of the channels 1 – 16. Channel 3 defaults to output function **04 = INTRUDER**. All other channels default to **11=SPARE**. Select the required output function using the **A>** and **<B** keys or by entering the function number directly. Once the required function is displayed, press the **ent** key to assign the function to the

selected channel. For example, a **PA** function programmed on channel 2 results in a **PA** code to be transmitted on channel 2 to the ARC when there is a **PA** alarm activation.

Confirmed alarm conditions will now work across multiple groups. Previously, a confirmed condition would only be created if both zones activated were in the same group. Confirmed outputs (and channels in DTMF format, **option 56.1.1.1**) will activate for alarms across groups as long as both groups concerned have been assigned to that output or channel.

2 = Output Mode
Each output function defaults to a specific, logical output mode. However, the output mode of each function can be modified to meet special requirements: when reprogrammed, the new mode applies to all outputs assigned to that function. The output modes are:

> **1 = Latch**: the output remains active until a valid code is entered,
> **2 = Reflex**: the output follows the activity of the triggering event, for example, the Set output follows the arming/setting and unsetting (disarming) of the group.
> **3 = Pulse**: the output remains active for the programmed pulse time (1-3000 seconds).

Programming the Output Mode
Select the required mode using the **A> or <B** keys or by selecting the number **1 - 3**. Once the required mode is selected, press the **ent** key to accept the programming. If assigning the **Pulse** output mode, enter the pulse time (001 – 300 seconds) and press the **ent** key.

NOTE: The **Output Mode** status determines the operation of the channel restore. The status is modified by pressing the ***** key when the channel details display on the keypad. The status options are:
> ***** = Restore – channel sends restore code when reset
> **#** = Open/close - channel reports setting/unsetting (arming/disarming)
> **blank** = Alarm only - channel signals alarm only (no restore signal transmitted)

3 = Output Polarity
The **Output Polarity** determines the normal operational state of the output.
> **0** = POS - channel activates when the output is triggered.
> **1** = NEG - channel activates when the output is reset.

4 = Diag Recording
Option not available

5 = Descriptor
Option not available

6 = Lighting
Option not available

7 = Output Groups

NOTE: The **Groups** attribute is only available if groups have been enabled on the system (refer to option **63 = OPTIONS**)

The **Group** attribute allows the channel to be assigned to the groups on the system; a channel can be assigned to more than one group. The channel will only trigger when an event occurs on one of the groups assigned to the channel. All channels default to all groups on the system.

On selecting the **Output Groups** attribute, the groups that the channel is currently assigned to are displayed. Press the relevant number keys to toggle the status of the group and press the **ent** key: if the group number is displayed on the top line, then the group is assigned to the channel; if a dash (–) appears in place of the group number, the group has been removed from the channel.

Multi-group Systems
The GX-520 panels have 32 groups; these are displayed on the keypad in blocks of eight groups, sub-divided into A, B, C and D: Use the **A>** or **<B** key to select the required group (**A1–D8**). When the end of a block is reached, the next block of eight groups is selected, press keys **1-8** to toggle the status of the relevant group in the current block to the channel; press the **ent** key to accept the selection.

Group Status

This group attribute offers an additional feature that makes the operation of the channel conditional on the set (armed) status of each of the system groups. A channel assigned **Group Status** only activates if the set (armed) conditions of the programming are met, for example, an **Intruder** channel can be programmed to activate only if groups **2** and **4** are set (armed) and group **3** is unset (disarmed).

To assign the **Group Status** conditions, press the ***** key when selecting the groups: an arrow (**>**) is displayed on the bottom line as well as the current **Status**. Press the relevant number keys to toggle the status of the groups and press the **ent** key to accept the programming. The available group status conditions are:

S = Set - group must be set (armed) to allow channel to activate;

U = Unset - group must be unset (disarmed) to allow channel to activate;

– = Set or unset - channel activation is independent of the group status.

Programming Individual Channel Account Numbers

When the account number is programmed using option **56.1.2 = COMMUNICATIONS.Telecoms. Account No.**, then all 16 channels are automatically programmed with the same number. The **Account/ Channel** menu option allows each channel to be programmed with a separate account number if required. The account number can be up to a maximum of six digits, however a four digit account number is the standard.

NOTE: Changing the main account number overwrites all separate account numbers previously programmed for channels 1 – 16.

On selecting **DTMF**, the keypad displays **1 = Channels 1 - 16**. Press the **A** key; the **2 = Acct/Channel** option is displayed. All 16 channels can be individually programmed. To access the **Acct/Channel** option press the **ent** key; the first channel is displayed. Select the required channel using the **A>** and **<B** keys or by entering the channel number directly and press the **ent** key; the account number currently assigned to the channel is displayed. Press the **<B** key to delete each of the digits and then enter the new account number.

2 = SIA (Security Industries Association)

The SIA format provides a highly detailed protocol that transmits detailed information including zone descriptions to a PC loaded with suitable software or to a SIA compatible receiver. The SIA format is capable of transmitting over 330 different GX-Series events (refer to **Appendix C** for further details).

On selecting the SIA format, the keypad prompts for the required SIA level to be entered, there are five SIA levels available:

- 0 (default) - Basic event information with 4 digit account number.
- 1 - as level 0 plus 6 digit accounts
- 2 - as level 1 but with event modifiers
- - as level 2 but with text descriptions
- - as level 3 but allows control commands to be received by the GX-Series control panel.

Trigger Events

When the SIA level has been selected press the **ent** key, the keypad displays the first trigger event and its **On/Off** status (see **table 6-25** for a list of available triggers). These are the events and alarms that are transmitted to the ARC or PC. If the trigger status is set to **On**, an activation of an event controlled by the trigger results in the transmission to the receiver of the event details. Step through the trigger events using the **A>** and **<B** keys.

Table 6-24 shows the list of signaling triggers that are available to the Telecom module, the RS232 module, the ISDN module and the Ethernet module.

No	Trigger Event	No	Trigger Event
1	PA/Duress	11	Reset/Cancel
2	Intruder	12	Modules/Comms
3	24 Hours	13	Elec Status
4	Security	14	Menu Access
5	Custom Zones	15	Trouble
6	Fire	16	Log Zone
7	Set Fault	17	Max Tag
8	Omit	18	Zone Restoral
9	Tamper	19	RF Supervision
10	Setting	20	Fault

Table 6-24. Trigger Events

1 = Status

To modify the trigger, select the required trigger type using the **A>** and **<B** keys and press the **ent** key. To program the status to **On** press **1**, to set it to **Off** press **0**. Press the **ent** key to save the programming and return to the previous menu level.

Programming the SIA Format with Groups Enabled

If groups have been enabled on the system (refer to option **63 = OPTIONS**), then the SIA format menu alters slightly; an additional level is added.

1 = Trigger Events

On selecting the SIA level the keypad displays **1 = Trigger Events**; press the **ent** key to display the first trigger event; the keypad shows the trigger, the trigger status and the groups assigned.

1 = Status

To modify the trigger select the required trigger type using the **A>** and **<B** keys and press the **ent** key. The **1 = Status** option is then displayed. If the status requires to be modified, press the **ent** key. To program the status to **On** press **1**, to set it to **Off** press **0**. Press the **ent** key to save the programming and return to the previous menu level.

2 = Groups

If groups have been enabled on the system (refer to option **63 = OPTIONS**), then groups can be assigned to the events. This means that the events have to occur in assigned groups before they are signaled. Press the **A** key, the keypad displays **2 = Group Settings** and then press the **ent** key; the status of the groups assigned to the trigger is displayed. If the group has **Y** below it, then this event occurring in this group is signaled. If **N** is displayed, then the event is not signaled for that group. To toggle the status of a group, enter the group number. When all the groups have been assigned press the **ent** key to save the programming and return to the previous menu level.

Cross Group Confirmation

Confirmed outputs (and channels in DTMF format, **option 56.1.1.1**) will activate for alarms across groups as long as both groups concerned have been assigned to that output or channel. In the point ID signaling formats (SIA and Contact ID), confirmed signals will be transmitted across groups that share the same account number. For example, in **option 56.1.1.2** (SIA), it is possible to select a different account number for each group on the system. Group 1 and group 2 can both be programmed with the same account number. If there is a single activation in group 1 then a single intruder activation in group 2, within the confirmed time window, a confirmed alarm signal will be transmitted for group 2.

Multi-group systems

The larger GX-Series panels have 32 groups; these are displayed on the keypad in blocks of eight groups, sub-divided into A, B, C and D:

Use the **A>** or **<B** key to select the required group (**A1–D8**). When the end of a block is reached the next block of eight groups is selected, press keys **1–8** to toggle the status of the relevant group in the current block; press the **ent** key to accept the selection.

2 = Group Settings

NOTE: This option is only displayed if the groups have been enabled (refer to option **63 = OPTIONS**).

The event triggers are signaled to the telephone number, with the account number, programmed in the menu options **56.1.2 = Telephone Number 1** and **56.1.3** = Account Number. However, each group can be programmed to transmit event details to a unique telephone number and assigned a separate account number. On selecting the **Group Settings** option the first system group is displayed. Select the required group using the **A>** or **<B** keys and press the **ent** key, **1 = Telephone Number** is displayed.

1 = Telephone Number

To assign a telephone number to the group press the **ent** key and enter the required number. The telephone number can be a maximum of 22 digits (including dial pause T and dial tone detect **#** characters); press the **ent** key to save the programming and return to the previous menu level.

2 = Account Number

To assign an account number to the group press the **ent** key and enter the required number. The account number can be a maximum of six digits; press the **ent** key to save the programming and return to the previous menu level.

Account Groups

It is possible to have a number of groups bound by the same Account Number (an Account Group).This means that one CL signal is not sent until all the groups within the Account Group are set. Individual groups within the Account Group will not send a CL signal. The groups within the Account Group are identified by a starred (T) Account Number, for example, T 2112.

When the Account Group is fully set, the identifier of the CL message is 999 to identify it as an Account Group that has set.

For unset, each group that is part of the Account Group can report individually that it is open.

NOTE: Account Groups only operate for SIA signaling.

3 = NOT USED

4 = Contact ID

Contact ID format is a protocol which transmits point identification information to an Alarm Receiving Centre that is capable of receiving the GX-Series variant of contact ID.

The menu structure and programming of the options are identical to the SIA format except for the addition of the **2 = Ack timeout** programming option. This option selects how long the telecom module waits for the handshake tone from the receiver and can be set to **1** (30 seconds) or **2** (60 seconds).

56.1.02 Telephone No. 1

Telephone number 1 **must** be entered. This is the main telephone number that the alarms are signaled to. Up to 22 digits may be entered, including control modifiers. The control modifiers are entered using the T and **#** keys:

* Pause (for two seconds before dialing the next digit). Multiple entries can be made, for example, entering * * * gives a six second pause.

Dial tone detect (wait for new dial tone). Each dial tone detect lasts for 15 seconds. Multiple entries can be made, for example, entering ## gives a 30 second dial tone detect. If a new dial tone is not detected in this time, then the dialing attempt is aborted. This is counted as a fail to communicate.

The **B** key is used to erase an existing telephone number. Each press deletes the last digit displayed.

56.1.03 Account No.

This is the site identifier. A unique account number must be entered, this can be up to a maximum of six digits although four digits is the standard.

The **B** key is used to erase an existing number. Each press deletes the last digit displayed.

NOTE: Entering the account number into this menu option automatically copies the number to all channel or group triggers in the selected format. Any individual account numbers that have been programmed are overwritten.

56.1.04 Receiver
The transmission destination can be set to one of three modes:

1 = Single

Reports to the telephone number programmed in **Telephone Number 1.**

2 = Dual

Reports to both numbers programmed in **Telephone Number 1** and **Telephone Number 2**. The alarm must be transmitted to both numbers.

3 = Alternate

Reports to **Telephone Number 1** OR **Telephone Number 2**. Each number is tried in sequence until the alarm is successfully transmitted. The alarm is only transmitted to one number. Telephone number 1 is always the first number attempted.

56.1.05 Telephone No. 2
A second telephone number is available to support **Dual** and **Alternate** dialing to a second destination receiver. The programming is identical to **Telephone Number 1**.

The **B** key is used to erase an existing number. Each press deletes the last digit displayed.

56.1.06 Dial Type
The transmission mode can be selected from two types:

1. = Tone (also known as "DTMF Dial") this is much quicker at dialing than the **Pulse** option.

2. =Pulse (also known as "Rotary" or "Loop Disconnect") is universal, however, an increasing number of exchanges now provide the Tone (DTMF Dial) option.

NOTE: If unsure of the type of exchange that the panel is connected to, leave as **Pulse** dialing.

56.1.07 Autotest
An engineer test can be automatically transmitted to the Monitoring Station at programmed intervals, in order to indicate alarm transmission path integrity.

1 = Start Time

The engineer uses this option to enter the time that the first engineer test is transmitted. Subsequent engineer test transmissions are offset by the value assigned in the **Test Interval** option.

2 = Intervals

This option determines the period between engineer test transmissions following the **Start Time**, the programmable range is **0 – 99** hours. {A test interval of 24 hours is required for UL installations.}

NOTES: 1. If the **Test Interval** is **0** (default) the **Autotest** is disabled — even if a **Start Time** has been assigned.

2. To disable **Autotest** enter **00:00** (default); no transmissions of test signals can be sent at midnight.

3 = Intelligent Test

This option stops the transmission of an automatic engineer test if an alarm signal has already been sent during the autotest interval.

4 = Group Condition

NOTE: This option is only displayed if the groups have been enabled (refer to option **63 = OPTIONS**).

The **Group Condition** determines the status that each group must satisfy before the **Autotest** is transmitted. This can be used to prevent an **Autotest** from being signaled when groups are set on the system. On selecting this option press the relevant number keys to toggle the status of the groups and press the **ent** key to accept the programming. The available group status conditions are:

S = Set - group must be set to allow autotest transmission;

U = Unset - group must be unset (disarmed) to allow autotest transmission;

– = Set or unset - autotest transmission is independent of the group status.

56.1.08 Engineer Test
An engineer test can be sent to the alarm destination once the **Account Number** and the **Telephone Number 1** have been entered, to ensure that the station is receiving transmissions sent from the Telecom module.

On selecting this option a warning message is displayed on the keypad, **WARNING!!! ENT = SEND MESSAGE.** Press the **ent** key to send the engineer test.

The test attempts to transmit once for each selection of the option. If the test is not successfully transmitted, the communicator does not attempt to resend. An unsuccessful transmission **is not** counted as a **FAIL TO COMMUNICATE**.

NOTE: Activation of an engineer test will send a test signal via all GX-Series communication modules.

56.1.09 No. of Rings
This option determines the number of rings before the Telecom module answers an incoming call; the programmable range is 1 – 20, the default is 10.

56.1.10 Line Fail
The Telecom module continually monitors the telephone line that it is connected to. This option determines the line monitoring conditions that result in a **LINE FAIL** event being reported and recorded in the log. The three line monitoring capabilities are:
1 = Line Volts (default **Enabled**): A line fail occurs if the voltage on the telephone line falls below three volts, or the line is cut.
2 = Dial Tone (default **Disabled**):A line fail occurs if the Telecom module cannot detect a dial tone on the telephone line, when a dial attempt is made. In this case the Telecom module records the line fail, but will continue the call attempt even if no dial tone is detected.
3 = Incoming Call (default **Disabled**):A line fail occurs if the Telecom module attempts to transmit an alarm while there is an incoming call.

NOTE: Any combination of the above options may be enabled or disabled at any time.

When one of these conditions is detected, a **LINE FAIL** message is sent to the GX-Series and is stored in the event log, with the exception of line volts which is monitored for a further period determined by the value programmed in parameter 51.68. If sufficient line voltage is restored within this period, no event will be stored. If an attempt is made to set (arm) the system or part of the system within this period, the message **ALERT – LINE FAIL 1 ent = CONTINUE SET** will be displayed. If **ent** is pressed the set (arm) will continue; if **esc** is pressed a line fail will immediately be logged. If the system is unset (disarmed), the **COMM LINE FAIL** message appears on the keypad display and a local alarm is sounded - the keypad buzzers and on-board horn (if connected) are activated. If the system is set when a line fail condition occurs, the message **COMM LINE FAIL** will be displayed when the system is unset. This will be accompanied by a local alarm.

The local alarm is only activated for the first line condition of each unset (disarmed) period. Subsequent line fails are displayed as **COMM LINE FAIL** messages on the keypad for the duration of the condition and are recorded in the event log.

If an alarm occurs during a line fail condition, then the programmed bell delay for each of the groups is overridden (refer to option **51.02 = PARAMETERS.Bell Delay**).

56.1.11 Fail to Communicate
This option determines how long the on-board telecom module will attempt to gain a connection before the **COMM FAIL** message is recorded in the event log.

When an alarm condition or event is to be transmitted to the monitoring station, the Telecom module snatches the telephone line and dials the programmed telephone numbers. After a successful communication the LED lights for three seconds, the module then releases the telephone line and reconnects any serially connected equipment. This procedure is repeated for the second telephone number if the **Receiver** option has been programmed as **Dual**.

NOTE: The Telecom module communicator snatches and holds the line until a successful attempt has been made to the required telephone numbers or all the repeat attempts have been tried.

If the communication attempt is unsuccessful, the LED flashes rapidly for three seconds. The communicator then waits for a short period before redialing the number (or the second telephone number if the **Receiver** option has been programmed as **Dual** or **Alternate**). When the **Fail To Communicate** option is left at the default setting of **120 seconds,** a communication Fail will be recognized if there has not been a successful kiss-off, irrespective of the number of failed attempts. **Bell Delay** (parameter 51.2) is overridden when this condition occurs.

The **FAIL TO COMM** parameter has 5 time values:

1 = 60 seconds; 2 = 120 seconds; 3 = 180 seconds; 4 = 240 seconds; 5 = 600 seconds.

NOTE: If the **Receiver** option is programmed as **Dual** then successful transmission **must** be made to both telephone numbers.
For UL installations, set Fail to Communicate option to 5 (600 seconds).
When the Faill to Communicate option is set to 5 (600 seconds), a COMM FAIL message will be recorded in the event log after 7 unsuccessful dial attempts.

56.1.12 Remote Access
This option defines when and how Remote Servicing will operate. The options are described as follows.

1 = Access Period
This option determines under what conditions the remote site can be accessed by the Remote operator. There are four modes:

1 = Off
Remote Servicing access to the GX-Series panel is disabled

2 = All Unset
Access only when all the groups are unset. If groups are not enabled access is available at any time.

3 = Any Set
No access if any of the groups are set. The system must be fully unset, whether groups are enabled or not.

4 = Any Time (default)
Access available at any time

2 = Mode

1 = Direct Access
This permits access at anytime. Once access is authorized, uploading, downloading and remote servicing can begin.

2 = Manager Authorize
There are two methods that an authorized user can use to enable access to the GX-Series via Remote Servicing:

- **Timed Access:** Remote Servicing **must** access the GX-Series within 40 minutes of this option being enabled by the manager. Once connected, there is no time limit on the access period. On terminating the connection, Remote Servicing can reaccess the system within a 15 minute period of the termination.

- **Call Back:** the manager instructs the GX-Series to initiate a connection to a PC (with Remote Servicing software loaded) by dialing one of the numbers programmed in the **Call Back** option.

3 = Call Back
Up to five telephone numbers can be programmed into this option. Remote Servicing requests the GX-Series to call back to one of the numbers.

NOTES: 1. If **Manager Authorize** is selected as the **Remote Access Mode**, then the telecoms module can only make outgoing calls - it is disabled from answering all incoming calls. This allows another telephone, fax or answering machine to be connected to the line without interference from the telecom module when calling into the premises.
2. If **Call Back** is selected, then access to the GX-Series is denied **unless** the call back option in Remote Servicing is used to initiate the connection.

56.1.13 Call Home
Not used

56.1.14 Alarm Monitoring {Not evaluated by UL}
This option is used to allow events to be dialed to a PC with Alarm Monitoring software loaded.

The **Alarm Monitoring** option transmits alarm events information only when all of the alarms have been sent to the ARC (or all seven of the communication attempts have been unsuccessfully made). If a new alarm event occurs while the system is transmitting in the **Alarm Monitoring** mode, the transmission is terminated and the alarms are sent to the ARC using the primary format selected.

The menu structure and programming of the **Alarm Monitoring** options are identical to the SIA format. Refer to option **2 = SIA** for programming details.

56.1.15 Backup Module
This option allows another module to become the primary communication module if a line fail is detected on the on-board telecom. There are 3 options:

> **1 = Off**
> **2 = NOT USED**
> **3 = NOT USED**
> **4 = NOT USED**
> **5 = Ethernet**
> **6 = Int RS232 1.**

56.1.16 Force V.21
Option not available

56.1.17 SMS {Not for UL installations}
The SMS option is available on GX-Series panels with V4.00 and above software and Telecom modules with V5.xx and above software. This option generates and transmits SMS text messages, for events generated by the GX-Series panel.

> **1=Mobile No.**
> This is a 22 digit telephone number and is the mobile phone number of the recipient of the message.
> **2=Centre No.**
> This is a 22 digit telephone number and is the phone number of the SMS centre. The default is different for each operator.
> **3=Format**
> The options for this menu are:
>> **1=TAP**
>> For mobile phones
>> **2=UCP (SMS)**
>> For mobile phones
>> **3=UCP (Minicall)**
>> For alpha pagers
>> **4=UCP (Numeric)**
>> For numeric pagers
> **4=Site ID**
> This is a 16 character alphanumeric string and is used to identify the panel/site sending the message. If the format is UCP (Numeric), then the site ID is numeric only, and only the first four characters are sent out.
> **5=Password**
> This is a 16 character string and is an optional field required by some paging centers.

4 = Ethernet Module


```
4 = Ethernet
    |
    ├── 01= Module ──── 1 = IP Address
    |      Config        2 = Site Name
    |                    3 = Gateway IP
    |                    4 = Network Mask
    |
    ├── 02 = Alarm ──── 1 = Format ──── 1 = SIA (0-4) ──── 1 = Trigger ──── 1 = Status
    |      Reporting                                                         2 = Groups
    |                                                       2 = Groups Setting ──── 1 = Account No.
    |                                                                               2 = IP Address
    |                                                                               3 = Port No.
    |                                     2 = Microtech
    |                    2 = Primary IP ──── 1 = IP Address
    |                                        2 = Port No.
    |                    3 = Secondary IP ──── 1 = IP Address
    |                                          2 = Port No.
    |                    4 = Account No.
    |                    5 = Receiver ──── 1 = Single
    |                                      2 = Dual
    |                    6 = Alarm Mon. ──── 1 = Trigger ──── 1 = Status
    |                                                         2 = Groups
    |                                        2 = Account No.
    |                                        3 = IP Address
    |                                        4 = Port No.
    |                    7 = Heartbeat ──── 1 = Interval
    |                    8 = Protocol ──── 0 = UDP
    |                                      1 = TCP
    |
    ├── 03 = Remote ──── 1 = Access Period ──── 1 = Off
    |      Access                                2 = All unset
    |                                            3 = Any Set
    |                                            4 = Any Time
    |                    2 = Mode ──── 1 = Direct access
    |                                  2 = Mgr Authorize ──── 1 = Call Back IP1 ──── 1 = IP Address
    |                                                                                2 = Port No.
    |                                                          2 = Call Back IP2 ──── 1 = IP Address
    |                                                                                2 = Port No.
    ├── 04 = Autotest ──── 1 = Start Time        3 = Call Back IP3 ──── 1 = IP Address
    |                      2 = Interval                                 2 = Port No.
    ├── 05 = Engineer Test                        4 = Call Back IP4 ──── 1 = IP Address
    ├── 06 = Fail to Comm                                               2 = Port No.
    |                                             5 = Call Back IP5 ──── 1 = IP Address
    |                                                                    2 = Port No.
    ├── 07 = Line Fail ──── 1 = Network ──── 0 = Off
    |                                        1 = Available
    |                       2 = Signal Path ──── 1 = Primary
    |                                            2 = Secondary
    |                                            3 = Alarm Mon.
    |                                            4 = Any
    |                                            5 = All
    ├── 8 = SIA Control ──── 1 = IP Address
    ├── 9 = Encrypt ──── 1 = Alarm Report ── 0 = Off
    |                                        1 = On
    |                    2 = Remote Access ── 0 = Off
    |                                         1 = On
    |                    3 = SIA Control ── 0 = Off
    |                                       1 = On
    |                    4 = Alarm Mon. ── 0 = Off
    |                                      1 = On
    └── 10 = Backup module ── 1 = Off
                              2 = NOT USED
                              3 = NOT USED
                              4 = NOT USED
                              5 = Int. Telecoms
                              6 = Int. RS232 1
```

NOTE: The Encrypt option is not used in UL installations.

GX-055-V1

Figure 6-9. Ethernet Module Programming Structure

The Ethernet module allows the GX-Series control panel to communicate over Ethernet local and wide area networks, using both UDP and TCP Ethernet protocols. The Ethernet module supports both alarm signaling and remote servicing. The Ethernet module communications also includes path supervision between the Ethernet module and alarm receiving applications.

56.4.01 Module Config
Each Ethernet module is pre-programmed with a unique MAC address, which identifies the module on the network. However in order for the module to communicate with other applications an IP address should be assigned to the unit. The information programmed in this section is required for other applications on the network to recognize the Ethernet module.

1 = IP Address
This is the IP address of the Ethernet module. This must be a unique, static IP address. The address will be in the form XXX.XXX.XXX.XXX. The dot separator will be automatically added after each sequence of three numbers or can be manually added by pressing the * key.

An example of a valid IP address is 192.0.1.152.

This address should be provided by your IT administrator

2 = Site Name
This option is not used at this time

3 = Gateway IP
When using the Ethernet module over a wide area network the IP address of the gateway router connected to the Ethernet local area network must be entered in this field. The format of this address is identical to the IP address of the Ethernet module.

This information should be supplied by the IT administrator

4 = Network Mask
The network mask identifies the class of network being used. This field masks off the parts of the gateway IP address which, are common and not required for specific identification of the Ethernet module.

This information should be supplied by the IT administrator.

56.4.02 = Alarm Reporting
This option allows selection of the alarm signaling format used to transmit the events. This option also controls the types of events, which are sent and the destination/identification for each independent group.

1 = Format
This is the signaling format of the receiver and has the following two formats:

SIA (0-4) Security Industries Association
The SIA format can be programmed between levels 0 and 4 and provides a protocol that transmits detailed information including textual descriptors, to a SIA compatible receiver or PC loaded with suitable receiver software.
The SIA format is capable of transmitting the GX-Series events indicated in Appendix D of this manual. Refer to Appendix C of this manual for the detailed breakdown of the SIA event structure for each level.
On selecting the SIA format, the keypad prompts for the required SIA level to be entered, there are five SIA levels available:
- Level 0 (default) – basic event information with 4 digit account numbers
- 1 – as level 0 plus 6 digit account numbers
- 2 – as level 1 but with event modifiers
- – as level 2 but with text descriptors
- – as level 3 but also enables the SIA control command feature (refer option 08 SIA control)

1 = Trigger Events
When the SIA level has been selected press the **ent** key. The keypad displays the first trigger event and it's On/Off status (see **table 6-25** for the list of available triggers, and **Appendix B** for the events which are controlled by each trigger). The triggers control the events, which are transmitted.

If the trigger is set to On, any events logged, which are controlled by the trigger will be transmitted. If the trigger is set to Off, the events controlled by the trigger will not be transmitted. Step through the trigger events using the **A>** and **<B** keys.

1 = Status

To modify the trigger on/off status select the trigger to be modified using the **A>** and **<B** keys and press the **ent** key. To program the status to **On** press **1**, to set it to **Off** press **0**. Alternatively use the **A/B** keys to toggle between **On** and **Off**. To accept the new status, press the **ent** key. This will automatically return the display to the previous menu level.

Programming the SIA format with groups enabled

If groups have been enabled on the system (refer to option 63.1), then the SIA format menu alters slightly to support the independent event trigger programming for each group.

1 = Trigger Events

On selecting the SIA level the menu enters the Trigger Events option. Press the ent key to display the first trigger event; the keypad shows the trigger, the trigger status and the groups assigned. To modify the trigger event select the required event using the **A>** and **<B** keys and press the **ent** key. The 1=Status option is then displayed. If the status requires to be modified press the **ent** key.

1 = Status

To program the status to **On** press **1**, to set it to **Off** press **0**. Alternatively use the **A/B** keys to toggle between **On** and **Off**. To accept the new status, press the **ent** key. This will automatically return the display to the previous menu level.

2 = Groups

If groups have been enabled on the system (refer option 63.1), then the groups can be assigned to each event trigger. This means that the events have to occur in assigned groups before they are signaled. To modify the groups assigned to a specific trigger press the **ent** key from the 2=Groups menu option. The display will show the groups and indicate whether it is assigned (Y) or not assigned (N) to the group. To assign or unassign a group from a specific trigger press the number key corresponding to the group number. The display will show the new status. To accept the new status, press the **ent** key and return to the previous menu level. If the GX-Series panel supports more than 8 groups use the **A>** and **<B** keys to scroll through all available groups.

Groups Setting

NOTE: This option is only displayed if the groups have been enabled (refer option 63.1)

Each of the events are signaled to Primary IP/Port Numbers programmed in menu option 56.4.2.2 and the account number programmed in 56.4.2.4. However, each group can be programmed to transmit event details to a unique IP address and port number, with a unique account number. On selecting the 2=Group Settings option the first group is displayed. Select the required group to be modified using the **A/B** keys and press **ent**. 1=Account No. is displayed

1 = Account No.

By default the account number programmed in option 56.4.2.4 will be entered in this field. To assign a unique account number to the group selected use the **B** key to erase any existing numbers and enter the new number. The account number should be between four and six digits long. Press the **ent** key to save the programming and return to the previous menu level.

To modify the IP address which events from a specific group will be signaled to press the **A** or **2** keys, then press **ent**.

2 = IP Address

By default the IP address programmed in option 56.4.2.2 will be displayed. To program a new IP address use the **B** key to erase any existing programming and enter the new IP address to which the events are to be sent. Press **ent** to save the new address and return to the previous menu level.

To modify the Port No. which events from a specific group will be sent press either the **A** or **3** keys, then press **ent**.

3 = Port No.
By default the Port No. programmed in option 56.4.2.2 will be displayed. To program a new port number use the **B** key to erase any existing programming and enter the new port number. Press the **ent** key to save the new address and return to the previous menu.
2 = NOT USED

2 = Primary IP
The Primary IP defines the receiver destination details for the primary alarm transmission path. The destination is made up of an IP address and a port number. To program the IP address press **ent**. If groups are enabled the information programmed for the primary IP and port numbers is automatically copied to all groups.
1 = IP Address
Enter the IP address of the primary receiver. The address will be in the form XXX.XXX.XXX.XXX. The dot separator will be automatically added after each sequence of three numbers or can be manually added by pressing the * key. To save the address and return to the previous menu level press **ent**. To program the port number of the primary destination receiver press either **2** or **A**, then press **ent**. Note: This number must be programmed, even if groups have been enabled and all groups have a programmed IP address. This is the IP address used for all system wide events.
2 = Port No.
To erase any previously programmed numbers press the **B** key. Enter the port number of the primary destination receiver. The default value is 10002. Press **ent** to save the programmed number.
3 = Secondary IP
The Ethernet module supports signaling to more than one receiver destination. The Secondary IP defines the receiver destination details for the secondary alarm transmission path. The destination is made up of an IP address and a port number. To program the IP address press **ent**.
1 = IP Addresss
Enter the IP address of the secondary receiver. The address will be in the form XXX.XXX.XXX.XXX. The dot separator will be automatically added after each sequence of three numbers or can be manually added by pressing the * key. To save the address and return to the previous menu level press **ent**. To program the port number of the secondary destination receiver press either **2** or **A**, then press **ent**.
2 = Port No.
To erase any previously programmed numbers press the **B** key. Enter the port number of the secondary destination receiver. The default value is 10002. Press **ent** to save the programmed number.
4 = Account No.
The account number identifies the GX-Series system to the receiver when signals are transmitted. Every signal transmitted contains the account number. The account number should be between 4 and 6 digits long. After entering the account number press ent to save and return to the previous menu level. If groups are enabled the account number entered in this field is automatically copied to all groups.
5 = Receiver
This option determines the paths, which will be used for alarm signaling.
1 = Single
If selected the Primary IP destination and/or specific group IP programming is used to signal alarms. If 1=Single is selected and a Secondary IP is programmed the Secondary IP destination will be used in the event of a failure to the Primary IP. A Fail to Comm will be logged against the Primary alarm transmission path.
2 = Dual
If selected and if a secondary IP is programmed events are sent to both the primary and secondary IP destinations.

6 = Alarm Monitoring

This option provides a further alarm transmission path specifically for events being sent to the GX-Series Alarm Monitoring application. The keypad displays the first trigger event and it's On/Off status (see **table 6-25** for the list of available triggers, and **Appendix B** for the events which are controlled by each trigger). The triggers control the events, which are transmitted. If the trigger is set to **On**, any events logged, which are controlled by the trigger will be transmitted.

If the trigger is set to **Off**, the events controlled by the trigger will not be transmitted. Step through the trigger events using the **A>** and **<B** keys.

1 = Trigger

Press the **ent** key to display the first trigger event; the keypad shows the trigger, the trigger status and the groups assigned.

To modify the trigger event select the required event using the **A>** and **<B** keys and press the **ent** key. The 1=Status option is then displayed. If the status requires to be modified press the **ent** key.

1 = Status

To program the status to **On** press **1**, to set it to **Off** press **0**. Alternatively use the **A/B** keys to toggle between **On** and **Off**. To accept the new status, press the **ent** key. This will automatically return the display to the previous menu level.

2 = Groups

If groups have been enabled on the system (refer option 63.1), then the groups can be assigned to each event trigger. This means that the events have to occur in assigned groups before they are signaled. To modify the groups assigned to a specific trigger press the **ent** key from the 2=Groups menu option. The display will show the groups and indicate whether it is assigned (Y) or not assigned (N) to the group. To assign or unassign a group from a specific trigger press the number key corresponding to the group number. The display will show the new status. To accept the new status, press the **ent** key and return to the previous menu level. If the GX-Series panel supports more than 8 groups use the **A>** and **<B** keys to scroll through all available groups.

2 = Account No.

This option is required to assign a unique account number to the events signaled to Alarm Monitoring. This data must be entered before any events are sent to Alarm Monitoring via this option. The account number can be a maximum of 6 digits. Press the **ent** key to save the programming and return to the previous menu level.

3 = IP Address

To program a new or modify the Alarm Monitoring IP address use the **B** key to erase any existing programming and enter the new IP address to which the events are to be sent. Press **ent** to save the new address and return to the previous menu level.

4 = Port No.

To program a new port number use the **B** key to erase any existing programming and enter the new port number. Press the **ent** key to save the new address and return to the previous menu.

7 = Heartbeat

The Ethernet module supports path supervision to ensure the alarm transmission paths are available to transmit event when required. This option, if programmed determines the frequency, which the alarm transmission paths are checked.

1 = Interval

Enter the interval within which a path supervision signal (heartbeat) must be received from each alarm transmission path (refer option 56.4.7.2 Line Fail – Signaling Path). If a heartbeat is not received within the programmed interval a line fail condition will be activated in the panel. The Line Fail event will indicate which path has failed (Primary, Secondary or Alarm Monitoring). The default period is 30 minutes. {For UL installations, 30 seconds is required.}

8 = Protocol

The Ethernet module is capable if signaling using either TCP (Transmission Control Protocol) or UDP (Universal Datagram Protocol). Earlier versions of Ethernet module, Alarm Monitoring and Remote Servicing only supported the TCP protocol. (TCP protocol is required for UL installations.)

NOTE: If communicating with V3.26 Alarm Monitoring or V6.26 Remote Servicing the TCP option should be selected.

Irrespective of the programming in this option Remote Servicing and SIA control command protocol will always use the TCP protocol.

0 = UDP

When this option is selected all alarm signaling from the Ethernet module will use the UDP format.

1 = TCP

When this option is selected all alarm signaling from the Ethernet module will use the TCP format.

56.4.03 = Remote Access

The Ethernet module supports remote servicing of the GX-Series alarm panel. The programming options in this section control when remote access can be granted and whether access is initiated from the panel or the Remote Servicing PC.

1 = Access Period

This option determines when the GX-Series panel can be accessed remotely.

1 = Off

Remote Servicing access to the GX-Series panel is disabled.

2 = All Unset

Remote Servicing access is only granted when all groups or the complete system are unset.

3 = Any Set

Remote Servicing access will only be granted if any of the groups or the complete system are set.

4 = Any Time (default)

Access available at any time.

2 = Mode

This option controls access authorization and whether the remote session is initiated from (Panel or PC).

1 = Direct Access

This permits access at any time (in conjunction with Access period). Access is initiated from Remote Servicing. Once access is authorized/initiated, uploading, downloading and remote servicing can begin.

2 = Manager Authorize

This option requires authorization from the site manager in order to gain remote access to the GX-Series panel. There are two methods that the manager can use to enable access to the GX-Series via Remote servicing.

Timed Access – Remote Servicing must access the GX-Series panel within 40 minutes of this option being enabled by the manager (Option 47.1.2.0). Once connected there is no time limit on the access period. On terminating the connection, Remote Servicing can reaccess the system within a 15 minute period of the termination.

Call Back – the manager instructs the GX-Series panel to initiate a connection to the Remote Servicing PC (Use option 47.1.2.1) by selecting one of the Call back IP addresses programmed into the system

1 = Call Back IP 1-5

There are 5 possible IP address/Port number destinations, which can be programmed for Remote Servicing access. This allows communication with up to five different Remote Servicing locations.

1 = IP Address

Enter the IP address of the PC running the Remote Servicing application

2 = Port No.

Enter the Port Number allocated to Remote Servicing on the PC (Default is 10001)

56.4.04 = Autotest

An engineer test can be automatically transmitted to the receiving station at programmed intervals.

1 = Start Time

The engineer uses this option to enter the time that the first engineer test is transmitted. Subsequent engineer test transmissions are sent periodically. The frequency of each test is controlled by the 2=Interval option.

2 = Interval

This option determines the period between automatic engineer test transmissions following the Start Time. The programmable range is 0-99 hours.

NOTE: For UL installations, the autotest must be programmed as 24 hours so the Telco and Ethernet supervise each other for line failure.

56.4.05 = Engineer Test

An engineer test can be sent on each of the transmission paths once the appropriate IP address/port no, and account numbers have been programmed into the system. This allows the installation engineer to ensure that the receiving station is correctly receiving the events from the Ethernet module.

On selecting this option a warning message is displayed on the keypad, **WARNING!!! ENT=SEND MESSAGE**. Press the **ent** key to send the engineer test.

56.4.06 = Fail to Comm

This option determines the number of unsuccessful communication attempts before the **COMM FAIL** message is recorded in the event log.

When an event is to be transmitted to the monitoring station, the Ethernet module attempts to initiate a session with the destination receiver for each programmed transmission path. If the programmed number of attempts is reached a Fail to Comm message will be logged. The logged event will include which path has failed.

NOTE: If the receiver option is programmed as Dual then a successful transmission must be made to both primary and secondary to be considered a successful transmission.

56.4.07 = Line Fail

The line fail option controls which Ethernet connections are monitored. The Ethernet module can be programmed to monitor both the network availability and the programmed transmission paths between the Ethernet module and receiver applications.

Line fail events (whether network or transmission path) must be present for the time programmed in parameter 51.68 before the event is activated. If a line fail is present and an attempt is made to set the system within parameter 51.68 delay period, the line fail will immediately be logged and indicated.

1 = Network

This option monitors the connection between the Ethernet module and the local network.

0 = Off

If programmed to off, the connection between the Ethernet module and local network will not be monitored. If the local network is not available or the Ethernet module is disconnected, no line fail will be indicated.

1 = Available

If programmed as available then the connection between the Ethernet module and the local Ethernet network is monitored. If the Ethernet module is disconnected from the network or the local network is not available a Line Fail event will be activated at the panel. The Line Fail event logged will indicate that the Line Fail was as a result of a network failure.

2 = Signal Path

This option determines which signaling paths, will be monitored by the Ethernet module. Monitoring is achieved by transmission of a path supervision signal (heartbeat) between the receiver application and the Ethernet module. The Ethernet module must receive a path supervision signal at least as often as the frequency programmed in option 56.4.2.7 (Alarm Reporting Heartbeat). If the signal is not received a line fail condition will become present. The line fail event will indicate the path which failed and the destination IP address of that path.

NOTE: If groups are enabled a failure on the primary path will not provide specific IP information. Options are available to select specific paths or all paths.

> **1 = Primary**
> When selected the Ethernet module will only monitor the primary transmission path. All other transmission paths will not be monitored.
> **2 = Secondary**
> When selected the Ethernet module will only monitor the secondary transmission path. All other transmission paths will not be monitored.
> **3 = Alarm Mon.**
> When selected the Ethernet module will only monitor the Alarm Mon. transmission path. All other transmission paths will not be monitored.
> **4 = Any**
> When selected the Ethernet module monitors all transmission paths. If a supervision failure is detected in any of the paths a line fail condition will be activated.
> **5 = All**
> When selected the Ethernet module monitors all transmission paths. If a supervision failure is detected in all of the paths a line fail condition will be activated.

56.4.08 = SIA Control

When using the SIA control command protocol for integration purposes the IP address of the computer sending the SIA control commands should be entered in this field to ensure that only commands from a computer with the programmed IP address will be recognized by the Ethernet module.

> **1 = IP Address**
> The address will be in the form XXX.XXX.XXX.XXX. The dot separator will be automatically added after each sequence of three numbers or can be manually added by pressing the * key.

56.4.09 = Encrypt

NOTE: This option is not for use in UL installations.

The Ethernet module supports a high level 128bit encryption algorithm for all communication options. This option allows encryption to be enabled/disabled for each of the communication options.

> **1 = Alarm Report**
> This option controls encryption for the Primary and Secondary alarm transmission paths. Default is disabled.
> > **0 = Off**
> > If selected encryption is disabled for the Primary and Secondary alarm transmission paths.
> > **1 = On**
> > If selected encryption is enabled for the Primary and Secondary alarm transmission paths. In order for data to be received when this option is selected the receiver must support decryption.
> **2 = Remote Access**
> This option controls encryption for the Remote Servicing sessions. Default is disabled.
> > **0 = Off**
> > If selected encryption is disabled for the Remote Servicing sessions.
> > **1 = On**
> > If selected encryption is enabled for the Remote Servicing sessions. In order for data to be received when this option is selected the receiver must support decryption.
> **3 = SIA Control**
> > **0 = Off**
> > This option controls encryption for communications between the Ethernet module and remote PC using the SIA control command protocol. Default is disabled.
> > **1 = On**
> > If selected encryption is enabled for communications between the Ethernet module and remote PC using the SIA control command protocol. In order for data to be received when this option is selected the receiver must support decryption.

4 = Alarm Mon.

This option controls encryption for the Alarm Monitoring alarm transmission paths. Default is disabled.

0 = Off

If selected encryption is disabled for the Alarm Monitoring alarm transmission paths.

1 = On

If selected encryption is enabled for the Alarm Monitoring alarm transmission paths. In order for data to be received when this option is selected the receiver must support decryption.

56.4.10 Backup Module

This option allows another module to become the primary communication module if a line fail is detected on the Ethernet module. There are 3 options:

1 = Off;

2 = NOT USED

3 = NOT USED

4 = NOT USED

5 = Int Telecoms

6 = Int RS232 1.

6 = Int RS232 Port

```
6 = Int RS232 Port
 ─1 = Mode ──────────┐ 1 = Printer
                       2 = Direct
                       3 = Modem ──────┐ 1 = Telephone No.
                                         2 = Dial Type ──────┐ 1 = Tone
                                                               2 = Pulse
                                         3 = Init String
                       4 = Storage Mode

 ─2 = Format ──────┐ 1 = SIA ──────── 0 (0-3) ──────── 1 = Trigger Events ─┐ 1 = Status
                                                                              2 = Groups
                     2 = Microtech ──── 1 = Trigger Events ─┐ 1 = Status
                                                              2 = Groups

 ─3 = Account No. ──── 6 digit Max.

 ─4 = Comms Setup ─┐ 1 = Baud Rate
                     2 = Data Bits
                     3 = Stop Bits
                     4 = Parity ────┐ 1 = No Parity
                                      2 = Odd Parity
                                      3 = Even Parity
```

GX-056-V0
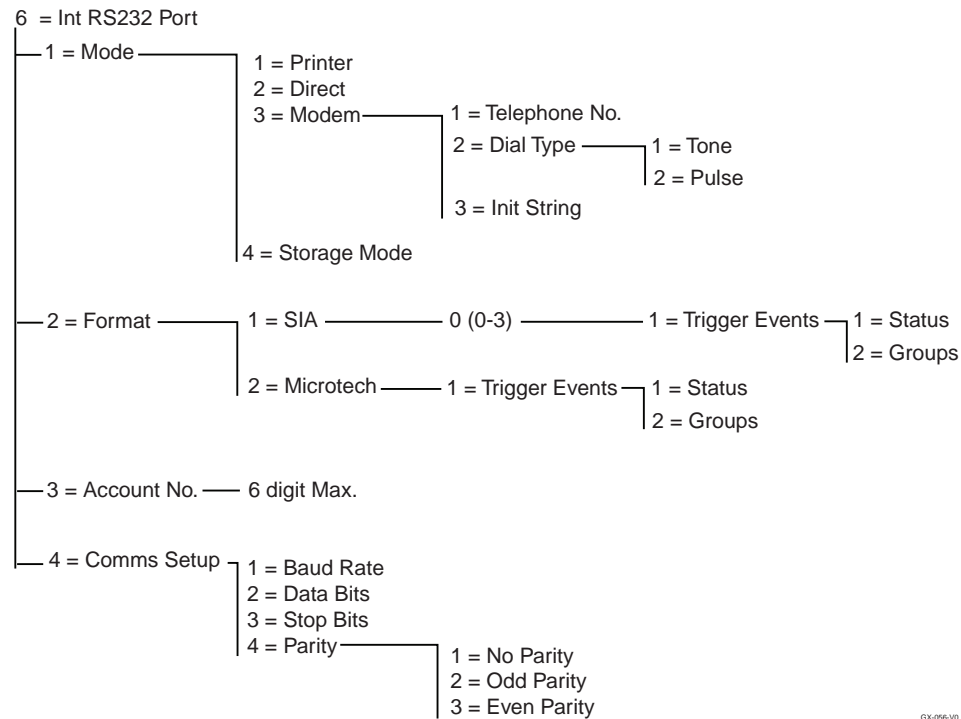
Figure 6-6. Internal RS232 Programming structure

The GX-Series supports an on-board RS232 serial port. This ports is:

- Programmable independently from the panel.
- Speed configurable from 300 to 56K bps (or highest practical speed).
- Able to configure data length, parity and stop bits.
- Supervised (optional via programming).

The RS232 port is configurable to support:

- Connection to a PC.
- Connection to a serial modem.
- Connection to 3rd party communication modules.
- Connection to serial printers.
- Connection to serial wireless transmitters.

56.6.1 Mode

The **Mode** option allows selection of the method of connection to the PC:

1 = Printer

This option is selected if the GX-Series is communicating with a serial printer.

2 = Direct

This mode is selected if the GX-Series panel and PC are located in close proximity to one another and can interface
via an RS232 cable.

3 = Modem

This mode is selected if the RS232 is communicating, via a modem and telephone line, with a remote PC.

> **1 = Telephone No.**
>
> The telephone number of the remote PC must be entered here.
>
> **2 = Dial Type**
>
> The type of telephone exchange (**Pulse** or **Tone**) must be assigned here.
>
> **3 = Init String**
>
> The initialization string is an alpha-numeric string which is used to initialize the modem connected to the internal RS232 port.

4 = Storage Mode

This mode allows the panel to emulate the behavior of an external RS232 module which can then be attached to another GX-Series panel to copy programming data. Refer to Appendix E for a full description of this function.

56.6.2 Format

This option allows selection of the alarm signaling format. There are two formats available for the RS232 module:

1 = SIA

Refer to the Telecom format menu **(56.1.2)** for programming details.

2 = Microtech

Refer to the Telecom format menu **(56.1.3)** for programming details.

> **NOTE:** The SIA and Microtech formats for the RS232 module are identical in structure and programming to the Telecom menu.

56.6.3 Account No.

This is the site identifier. A unique account number **must** be entered, this can be up to a maximum of six digits. The **B** key is used to erase an existing number. Each press deletes the last digit displayed.

56.6.4 Comms Setup

Serial communication between the on-board R232 port and a remote PC require the following 4 elements.

1 = Baud Rate

This is the number of bits that occur each second (bps). This can be set as follows:
1=300 2=600; 3=1200; 4=2400; 5=4800; 6=9600 (default); 7=19200; 8=38400; 9=57600 .

2 = Data bits

This can be sets follows:
1=5; 2=6; 3=7; 4=8 (default)

3 = Stop Bits

This can be set as follows:
1=1 (default); 2=2.

4 = Parity

This can be set with one of three options:

> **1 = No Parity** (default)
> **2 = Odd Parity**
> **3 = Even Parity**

Option 57 – System Print

The **System Print** option allows the details of the system programming to be printed. There are 2 options for the printer output:

1 = Printer Module

2 = Int RS232 1

From either option, the specific details of one or all of the menu options in the following table can be selected:

Menu Option		Menu No.
01	System Data	23
02	Codes	42
03	Parameters	51
04	Zones	52
05	Outputs	53
06	Links	54
07	Communication	56
08	ISDN	56.3
09	Groups	63
10	Keypads	58
11	Timers	65
12	Event Log	22
13	All (items 1-11)	

Table 6-25. System Print Options

Selecting a Print Option

The required print option is selected by entering the option number 01 – 12 or by using the **A>** and **<B** keys and then pressing **ent**. When printing option **11 = EVENT LOG**, the system prompts for **Groups** to be selected; the print shows only those events logged for the groups selected. The print can be aborted at any time by pressing the **esc** key.

NOTE: A serial printer on line must be connected to communication line 1 of the GX-Series before the print option is selected. If the printer is off-line or is not connected, the **PRINTER off-line / ESC to abort** message is displayed. Press the **ESC** key and correct the problem.

Printing Timers

Printing **10 = Timers** gives details of all the times that have been assigned in option **65 = TIMERS**; this includes the autoset time, the pre-warning period and lockout times.

Option 58 – Keypad

The keypads connected to the GX-Series control panel can be assigned individual attributes allowing each keypad to respond in a particular way. On selecting the **Keypad** option the details of the first keypad connected to the system are displayed.
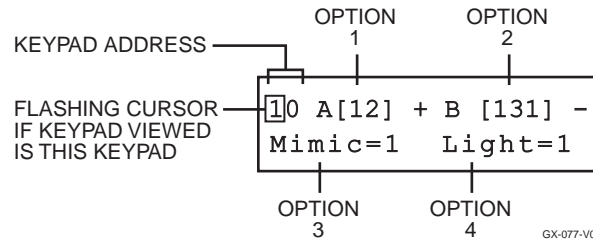
The required keypad is selected by entering the keypad address or by using the **A>** and **<B** keys and then pressing **ent;** the keypad displays **1=A-key**. Press the **A>** and **<B** keys to select the required option and press the **ent** key.

NOTE: **W**en the address of the keypad currently being used is displayed, a black square flashes on and off over the first digit of the keypad address.

1 = A-key
Code Status

This option assigns a menu function to the **A** key. On selecting the option the keypad displays **1 = Code Status**, this determines the method of operation of the **A** key:

> **0 = OFF [ ] - A** key disabled
> **1 = WITH CODE [+]** - **A** key requires code to be entered prior to operation
> **2 = NO CODE [–]— A** key is a single touch operation no code is required
> Select the required **Code Status** and press the **ent** key.
> **NOTE:** he **Code Status** assigned to the key is displayed when selecting the keypad address, for example **A[12]–** indicates that the **A** key does not require a user code.

Menu Option

To assign one of the menu options to the **A** key, press the **A** key to move to the **2 = Menu option** and press the **ent** key. The keypad displays the currently assigned menu option.
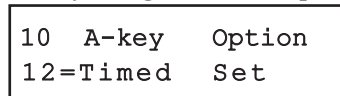
To assign a new menu function, enter the full menu option number 11 – 71 or press the **A>** and **<B** keys until the required menu option is displayed; press the **ent** key to accept the selection and return to the previous menu level.

2 = B-key

The programming of the **B** key is identical to that of the **A** key.

3 = Buzzer Mimic

This option determines whether the keypad buzzer mimics the function of the programmed keypad output (refer to option **53 = PROGRAM OUTPUTS**). The default function of the keypad output is **Entry/Exit Horn** and the default **Mimic** defaults to **On**, therefore the keypad buzzer operates as an **Entry/Exit Horn** at factory setting.

To disable the keypad buzzer from mimicking the output select **0 = Off**.

4 = Backlighting

This option determines when the keypad backlighting switches on and off.

> **0 =** always off,
> **1 =** always on (default),
> **2 =** on when the system is unset; off when the system is set; switches on when the keys are pressed,

> **3 =** on during setting (arming) and unsetting (disarming); switches on when keys are pressed; switches off after keypad timeout and when menu is exited,
>
> **4 =** switches on when keys are pressed; switches off after keypad timeout and when menu is exited.

5 = Keypad Mute

This option allows the bleep which normally accompanies a valid keypress to be disabled. This features improves security and reduces tampering with the keypad when it is located in a public place.

When the **Mute** option is set to **1 = On**, whenever the keypad banner is displayed the keypresses are silent, there are no T s displayed as each key is pressed and the keypad backlighting remains off. As soon as a valid code is entered the keypad returns to normal operation - the keys are accompanied by bleeps and the backlighting switched on. The **Mute** option defaults to disabled (**0 = Off**).

Keypad Disable

A keypad may be disabled by programming the address of the keypad as a link destination (refer to menu option **54 - Links**). When the source of the link is activated the keypad does not respond to any keypress, however, the LCD, keypad buzzer and any keypad output device acts as normal.

6 = Show Status

This option allows the keypad to display the set status of the groups. When **Show Status** is enabled, pressing the * and # keys simultaneously when the normal banner is displayed indicates the group set status.

F = Fault
R = Ready
S = Set
P = Part Set
L = Locked Out
- = Group not assigned to Keypad

```
┌──────────────────────┐
│ STATUS   1 2 3 4 5 6 7 8 │
│ G r o u p s   R R S R L P F P │
└──────────────────────┘
              └─ GROUP BLOCK
                   GX-079-V0
```

NOTE: The **Show Status** indicates the set conditions of groups when the system is set (keypad blank) or unset (normal banner). **Show Status** does not operate while engineer mode is accessed.

Pressing the * and **#** keys again toggles the display to show the status of the groups individually. To move between each groups, press the * and **A>** or the * and **<B** keys simultaneously.

Pressing the * and **#** keys again returns the keypad to the banner display.

Multi-group Systems

The larger GX-Series panels have 32 groups; these are displayed on the keypad in block of eight groups, subdivided into A, B, C and D. Press the **A>** or **<B** key to display each of the group blocks.

7 = Keypad Groups

Each keypad can be assigned to selected groups; the keypad then responds only to user codes that have a group common to it and only displays alarm information on the groups assigned.

Entering a user code which is assigned to all groups, on a keypad which is only assigned to a single group, allows access to all of the user's groups. The user is not restricted by the groups that are assigned to the keypad as long as there is one group common to both. This means that a keypad assigned only to group 1, for example, can be used to set groups 1, 2, 3 and 4 by a code with all of these groups allocated.

Keypad Group Restriction

To restrict access only to groups that are common to both the user and the keypad, press the * key when assigning groups to the keypad. This means that when a user with access to groups 1, 2 and 3 sets the system on a keypad assigned to groups 2, 3 and 4, only the common groups (groups 2 and 3) are set.

Assigning Keypad Groups

On selecting the **Keypad Groups** option, the groups currently allocated to the keypad are displayed (the default is all groups assigned). Pressing the group number toggles the group assigned to the keypad.

Multi-group Systems

The GX-520 panels have 32 groups; these are displayed on the keypad in block of eight groups, sub-divided into A, B, C and D. Use the **A>** or **<B** key to move between the group blocks; press keys **1 – 8** to assign the relevant groups in each block to the user.

When the required groups have been assigned to the user, press the **ent** key to accept the programming and return to the previous menu level.

NOTE: Also see menu 53, to control the buzzer operation on each keypad. This is independent of the keypad group parameter.

Option 59 – Quick Menu

The GX-Series quick menu consists of up to 10 menu options that are accessed by all type 2.3 (and above) user codes that do not have a * assigned to their code type. This option allows the quick menu to be reprogrammed to any selection of the menu options. The **Quick Menu** defaults to a factory selection as shown in the following table:

	Menu Option		User Type
0	Omit Zones	11	2.3
1	Forced set (Forced bypass)	14	2.3
2	Chime	15	2.3
3	Display Zones	21	2.4
4	Display Log	22	2.4
5	Print	24	2.4
6	Walk	Test 31	2.5
7	Time/Date	41	3.6
8	Codes	42	2.1
9	Summer	43	3.6

Table 6-26. Quick Menu Options

Modifying the Quick Menu

On selecting the **Quick Menu** option, the details of the first option assigned to the quick menu are displayed; this includes the quick menu location, the menu option assigned, the full menu option number and the current user type assigned to the option.

QUICK MENU LOCATION ——— ——— MENU OPTIONS

```
0=OMIT ZONES
Option=[11]  L=3
```

FULL MENU OPTION NUMBER ——— ——— USER LEVEL

GX-080-V0
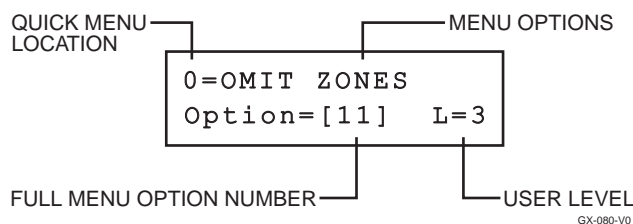
Select the quick menu number to be modified by entering the option number 0 – 9 or by using the **A>** and **<B** keys and then pressing **ent**. The display indicates the quick menu location and the full menu option number currently assigned.

To modify the quick menu, enter the full menu option number 11 – 71 or press the **A>** and **<B** keys until the required menu option is displayed; press the **ent** key to accept the selection and return to the previous menu type. To delete a quick menu option, press the * key instead of a menu option number; * * **=NOT USED** is displayed.

The system arranges the quick menu in order of lowest user type access required, therefore if quick menu number **0** is assigned a menu option which is of a higher access type than options **2**, **3** and **4**, the menu is rearranged and the display indicates that the option is now number **4**.

NOTE: Assigning duplicate quick menu options is denied. The message **DUPLICATE ENTRY** is displayed and the system prompts for a new option to be assigned.

Engineer 2

Option 61 – Diagnostics

This option allows several diagnostic tests to be run on the system, providing valuable information on the operational status of the GX-Series and connected modules.

The GX-Series diagnostic option performs a number of checks including:
the communication integrity between the GX-Series panel and modules on the system.

- voltage measurements.
- current measurements.
- resistance measurements
- module version checks
- panel memory checks

This option is split into two sections: **Latest** and **Historical**.

Latest gives real time diagnostic information for the GX-Series system.

Historical allows a snapshot of the GX-Series system diagnostic status to be generated and saved.

1 Latest

The **Diagnostic** options are:

1 = MEMORY TEST - This option forces a check of the panel memory.

2 = KEYPAD COMMS - the communication level between the GX-Series panel and the keypads.

3 = RIO COMMS - the voltage and version at each RIO as well as the communication level between the GX-Series panel and the RIO.

4 = PSU COMMS - the voltage at each GX-Series Power Supply Unit. It is identical to the **RIO COMMS** diagnostic with the exception that it also indicates the, PTC$^\lozenge$ status and battery status.
A number to the right of the current indicates a blown PTC$^\lozenge$:
2 = Battery PTC$^\lozenge$
3 = +12V Auxiliary 1 PTC$^\lozenge$
4 = +12V Auxiliary 2 PTC$^\lozenge$
5 = Not Used
6 = On-board Bell PTC$^\lozenge$
A * indication means low battery or a missing battery.
95% *2 13.6V 1.9A.

$^\lozenge$ **NOTE:** The PC board uses a PTC device instead of a fuse. The PTC serves as an automatically resetting fuse.

Pressing the **#** key gives 7 different displays in the following order:
1. The system status in volts and current draw are displayed.
2. The battery standby time and the battery charge time are displayed. The standby time is the estimated time that the battery can power the panel if the AC power should fail. It is based on the actual current draw and the battery size (parameter 51.36). An exclamation mark is displayed after **standby time** if the battery cannot support the panel for the time specified in parameter **51.37 = Standby Time**.

```
Standby  Time   8h
Charge  Time    4h
```
GX-081-V0

3. The status of the AC power and battery are displayed. Also, if available, the lowest voltage during the last battery load test.
4. This displays the battery charging voltage and current information. The panel and GX-Series PSU will also display the current charging state after **Battery**. This is either **Charging** or **Charged**.

5. This displays the battery load test. It is only available for the on-board PSU. Pressing the **ent** key again initiates a system wide battery load test. This test is only available for RIO 100 and 101.
6. This displays the AUX1 volts and current draw.
7. This displays the AUX2 volts and current draw.

NOTE: The current reading for the auxilliary supply is the total current of AUX1 and AUX2. The current display on the keypad for AUX1 or AUX2 is the combined reading of both.

   5 = MAX COMMS - the communication level between the GX-Series panel and the MAX/DCM readers.
   6 = **COMM MODULES** - the communication level between the GX-Series panel and the **Int Telecoms**, the **Int RS232** and **Mux Modules**.

```
Audio Module                PRESS #        Audio Module
100%  CM08  V1.0         ----------->      100% CM08 13.72V
```
GX-082-V0

To access the MUX module diagnostics press the asterisk key when the keypad display shows the diagnostics for the audio interface. Then use the arrow key to scroll between each MUX module. To exit the menu, to return to the other comms modules diagnostics, press the escape key once.

   7 = ZONES - the status of each zone can be viewed.
   8 = DCM ZONES - the status of each DCM zone can be viewed.

2 Historical

This option allows a full diagnostic baseline to be performed on the complete GX-Series system, including power supplies and peripherals. There are 5 selectable options:

   1 = View

   This option allows any stored baseline data to be viewed from option **61.2.3 = Record**.

   1. MEMORY TEST - As **latest.**

   2. KEYPAD COMMS - Snapshot value from last test.

   3. RIO COMMS - Snapshot value from last test.

   4. PSU COMMS - Snapshot value from last test.

   5. NOT USED

   6. COMM MODULES - Snapshot value from last test.

   7. ZONES - Snapshot value from last test. The * key allows printing of results.

   8. DCM ZONES - snapshot value from last test.

   2 = Timeline

   This option shows the time and date when the last check was carried out for each of the areas listed in table 6-27:

AREA	DATA GATHERED
1 = Batt Size	Battery size in Ah
2 = Batt RF	The battery status of all RF devices. Shows LOW if not ok.
3 = PSU Volts	The voltage level of the on-board PSU's
4 = RIO Volts	The voltage level of the on-board RIOs
5 = Zone Ohms	The current resistance across all zones on the system.
6 = Communication	Type of device, address, and the% level with all peripherals on the system
7 = Panel memory	A check of the panel memory
8 = Total amps	the total current draw for the on-board PSU. This included aux current and battery current
9 = Batt Volts	Voltage level of the battery connected to the control panel

Table 6-27. Historical Timeline

3 = Record

This option initiates a baseline check of areas 1 to 7 in the table above. The display prompts the user to press the * key to continue with the diagnostic check.

4 = Checks
This option allows each of the areas 1 to 9 listed in the table above to be included or excluded from the baseline recording. All areas are included by default.

5 = Print
This option allows the stored baseline data to be printed using the on-board RS232 port.

Option 62 – Full Test

The **Full Test** option allows two zones to be selected and tested under full set conditions. Activating the selected zone results in a full alarm condition, including remote signaling. Constantly active zones (**Security, 24 Hours**, **PA**, **Fire**) remain active throughout the **Full Test**; an activation generates the appropriate local or full alarm depending on the zone.

On selecting the **Full Test** option, the address and function of the first zone on the system is displayed. Move to the required zone by pressing the **A>** or **<B** keys or by entering the zone address. Press the **ent** key. An option is then given to choose a second confirm zone. If you press the **A>** (YES) key, select a second required zone by pressing the **ent** key. If you press the **<B** (NO) key, the system begins the full setting (arming) procedure. Activating the zone results in a full alarm condition. To end the full test unset (disarm) the system.

Option 63 – Options

The **Options** function allows the GX-Series to be divided into group subsystems.

Options

```
└─1 = Groups ──── 1 = Group Mode ───── 0 = Disabled
                │                      1 = Enabled
                │
                │  2 = Setting Logic──── A/B to move to group and ent to select.
                │                        Number keys to toggle:
                │                        - = status of group unimportant
                │                        S = Group must be set to allow group to set.
                │
                │  3 = Group Name─────── A/B to move to group and ent to select.
                                         # = toggle upper case, lower case or library text.
                                         * = delete last character.
                                         A/B = move to character/word.
                                         ent = assign character/word.
                                         esc = save programming.
```

GX-058-V0

Figure 6-7. Options

63.1=Groups

On selecting **Options**, the keypad displays **1 = Groups**; press the **ent** key to select this function.

1 = Group Mode

This option is used to enable the **Groups** function (default is **0 = Disabled**). When enabled, the system options that are eligible for group programming are then made available throughout the menu, otherwise they do not appear.

Enabling Groups

On selecting **1 = Enabled**, press the **ent** key to accept the programming and return to the previous menu type.

NOTE: You **must** return to the Engineer Mode banner for groups to be fully enabled.

Disabling Groups

The **Group Disabled** feature operates as follows:

When disable groups is selected in menu option 63.1.1 two option are given:

1. Reset Groups
2. Disabled

If option 1 - Reset Groups is selected the engineer is prompted to confirm the selection. If confirmed, by pressing the enter key, all group programming, for all the panel features, are reset to A1. When engineering mode is exited a warning message is displayed **(ATT!!! GRPS OFF, SYS.OP. IMPACT)** alerting the engineer that groups have been reset and there will be an impact on the operation of all functions not programmed as group A1. This warning message will be displayed until the ESC key is pressed by the engineer, acknowledging the warning.

NOTE: When group programming is re-enabled all previous group programming will not be restored.

If option 2 - Disabled is selected the engineer is prompted to confirm the selection. If confirmed, by pressing the enter key, all group programming, other than A1 will be disabled (zones, outputs, links, users). When engineering mode is exited a warning message is displayed **(ATT!!! GRPSOFF, SYS. OP. IMPACT)** alerting the engineer that groups have been disabled and there will be an impact on the operation of all areas not programmed as group A1. This warning message is displayed until the ESC key is pressed by the engineer, acknowledging the warning.

NOTE: If this option is selected, when group mode is re-enabled all previous group programming will be restored. However, while group mode is disabled, a zone not programmed to group A1 will not operate normally on the system. It is strongly recommended that, whenever possible, groups are always reset to A1 when disabling groups.

2 = Setting Logic

The **Setting Logic** option restricts a group from setting by determining which other groups must be set before it can set. For example, group 1 may be prohibited for setting (arming) unless groups 3, 7 are already set. The **Setting Logic** is individually defined for each group.

Programming Setting Logic

On selecting the **Setting Logic** option, group 1 is displayed. Use the **A>** or **<B** keys to move to the required group or directly select it by pressing the required group number; press the **ent** key to access the group. On selecting the group, the current **Setting Logic** details are displayed:

- **S** below a group means that it must be set to allow the selected group to set
- a dash (**–**) below the group indicates that the set status of this group is not important.

Toggle the status between **S** and – by pressing the number key. When the required setting logic pattern has been defined press the **ent** key to accept the programming and return to the previous menu type.

Multi-group Systems

The larger GX-Series panels have 32 groups; these are displayed on the keypad in block of eight groups, subdivided into A, B, C and D:

Group Block	Physical Groups
A1-8	1-8
B1-8	9-16
C1-8	17-24
D1-8	25-32

Table 6-28. Groups

Use the **A>** or **<B** key to move between the group blocks; press keys 1 – 8 to toggle the **Setting Logic** for the relevant groups in each block.

Setting Logic Operation

If **Setting Logic** has been assigned to a group, the set status of the groups must satisfy the conditions defined in the option to permit the group to set. If the **Setting Logic** conditions are not satisfied, then the group cannot set. If multiple groups are being set simultaneously, but one group is restricted due to the programmed **Setting Logic**, the remainder of the groups set. The restricted group does not set; there is no warning or indication given.

If the programmed **Setting Logic** results in none of the selected groups being allowed to set, a warning message is displayed on the keypad.

```
2 Groups not set
[<],[>] to view
```
GX-083-V0

This message does not appear if at least one group sets.

3 = Group Name

This option is used to assign a name of up to 12 characters to each of the groups. This name is assembled from the character set and/or library options. On selecting the **Group Name** option, the name currently assigned to group 1 is displayed. All group names default to **Group X** (where **X** is the group number). Use the **A>** or **<B** keys to move to the required group or directly select it by pressing the required group number; press the **ent** key to access the group. On selecting the group, the following details are displayed:

CURRENT GROUP NAME

```
A2  Group  Name
EFG  HIJKLMNÖØOP
```

UPPER CASE TEXT
TO TOGGLE
UPPER CASE/
LOWER CASE/
LIBRARY
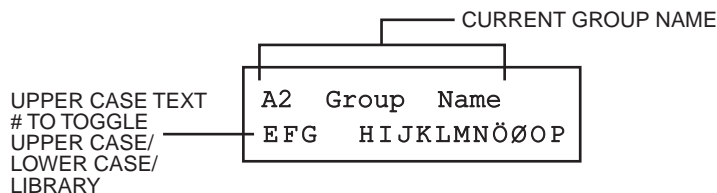
GX-084-V0

The currently assigned name is displayed on the top line - an underscore shows where the next character will be positioned, and a selection of the alphabet is shown on the bottom line - the cursor flashes on the letter **L**.

Press the * key to erase the characters already assigned to the name.

The **A>** or **<B** keys can be used to move the alphabet left or right until the required character is positioned underneath the flashing cursor. When the required character is in position press the **ent** key to copy the character to the descriptor in the top line. Repeat this procedure to assemble the required **Group Name**.

Text Case & Library
On entering the **Group Name** option the alpha-numeric characters are all presented in upper case. Pressing the **#** key toggles the characters to lower case.

Pressing the **#** key when the lower case alphanumeric characters are displayed toggles to the library words. The words can be viewed using the **A>** or **<B** keys or directly selected using the reference number - refer to **Appendix A - Library**. When the required word is displayed, press the **ent** key to copy it to the name.

NOTE: Library words are a maximum of 12 characters and upper case only.

Group Name Display
When viewing the groups assigned to an option, for example user code or outputs, simultaneously pressing the **#** and * keys displays the groups individually. The keypad displays the group number, name and the status of the particular option being displayed. Press the # key to toggle the status of the group. To move to another group press the **A>** or **<B** keys or enter the number of the group directly.

```
                                    ┌──────── CURRENT GROUP NAME
                          ┌─────────┴───────┐
SELECTED GROUP ──────────┤ A2   Sales  Dept  S ├──── STATUS OF GROUP
                         │ [<],[>],#=CHANGE  │
                          └──┬──────────┬────┘
A OR B KEY TO MOVE ──────────┘          └──────── # KEY TO TOGGLE STATUS
TO OTHER GROUP
                                                          GX-085-V0
```
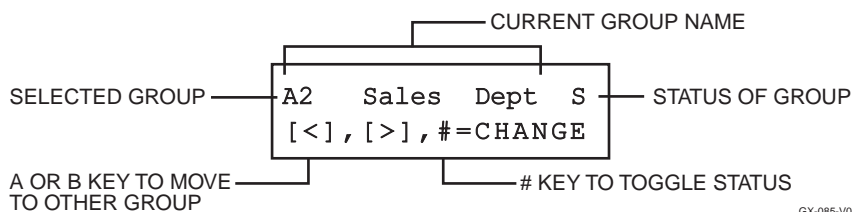
Notes on Groups
1. All zones default to group 1.
2. All keypads, user codes and outputs default to all system groups assigned.
3. Remove unused groups from user codes, otherwise the unused groups will set (arm) and unset (disarm) even though they are not programmed.
4. **Final, Keyswitch** and **Exit** can be programmed to function in regard to other groups during the setting (arming) and unsetting (disarming) procedures (refer to option **52 = PROGRAM ZONES**).
5. Outputs can be assigned to any selection of groups. Output activation can be made dependent on the set (armed) or unset (disarmed) status of the assigned groups (refer to option **53 = PROGRAM OUTPUTS**).
6. After programming zones, codes, keypads and outputs into their various groups they remain programmed if the **Group Mode** function is disabled. Only Group 1 remains active.
7. The GX-Series control panels have multi-user software that allow several users to operate the system simultaneously.

Option 64 – Assemble Zone

The **Assemble Zones** option allows 2 zone functions to be customized to the user's requirements; these are the **1 Custom-A** and **2 Custom-B** zones. Once a custom zone function has been assembled, it is assigned to zones using option **52 = PROGRAM ZONES**.

Programming a Custom Zone

The flexibility of this menu option allows for an extensive range of possibilities. It is therefore important that the engineer is fully aware of the system and has a clear picture of what is required of the new zone function. The procedure for assembling a custom zone has 4 stages:

1. Outputs
2. Status
3. Setting (arming)
4. Log

1 = Outputs	Output Type:	Disabled Set Unset Set/Unset	A/B – select output type # – toggle between Disabled, Set, Unset & Set/Unset esc – save programming
2 = Status	1 = Unset	Disabled Alarm	# – toggle between Disabled and Alarm esc – save programming
	2 = Entry/ Exit	Disabled Alarm	
	3 = Part Set	Disabled Alarm	
	4 = Full Set	Disabled Alarm	
3 = Setting/ arming	1 = Begin Set	Disabled Enabled	# – toggle between Disabled and Enabled esc – save programming
	2 = Begin Entry	Disabled Enabled	
	3 = Sets System	Disabled Enabled	
4 = Log	Disabled Entry Exit 24 Hours Alarms		# – toggle between Disabled, Entry/Exit, 24 Hours & Alarms esc – save programming

Table 6-29. Programming a custom Zone

1 = Outputs

Any of the available output types can be assigned to the custom zone. On selecting this attribute the **01=BELLS** output type is displayed along with it status; the default status is disabled. The status indicates the conditions under which the custom zone activates the output. To assign the output type status press the **#** key, this toggles between each of the status settings:

1. Disabled the output is not activated by the custom zone,

2. Set the output is activated by the custom zone only when the system is set (armed),

3. Unset the output is activated by the custom zone only when the system is unset (disarmed).

4. Set/Unset the output is activated by the custom zone when the system is both set (armed) and unset (disarmed).

Select the output types to be assigned by pressing the **A>** and **<B** keys or by entering the number of the required output type and assign the required status. When all of the output types have been selected, press the **esc** key to return the previous menu level. For a full list of output types refer to option **53 = Program Outputs.**

2 = Status

The **Status** attribute determines the system conditions that custom zone is operational in. The four **Status** attributes are:

> **1. Unset** activates an alarm when the system is unset (disarmed),
> **2. Entry/Exit** activates an alarm when the system is setting (arming) and unsetting (disarming),
> **3. Part Set** activates an alarm when the system is part set (part armed)**,**
> **4. Full Set** activates an alarm when the system is full set (full armed)**.**

The default for each of the **Status** attributes is disabled. To enable the zone to activate an alarm, select the required **Status** attribute using the **A>** or **<B** keys and press the # key; the display indicates that a custom zone activation while the system is in the selected **Status** will create an **Alarm** condition and switch on the assigned outputs.

NOTE: The custom zone can be operational in all four **Status** conditions if required.

3 = Setting

The **Setting** attribute determines the function (if any) that the custom zone has in setting (arming) and unsetting (disarming) the system.

> **1. Begin Set** if enabled, the custom zone starts the setting/arming setting (arming) procedure,
> **2. Begin Entry** if enabled, the custom zone starts the unsetting (disarming) procedure,
> **3. Sets System** if enabled, the custom terminates the setting (arming) procedure.

> The default for each of the **Setting** attributes is disabled. To enable the options, select the required **Setting** attribute using the **A>** or **<B** keys and press the # key; the display indicates that attribute is **ENABLED** for the custom zone.

NOTE: The custom zone can be assigned all three **Setting** attributes if required, however, it is recommended that either attribute **1** (**Begin Set**) or **3** (**Sets System**) is enabled, but not both.

4 = Log

This attribute determines which custom zone activations are logged. On selecting **Log** the current selection is displayed. To change the selection press the # key, this toggles between the **Log** options;

> **Disabled** the custom zone activations are not logged,
> **Entry/Exit** the custom zone activations only log during the setting (arming) and unsetting (disarming) procedure,
> **24 Hours** all custom zone activations log [both in the set (armed) and unset (disarmed) states]
> **Alarms** the custom zone only logs when an activation results in an alarm condition.

NOTE: The opening (**+**) and closing (**–**) of custom zones are recorded in the event log.

Assemble Zone Example:

Assemble a zone that:
- activates **Bells** outputs when the system is set (armed),
- activates **Link-A** outputs when the system is unset (disarmed),
- generates an alarm condition when the system is part and full set,
- does not generate an alarm condition during the setting (arming) and unsetting (disarming) procedure,
- acts as a terminator when the system is setting (arming),
- logs all activation [in both set (armed) and unset (disarmed) states].

Programming:

(Assuming factory default settings)
1. Select option **64 = ASSEMBLE ZONES**; press the **ent** key,
2. Select custom zone (**1 = Custom-A**, **2 = Custom-B**); press the **ent** key,
3. Outputs is displayed. Press the **ent** key to select this option,
4. Bells is displayed. Press the **#** key. **Set** is displayed,
5. Enter **51**. **Link-A** is displayed. Press the **#** key. **Set** is displayed,
6. Press the **#** key. **Unset** is displayed,

7. Press the **esc** key. **Outputs** is displayed,

8. Press the **A** key. **Status** is displayed. Press the **ent** key to select this option,

9. Unset Disabled is displayed,

10. Press the **A** key. **Entry/ Exit Disabled** is displayed,

11. Press the **A** key. **Part Set Disabled** is displayed,

12. Press the **#** key. **Part Set Alarm** is displayed,

13. Press the **A** key. **Full Set Disabled** is displayed,

14. Press the **#** key. **Full Set Alarm** is displayed,

15. Press the **esc** key. **Status** is displayed,

16. Press the **A** key. **Setting** is displayed. Press the **ent** key to select this option,

17. Begin Set Disabled is displayed,

18. Press the **A** key. **Sets System Disabled** is displayed,

19. Press the **#** key. **Sets System Enabled** is displayed,

20. Press the **esc** key. **Setting** is displayed,

21. Press the **A** key. **Log** is displayed. Press the **ent** key to select this option,

22. Log Disabled is displayed,

23. Press the **#** key. **Log Entry/Exit** is displayed,

24. Press the **#** key. **Log 24 Hours** is displayed,

25. Press the **esc** key three times to return to the **64 = ASSEMBLE ZONES** display.

Option 65 – Timers

The **Timers** menu is as follows:

```
65 = Timers
     │
     ├─1 = Weekly ──── 1 = Name (12 alpha-numeric)
     │      Schedule   2 = Status ───── 0 = Off
     │      (01-67)                     1 = On
     │
     │                 3 = Events ───── Use A or B key to select timer
     │                                  then press ent.
     │                                  W01-67 ✱✱✱  ✱✱✱  ✱✱:✱✱
     │                                  [>], [<], #, 0-9, ✱
     │                                  A(>), B(>) key to program day (Mon - Sun)
     │                                  # to toggle ON/OFF status
     │                                  0-9 keys to enter time
     │                                  ✱ to delete programming
     │
     │                 4 = Holiday ──── 00-32 (00=None)
     │                     Period
     │
     │                 5 = Holiday ──── 01-67 schedules
     │                     Schedule
     │
     │                 6 = Pattern day ── 1 = Mon
     │                                    2 = Tue
     │                                    3 = Wed
     │                                    4 = Thu
     │                                    5 = Fri
     │
     ├─2 = Timer ───── 1 = Timer A ──── 1 = Status ───── 0 = Off
     │      Outputs                                      1 = On
     │
     │                                  2 = Weekly ──── 01-67 schedules
     │                                      Schedule
     │
     │                 2 = Timer B ──── 1 = Status ───── 0 = Off
     │                                                   1 = On
     │
     │                                  2 = Weekly ──── 01-67 schedules
     │                                      Schedule
     │
     └─3 = Autoset ──── Use A or B keys to
            (groups)    select group and
                        press ent. ──── 1 = Status ───── 0 = Off
                                                         1 = On
                                                         2 = Monitor
                                        2 = Prewarning ─ 1 = Period ──── 30 (0-50) mins
                                                         2 = Audible ──── 0 = Off
                                                                          1 = On
                                        3 = Extension ── 030 (0-400) mins
                                        4 = Force Set ── 0 = Off
                                                         1 = On
                                        5 = Weekly ──── 01-67 schedules
                                            Schedule
                                        6 = Lockout ──── 0 = Off
                                            Status        1 = On
                                        7 = Lockout ──── 01-67 schedules
                                            Schedule
```

GX-059-V0

Figure 6-8. Timers

The GX-Series control panel provides programming of timer schedules on a weekly basis. Each event corresponds to an ON or an OFF time. The state of the schedule is ON or OFF depending on the last event that was reached.

Timers can be assigned to:
- Individual users to disable them
- Individual doors to lock them
- Individual groups for autoset
- Outputs for automatic activation.

NOTE: The **ON** period is the secure period for a particular schedule when users will be unable to gain access to allocated areas and the Autoset (armed) and Lockout features for allocated groups are enabled.

The Timers menu Structure is as follows:

65.1 = Weekly Schedule
A weekly schedule consists of a selection of daily time programs for each day of the week. The state of the weekly schedule is ON or OFF depending on the last event that was reached. Up to 67 weekly schedules with 28 time slots are available for programming depending on panel variant The weekly schedules are used to control various panel features:
- Auto setting/arming
- Lockout times
- User access times
- Timer Outputs

1 = Name
A maximum 12 character alpha-numeric name can be entered here for a weekly schedule.

2 = Status
The status of the each of the timers is shown here whether **0 = OFF** or **1 = ON**. To change the status press the **A>** or **<B** key or press **1** to select **ON** or **2** to select **OFF.**

3 = Events
This option programs the weekly timer events with Day (Mon-Sun) and ON/OFF times.

NOTE: The number of weekly timer events is dependent on panel variant.

Programming Timer Events
1. Enter the Weekly Schedule menu. The first timer is displayed.
2. Go to **3 = Events** and press enter. The programmed status (if any) of the first timer is displayed.
3. If the timer has not been programmed then the following window appears on the keypad:

```
W01***    ***   **:**
```
GX-086-V0

4. To enter a new timer program for W01 do the following:
- Press **ent** to select the timer.
- Press the **A>** or **<B** keys to select the day (MON to SUN).
- Press the **#** key to select the status **ON** or **OFF.**
- Press the number keys (0-9) to select the first time (4 digit 24 hour format) on the top row.
- Press **ent** to accept the programming. The following typical window is displayed:

```
W01MON   ON    08:30
```
GX-087-V0

5. To program the OFF time on the bottom row repeat step 4. The following typical window is displayed:

```
W01MON  ON    08:30
     MON OFF   17:00
```
GX-088-V0

6. Press the **esc** key three times to escape from the **Timers** option.

NOTE: The **Timer Status** can be switched **On** and **Off** by users via option **45 = TIMER CONTROL**.

4 = Holiday Period
This is the holiday period programmed in **45.2.1. Timer Control.Holidays.Modify Dates.** Up to 32 holiday periods can be viewed with this option.

5 = Holiday Schedule
This is an alternative schedule that is used if option **45.2. Timer Control.Holidays** is activated. The system defines a selection of holiday dates (65.1.4) and then a schedule of times can be used on those dates under this option. Up to 67 holiday schedules can be selected.

6 = Pattern Day
The **Pattern Day** can only be allocated by the engineer. This option determines the programmed timers that are effective when the **Weekend Day** option (45.6.1) is selected by the user; the timers of the selected

Pattern Day are adopted by the days selected for weekend work.

On selecting this option the programmed **Pattern Day** is displayed; the default is **1 = MON**. Use the **A>** or **<B** keys to select the required day or days and press the **ent** key to accept the programming and return to the previous menu level:
- **1 = MON**
- **2 = TUE**
- **3 = WED**
- **4 = THU**
- **5 = FRI**

65.2 = Timer Outputs
Once the times have been programmed and the **Status** is set to **1=On**, the **Timer-A** or **Timer-B** outputs 53.29 and 53.30 are activated at the **On** times and deactivated at the **Off** times programmed in **65.1=Weekly Schedule**. User codes that they have been attributed to a **Time Zone A** or **B** are invalid between an **On** time and the next **Off** time for the appropriate timer.

65.3 = Autoset
Each group can be programmed with up to 67 (dependent on panel variant) **Autoset (armed)** times over a 7 day period. These can be combined in any order of **On** and **Off** times as required. When the system has been set (armed) by the **Autoset (armed)** function, outputs programmed as **Autoset (armed)** (refer to option **53 = PROGRAM OUTPUTS**) are activated; the **Set** outputs are also activated.

Programming Autoset
If groups are enabled (refer to option **63 = OPTIONS**) the keypads prompts for the group that the autoset time is to be allocated to. Press the **A>** or **<B** keys to step through the groups until the required number is displayed and press the **ent** key.

NOTE: The group can be directly selected by entering the group number. Larger GX-Series systems have 32 groups; these are displayed in blocks of eight groups, sub-divided into A, B, C and D:

Group Block	Physical Groups
A1-8	1-8
B1-8	9-16
C1-8	17-24
D1-8	25-32

Table 6-30. Groups

Use the **A> or <B** key to select the required group (**A1–D8**). When the end of a block is reached, the next block of eight groups is displayed; use keys **1–8** to assign the relevant group in the current block to the zone; press the **ent** key to accept the selection.

Account Group Autosetting

The GX-Series allows Account Group autosetting (autoarming). This means that several groups can be bound together into one account group and, instead of a sending a normal CA event, the panel sends a CL event.

Refer to menu option **56.1.2.2.2 = Communications.Internal Telecoms.Format.SIA.Group Settings.Account No.**

There are five stages to programming the **Autoset** function:

1. Autoset Status

0 = Off (default)

1 = On

2 = Monitor - if selected, the setting (arming) and unsetting (disarming) of the group is monitored:

- if not set (armed) manually before the **On** time, then the **Set Late** output is activated
- if unset (disarmed) before the **Off** time, then the **Unset (disarmed) Early** output is activated.

2. Prewarning

1 = Period

0 – 50 minutes (default 30 minutes):

2 = Audible (this can be turned ON or OFF)

This option determines the warning period given to users prior to the system autosetting. Outputs programmed as **Prewarning** activate during the prewarning period. The output normally emits a constant tone, however if an extension is not possible, then a pulsed tone is emitted and prewarn activates at the Autoset time. At the end of the prewarning period, the system begins the timed setting (arming) procedure.

NOTE: Pressing the **esc** key at any time during the **prewarning** resets and restarts the **prewarning** countdown. If more than one group is in the prewarning period, each group can be viewed by pressing ***** and **>** or ***** and **<**.

3. Extension

0 – 400 minutes (default 30 minutes):

An autoset **Extension** can be assigned to each group on the system - programmed with different values per group. Entering a user code during the **Prewarning** delays the autosetting/arming by the period assigned to the **Extension**.

NOTE: The **Late Working** option (refer to option (**45 = TIMERS**) authorizes an **Extension** in advance of the **Prewarning** period.

Late Set appears if the system is not set (armed) after prewarn time plus 300 seconds (longest possible exit delay) An **Extension** cannot be granted once the timed setting (arming) procedure begins.

4. Force Set

0 = Off (default)

1 = On

As a factory preset, any zone that is open at the start of the setting (arming) procedure - except **Final**, **Exit**, **Entry**, or **Push Set**, (or **Secure Final** or **Part Final** when acting as a **Final**) - is omitted by the autoset routine whether or not it is omittable. If one of the above listed zones is open and is non-omittable, on expiry of the time programmed in the **Fail-to-Set** parameter the **Fail-to-Set** outputs are activated along with a full alarm.

5. Weekly Schedule

This option assigns a programmed weekly schedule for each group when the selected group is automatically switched **On** (Autoset) and **Off** (Autounset).

When the keyswitch is activated twice during the exit time of an autoset, the autoset is temporarily cancelled for a few seconds, then it restarts the exit time causing the panel to reset.

Operating a keyswitch zone type during the pre-warn period of an autoset will start a Force Set. If you then activate the switch again (i.e. unset (disarmed) with keyswitch) before the panel sets, the pre-warn continues on the autoset.

NOTE: When the keyswitch is activated the second time to take panel back into pre-warn, it can be up to10 seconds before the pre-warn tones at the keypad start up again.

Lockout

Each group can be allocated with up to 67 (dependent on panel variant) **Lockout** schedules over a seven day period. These can be combined in any order of **On** and **Off** times as required.

If **Lockout** has been assigned to a group, the group is locked-out at the **Lockout On** time or when the group sets - whichever occurs first. Outputs programmed as **Lockout** are active while the system is locked out – this will not always correspond to the times assigned to the **Lockout** depending on whether the group sets prior to **Lockout On**. When a group is locked-out the setting (arming) status indicates that it cannot be unset (disarmed) by displaying and L.

```
Groups  12345678
        LLLUULLS
```
GX-089-V0

During the **Lockout** period, the group can not be unset (disarmed) unless an alarm has been activated in the group. In the event of an alarm occurring during the **Lockout** period, any valid type 2.3 (or above) code assigned to the group in alarm may be used to unset (disarm) and/or reset the group. If multiple locked-out groups are in an alarm condition entry of a single valid code (type 2.3 or above with access to the relevant groups) cancels the alarms and unsets (disarms) the activated groups.

The group can only be manually unset (disarmed) once in each **Lockout Off** period. If no **Lockout** times are programmed, the group may be unset (disarmed) at any time.

Codes are not affected by **Lockout**, and can be used to gain access to the menus and to manually set (armed) the group.

Programming Lockout

There are two stages to programming the **Lockout function**. These are options **6 = Lockout Status** and
  7 = Lockout Schedule of the Autoset programming menu:
  6 = Lockout Status
  The lockout status has to be set to On before the lockout schedule will function.
      0 = Off (default)
      1 = On
      7 = Lockout Schedule
This option allocates the automatic lockout time schedule **OFF** (Unlock) and **On** (Lockout) for the selected group. Up to 67 weekly schedules are available which are programmed in **65.1=Weekly Schedule.**

Option 66 – Pre-checks

The **Pre-Check** option provides added system security by alerting the user to zones that may not be operating correctly.

NOTE: Pre-check does not operate when the system is in the engineer mode.

Testing Zones

```
16   CHECK   ZONES
A=VIEW
```
GX-090-V0

The **Entry/Exit Horns** beep once when each zone is tested. As each zone is successfully tested, the keypad indicates the number that remain to be tested. When the last zone is successfully tested the **Entry/Exit Horn** sounds twice and the keypad displays **0 CHECK ZONES**; press the **ent** key to resume the system routine.

1 = Mode

The **Mode** determines the pre-check level that the selected zones are subjected to before the system can set. The Mode is selected from one of the following:

1. **Disabled** (default)**:** the pre-check option is disabled; even if zones are selected, they are not checked.
2. **Warning:** when the setting (arming) routine is started the user is informed of the number of selected pre-check zones that have not been activated since the system was unset (disarmed); press the **A>** or **<B** keys to view the zones. Press the **ent** key to continue the setting (arming) routine. The zone that have not been activated do not have to be tested.
3. **Autocheck:** when the setting (arming) routine is started the user is informed of the number of selected pre-check zones that have not been activated since the system was unset (disarmed) and a warning is sounded; press the **A>** or **<B** keys to view the zones. These zones must be tested before setting (arming) can be resumed.
4. **Forced Check:** when the setting (arming) routine is started the keypad indicates the number of pre-check zones t hat are on the system; to view the pre-check zone addresses press the **A>** or **<B** keys. All of the preselected zones must be tested before setting (arming) can take place.

```
Levels       3456
11=OMIT  ZONES
```
GX-091-V0

2 = Select Zones

On selecting **2 = Select Zones**, the address and function of the first zone on the system is displayed. Move to the required zone by pressing the **A>** or **<B** keys or by entering the zone address. To toggle the status of the precheck attribute of the zone press the **#** key; the keypad indicates that the zone is included in the pre-check by displaying **PRE-CHECK ZONE**. Select other zones to be pre-checked in the same way. Once all of the zones have been selected, press the **esc** key.

Option 67 – Remote Reset

The **Remote Reset** option allows a user to perform an engineer reset authorized by the Alarm Receiving Center (ARC). In the event of an alarm that requires an engineer reset, the keypad displays a number, which, when quoted to the ARC is decoded and exchanged for a new number. When this new number is entered it resets the GX-Series panel. Entering the engineer code also resets the GX-Series panel.

NOTE: The alarm conditions that require to be reset remotely must have the appropriate **System Reset**,

Tamper Reset or **PA Reset** parameters programmed for engineer reset (**type 3.7**). Each alarm activation generates a random number, therefore, the number required to reset the panel changes each activation. As ARCs have different decoding equipment, the appropriate reset system must be selected from the following **Remote Mode** options:

> **0 = OFF** (default).
>
> **1 = SMS** - Southern Monitoring Service (4 digits).

Option 68 – Menu Access

The **Menu Access** option is used to assign access types to each of the menu options. This allows code types 2.3 – 3.6 to have access to menu options to which they would normally have insufficient access rights.

On selecting this option, **11 = OMIT ZONES** is displayed along with the current code types assigned (**3456** default).

```
Levels       3456
11=OMIT  ZONES
```
GX-091-V0

Use the **A>** or **<B** key to select the required menu option or enter the option number directly and press the **ent** key. The currently assigned types appear displayed on the top line of the display. The type maps default to the standard access. To modify the types, press the required number keys; this toggles the access type numbers on the bottom line of the display on and off.

```
Levels       3456
             >--5-
```
GX-092-V0

Press the **ent** key to save the programming and return to the previous menu level. If the level is assigned to the option the number is displayed, if it has been removed a dash (–) is displayed.

For example, type 2.5 5 codes can be given access to menu 42 which would allow them to allocate codes.

```
Levels       ---6
42=CODES
```
GX-093-V0

Users can only allocate codes up to the type that they have been assigned. A type 2.4 user cannot assign a user code as type 2.5.

NOTE: The following menu access types are fixed: option **48 = DATELOCK** level **3.6**, and option **68 = MENU ACCESS** engineer access (type 3.7 and 3.8).

Option 69 – Integrated Access Control

The GX-Series Access Control System is a complete security system. The following diagrams shows the programming options for the Door Control Module.

69 = Access Control

```
69 = Access Control
 ├─ 1 = Mode ─── 0 = Disabled
 │               1 = Enabled
 │
 ├─ 2 = NOT USED
 │
 └─ 3 = DCM ─┬─ 1 = DCM Parameters ─┬─ 1 = Descriptor ABCDE_ (9 characters)
             │   DCM XXX (select)   │
             │                      ├─ 2 = Operation ─── 0 = Entry & Exit
             │                      │                    1 = Entry & Entry
             │                      │                    2 = Single Entry
             │                      │
             │                      ├─ 3 = System Group
             │                      │
             │                      ├─ 4 = Facility Code ─── 1 = Code 1
             │                      │                        2 = Code 2
             │                      │                        3 = Code 3
             │                      │                        4 = Code 4
             │                      │
             │                      └─ 5 = Reader (01 or 02) ─┬─ 01 = Descriptor (ABCDE_ 9 characters)
             │                                                ├─ 02 = Relay Duration - 0-60 seconds (default = 05)
             │                                                ├─ 03 = Open Timeout - 1-60 seconds (default = 10)
             │                                                ├─ 04 = Group ─── 1 = Alarm Group
             │                                                │       Config    2 = Group Restrict
             │                                                │                 3 = Exit Group
             │                                                ├─ 05 = Emergencies ─── 0 = Disabled,  1 = Enabled
             │                                                ├─ 06 = AntiPassBack ─┬─ 1 = Mode ─── 0 = Off
             │                                                │                     │              1 = Soft
             │                                                │                     │              2 = Hard
             │                                                │                     ├─ 2 = Timeout 00 (0-60) minutes
             │                                                │                     └─ 3 = Forgive
             │                                                ├─ 07 = APB (by group)
             │                                                ├─ 08 = Security ─┬─ 1 = Nightlock ──── 00-67 weekly schedules
             │                                                │                 ├─ 2 = Unlock Time ── 00-67 weekly schedules
             │                                                │                 ├─ 3 = Dual Mode ─── 0 = Disabled
             │                                                │                 │                    1 = Card and Card
             │                                                │                 │                    2 = Card and Pin
             │                                                │                 └─ 4 = Dual Time - Option not available
             │                                                └─ 09 = Menu Recall ─┬─ 1 = Menu Function 11-71 (** = not used)
             │                                                                     ├─ 2 = Menu Mode ─── 1 = Triple Repeat
             │                                                                     │                    2 = Recall Button
             │                                                                     └─ 3 = Keypad ─── ** - Keypad
             │                                                                                       # = Enable
             └─ 2 = Card Format ─── 0 = 26bit
                                    1 = Crp 1K 35bit
                                    2 = 37bit no FC
                                    3 = Northern 34 bit
                                    4 = Custom ─┬─ 1 = Format Name
                                                ├─ 2 = Card Length ─── 1 = 26 Bit, 2 = 27 Bit, 3 = 32 Bit, 4 = 34 Bit
                                                │                      5 = 35 Bit, 6 = 37 Bit, 7 = 40 Bit
                                                ├─ 3 = Start Point ─── 13 (1-33)
                                                └─ 4 = User Field ─┬─ 1 = Field Position 00 (1-13)
                                                                   └─ 2 = Field Length 09 (1-13)
```

GX-060-V1

Figure 6-8. Access Control Programming Structure

69.1 = Access Mode
The Access Control function can either be set to **0 = Disabled** or **1 = Enabled**. The default is Enabled. The following pages describe the Door Control Module programming functions.

69.2 = NOT USED

69.3 = DCM
This option is used to program the GX-Series Door Control Module (DCM) access control readers. The DCM can be fully integrated into the system, communicating on the AB lines and fully utilizing the facilities of the GX-Series control panel. Each DCM can control up to two readers. The exit reader can be replaced with a request to exit button.

When enabled, the options that are eligible for DCM programming are made available throughout the menu, otherwise they do not appear, or appear as **Option not Available**.

Addressing the DCM
The DCM takes its address from a rotary hex switch on-board or by setting with DIP switches. Refer to **Section 5, Access Control, Door Control Module.**

69.3.1 = DCM Parameters
This option defines the individual operational features of each of the Door Control Modules. On selecting this option the address of the first DCM on the system is displayed along with the descriptor currently assigned to it. If there are no DCM's on the system the message NO ENTRIES is displayed.

Select the required DCM address using the **A>** and **<B** keys pressing the **ent** key. The first parameter, **1 = Descriptor** is displayed. Use the **A>** or **<B** keys to move to the required parameter and press the **ent** key.

> **1 = Descriptor**
> This option is used to assign a name of up to 9 characters to each of the DCM's. This name is assembled from the character set and/or library options. On selecting the **Descriptor** parameter the currently assigned name is displayed on the top line - an underscore shows where the next character will be positioned, and a selection of the alphabet is shown on the bottom line - the cursor flashes on the letter **L**.
>
> Press the * key to erase the characters already assigned to the name.
>
> The **A>** or **<B** keys can be used to move the alphabet left or right until the required character is positioned underneath the flashing cursor. When the required character is in position press the **ent** key to copy the character to the description in the top line. Repeat this procedure to assemble the required **Descriptor**.
>
> **2 = Operation**
> This option determines how the DCM will operate. There are three choices;
>> **0 = Entry and Exit**
>> This option provides entry at one reader and exit at another reader.
>>
>> **1 = Entry and Entry**
>> This option provides entry only at both readers
>>
>> **2 = Single entry**
>> This option means that one reader is connected and its type is entry.
>>
>> **3 = System Group**
>> This is the group that the DCM will report on for module tampers and diagnostics.
>>
>> **4 = Facility Code**
>> This allows the cards to be programmed as a specific technology with a Facility code plus an ID.
>>> **1 = Code 1**
>>> **2 = Code 2**
>>> **3 = Code 3**
>>> **4 = Code 4**
>>
>> **5 = Reader (01 or 02)**
>> This option allows the DCM readers to be set up with the 9 options that follow:

01 = Descriptor
This option is used to assign a name of up to 9 characters to each of the readers. This name is assembled from the character set and/or library options. On selecting the **Descriptor** parameter the currently assigned name is displayed on the top line - an underscore shows where the next character will be positioned, and a selection of the alphabet is shown on the bottom line - the cursor flashes on the letter **L**.

Press the * key to erase the characters already assigned to the name.

The **A>** or **<B** keys can be used to move the alphabet left or right until the required character is positioned underneath the flashing cursor. When the required character is in position press the **ent** key to copy the character to the description in the top line. Repeat this procedure to assemble the required **Descriptor**.

02 = Relay Duration
This is the period, following the user card swipe, that the reader relay is activated allowing a door strike to be unlocked and the door to be opened without creating an alarm. The reader relay de-activates as soon as the door contact opens or the **Open Timeout** occurs.

On entering the **Relay Duration** parameter, the current value is displayed; assign the required time within the range 0 – 60 seconds, the default time is 5 seconds. Press the **ent** key to save the programming and return to the previous menu level.
NOTE: Pressing the **A>** key increases the time by one second increments, the **<B** key decreases the time in one second decrements.

03 = Open Timeout
This is the period, following the user card swipe, that the door can remain open when gaining access. If the door remains open longer than the period assigned to the **Open Timeout**, then an alarm occurs.

NOTE: If the **Open Timeout** is programmed as **0** seconds, then the door can remain open indefinitely without resulting in an alarm being activated.

On entering the **Open Timeout** parameter, the current value is displayed; assign the required time within the range 0 – 60 seconds, the default time is 10 seconds. Press the **ent** key to save the programming and return to the previous menu level.

NOTE: Pressing the **A** key increases the time by one second increments, the **B** key decreases the time in one second decrements.

04 = Group Config
The groups option allows each DCM readers to be allocated to a particular group (s).

1 = Alarm Group
On selecting the **Alarm Group** option, the group currently allocated to the DCM reader is displayed. Pressing the group number toggles the group assigned to the reader. The reader does not allow access through the door when the group is set. a user must have this group assigned to them in order to gain access at this door.

Multi-group Systems
Larger GX-Series panels have 32 groups; these are displayed on the DCM reader in block of 8 groups, sub-divided into A, B, C and D. Use the **A>** or **<B** key to move between the group blocks; press keys **1 – 8** to assign the relevant groups in each block to the DCM reader.

When the required groups have been assigned to the user, press the **ent** key to accept the programming and return to the previous menu level.

2 = Group Restrict
Each DCM reader can be assigned selected groups using the Group Restriction option. This group restriction affects the operation of the DCM readers for both access and card held functions. A card can only be used at a reader if there are common groups between them.

By default each reader is assigned to all groups on the system. Groups can be removed as required to restrict the operation of the DCM reader.

NOTE: Each DCM card can be assigned a single menu function (refer to option **42 = CODES**). Activating this function with a card that is assigned to all groups, on a reader that is only assigned to a single group, results in the function operating on all of the card's groups. The DCM function is not restricted to the groups assigned to the reader, it is restricted to the groups assigned to the card, as long as there is one group common to both. This means that a DCM reader assigned only to group 1, for example, can be used to activate the DCM reader function on groups 1, 2, 3 and 4 by a card with all of these groups allocated. The groups are assigned to the DCM card using option **42 = CODES**.

3 = Exit Group - Option not available
This allows the group outside of the protected area to be defined. This is only used in conjunction with an exit reader, so that the current location of a specific user can be tracked.

05 = Emergencies
This option allows each individual DCM reader to be configured to respond to fire zones in a given set of groups. Upon the opening of a fire zone in one of the groups allocated to the reader, the reader will trigger the door strike and hold the door open until the system is reset. The DCM LED will light and the buzzer will sound. Closing the fire zone will have no effect - the DCM readers are treated as latched outputs and an appropriate level reset is required, at which point they are immediately reset.

A second group map is allocated to each DCM reader in order to facilitate this function. This permits the existing door control features to be completely detached from the fire escape features.

The default setting for each DCM reader is all groups selected. Therefore, a system, which is unchanged from the default will open all DCM doors in response to any fire zone activation.

Selecting the **Emergencies** option selects the groups you want allocated to the DCM readers for escape purposes and accepts the programming by pressing the enter key. When a fire zone is activated in any of the groups programmed, the door controlled by the DCM will be opened.

06 = AntiPassBack
This option, when enabled, will prevent more than one use of any particular card at a particular reader within a given time period.
A forgiveness function is available to clear all or particular antipassback restrictions in force. A manager code can authorize a forgive function on a particular user in option **42.1 = Codes.User Codes.** An engineer code can authorize a forgive function on a particular reader.

1 = Mode
This option has three settings
0 = Off
No antipassback restriction.
1 = Soft
Access is never denied but any violations will be recorded in the event log.
2 = Hard
No access will be granted for a second swipe within the antipassback period, following a valid swipe.

2 = Timeout (0-60 minutes)
This option specifies the time that the antipassback restriction lasts for. The default is 0 minutes.

3 = Forgive
This option allows the engineer to remove all antipassback restrictions for the selected DCM. Use the **A>** and **<B** keys to select the reader address the press **ent** to forgive.

07 = APB
Not used

08 = Security

This option determines when and how a door can be locked and unlocked for access.

1 = Nightlock

This allows a time schedule to be allocated to determine when access to the door will be blocked. Up to 67 weekly time schedules can be programmed. Setting the schedule to 00 disables the function.

2 = Unlock Time

This allows a time schedule to be allocated to determine when the door will be unlocked to provide unrestricted access. Up to 67 weekly time schedules can be programmed. Setting the schedule to 00 disables the function.

3 = Dual mode

This defines if access at a door requires dual authority or not via the assigned keypad. The options are:

0 = Disabled

A card **or** a Pin is required to gain access.

1 = Card and Card

Two cards are required to gain access.

2 = Card and Pin

A card and a Pin from the same user are required to gain access.

4 = Dual Time

Option not available

09 = Menu Recall

This determines whether the user is allowed to apply the menu recall function at any DCM reader. This is in addition to any DCM function that may be assigned. There are two options:

1 = Menu Function

Depending on the level of access granted in **Option 68, Menu Access**, the user can hold their card at a compatible reader for three seconds to activate a single menu function selected from the available list (11-71). A new option is assigned by pressing the **A>** or **<B** keys until the required option is displayed or by entering the option number directly and then pressing the **ent** key to accept the selection. Assigning a Double asterisk (**) to the menu function makes it not used.

2 = Menu Mode

This determines how the menu function will operate. There are two options:

1 = Triple Repeat

The card is presented to the reader three times to activate the menu.

2 = Recall Button

The recall button is pressed once to activate the menu.

2 = Keypad assignment

This assigns a specific keypad address to work in conjunction with a MAX. This keypad is used to display the menu action assigned in 1 = Menu Function.

69.3.2 = Card Format

This option selects what type of card is used with the DCM reader. There are five options:

0 = 26 bit

1 = Crp 1K 35 bit

2 = 37 bit no FC

3 = Northern 34 bit

4 = Custom.

1 = Format Name

This option is only available when **4 = Custom** is selected as the format. It gives a name to the custom format. The maximum number of characters in the name is 12.

2 = Card Length

The bit size of the card can be 26, 27, 32, 34, 35, 37 or 40.

NOTE: For UL294 installations use Northern 34 bit proximity cards.

3 = Start Point

If the card structure is unknown then it can be decided where the card number starts from. This is a numeric value that must be less than the maximum length of the card.

4 = User Field

This is where the facility code is specified. Two options can be selected:

1 = Field Position

This is the start bit for the facility code. It can be from 1 to the card number start point.

2 = Field Length

This is the length of the facility code. The maximum field length is from the field position to the start of the card number.

Engineer 3

Option 71 – SPI Key

The SPI (Serial Peripheral Interface) key is an engineering peripheral used for copy/overwriting programming data and carrying out software upgrades.

Using the SPI Key

If no key is inserted the display will briefly show:

```
SPI  Key:
Device error
```

GX-095-V0

SPI Keys can be supplied in one of two ways:
1. Programmed - the SPI Key will be pre-programmed with a specific application file.
2. Un-programmed - The SPI Key is blank and contains no application or configuration data. If the SPI Key is inserted and the key is blank, then the only option presented to the user will be **1 = Format Key.**

1 = Format Key

This function formats the key ready for copy and overwriting of panel configuration data. On selecting this option the user is presented with a display where the top line reads "Formatting", with a progress bar shown on the bottom line.

Once the key has been formatted the user is presented with the following options:

1 = Show Key

This option is only shown when there is existing information stored on the SPI Key and then provides options for downloading the saved information into the panel. The user can scroll through the available files on the SPI Key.

For each file the display toggles between the:

Filename, creation time and date of the saved data and the,

Panel Type, Panel version and file type.

A further press of the **ent** key will provide the user with the following two options:

1 = Use File

Selecting this option will reprogram your control panel with the software application file or configuration file stored on the SPI key. This will take approximately 2 minutes.

NOTE: If a new panel application file is being downloaded, the panel configuration stored in the panel should firstly be saved from the panel to the SPI Key. The new panel application can then copied from the SPI Key to the panel. Once the new application has been downloaded the saved panel configuration can be copied back to the panel.

Once the process has started, the panel will validate the data, then begin reprogramming the control panel. While reprogramming is taking place, the panel stops running. The keypads and other peripherals will go off-line for a short period. Once the reprogramming is complete, the panel will automatically reboot. Once the panel has fully reconfigured, power may be removed or any previously saved configuration can be restored via option **1 = show key** and selecting the appropriate file.

CAUTION: Do not remove power or unplug the SPI key until the panel has restarted.

2 = Delete File

When selected, the binary file stored on the SPI Key is deleted.

CAUTION: Do not use this command as the SPI key will have to be recalled to Honeywell Security to be reprogrammed with the software.

2 = Save config

This option allows the panel configuration data to be saved to SPI Key. If selected the user is first prompted for filename for the saved data. This can be up to 8 characters in length.

Once the filename has been entered the data save sequence is started. The keypad display gives an indication of the progress until the configuration has been saved.

3 = Check space

If selected this option displays the available space left on the SPI Key. This will display the number of free memory Kbytes left on the device, out of a maximum of 4096.

4 = Erase key

This option deletes all programming and returns the SPI key to the unformatted state. This option should not be used.

NOTE: If replacing the software all users, other than the engineer at the keypad in use will be logged out of the system. The keypad banner will display a warning of what is happening. The engineer will be given a warning that the panel software is about to be replaced. It will take approximately 2 minutes to replace the software, during which time the keypads will go off line. Once reprogrammed, the panel will restart.

Appendix A: Library

00	0	001	ABOVE	059	BY	117	DINING
01	1	002	ACCESS	060	CABINET	118	DIRECTOR
02	2	003	ACCOUNTANT	061	CAFE	119	DIRECTORS
03	3	004	ACCOUNTANTS	062	CALL	120	DISPATCH
04	4	005	ACCOUNTS	063	CANTEEN	121	DOG
05	5	006	ADMIN.	064	CAR	122	DOOR
06	6	007	ALARM	065	CARGO	123	DOUBLE
07	7	008	ALERT	066	CARPENTER	124	DOWNSTAIRS
08	8	009	ANIMAL	067	CARPET	125	DRAMA
09	9	010	ANNEXE	068	CASH	126	DRAWER
10	space	011	ARCH	069	CASHIER	127	DRAWING
11	Å	012	AREA	070	CEILING	128	DRINKS
12	Ä	013	ARENA	071	CELL	129	DRIVE
13	A	014	AROUND	072	CELLAR	130	DRUGS
14	Æ	015	ART	073	CENTRAL	131	EAST
15	B	016	ASSEMBLY	074	CENTRE	132	ECONOMICS
16	C	017	ASSISTANT	075	CHAIR	133	EDGE
17	D	018	AT	076	CHANGING	134	EIGHT
18	E	019	ATTACK	077	CHEMISTRY	135	EIGHTEEN
19	F	020	ATTIC	078	CHICKEN	136	EIGHTY
20	G	021	AUTOMATIC	079	CHURCH	137	ELECTRIC
21	space	022	AUXILIARY	080	CLASSROOM	138	ELECTRICIAN
22	H	023	BACK	081	CLEANER	139	ELECTRONICS
23	I	024	BAGGAGE	082	CLEANERS	140	EMERGENCY
24	J	025	BAKERY	083	CLEANING	141	END
25	K	026	BALCONY	084	CLERK	142	ENGINE
26	L	027	BALLROOM	085	CLERKS	143	ENGINEER
27	M	028	BANK	086	COAL	144	ENGINEERS
28	N	029	BANKING	087	COAT	145	ENGLISH
29	Ø	030	BAR	088	COIN	146	ENTRANCE
30	Ö	031	BARN	089	COLD	147	ENTRY
31	O	032	BASEMENT	090	COLLECTION	148	EQUIPMENT
32	space	033	BATH	091	COMMUNICATOR	149	ESCAPE
33	P	034	BATHROOM	092	COMPUTER	150	ESCALATOR
34	Q	035	BAY	093	CONFERENCE	151	EXIT
35	R	036	BEAM	094	CONTAINER	152	EXPORT
36	S	037	BEDROOM	095	CONTACT	153	EXTERNAL
37	T	038	BEHIND	096	CONSERVATORY	154	FACTORY
38	U	039	BELL	097	CORNER	155	FAILURE
39	Ü	040	BELOW	098	CORRIDOR	156	FAR
40	V	041	BENCH	099	COUNTER	157	FARM
41	W	042	BESIDE	100	COURT	158	FAX
42	X	043	BIOLOGY	101	COW	159	FEED
43	space	044	BIRD	102	CUPBOARD	160	FEMALE
44	Y	045	BLOCK	103	CURRENCY	161	FENCE
45	Z	046	BLUE	104	DAIRY	162	FIELD
46	.	047	BOARD	105	DARK-ROOM	163	FIFTEEN
47	,	048	BODY	106	DATA	164	FIFTY
48	/	049	BOILER	107	DAY	165	FLING
49	-	050	BOOTH	108	DEPARTURE	166	FIRE
50	+	051	BOTTOM	109	DEPUTY	167	FIRST
51	&	052	BOX	110	DEPT.	168	FIRST-AID
52	(	053	BOYS	111	DESIGN	169	FISH
53	)	054	BRANCH	112	DESK	170	FIVE
54	space	055	BROOM	113	DETECTOR	171	FLAT
		056	BROWN	114	DEVELOPMENT	172	FLOOR
		057	BUILDING	115	DEVICE	173	FOR
		058	BUNKER	116	DIARY		

174	FOREIGN	235	JUST	296	NINETEEN
175	FORTY	236	KEEP	297	NINETY
176	FOUNTAIN	237	KEYPAD	298	NODE
177	FOUR	238	KITCHEN	299	NOISE
178	FREEZER	239	LAB	300	NURSE
179	FRENCH	240	LADIES	301	NURSERY
180	FRIDGE	241	LANDING	302	NORTH
181	FROM	242	LAST	303	OF
182	FRONT	243	LATIN	304	OFFICE
183	GAMES	244	LAUNDRY	305	OFFICER
184	GARAGE	245	LAVATORY	306	OFFICERS
185	GARDEN	246	LAWN	307	OFFICES
186	GATE	247	LEAST	308	OIL
187	GENTS	248	LECTURE	309	ON
188	GEOGRAPHY	249	LEFT	310	ONE
189	GERMAN	250	LEVEL	311	OPEN
190	GIRLS	251	L.H.S.	312	ORANGE
191	GLASS	252	LIBRARY	313	OUT
192	GOLD	253	LIFT	314	OUTER
193	GOODS	254	LIGHT	315	OUTSIDE
194	GREAT	255	LINE	316	OVAL
195	GREEN	256	LITTLE	317	OVER
196	GROCERY	257	LOADING	318	P.A. BUTTON
197	GROUND	258	LOBBY	319	PACKING
198	GROUNDS	259	LOCK	320	PAINT
199	GROUNDSMAN	260	LOFT	321	PANEL
200	GROUP	261	LORRY	322	PANIC
201	GUARD	262	LOUNGE	323	PANTRY
202	GUN	263	LOW	324	PARCEL
203	GYM	264	LUNCH	325	PARK
204	HALL	265	MACHINE	326	PARTITION
205	HAND	266	MAGNETIC	327	PASSIVE
206	HANGER	267	MAIN	328	PATH
207	HEAD	268	MAJOR	329	PATIO
208	HEAT	269	MALE	330	PEN
209	HEATER	270	MAN	331	PENTHOUSE
210	HIGH	271	MANAGER	332	PERIMETER
211	HISTORY	272	MANAGERS	333	PERSONAL
212	HOME	273	MASTER	334	PERSONNEL
213	HORSE	274	MAT	335	PHONE
214	HOT	275	MATHS	336	PHYSICS
215	HOUSE	276	MEDICAL	337	PIG
216	ICE	277	MEN	338	PIR
217	IN	278	MESS	339	PIR BY
218	INDUSTRIAL	279	METAL	340	PIR IN
219	INFANT	280	METER	341	PIR ON
220	INFANTS	281	MEZZANINE	342	PLACE
221	INFORMATION	282	MICROWAVE	343	PLANT
222	INFRARED	283	MIDDLE	344	PLAY
223	INSIDE	284	MILK	345	PLAZA
224	INSTRUCTORS	285	MINOR	346	PLUMBER
225	INTERIOR	286	MOBILE	347	PLUMBERS
226	INTO	287	MODEL	348	POINT
227	IRON	288	MONITOR	349	POND
228	ISOLATION	289	MOULDING	350	POOL
229	IT	290	MOVEMENT	351	PORCH
230	ITALIAN	291	NEAR	352	POST
231	JANITOR	292	NEW	353	POWER
232	JANITORS	293	NEXT	354	PRESSURE
233	JUDGE	294	NIGHT	355	PRIMARY
234	JUNIOR	295	NINE	356	PRIME

357	PRINT	418	SILENT	479	TOILET
358	PROCESSING	419	SILVER	480	TOOL
359	PRODUCTION	420	SITE	481	TOP
360	PUBLIC	421	SITTING	482	TRACK
361	PURCHASING	422	SIX	483	TRACTOR
362	PURPLE	423	SIXTEEN	484	TRADE
363	QUALITY	424	SIXTY	485	TRAILER
364	QUANTITY	425	SLIDING	486	TRAIN
365	QUIET	426	SMOKE	487	TRAINING
366	QUICK	427	SOFTWARE	488	TRANSPORT
367	RANGE	428	SOLITARY	489	TRAP
368	READING	429	SOUND	490	T.V.
369	REAR	430	SOUTH	491	TWELVE
370	RECEPTION	431	SPANISH	492	TWENTY
371	RECORDS	432	SPRAY	493	TWIN
372	RECTOR	433	SPRING	494	TWO
373	RECTORS	434	SQUARE	495	TYPE
374	RED	435	SQUASH	496	TYPING
375	REED	436	STABLE	497	TYRE
376	REFECTORY	437	STADIUM	498	ULTRASONIC
377	REMOTE	438	STAFF	499	UNDER
378	REPAIR	439	STAIRS	500	UNIT
379	RESEARCH	440	STAIRWELL	501	UP
380	REST	441	STALLS	502	UPPER
381	RESTAURANT	442	STAND	503	UPSTAIRS
382	REVOLVING	443	START	504	USER
383	RIGHT	444	STATION	505	UTILITY
384	R.H.S.	445	STOP	506	VAN
385	ROLLER	446	STORE	507	VARIABLE
386	ROOF	447	STORES	508	VAULT
387	ROOM	448	STROBE	509	VENTILATOR
388	ROUND	449	STRONG	510	VISUAL
389	RUN	450	STUDY	511	VOLTAGE
390	SAFE	451	SUITE	512	WAITING
391	SALES	452	SUMMER	513	WALK
392	SCAN	453	SUNDAY	514	WALL
393	SCANNER	454	SUPPLY	515	WARD
394	SCANNERS	455	SURGERY	516	WAREHOUSE
395	SCANNING	456	SWIMMING	517	WASH
396	SCREEN	457	SWITCH	518	WATER
397	SEA	458	SYSTEM	519	WAY
398	SECOND	459	TABLE	520	W.C.
399	SECURE	460	TALL	521	WEAPON
400	SECRETARIES	461	TAMPER	522	WEEKEND
401	SECRETARY	462	TEA	523	WEST
402	SECTION	463	TEACHER	524	WINDOW
403	SECURITY	464	TECHNICAL	525	WINTER
404	SENSOR	465	TECHNICIAN	526	WITH
405	SEVEN	466	TELLER	527	WOOD
406	SEVENTEEN	467	TEN	528	WOODWORK
407	SEVENTY	468	TENNIS	529	WORK
408	SHACK	469	TEST	530	WORKS
409	SHAFT	470	THE	531	WORKSHOP
410	SHED	471	THEATRE	532	X-RAY
411	SHEEP	472	THEN	533	YARD
412	SHOP	473	THIRTEEN	534	YEAR
413	SHOWROOM	474	THIRTY	535	YELLOW
414	SHORT	475	THREE	536	ZERO
415	SHOWER	476	TICKET	537	ZONE
416	SHUTTER	477	TILL	538	ZOO
417	SIDE	478	TO		

Appendix B: SIA and Contact ID Event Codes

Ev	SIA Event Description	GX Log Event	GX Log Event Description	Ev Type	GX Trigger	Contact ID Event
A - Alarm Cause						
AC	Alarm Cause	ALM CAUSE	User report alarm cause	USER	ALWAYS TR	None
A - AC Power						
AR	AC Restoral	AC FAIL-	AC Fail zone restored	ZONE	13.ELEC.ST	301
		CU-AC-	Control Unit AC restored	ZONE	13.ELEC.ST	301
		AC FAIL-	Module AC fail restored	MOD.	13.ELEC.ST	301
		STAND LOW-	Standby Battery Low	MOD	13.ELEC.ST	301
		CU FUSE- ◊	Control Unit protection rest.	MISC	9.TAMPER 13. ELEC.ST	300
AT	AC Trouble	AC FAIL+	AC Fail zone trouble	ZONE	13.ELEC.ST	301
		CU-AC+	Control Unit AC trouble	ZONE	13.ELEC.ST	301
		AC FAIL+	Module AC fail trouble	MOD.	13.ELEC.ST	301
		STAND LOW+	Standby Battery Low	MOD	13.ELEC ST	301
		CU FUSE+ ◊	Control Unit protection trbl	MISC	9. TAMPER 13.ELEC ST	300
		FUSE AUX1 ◊	Aux1 protection trouble	MOD	9.TAMPER 13.ELEC ST	300
		FUSE AUX2 ◊	Aux2 protection trouble	MOD	9.TAMPER 13.ELEC ST	300
		FUSE BELL ◊	Bell protection trouble	MOD	9.TAMPER 13.ELEC ST	300
B - Burglary						
BA	Burglary Alarm	ENTRY	Entry zone alarm	ZONE	NONE	150
		EXIT+	Exit zone alarm	ZONE	2.INTRUDE	134
		INTRUDER+	Intruder zone alarm	ZONE	2.INTRUDE	130
		24 HOURS+	24 hour zone alarm	ZONE	3.24 HOURS	135
		SECURITY+	Security zone alarm	ZONE	4.SECURITY	135
		DUAL+	Dual zone alarm	ZONE	2.INTRUDE	130
		FINAL	Final zone alarm	ZONE	NONE	150
		SEC FINAL+	Secure final zone alarm	ZONE	4.SECURITY	134
		PRT FINAL+	Part final zone alarm	ZONE	2.INTRUDE	134
		PRT ENTRY+	Part entry zone alarm	ZONE	2.INTRUDE	134
		BEAM PAIR+	Beam pair zone alarm	ZONE	2.INTRUDE	130
		VIDEO+	Video zone alarm	ZONE	2.INTRUDE	130
		VIDEO EXT+	Video exit zone alarm	ZONE	2.INTRUDE	130
		CUSTOM A+	Custom A zone alarm	ZONE	5.CUS ZON	130
		CUSTOM B+	Custom B zone alarm	ZONE	5.CUS ZON	130
		MASK+	Mask zone alarm	ZONE	4.SECURITY	135
		INT DELAY	Intruder Delay alarm	ZONE	2.INTRUDE	150
		URGENT+	Urgent zone alarm	ZONE	3.24 HOURS	130
		VIBRATION+	Vibration zone alarm	ZONE	2.INTRUDE	133
		ATM-1+	ATM-1 zone alarm	ZONE	3.24 HOURS	133
		ATM-2+	ATM-2 zone alarm	ZONE	3.24 HOURS	133
		ATM-3+	ATM-3 zone alarm	ZONE	3.24 HOURS	133
		ATM-4+	ATM-4 zone alarm	ZONE	3.24 HOURS	133
		ALARM EXT+	Extend zone alarm	ZONE	3.24 HOURS	130
		T/O BURGL+	Entry timeout with zone	ZONE	2.INTRUDE	134
BB	Burg Bypass	OMITTED	Zone omitted	ZONE	8.OMIT	573
		FORCEOMT+	Force omit after rearm	ZONE	8.OMIT	573
		GRP OMIT+	Group omitted	USER	8.OMIT	574
		OMIT VIBS	Omit Vibration zone	EVENT	8.OMIT	572
		OMIT-ATM1+	Omit ATM-1 zone	EVENT	8.OMIT	572
		OMIT-ATM2+	Omit ATM-2 zone	EVENT	8.OMIT	572
		OMIT-ATM3+	Omit ATM-3 zone	EVENT	8.OMIT	572
		OMIT-ATM4+	Omit ATM-4 zone	EVENT	8.OMIT	572
BC	Burg Cancel	KSW CANCL	Keyswitch Cancel	ZONE	11.RESET	406
		CANCEL	Cancel by user	USER	11.RESET	406
BF	Intruder High	INTR HIGH	Intruder zone alarm	ZONE	2. INTRUDE	130

◊ The PC board uses a PTC device instead of a fuse. The PTC serves as an automatically resetting fuse.

Ev	SIA Event Description	Log Event	Log Event Description	Ev Type	Trigger	Contact ID Event
BJ	Burg Troub rest	LOW RES-	Restor zone resistance	ZONE	15.TROUBL	380
		HIGH RES-	Restor zone resistance	ZONE	15.TROUBL	380
		RF SUPER-	RF Supervision Failure	ZONE	15.TROUBL	381
BL	Intruder Low	INTR LOW	Intruder zone alarm	ZONE	2. INTRUDE	130
BR	Burglary Rest	EXIT-	Exit zone type restored	ZONE	2.INTRUDE 18.ZN RESTO	134
		INTRUDER-	Intruder zone restored	ZONE	2.INTRUDE 18.ZN RESTO	130
		24 HOURS-	24 hour zone restored	ZONE	3.24 HOURS 18.ZN RESTO	135
		SECURITY-	Security zone restored	ZONE	4.SECURITY 18.ZN RESTO	135
		DUAL-	Dual zone restored	ZONE	2.INTRUDE 18.ZN RESTO	130
		SEC FINAL-	Secure final zone rest.	ZONE	4.SECURITY 18.ZN RESTO	134
		PRT FINAL-	Part final zone restored	ZONE	2.INTRUDE 18.ZN RESTO	134
		PRT ENTRY-	Part entry zone restored	ZONE	2.INTRUDE 18.ZN RESTO	134
		BEAM PAIR-	Beam pair zone rest.	ZONE	2.INTRUDE 18.ZN RESTO	130
		VIDEO-	Video zone restored	ZONE	2.INTRUDE 18.ZN RESTO	130
		VIDEO EXT-	Video exit zone rest.	ZONE	2.INTRUDE 18.ZN RESTO	130
		CUSTOM A-	Custom A zone rest.	ZONE	5.CUS ZON 18.ZN RESTO	130
		CUSTOM B-	Custom B zone rest.	ZONE	5.CUS ZON 18.ZN RESTO	130
		MASK-	Mask zone restored	ZONE	4.SECURITY 18.ZN RESTO	135
		INT ALARM-	Intruder Delay restored	ZONE	2.INTRUDE 18.ZN RESTO	130
		URGENT-	Urgent zone restored	ZONE	3.24 HOURS 18.ZN RESTO	130
		VIBRATION-	Vibration zone restored	ZONE	2.INTRUDE 18.ZN RESTO	133
		ATM-1-	ATM-1 zone restored	ZONE	3.24 HOURS 18.ZN RESTO	133
		ATM-2-	ATM-2 zone restored	ZONE	3.24 HOURS 18.ZN RESTO	133
		ATM-3-	ATM-3 zone restored	ZONE	3.24 HOURS 18.ZN RESTO	133
		ATM-4-	ATM-4 zone alarm	ZONE	3.24 HOURS 18.ZN RESTO	133
		ALARM EXT-	Alarm extend zone rest.	ZONE	3.24 HOURS 18.ZN RESTO	130
		T/0 BURGL-	Entry timeout restore	ZONE	2.INTRUDE 18.ZN RESTO	134
BT	Burg. Trouble	LOW RES+	Low resistance on zone	ZONE	15.TROUBL	380
		HIGH RES+	High resistance on zone	ZONE	15.TROUBL	380
		RF SUPER+	RF Supervision Failure	ZONE	15.TROUBL	381
		MASKED	Zone masked	ZONE	15.TROUBLE	380
BU	Burg Unbypass	GRP OMIT-	Group unomitted	USER	8.OMIT	574
		OMIT-ATM1-	Unomit ATM-1 zone	EVENT	8.OMIT	572
		OMIT-ATM2-	Unomit ATM-2 zone	EVENT	8.OMIT	572
		OMIT-ATM3-	Unomit ATM-3 zone	EVENT	8.OMIT	572
		OMIT-ATM4-	Unomit ATM-4 zone	EVENT	8.OMIT	572
		FORCE OMT-	Unomitted after rearm	ZONE	8.OMIT	573
BV	Burg Confirm	CONFIRM	2 independant alarms	EVENT	2.INTRUDE	None
BX		EXIT	Exit zone tested	ZONE	NOT SENT	611
		INTRUDER	Intruder zone tested	ZONE	NOT SENT	611
		24 HOURS	24 hour zone tested	ZONE	NOT SENT	611
		SECURITY	Security zone tested	ZONE	NOT SENT	611
		DUAL	Dual zone tested	ZONE	NOT SENT	611
		ENTRY	Entry zone tested	ZONE	NOT SENT	611

Ev	SIA Event Description	Log Event	Log Event Description	Ev Type	Trigger	Contact ID Event
		PUSH SET	Push set zone tested	ZONE	NOT SENT	611
		KEYSWITCH	Keyswitch zone tested	ZONE	NOT SENT	611
		SEC FINAL	Secure final zone test.	ZONE	NOT SENT	611
		PRT FINAL	Part final zone tested	ZONE	NOT SENT	611
		PRT ENTRY	Part entry zone tested	ZONE	NOT SENT	611
		PA	PA zone tested	ZONE	NOT SENT	611
		PA SILENT	PA silent zone tested	ZONE	NOT SENT	611
		PA DELAY	PA delay zone tested	ZONE	NOT SENT	611
		PA DEL/SL	PA delay sil zone tested	ZONE	NOT SENT	611
		LINK	Link zone tested	ZONE	NOT SENT	611
		SPARE	Spare zone tested	ZONE	NOT SENT	611
		TAMPER	Tamper zone tested	ZONE	NOT SENT	611
		BELL TAMP	Bell tamper zone tested	ZONE	NOT SENT	611
		BEAM PAIR	Beam pair zone tested	ZONE	NOT SENT	611
		BATT LOW	Battery Low zone tested	ZONE	NOT SENT	611
		LINE FAIL	Line fail zone tested	ZONE	NOT SENT	611
		AC FAIL	AC fail zone tested	ZONE	NOT SENT	611
		LOG	Log zone tested	ZONE	NOT SENT	611
		RM ACCESS	Rem acc zone tested	ZONE	NOT SENT	611
		VIDEO	Video zone tested	ZONE	NOT SENT	611
		VIDEO EXT	Video exit zone tested	ZONE	NOT SENT	611
		INT DELAY	Intrud delay zone tested	ZONE	NOT SENT	611
		SEC DELAY	Security del zone tested	ZONE	NOT SENT	611
		SET LOG	Set Log zone tested	ZONE	NOT SENT	611
		CUSTOM A	Custom A zone tested	ZONE	NOT SENT	611
		CUSTOM B	Custom B zone tested	ZONE	NOT SENT	611
		EXITGUARD	Exitguard zone tested	ZONE	NOT SENT	611
		MASK	Mask zone tested	ZONE	NOT SENT	611
		URGENT	Urgent zone tested	ZONE	NOT SENT	611
		PA UNSET	PA unset zone tested	ZONE	NOT SENT	611
		KSW RESET	Ksw. reset zone tested	ZONE	NOT SENT	611
		VIBRATION	Vibration zone tested	ZONE	NOT SENT	611
		ATM-1	ATM-1 zone tested	ZONE	NOT SENT	611
		ATM-2	ATM-2 zone tested	ZONE	NOT SENT	611
		ATM-3	ATM-3 zone tested	ZONE	NOT SENT	611
		ATM-4	ATM-4 zone tested	ZONE	NOT SENT	611
		ALARM EXT	Alarm extend zone test.	ZONE	NOT SENT	611
		SOAK TEST	Soak test zone act	ZONE	NOT SENT	611

C - Closing

Ev	SIA Event Description	Log Event	Log Event Description	Ev Type	Trigger	Contact ID Event
CA	Closing Report	FULL SET	Automatic Set	EVENT	10.SETTING	401
CE	Closing Extend	EXTENSION	Auto arm exten. delay	USER	10.SETTING	464
		PREWARN	Auto arm prewarn delay	MISC	NEVER TR	464
CG	Close Area	PART SET	Part set by user	USER	10.SETTING	441
		KSW P/SET	Part set by user	KSSET	10.SETTING	442
CI	Fail to Set	FAIL SET	Fail to Set	EVENT	7. SET FAULT	454
CJ	Late to Set	LATE SET	Late to Set	EVENT	10.SETTING	454
CL	Closing Report	FULL SET	Full set	USER	10.SETTING	401
		FULL SET	Set by keypad	EVENT	10.SETTING	401
		KSW SET	Keyswitch set	ZONE	10.SETTING	409
CP	Auto. Closing	REARM	Rearm after alarm	EVENT	10.SETTING	463
CR	Recent Close	RECEN.SET	Previous alarm was within 5 mins of set	EVENT	2.INTRUDER	459
CT	Late to Open	TIMEOUT	Entry timeout	EVENT	10.SETTING	None

D - Access

Ev	SIA Event Description	Log Event	Log Event Description	Ev Type	Trigger	Contact ID Event
DD	Acces Denied	Invalid Card	Card tag unknown	MOD.	17.MAXTAG	421
DF	Door Forced	DCM EVENT	Door contact broken	MOD.	4.SECURITY	423
DG	Acces Granted	LEGAL CD	Legal code entered	USER	16.LOG	462
		LEGAL CD	ATM code entered	USER	16.LOG	462
		Valid	Card tag accepted	USER	17.MAXTAG	422
DK	Access Lockout	ILL-CODE	Illegal code entry	USER	16.LOG	421
		REJECT CARD	Illegal Card tag	USER	17.MAXTAG	421
		FOB REJECT	Illegal Fob	ZONE	10.SETTING	421

Ev	SIA Event Description	Log Event	Log Event Description	Ev Type	Trigger	Contact ID Event
		DCM EVENT	Invalid Card Reader Lockout	USER	16.LOG 10.SETTING 17.MAXTAG	421
DT	Door propped	DOOR PROP	Access Door left open	MOD.	4.SECURITY	426

E - System Trouble

Ev	SIA Event Description	Log Event	Log Event Description	Ev Type	Trigger	Contact ID Event
ER	Mod Removed	REMOVED	Module Removed	MOD	TAMPER	532

F - Fire

Ev	SIA Event Description	Log Event	Log Event Description	Ev Type	Trigger	Contact ID Event
FA	Fire Alarm	FIRE+	Fire zone alarm	ZONE	6.FIRE	110
FB	Fire Bypass	OMITTED	Fire zone omitted	ZONE	8.OMIT	573
		FORCEOMT+	Force omit after rearm	ZONE	8.OMIT	573
FJ	Fire Troub rest	LOW RES-	Restor zone resistance	ZONE	15.TROUBL	380
		HIGH RES-	Restor zone resistance	ZONE	15.TROUBL	380
FR	Fire Restoral	FIRE-	Fire zone restored	ZONE	6.FIRE 18.ZN RESTO	110
FT	Fire Trouble	LOW RES+	Low resistance on zone	ZONE	15.TROUBL	380
		HIGH RES+	High resistance on zone	ZONE	15.TROUBL	380
FU	Fire Unbypass	FORCE OMT-	Unomitted after rearm	ZONE	8.OMIT	573
FX	Fire Test	FIRE	Fire zone tested	ZONE	NOT SENT	None
		SOAK TEST	Soak test fire zone act	ZONE	NOT SENT	None

G - Gas (Custom SIA - See Note 2)

Ev	SIA Event Description	Log Event	Log Event Description	Ev Type	Trigger	Contact ID Event
GA	Alarm	Note 1	zone in alarm	ZONE	5.CUS ZON	Note 1
GB	Bypass	OMITTED	zone omitted	ZONE	8.OMIT	Note 1
		FORCEOMT+	Force omit after rearm	ZONE	8.OMIT	Note 1
GJ	Trouble Rest	LOW RES-	Restor zone resistance	ZONE	15.TROUBL	Note 1
		HIGH RES-	Restor zone resistance	ZONE	15.TROUBL	Note 1
GR	Alarm Restore	Note 1	zone restored	ZONE	5.CUS ZON 18.ZN RESTO	Note 1
GT	Trouble	LOW RES+	Low resistance on zone	ZONE	15.TROUBL	Note 1
		HIGH RES+	High resistance on zone	ZONE	15.TROUBL	Note 1
GU	Unbypass	FORCE OMT-	Unomitted after rearm	ZONE	8.OMIT	Note 1

H - Holdup

Ev	SIA Event Description	Log Event	Log Event Description	Ev Type	Trigger	Contact ID Event
HA	Holdup Alarm	PA SILENT+	PA Silent zone alarm	ZONE	1.PA/DURE	122
		PA DEL/SL+	PA Delay Sil.zone alarm	ZONE	1.PA/DURE	122
		DURESS	Duress with code	USER	1.PA/DURE	121
		PA UNSET+	PA Unset zone alarm	ZONE	1.PA/DURE	122
HB	Holdup Bypass	OMITTED	Holdup zone omitted	ZONE	8.OMIT	573
		FORCEOMT+	Force omit after rearm	ZONE	8.OMIT	573
HJ	Hold Troub rest	LOW RES-	Restor zone resistance	ZONE	15.TROUBL	380
		HIGH RES-	Restor zone resistance	ZONE	15.TROUBL	380
HR	Hold Restoral	PA SILENT-	PA Silent zone restored	ZONE	1.PA/DURE 18.ZN RESTO	122
		PA DEL/SL-	PA Delay Sil.zone rest.	ZONE	1.PA/DURE 18.ZN RESTO	122
		PA UNSET-	PA Unset zone restored	ZONE	1.PA/DURE 18.ZN RESTO	122
HT	Holdup Trouble	LOW RES+	Low resistance on zone	ZONE	15.TROUBL	380
		HIGH RES+	High resistance on zone	ZONE	15.TROUBL	380
HU	Hold Unbypass	FORCE OMT-	Unomitted after rearm	ZONE	8.OMIT	573

J - Wrong code, Time changed

Ev	SIA Event Description	Log Event	Log Event Description	Ev Type	Trigger	Contact ID Event
JA	Code Tamper	WRONG CD	Wrong code alarm act.	MOD.	9.TAMPER	461
	Invalid Code	INVALID CD	Invalid Code entered	MOD.	ALWAYS TR	None
JL		LOG 90%		MISC	Always TR	632
JR		TIMER A		MISC	NONE	0
		TIMER B		MISC	NONE	0
		AUTOTIMER		MISC	NONE	0
		LOCKTIMER		MISC	NONE	0
JT	Time changed	NEW T/D	Time/Date modified	USER	ALWAYS TR[3]	625

Ev	SIA Event Description	Log Event	Log Event Description	Ev Type	Trigger	Contact ID Event
K - Heat (Custom SIA - See Note 2)						
KA	Alarm	Note 1	zone in alarm	ZONE	5.CUS ZON	Note 1
KB	Bypass	OMITTED	zone omitted	ZONE	8.OMIT	573
		FORCEOMT+	Force omit after rearm	ZONE	8.OMIT	573
KJ	Trouble Rest	LOW RES-	Restor zone resistance	ZONE	15.TROUBL	380
		HIGH RES-	Restor zone resistance	ZONE	15.TROUBL	380
KR	Alarm Restore	Note 1	zone restored	ZONE	5.CUS ZON	Note 1
					18.ZN RESTO	
KT	Trouble	LOW RES+	Low resistance on zone	ZONE	15.TROUBL	380
		HIGH RES+	High resistance on zone	ZONE	15.TROUBL	380
KU	Unbypass	FORCE OMT-	Unomitted after rearm	ZONE	8.OMIT	573
L - Phone, Program						
LB	Program begin	ENGINEER+	Engineer mode entered	MISC	ALWAYS TR	627
		TEST O/P		USER	NONE	0
		FULL TEST		SET	NONE	0
		MOD T/D		USER	NONE	0
		MOD CODES		USER	NONE	0
		MOD REM		USER	NONE	0
		OMIT ZONE		USER	NONE	0
		ENG PARAM		USER	NONE	0
		ENG ZONES		USER	NONE	0
		ENG O/PS		USER	NONE	0
		ENG LINKS		USER	NONE	0
		ENG SOAK		USER	NONE	0
		ENG DIGI		USER	NONE	0
		ENG PRINT		USER	NONE	0
		ENG QUICK		USER	NONE	0
		ENG DIAG		USER	NONE	0
		ENG GROUP		USER	NONE	0
		ENG ASSEM		USER	NONE	0
		ENG TMRS		USER	NONE	0
		ENG CHECK		USER	NONE	0
LR	Line Restore	LINE FAIL-	Zone Tel line fail rest.	ZONE	12.MD/COM	351
		LINE FAIL-	Module Tel line fail rest.	MOD	12.MD/COM	351
LT	Line Trouble	LINE FAIL+	Zone Tel line fail trouble	ZONE	12.MD/COM	351
		LINE FAIL+	Mod Tel line fail trouble	MOD	12.MD/COM	351
LX	Local Prog end	ENGINEER-	Engineer mode exited	EVENT	ALWAYS TR	627
M - Medical (Custom SIA - See note 2)						
MA	Alarm	Note 1	zone in alarm	ZONE	5.CUS ZON	Note 1
MB	Bypass	OMITTED	zone omitted	ZONE	8.OMIT	573
		FORCEOMT+	Force omit after rearm	ZONE	8.OMIT	573
MJ	Trouble Rest	LOW RES-	Restor zone resistance	ZONE	15.TROUBL	380
		HIGH RES-	Restor zone resistance	ZONE	15.TROUBL	380
MR	Alarm Restore	Note 1	zone restored	ZONE	5.CUS ZON	Note 1
					18.ZN RESTO	
MT	Trouble	LOW RES+	Low resistance on zone	ZONE	15.TROUBL	380
		HIGH RES+	High resistance on zone	ZONE	15.TROUBL	380
MU	Unbypass	FORCE OMT-	Unomitted after rearm	ZONE	8.OMIT	573
O - Opening						
OA	Open Report	UNSET	Automatic Unset	EVENT	10.SETTING	401
OG	Open Area	UNSET	Part Unset	USER	10.SETTING	401
		KSW UNSET	Keyswitch part unset	ZONE	10.SETTING	409
OK	Early Open	U/S EARLY	Unset Early	EVENT	10.SETTING	451
OP	Open Report	UNSET	Unset	USER	10.SETTING	401
		KSW UNSET	Keyswitch unset	ZONE	10.SETTING	409
OR	Disarm alarm	SYS RESET	All Burglar alarms reset	USER	11.RESET	313
		PA RESET	All PA alarms reset	USER	1.PA/DURE	465
		TAMP RST	All Tamper alarms reset	USER	9.TAMPER	313
		SYS RESET	Ksw reset Burglar alarm	EVENT	11.RESET	313
		PA RESET	Ksw reset PA alarms	EVENT	1.PA/DURE	465
		TAMP RESET	Ksw reset Tamp alarm	EVENT	9.TAMPER	313
		LF RESET		USER	20.FAULT	313

Ev	SIA Event Description	Log Event	Log Event Description	Ev Type	Trigger	Contact ID Event
		FAULT RST		USER	20.FAULT	313
		PF RESET		USER	20.FAULT	313
P - Panic						
PA	Panic Alarm	PA+	PA zone alarm	ZONE	1.PA/DURE	120
		DELAY ALM+	PA Delay zone alarm	ZONE	1.PA/DURE	120
PB	Panic Bypass	OMITTED	PA zone omitted	ZONE	8.OMIT	573
		FORCEOMT+	Force omit after rearm	ZONE	8.OMIT	573
PJ	Pan Troub rest	LOW RES-	Restor zone resistance	ZONE	15.TROUBL	380
		HIGH RES-	Restor zone resistance	ZONE	15.TROUBL	380
PR	Panic Restoral	PA-	PA zone restored	ZONE	1.PA/DURE 18.ZN RESTO	120
		DELAY ALM-	PA Delay zone restored	ZONE	1.PA/DURE 18.ZN RESTO	120
PT	Panic Trouble	LOW RES+	Low resistance on zone	ZONE	15.TROUBL	380
		HIGH RES+	High resistance on zone	ZONE	15.TROUBL	380
PU	Panic Unbypas	FORCE OMT-	Unomitted after rearm	ZONE	8.OMIT	573
Q - Assist (Custom SIA - see note 2)						
QA	Alarm	Note 1	zone in alarm	ZONE	5.CUS ZON	Note 1
QB	Bypass	OMITTED	zone omitted	ZONE	8.OMIT	573
		FORCEOMT+	Force omit after rearm	ZONE	8.OMIT	573
QJ	Trouble Rest	LOW RES-	Restor zone resistance	ZONE	15.TROUBL	380
		HIGH RES-	Restor zone resistance	ZONE	15.TROUBL	380
QR	Alarm Restore	Note 1	zone restored	ZONE	5.CUS ZON 18.ZN RESTO	Note 1
QT	Trouble	LOW RES+	Low resistance on zone	ZONE	15.TROUBL	380
		HIGH RES+	High resistance on zone	ZONE	15.TROUBL	380
QU	Unbypass	FORCE OMT-	Unomitted after rearm	ZONE	8.OMIT	573
R - Remote,Log,Test						
RB		REM LOG		USER	NONE	0
		REM RESET		USER	NONE	0
		REM ID		USER	NONE	0
		REM COPY		USER	NONE	0
		REM OVRWR		USER	NONE	0
		REM MSG		USER	NONE	0
		COPY SITE		MODULE	NONE	0
		OVWR SITE		MODULE	NONE	0
RC	Relay closed	LINK-	Link zone closed	ZONE	16.LOG	150
		LOG-	Log zone closed	ZONE	16.LOG	150
		LOG DELAY-	Log delay zone closed	ZONE	16.LOG	150
		CUSTOM A-	Zone closed(Non alarm)	ZONE	16.LOG	150
		CUSTOM B-	Zone closed(Non alarm)	ZONE	16.LOG	150
		EXITGUARD-	Exitguard zone closed	ZONE	16.LOG	150
RD	Prog, denied	RMACCESS+	Zone denied rem. acc	ZONE	14.MEN AC	553
RO	Relay open	BELL FAIL	Bell fail zone opened	ZONE	16. LOG	150
		KEYSWITCH		KS	NONE	150
		LINK+	Link zone opened	ZONE	16.LOG	150
		LOG+	Log zone opened	ZONE	16.LOG	150
		LOG DELAY+	Log delay zone opened	ZONE	16.LOG	150
		NOT USED		ZONE	16. LOG	150
		SET LOG		ZONE	16. LOG	150
		CUSTOM A+	Zone opend(Non alarm)	ZONE	16.LOG	150
		CUSTOM B+	Zone opend(Non alarm)	ZONE	16.LOG	150
		EXITGUARD+	Exitguard zone opened	ZONE	16.LOG	150
		PUSH SET	Push set zone opened	ZONE	NONE	150
		KSW RESET		KS	NONE	150
		SPARE	Spare zone opened	ZONE	16. LOG	150
RP	Automatic test	AUTOTEST	Automatic test	EVENT	ALWAYS TR	602
RR	Power Up	MEMORY OK	Warm start of panel	EVENT	13.ELEC ST	305
RS	Prog, success	RM ACCESS-	Zone allowed rem acc	ZONE	14.MEN AC	553
		REM CALL	Remote call complete	MOD	14.MEN AC	412
RX	Manual test	ENG TEST	Engineer test	USER	ALWAYS TR	601

Ev	SIA Event Description	Log Event	Log Event Description	Ev Type	Trigger	Contact ID Event
S - Sprinker (Custom SIA - see note 2)						
SA	Alarm	Note 1	zone in alarm	ZONE	5.CUS ZON	Note 1
SB	Bypass	OMITTED	zone omitted	ZONE	8.OMIT	573
		FORCEOMT+	Force omit after rearm	ZONE	8.OMIT	573
SJ	Trouble Rest	LOW RES-	Restor zone resistance	ZONE	15.TROUBL	380
		HIGH RES-	Restor zone resistance	ZONE	15.TROUBL	380
SR	Alarm Restore	Note 1	zone restored	ZONE	5.CUS ZON	Note 1
ST	Trouble	LOW RES+	Low resistance on zone	ZONE	15.TROUBL	380
		HIGH RES+	High resistance on zone	ZONE	15.TROUBL	380
SU	Unbypass	FORCE OMT-	Unomitted after rearm	ZONE	8.OMIT	573
T - Tamper,Test						
TA	Tamper Alarm	TAMPER+	Tamper zone alarm	ZONE	9.TAMPER	137
		BELL TAMP+	Bell Tamper zone alarm	ZONE	9.TAMPER	137
		LID TAMP+	Lid Tamper alarm	ZONE	9.TAMPER	137
		AUX TAMP+	Auxilary Tamper alarm	ZONE	9.TAMPER	137
		TAMP S/C+	Tamper short circuit	ZONE	9.TAMPER	383
		TAMP O/C+	Tamper open circuit	ZONE	9.TAMPER	383
		TAMPER+	Module Tamper	MOD	9.TAMPER	145
		MISSING+	Missing module alarm	MOD	9.TAMPER	145
		CV TAMP+	Voltage tamper on zone	ZONE	9.TAMPER	383
		MAX TAMP+	MAX Module Tamper	MOD.	9.TAMPER	145
		WALL TAMP	Wall tamper zone alarm	ZONE	9.TAMPER	137
		MASK TAMP		ZONE	9.TAMPER	383
		DCM EVENT	Invalid Card Tamper alarm	MOD.	9.TAMPER	None
		ADDED	Module Added	MOD.	9.TAMPER	531
		ENG TAMP+	Engineering Tamper	MISC	9.TAMPER	None
TE	Test End	WALK TEST-	Walk test finished	USER	14.MEN AC	607
TR	Tamper Restor	TAMPER-	Tamper zone restored	ZONE	9.TAMPER 18.ZN RESTO	137
		BELL TAMP-	Bell Tamper zone rest.	ZONE	9.TAMPER 18.ZN RESTO	137
		LID TAMP-	Lid Tamper restored	ZONE	9.TAMPER 18.ZN RESTO	137
		AUX TAMP-	Auxilary Tamper rest.	ZONE	9.TAMPER 18.ZN RESTO	137
		TAMP S/C-	Tamper s/circuit rest.	ZONE	9.TAMPER 18.ZN RESTO	383
		TAMP O/C-	Tamper o/circuit rest.	ZONE	9.TAMPER 18.ZN RESTO	383
		TAMPER-	Module Tamper rest.	MOD	9.TAMPER 18.ZN RESTO	145
		MISSING-	Missing module rest.	MOD	9.TAMPER 18.ZN RESTO	145
		CV TAMP-	Voltage tamper rest.	ZONE	9.TAMPER 18.ZN RESTO	383
		MAX TAMP-	MAX Module Tamp rest	MOD.	9.TAMPER 18.ZN RESTO	145
		ENG TAMP-	Engineer Tamper	MISC	9.TAMPER 18.ZN RESTO	None
TS	Test Start	WALK TEST+	Walk test started	USER	14.MEN AC	607
		ARC TEST		TEST	ALWAYS TR	607
V -??						
VY		PRINT OC		USER	NONE	0
		PRINT OL		MISC	NONE	0
W – Water (Custom SIA - see note 2)						
WA	Alarm	Note 1	zone in alarm	ZONE	5.CUS ZON	Note 1
WB	Bypass	OMITTED	zone omitted	ZONE	8.OMIT	573
		FORCEOMT+	Force omit after rearm	ZONE	8.OMIT	573
WJ	Trouble Rest	LOW RES-	Restor zone resistance	ZONE	15.TROUBL	380
		HIGH RES-	Restor zone resistance	ZONE	15.TROUBL	380
WR	Alarm Restore	Note 1	zone restored	ZONE	5.CUS ZON 18.ZN RESTO	Note 1

Ev	SIA Event Description	Log Event	Log Event Description	Ev Type	Trigger	Contact ID Event
WT	Trouble	LOW RES+	Low resistance on zone	ZONE	15.TROUBL	380
		HIGH RES+	High resistance on zone	ZONE	15.TROUBL	380
WU	Unbypass	FORCE OMT-	Unomitted after rearm	ZONE	8.OMIT	573

Z - Freezer (Custom SIA - see note 2)

Ev	SIA Event Description	Log Event	Log Event Description	Ev Type	Trigger	Contact ID Event
ZA	Alarm	Note 1	zone in alarm	ZONE	5.CUS ZON	Note 1
ZB	Bypass	OMITTED	zone omitted	ZONE	8.OMIT	573
		FORCEOMT+	Force omit after rearm	ZONE	8.OMIT	573
ZJ	Trouble Rest	LOW RES-	Restor zone resistance	ZONE	15.TROUBL	380
		HIGH RES-	Restor zone resistance	ZONE	15.TROUBL	380
ZR	Alarm Restore	Note 1	zone restored	ZONE	5.CUS ZON	Note 1
					18.ZN RESTO	
ZT	Trouble	LOW RES+	Low resistance on zone	ZONE	15.TROUBL	380
		HIGH RES+	High resistance on zone	ZONE	15.TROUBL	380
ZU	Unbypass	FORCE OMT-	Unomitted after rearm	ZONE	8.OMIT	573

NOTES: 1 Dependent upon zone type selected
2   Custom SIA event allow existing zone types to be modified in order to send specific SIA events from the panel. This allows more specific SIA information to be transmitted. The zones used to program the custom SIA events will continue to function as per the zone description

Appendix C: SIA Event Structure

Event Type	SIA LEVEL	ACC. Block	DATA Block Format (N block code)	Ascii Block Format (A block code)	Explanation
ZONE	3,4	#xxxxx	Ntixx:xx/rixx/EVzzzz	Aeeeeeeeeesiiiiiiii dddddddddddddddd	Detector alarmed, keyswitch etc
	2	#xxxxxx	Ntixx:xx/rixx/EVzzzz		
	1	#xxxxxx	NEVzzzz		
	0	#xxxx	NEVzzzz		
User	3,4	#xxxxxx	Ntixx:xx/rixx/iduuu/pixxx/EV	Aeeeeeeeeesiiiiiiii dddddd	User Set/Unset, reset, duress, etc
	2	#xxxxxx	Ntixx:xx/rixx/iduuu/pixxx/EV		
	1	#xxxxxx	NEVmmm		
	0	#xxxx	NEVmmm		
Module	3,4	#xxxxxx	Ntixx:xx/rixx/pimmm/EV	Aeeeeeeeeesiiiiiiii ddd	1. With ri modifier: Set with A or B key without code
	2	#xxxxxx	Ntixx:xx/rixx/pimmm/EV		2. 2. Without ri modifier: Keypad added, Rio missing etc
	1	#xxxxxx	NEVmmm		
	0	#xxxx	NEVmmm		
Event	3,4	#xxxxxx	Ntixx:xx/rixx/EV	Aeeeeeeeeesiiiiiiii	1. With ri modifier: Automatic set, timer activated
	2	#xxxxxx	Ntixx:xx/rixx/EV		
	1	#xxxxxx	NEV		2. 2. Without ri modifier: Automatic test, engineer mode
	0	#xxxx	NEV000		

Key:

Data Block

ti Time modifier
ri Group modifier (not used if groups are disabled)
id User modifier
u User number
pi Peipheral modifier
m Peripheral number
EV Event Code Type (see SIA event list supplied)
z Zone number
x maximum digits for modifier field

Ascii Block

e Log event (9 chars, see GX Log Event in table supplied)
s Event state ('+' : ON, '-' : OFF, ' ' : NOT USED)
i Site identifier (8 char description of site - can be blank)
d Descriptor (additional text to describe event),
    1. Zone Event - 16 char zone descriptor
    2. User Event - 6 char user name
    3. Module Event - 3 char module name,
'RIO' (8 zone module), '**KEY'** (keypad), '**MAX'** (Proximity Reader **'COM'** (COM1 = Int Telecom, COM4 = Ethernet, COM6 = Int RS232)

Appendix D: Event Log Messages

KEYPAD TEXT	DESCRIPTION	TRIGGER EVENT	
0001 + CU-BATT	Control Unit Standby Battery Low has occurred (battery voltage below 10.2VDC).	13. Elec Status 20. Fault	M
0001 - CU-BATT	Control Unit Standby Battery Low has finished (battery voltage now above 10.2VDC).	13. Elec. Status	M
0002 + CU-AC	Control Unit Mains (a.c.) Power Fail has occurred.	13. Elec. Status 20. Fault	M
0002 - CU-AC	Control Unit Mains (a.c.) Power Fail has finished.	13. Elec. Status	M
0003 + LID TAMP	Lid Tamper on control unit has occurred.	9. Tamper	M
0003 - LID TAMP	Lid Tamper on control unit has finished.	18. Zone restoral	M
0004 + AUX TAMP	Auxiliary Tamper on control unit has occurred.	9. Tamper	M
0004 - AUX TAMP	Auxiliary Tamper on control unit has finished.	9. Tamper 18. Zone restoral	M
+ABORT SET	Setting process aborted	11. Reset	NM
+AC+BATT	AC Fail and battery voltage low.	13. Elec. Status 20. Fault	M
+ AC FAIL	AC Fail zone activated (opened) or an AC Fail on a Power Supply Unit.	13. Elec. Status 20. Fault	M
– AC FAIL	AC Fail zone de-activated (closed) or an AC Fail on a Power Supply Unit has stopped.	13. Elec. Status 20. Fault	M
+ALARM EXT	Alarm extend zone activated.	3. 24 Hours 16. Log Zone	M
ALM CAUSE	Reset of system required by entry of an alarm cause code.	Always TR	M
ADDED	Engineer has added a Module to the system.	9. Tamper	M
ARC TEST	Alarm Receiving Centre Test	Always TR	NM
+ATM-1	ATM-1 zone activated.	3. 24 Hours 16. Log Zone	NM
+ATM-2	ATM-2 zone activated.	3. 24 Hours 16. Log Zone	NM
+ATM-3	ATM-3 zone activated.	3. 24 Hours 16. Log Zone	NM
+ATM-4	ATM-4 zone activated.	3. 24 Hours 16. Log Zone	NM
AUTOTEST	Automatic Test of the system via a comms Module	Always TR	
+AUTOTIMER	Autoset timer activated.	None	NM
–AUTOTIMER	Autoset timer de-activated.	None	NM
BURG HIGH	High priority intruder alarm zone open	2. Intrude 18. Zone Restoral	M
BURG LOW	Low priority intruder alarm zone open.	2. Intrude 18. Zone Restoral	M
+BAT FUSE ◊	Fault on battery protection	13. Elec Status 20. Fault	M
+ BATT LOW	Battery Low activated on Power Supply Unit.	13. Elec. Status 20. Fault	M
– BATT LOW	Battery Low de-activated on Power Supply Unit.	13. Elec. Status 20. Fault	M
+BEAM PAIR	Beam Pair zones activated (opened).	2. Intruder	NM
+BEGIN SET	Setting process started.	None	NM
+ BELL FAIL	Bell Fail zone opened.	16. Log Zone	NM
+ BELL TAMP	Bell Tamper zone activated (opened).	9. Tamper	M
– BELL TAMP	Bell Tamper zone de-activated (closed).	9. Tamper 18. Zone restoral	M
BOOT UP	System has been started up or restarted.	13. Elec. status	NM
CANCEL	Alarm activation Cancelled by a valid user Code (system or Group(s) still Set).	11. Reset/Cancel	NM
COMM FAIL	Communication Failure has occurred on a comms Module.	20. Fault	M
CONFIRM	Two independent alarms.	2. Intruder	M
COPY SITE	Remote Copy of the Site (system) has occurred via Remote Servicing or the RS232 Module.	None	NM
CUSTOM-	Custom-A zone activated (opened).	5. Custom zones 16. Log Zone	NM
CUSTOM-B	Custom-B zone activated (opened).	5. Custom Zones 16. Log Zone	NM
+CU-FUSE ◊	Control Unit protection trouble.	9. Tamper 13. Elec Status 20. Fault	M
DELAY ALM	PA Delay Alarm zone activated after PA Delay timeout.	1. PA/duress	M

◊ The PC board uses a PTC device instead of a fuse. The PTC serves as an automatically resetting fuse.

KEYPAD TEXT	DESCRIPTION	TRIGGER EVENT	
DL/SL ALM	PA Delayed Silent zone activated after PA Delay timeout.	1. PA/duress	M
DOOR PROP	MAX - Door left open	4. Security	NM
DR MASKED	Detector Masked. Activity Monitoring of zone has failed.	15. Trouble 20. Fault	
DUAL	Dual (Double Knock) zone activated (opened).	2. Intruder	M
DURESS	Duress code has been entered	1. PA/Duress	M
ENG ASSEM	Engineering Assemble Zone Menu (Menu Option 64) has been accessed.	14. Menu Access	M
ENG CHECK	Engineering Pre-Check Menu (Menu Option 66) has been accessed.	14. Menu Access	M
ENG DIAG	Engineering Diagnostics Menu (Menu Option 61) has been accessed.	14. Menu Access	M
ENG DIGI	Engineering Digicom (Communications) (Menu Option 56) has been accessed.	14. Menu Access	M
ENG GROUP	Engineering Groups (Menu Option 63) has been accessed.	14. Menu Access	M
ENG KPAD	Engineering Keypad (Menu Option 58) has been accessed.	14. Menu Access	M
ENG LINKS	Engineering Links (Menu Option 54) has been accessed.	14. Menu Access	M
ENG O/PS	Engineering Outputs (Menu Option 53) has been accessed.	14. Menu Access	M
ENG PARAM	Engineering Parameters (Menu Option 51) has been accessed.	14. Menu Access	M
ENG PRINT	Engineering Print (Menu Option 57) has been accessed.	14. Menu Access	M
ENG QUICK	Engineering Quick Menu (Menu Option 59) has been accessed.	14. Menu Access	M
ENG SOAK	Engineering Soak Test (Menu Option 55) has been accessed	14. Menu Access	M
ENG TEST	Engineer Test of the system via the Telecom Module.	Always TR	NM
ENG TMRS	Engineering Timers A/B (Menu Option 65) has been accessed.	14. Menu Access	M
ENG ZONES	Engineering Zones (Menu Option 52) has been accessed.	14. Menu Access	M
ENG TAMP	Tamper when entering Engineer Mode.	None	NM
+ENGINEER	Entering Engineer	Mode. Always TR	NM
–ENGINEER	Leaving Engineer	Mode. Always TR	NM
ENT DELAY	User entering Ent Delay State	None	NM
ENT SET	User entering Ent Set State	None	NM
ENT SETNG	User entering Setting State	None	NM
ENT UNSET	User entering Unset State	None	NM
ENT UNST	User entering Unsetting (disarming) State	None	NM
+ENTRY	Entry zone activated (opened) during Setting/Unsetting (arming/disarming) procedure or when Set.	None	NM
–ENTRY	Entry zone de-activated (closed) during Setting/Unsetting (arming/disarming) procedure or when Set.	None	NM
ETST FAIL	Engineer test has failed	None	NM
ETST PASS	Engineer test has passed	None	NM
+EXIT	Exit zone activated (opened) during the Unsetting (disarming) procedure or when Set.	2. Intruder	NM
–EXIT	Exit zone de-activated (closed) during the Unsetting (disarming) procedure or when Set.	2. Intruder	NM
EXITGUARD	ExitGuard zone activated (opened).	16. Log	NM
EXTENSION	System or Group(s) are in the Autoset Extension period.	10. Setting	NM
FAIL SET	Fail to set event. 7.	Set Fault	M
+FAULT	Fault condition activated on zone	20. Fault	M
–FAULT	Fault condition cleared from zone	20. Fault	M
FAULT RST	Fault has been cleared	20. Fault	NM
FB BAT	LOW RF Fob has low battery	None	NM
+FINAL	Finalzone activated (opened) during Setting/Unsetting (arming/disarming) procedure or when Set.	7. Set Fault	NM
–FINAL	Final zone de-activated (closed) during Setting/Unsetting (arming/disarming) procedure or when Set.	7. Set Fault	NM
FIRE	Fire zone activated (opened).	6. Fire	M
FOB REJCT	Illegal fob	None	M
FORCE OMT	Force Omit of a zone (Menu Option 14).	8. Omit	M
FULL SET	Full Set (Menu Option 12) of the system or Group(s).	10. Setting	M
FULL TEST	Full Test (Menu Option 62) has occurred.	None	NM
FUSE 14.5 ◊	Fault with 14.5V protection on Power Supply Unit	13. Elec. Status 20. Fault	M
FUSE AUX1 ◊	Fault with AUX1 protection on Power Supply Unit	9. Tamper 13. Elec. Fault	M
FUSE AUX2 ◊	Fault with AUX2 protection on Power Supply Unit	9. Tamper 13. Elec. Status	M
FUSE BELL ◊	Change fuse to protection.	9. Tamper 13. Elec. Status	M
+GRP OMIT	Area bypass has occurred (Group(s) has been omitted).	8. Omit	M
–GRP OMIT	Group omit/area bypass has finished (Group(s) has been un-omitted).	8. Omit	M
+HIGH RES	Zone changing to High Resistance (1200 to 1300 Ohm) Engineer Log only.	15. Trouble	M

◊ The PC board uses a PTC device instead of a fuse. The PTC serves as an automatically resetting fuse.

KEYPAD TEXT	DESCRIPTION	TRIGGER EVENT	
–HIGH RES	Zone changing from High Resistance to Normal Closed (1300 to 1200 Ohm) Eng. Log only	15. Trouble	M
ILL -CODE	Illegal code entry	16. Log Zone	NM
+INST SET	Instant set of system or group	None	NM
INTRUDER	Intruder zone activated (opened)	2. Intruder 18. Zone restoral	M
INT DELAY	Intruder delay zone activated (opened)	None	M
INVALD CD	Invalid Code entered	None	NM
JAM DELAY	RF jam signal sent to panel	None	M
KEYSWITCH	Keyswitch zone activated (opened)	None	NM
KSW CANCL	Keyswitch Cancels alarm activation (system or Group(s) still Set).	11. Reset/Cancel	NM
KSW P/SET	Keyswitch part sets the system or group(s)	10. Setting	M
KSW RESET	Keyswitch resets the system or group(s)	None	NM
KSW SET	Keyswitch full sets the system or group(s)	10. Setting	M
KSW UNSET	Keyswitch unsets (disarms) the systems or group(s)	10. Setting	M
LATE SET	Late Set of the system or group(s)	10. Setting	NM
LEGAL CD	Legal code entered	16. Log Zone	NM
LF RESET	Line Fail Reset has occured	20. Fault	NM
LID TAMP	Lid Tamper alarm	9. Tamper	M
+LINE FAIL	Comms Module Line fail has occured or a Line Fail zone activated (opened)	12. Modules/Comms 20. Fault	M
–LINE FAIL	Comms Module Line fail has finished or a Line Fail zone de-activated (closed)	12. Modules/Comms 20. Fault	M
+LINK	Link zone activated (opened)	16. Log Zone	NM
–LINK	Link zone de-activated (closed)	16. Log Zone	NM
LOC WRITE	Diagnostics local write event	None	M
+LOCKTIMER	Lockout timer activated.	None	NM
–LOCKTIMER	Lockout timer de-activated.	None	NM
+LOG	Log zone activated (opened).	16. Log	NM
–LOG	Log zone de-activated (closed).	16. Log	NM
LOG 90%	Event log 90% full	Always TR	NM
LOG DELAY	Log Delay zone has been activated (opened) for longer than the Delay Alarm time.	16. Log	NM
+LOW RES	Zone changing to low resistance (900 to 800 Ohm).	15. Trouble	M
–LOW RES	Zone changing from Low Resistance to Normal Closed (800 to 900 Ohm).	15. Trouble	M
+LOW VOLTS	Voltage of AUX outputs has dropped below 10V.	13. Elec Status 15. Trouble	M
+MASK	Mask zone activated (opened).	4. Security	M
–MASK	Mask zone de-activated (closed).	4. Security 18. Zone restoral	M
MASKED	Zone masked. Detector has activated its masking output.	15. Trouble 20. Fault	M
MAX ALARM	MAX alarm — door forced.	4. Security 17. Max Tag	M
MAX TAMP	MAX Tamper	9. Tamper	M
MEM RESET	Memory Reset (Restart) to factory default settings (Cold Start).	13. Elec Status	NM
+MISSING Module	Missing its AB (RS485) communications.	9. Tamper	M
–MISSING	Module that was Missing now has its AB (RS485) communications re-established.	9. Tamper 18. Zone restoral	M
MOD CODES	Modify Codes menu (Menu Option 42) has been accessed.	14. Menu Access	M
MOD REM	Remote Servicing menu (Menu Option 47) has been accessed.	14. Menu Access	NM
MOD SUMMR	Modify Summer menu (Menu Option 43) has been accessed.	14. Menu Access	NM
MOD T/D	Modify Time/Date menu (Menu Option 42) has been accessed.	14. Menu Access	M
MOD TMRS	Modify Timers Control menu (Menu Option 45) has been accessed.	14. Menu Access	NM
NEW T/D	New Time/Date after modification.	Always TR	M
OMIT ATM1	Omit all ATM1 zones.	8. Omit	M
OMIT ATM2	Omit all ATM2 zones.	8. Omit	M
OMIT ATM3	Omit all ATM3 zones.	8. Omit	M
OMIT ATM4	Omit all ATM4 zones.	8. Omit	M
OMIT VIBS	Mass omit of vibration zones.	8. Omit	M
OMIT ZONE	Omit zones menu (menu option 0 in Quick Menu or menu option 11 in Full Menu has been accessed.	None	N
OMITTED	Zone has been omitted	8. Omit	M
OVERRIDE	Event has been overridden to set the system	None	M
OVWR SITE	Remote overwrite of the site has occured via Remote Servicing or RS232 module	None	M
P.AUDIBLE	PA Audible zone activated (opened).	None	NM

KEYPAD TEXT	DESCRIPTION	TRIGGER EVENT	
PA	PA zone activated (opened)	1. PA/Duress	M
PA DEL/SL	PA Delayed Silent zone activated (opened).	1. PA/Duress	M
PA DELAY	PA Delayed zone activated (opened).	1. PA/Duress	M
PA RESET	PA Reset has occurred.	1. PA/Duress	NM
PA SILENT	PA Silent zone activated (opened).	1. PA/Duress	M
PA UNSET	PA Unset zone activated while group in unset (disarmed) condition.	1. PA/Duress	M
PART SET	Part Set of system or Group(s).	10. Setting	M
PF RESET	System has returned to the set status after a power failure.	20. Fault	NM
PREWARN	System or Group(s) in the Autoset Prewarning period.	None	NM
PRINT OC	Print On Command.	None	NM
PRINT OL	Print On Line, the automatic printing of the Event Log. Not to be confused with the printer on-line message from a printer.	None	NM
+PRT ENTRY	Part Entry zone activated (opened).	2. Intruder	NM
–PRT ENTRY	Part Entry zone de-activated (closed).	2. Intruder 18. Zone restoral	NM
+PRT FINAL	Part Final zone activated (opened).	2. Intruder	NM
–PRT FINAL	Part Final zone de-activated (closed).	2. Intruder 18. Zone restoral	NM
+PSU FLT	Power Supply Unit fault	13. Elec. Status 20. Fault	M
PUSH SET	Push Set (Exit Terminator) zone activated (opened).	None	NM
R.TIMESET	Remote timeset.	None	NM
REARM	Rearm of system has occurred.	10. Setting	M
RECEN.SET	Recent Set. Alarm occured within 5 minutes of set.	2. Intruder	M
REM ABORT	Remote connection timeout.	None	NM
+REM CALL	Remote device connected.	14. menu access	NM
–REM CALL	Remote device disconnected.	14. Menu access	NM
REM COPY	Remote Copy of site details via SIA has occurred.	None	NM
REM FAIL	Remote failure after all retries.	None	NM
REM FIN	Remote connection finished.	None	NM
REM ID	Remote suite ID menu accessed.	None	NM
REM LOG	Remote log menu accessed.	None	NM
REM MSG	Remote message menu accessed.	None	NM
REM OVRWR	Remote Overwrite via SIA has occurred.	None	M
REM RESET	Remote reset menu accessed.	None	NM
REM TRY	First remote connection attempt logged.	None	NM
REM WR/RD	Diagnostics remote read/write	None	M
REMOVED	Engineer has Removed a module from the system.	9. Tamper	M
RF BATLOW	RF Battery low	13. Elec. Status 15. Trouble 20. Fault	M
RF JAM	RF signal jammed	15. Trouble 20. Fault	M
RF MEM!	RF RIO Non Volatile Memory failed	9. Tamper	M
RF SUPER	RF Supervision failure	19. RF Supervision 20. Fault	M
RM ACCESS	Remote Access zone activated	14. Menu Access	NM
+SEC FINAL	Security Final zone activated (opened)	4. Security	M
-SEC FINAL	Security Final zone closed (closed)	4. Security 18. Zone restoral	M
+SECURITY	Security zone activated (opened).	4. Security	M
–SECURITY	Security zone de-activated (closed).	4. Security 18. Zone restoral	M
SET LOG	Set Log zone activated (opened) when the system or group(s) is set.	16. Log zone	M
SOAK TEST	Zone under Soak Test (Menu Option 55) activated when the system or group(s) is Set.	None	NM
SPARE	Spare zone opened.	16. Log zone	M
STANDLOW	Standby time for the battery is Low.	13. Elec status	M
SUSP. SET	Setting of system suspended	None	NM
SYS RESET	System Reset has occurred event.	11. Reset/Cancel	NM
TAG REJECTED	Rejected card		
TAG VALID	Valid card		
TAG HARD ANTIPASSBACK	Hard APB		
TAG SOFT ANTIPASSBACK	Soft APB		
TAG REJECT NOT GRP MATCH	Rejected card - no group match		

KEYPAD TEXT	DESCRIPTION	TRIGGER EVENT	
TAG REJECT GRP SET	Rejected card - group set		
TAG REJECT ILL TIME	Rejected card - illegal time		
+TAMP C/V	constant Voltage tamper event	9. Tamper	M
+TAMP O/C	Zone changing to Tamper Open Circuit (greater than 12,000 Ohm).	9. Tamper	M
–TAMP O/C	Zone changing from Tamper Open Circuit to Normal Closed (1200 to 900 Ohm).	9. Tamper 18. Zone restoral	M
TAMP RST	Tamper Reset of the system has occurred.	9. Tamper	NM
+TAMP S/C	Zone changing to Tamper Short Circuit (less than 800 Ohm).	9. Tamper	M
–TAMP S/C	Zone changing from Tamper Short Circuit (less than 800 Ohm). to Normal Closed (900 to 1200 Ohm).	9. Tamper 18. Zone restoral	M
+TAMPER	Tamper on a module activated (opened). A module is either a keypad, GX RIO, Telecom Module or RS232 Module.	9. Tamper	M
–TAMPER	Tamper on a module de-activated (closed). A module is either a keypad, GX RIO, Telecom Module or RS232 Module.	9. Tamper 18. Zone restoral	M
TEST O/P	Test Outputs menu (Menu Option 32) has been accessed.	None	NM
TIMEOUT	Timeout alarm after the Entry Time has expired.	10. Setting	M
+TIMER A	Timer A activated (on).	None	NM
–TIMER A	Timer A de-activated (off).	None	NM
+TIMER B	Timer B activated (on).	None	NM
–TIMER B	Timer B de-activated (off). None	NM	
T/O-BURGL	Timeout alarm after the Entry Time has expired (same as TIMEOUT but used as a SIA event).	2. Intruder	M
U/S EARLY	The Unset Early output has been activated before programmed time.	10. Setting	NM
UNSET	Unset of the system or Group(s).	10. Setting	M
URGENT	Urgent zone activated.	3. 24 Hours	M
VIBRATION	Vibration zone activated.	2. Intruder 16. Log Zone	NM
VIDEO	Video zone activated (opened).	2. Intruder	M
VID EXIT	Video Exit zone activated (opened).	2. Intruder	M
+WALK TEST	Walk Test has occurred.	14. Menu access	NM
–WALK TEST	Walk Test has finished.	14. Menu access	NM
WALL TAMP	Wall Tamper zone alarm.	9. Tamper	M
WRONG CD	Wrong Code alarm activation (6 consecutive wrong codes). This Requires a system reset.	9. Tamper	M
24 HOURS	24 Hours zone activated (opened).	3. 24 Hours	M

NOTES: M = Mandatory.
NM = Non-Mandatory
A plus (+) means an event has started. A negative (-) means an event has finished.

Appendix E: Specifications

Panel Specifications

Mechanical

Enclosure	18 x 14.5 x 4.3 in. (457 x 368 x 109mm)
	Weight: 6.4 kg
Battery (standby)	Type – 12 VDC Sealed lead-acid battery
PCB only	Width: 10.43 in (265mm)
	Height: 4.72 in (120mm)
	Depth: 1.85 in (47mm)
	Weight: .66 lb (0.3 kg)
Operating temperature:	+14 to +131ºF (-10 to + 55º C)

Electrical

AC Power:	120 V, 60 Hz (Primary)
Power supply:	18 V, 60 Hz, 72 VA (Secondary)
Auxiliary +12V outputs:	12V nominal
GX-48/520	480 mA maximum current draw
	50.0 mV maximum ripple
PSTN	V.22 Modem 1200 Baud
RS232	300 - 56k programmable
RS485	9600 Baud, Full Duplex, Asynchronous

Modules	**Weight**	**Order Code**
GX Mk7 Keypad	6.1 oz (190g)	CP037
Size: 5.87 x 3.58 x 1.22 in (149 x 91 x 31mm)		

Keypads Material ....PC + ABS
Keypad Color ....Neutral

Modules	**Weight**	**Order Code**
GX TouchCenter	16.07 oz (500g)	CP041-A1
Size 7.17 x 5.04 x 1.33 in (182 x 128 x 34mm)		
GX RIO (Boxed)	9.6 oz (300g)	C072-A1
Size: 5.91 x 6.38 x 1.54 in (150 x 162 x 3mm)		

Modules	**Weight**	**Order Code**
Door Control module (Boxed)	8.7 oz (270g)	C080
Size 5.91 x 6.38 x 1.54 in (150 x 162 x 39mm)		

PCBs	**Weight**	**Order Code**
GX-48/520	12.2 oz (378g)	A323
Size: 10.43 x 4.72 x 1.97 in (265 x 120 x 50mm)		
GX RIO	1.67 oz (92g)	A158
Size: 4.76 x 3.54 x .59 in (121 x 90 x 15mm)		

PCBs   **Weight**   **Order Code**
Ethernet..1.8 oz (56g)   E080-2
Size:..4.76 x 3.54 x .59 in (121 x 90 x 15mm)

NOTE: The above weights and order codes are from the populated Printed Circuit Board (PCB) only.

Device	Quiescent Current (mA)	Device	Quiescent Current (mA)
GX-48	100		
GX-520	210		
GX RIO (C072-A1) (Note 1)	30	TouchCenter (CP041-A1)	105
Mk7 keypad (CP037)	70	Door Control Module (C080)	15
Ethernet Module (E080-2)	155		

Table E-1. Current Consumption

NOTES: 1.   Measured with no load on zone input.
               2.   Not communicating.

	RIO		DCM		Keypad		Ethernet	
Width:	160mm	6 ¼"	162 mm	6.4"	93mm	3 5/8"	121 mm	4 ¾"
Height:	151mm	6"	150 mm	5.9"	150mm	6"	90 mm	3 ½"
Depth:	40mm	1 ½"	39 mm	1.5"	31mm	1 ¼"	16 mm	5/8"
Weight: (approx)	300g	11oz	270g	9.5oz	180g	6oz	60g	2oz
Humidity:	0-85%		0-85%		0-85%		0-85%	
Nominal Supply Voltage:	12 VDC		12 VDC		12 VDC		12 VDC	
Current: (Maximum)	730mA		130mA		90mA (buzzer + backlight)		200mA (During Flash upgrade only)	
Current: (Nominal)	30mA		40mA		70mA (backlight on)		155mA	
Current outputs: (Maximum)	Output 1 400mA Output 2 100mA Output 3 100mA Output 4 100mA		45mA x 2		N/A		N/A	

Table E-2. Electrical Specifications

Appendix F: Parts List Index

Product Name	Part No	Comments
Replacement PCB's		
GX-48 PCB	A321-C-A1	
GX-520 PCB	A323-C-A1	With expander
Accessories		
Serial Peripheral interface Key	A227	
Keypad		
GX Mk7 Keypad	CP037-01	With volume control
TouchCenter	CP041-A1	
Remote Modules		
RIO (PCB)	A158-B	
RIO (boxed)	C072-A1	
Ethernet Module	E080-2	
Access Control		
Door Control module	C080	
SPI Key Programmer	C087	
Software Packages: **Remote Servicing Suite**		
Licensing K it		
Upgrade		
License K it (Dongle)		
Upgrade (Dongle)		

UL NOTES:

1. Supply line transient protection complying with the Standard for Transient Voltage Surge Suppressors, UL 1449, with a maximum marked rating of 330 V.

2. Signal line transient protection complying with the Standard for Protectors for Data Communications and Fire Alarm Circuits, UL 497B, with a maximum marked rating of 50 V.

3. Communication circuits and network components connected to the telecommunications network shall be protected by secondary protectors for communication circuits. These protectors shall comply with the Standard for Secondary Protectors For Communications Circuits, UL 497A. These protectors shall be used only in the protected side of the telecommunications network.

4. Equipment to be installed in a temperature controlled environment. A temperature controlled environment is defined as one that can be maintained between 13 - 35°C (55 - 95°F) by the HVAC system. Twenty-four hours of standby power shall be provided for the HVAC system. The standby power system for the HVAC system may be supplied by an engine driven generator alone. A standby battery is not required to be used.

5. The installed UPS shall comply with the Standard for Uninterruptable Power Supply Equipment, UL 1778, or the Standard for Fire Protective Signaling Devices, UL 1481.

6. To perform maintenance and repair service, a means for disconnecting the input to the UPS while maintaining continuity of power to the automation system shall be provided. Measured with no load on zone input.

7. The central station receiving equipment is limited to receiving signals from a maximum of 1000 accounts.

Appendix G: Regulatory Agency Statements

FEDERAL COMMUNICATIONS COMMISSION (FCC) STATEMENTS

The user shall not make any changes or modifications to the equipment unless authorized by the Installation Instructions or User's Manual. Unauthorized changes or modifications could void the user's authority to operate the equipment.

FCC CLASS B STATEMENT:

This equipment has been tested to FCC requirements and has been found acceptable for use. The FCC requires the following statement for your information:

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

• If using an indoor antenna, have a quality outdoor antenna installed.
• Reorient the receiving antenna until interference is reduced or eliminated.
• Move the radio or television receiver away from the receiver/control.
• Move the antenna leads away from any wire runs to the receiver/control.
• Plug the receiver/control into a different outlet so that it and the radio or television receiver are on different branch circuits.
• Consult the dealer or an experienced radio/TV technician for help.

IN THE EVENT OF TELEPHONE OPERATIONAL PROBLEMS

In the event of telephone operational problems, disconnect the control panel by removing the plug from the RJ31X (CA38A in Canada) wall jack. We recommend that you demonstrate disconnecting the phones on installation of the system. Do not disconnect the phone connection inside the control panel. Doing so will result in the loss of your phone lines. If the regular phone works correctly after the control panel has been disconnected from the phone lines, the control panel has a problem and should be returned for repair. If upon disconnection of the control panel, there is still a problem on the line, notify the telephone company that it has a problem and request prompt repair service. The user may not under any circumstances (in or out of warranty) attempt any service or repairs to the system. It must be returned to the factory or an authorized service agency for all repairs.

FCC PART 68 NOTICE

This equipment complies with Part 68 of the FCC rules. On the front cover of this equipment is a label that contains, among other information, the FCC registration number and ringer equivalence number (REN) for this equipment. If requested, this information must be provided to the telephone company.

This equipment uses the following jacks:

An RJ31X is used to connect this equipment to the telephone network.

The REN is used to determine the quantity of devices that may be connected to the telephone line. Excessive RENs on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of the RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to the line, as determined by the total RENs, contact the telephone company to determine the maximum REN for the calling area.

If this equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. If advance notice is not practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe necessary.

The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make the necessary modifications in order to maintain uninterrupted service.

If trouble is experienced with this equipment, please contact the manufacturer for repair and warranty information. If the trouble is causing harm to the telephone network, the telephone company may request that you remove the equipment from the network until the problem is resolved.

There are no user serviceable components in this product, and all necessary repairs must be made by the manufacturer. Other repair methods may invalidate the FCC registration on this product.

This equipment cannot be used on telephone company-provided coin service. Connection to Party Line Service is subject to state tariffs.

This equipment is hearing-aid compatible.

When programming or making test calls to an emergency number, briefly explain to the dispatcher the reason for the call. Perform such activities in the off-peak hours, such as early morning or late evening.

CANADIAN EMISSIONS STATEMENTS

ICES-003 CLASS B NOTICE
This Class B digital apparatus
complies with Canadian ICES-003.

The Industry Canada Label identifies certified equipment. This certification means that the equipment meets telecommunications network protective, operational and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirements document(s). 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 coordinated by a representative designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may cause the telecommunications company 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 an appropriate electric inspection authority, or electrician, as appropriate.

NOTICE: The **Ringer Equivalence Number** (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed 5.

AVIS NMB-003, CLASSE B
Cet appareil numérique de la classe B est
conforme à la norme NMB-003 du Canada.

L'étiquette d'Industrie Canada identifie le matériel homologué. Cette étiquette certifie que le matériel est conforme aux normes de protection, d'exploitation et de sécurité des réseaux de télécommunications, comme le prescrivent les documents concernant les exigences techniques relatives au matériel terminal. 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'assurer qu'il est permis de le raccorder aux installations de l'enterprise locale de télécommunication. Le matériel doit également être installé en suivant une méthode acceptée da raccordement. L'abonné ne doit pas oublier qu'il est possible que la conformité aux conditions énoncées ci-dessus n'empêche pas la dégradation du service dans certaines situations.

Les réparations de matériel nomologué doivent être coordonnées par un représentant désigné par le fournisseur. L'entreprise de télécommunications peut demander à l'utilisateur da débrancher un appareil à la suite de réparations ou de modifications effectuées par l'utilisateur ou à cause de 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, de 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 avoir racours à un service d'inspection des installations électriques, ou à un électricien, selon le cas.

AVIS : L'indice d'équivalence de la sonnerie (IES) assigné à chaque dispositif terminal indique le nombre maximal de terminaux qui peuvent être raccordés à une interface. La terminaison d'une interface téléphonique peut consister en une combinaison de quelques dispositifs, à la seule condition que la somme d'indices d'équivalence de la sonnerie de tous les dispositifs n'excède pas 5.

FCC / IC STATEMENT:
This device complies with Part 15 of the FCC Rules, and RSS 210 of IC. Operation is subject to the following two conditions: (1) This device may not cause harmful interference (2) This device must accept any interference received, including interference that may cause undesired operation.

Cet appareil est conforme à la partie 15 des règles de la FCC & de RSS 210 des Industries Canada. Son fonctionnement est soumis aux conditions suivantes: (1) Cet appareil ne doit pas causer d' interferences nuisibles. (2) Cet appareil doit accepter toute interference reçue y compris les interferences causant une reception indésirable.

Contacting Technical Support

PLEASE, before you call Technical Support, be sure you:

- READ THE INSTRUCTIONS!
- Check all wiring connections.
- Determine that the power supply and/or backup battery are supplying proper voltages.
- Verify your programming information where applicable.
- Note the proper model number of this product, and the version level (if known) along with any documentation that came with the product.
- Note your Honeywell customer number and/or company name.

Having this information handy will make it easier for us to serve you quickly and effectively.

Technical Support: .... 1-800-645-7492 (8 a.m.-10 p.m. E.S.T.)

MyWebTech: .... http://www.honeywell.com/security/hsc/resources/MyWebTech

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WARRANTY INFORMATION

Fort the latest warranty information, please go to:

www.honeywell.com/security/hsc/resources/wa

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