

TS2200

Installation & User Guide



Compatible Equipment

CPA6 OM - Output Module

9040 - Loudspeaker

DC54/58 - Digital Communicator

Overview

Introduction

The TS2200 is a comprehensive intruder alarm control system especially suitable for installation featuring large numbers of zones or complex user requirements. The system is capable of being broken down into separately controlled "intelligent" areas (Wards) so that premises or parts of premises can be occupied independently.

Multi-processor technology allows tremendous diversity in the way the system can be programmed whilst remaining simple and user-friendly to operate. Six multiplex networks keep cable installation time low and provide the ability to upgrade older control panels without having to alter existing wiring.

TS2200 systems can be interrogated and programmed remotely using a Modem Link (DC3M) and a Personal Computer (PC). This saves costly site visits in situations where only simple re-programming is required, and allows remote diagnosis of system faults so that engineers are better prepared if they do have to visit.

Control Panel

The control panel is the controlling unit for the system with its own 1.5A power supply and connections for a standby battery. It has the following facilities:

- 6 fused multiplex networks for connections to Nodes or Remote Keypads
- 8 programmable outputs
- Bell and strobe outputs
- Serial output for DC3 Digicom and DC3M Digi-Modem.
- Extension loudspeaker output (16 Ohms)
- Auxiliary 12V 1.2A supply
- Output for printer (DATAC)
- Output for CPA6.OM Mimic Driver
- Connection for Engineer's Keypad
- All system program information is stored in a Removable NOVRAM.

Remote Keypad (TS2200.REM)

The Remote Keypad is the point of contact between the system and the user. Simple questions displayed on a backlit supertwist LCD are answered using YES and NO keys on the tactile rubber push-buttons, making the TS2200 very easy to use and program. The Remote

Keypad has an internal sounder used to indicate all system and tones: in addition there are terminals for connecting an extension loudspeaker. An Engineer's Keypad interface lead (TS2200.EKI) connected to a Remote Keypad may be temporarily plugged onto either the main control panel or any Node so that system programming and testing is made easier.

Node (TS2200.Node)

The Nodes are the distribution points for alarm and output circuits. They are connected to one of the six system networks and have terminations for 5 alarm circuits and 5 outputs circuits. Any input on any Node can be programmed to trigger any output or combination of outputs anywhere else on the system.

Options

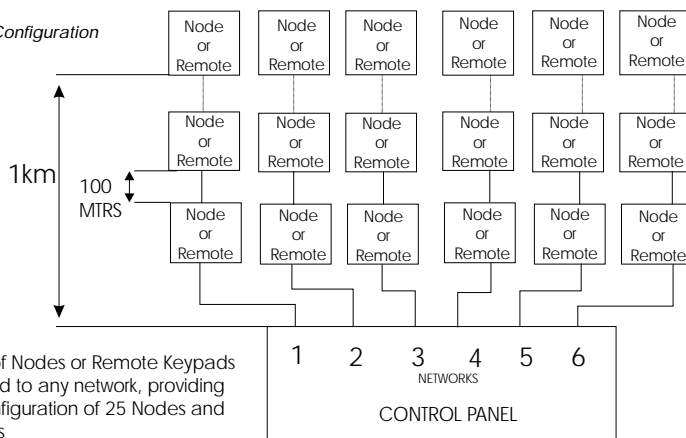
- Digital Communicator type DC3 OR DC28 may be fitted inside the panel to transfer panel status information to a dedicated Central Station via BT lines.
- Digi-Modem type DC3M may be fitted inside the panel to allow remote interrogation and programming via the BT lines and a PC. It also functions as a standard DC3 Digicom.
- Output Module units (CPA6.OM) may be connected to the panel and are used to provide a switched -ve output to a set of LEDs/relays to indicate alarm/mimic activations. Each module will provide up to eight indications and maybe 'daisy chained' if more outputs are required. The first Output Module will always indicate the eight wards.
- A printer type DATAC or other standard RS232 serial printers via a Menvier Security Printer Adapter (MPA) may be connected to provide a printout of 360 log events and system parameters.
- Power supply (519XB) is a 1.5 amp cased power supply with space for standby batteries. A monitor board (519FM) may be plugged onto the 519XB and when connected to a Node can monitor mains failure, Aux 12V failure and low battery condition.
- Relay Module (RM3A) provides 2 x 3A voltage free change over contacts which can be connected to the panel or Node outputs.

Specification

Panel Input Voltage:	240V +/-10% 50Hz
Panel Current Consumption:	160mA
Remote Keypad Current Consumption:	50mA (normal); 60mA (in Alarm)
Node:	40mA
Battery:	12V 6Ah or 7Ah sealed lead acid
Zone:	125 using 25 Nodes
Auxiliary 12V Output:	1.2A
Control Panel Dimensions:	360 (L) x 310 (H) x 85 (D) mm
Remote Keypad Dimensions:	130 (L) x 130 (H) x 30 (D) mm
Node:	128 (L) x 182 (H) x 34 (D) mm
Control Panel Weight:	3kg
Remote Keypad Weight:	322g
Node:	367g
Environment:	0 - 55° C

System Installation

Figure 1. System Configuration



Any connections of Nodes or Remote Keypads may be connected to any network, providing the maximum configuration of 25 Nodes and 9 Remote Keypads

System Configuration

The network cabling comprises 6 core, PVC covered 7/0.2mm multi-stranded cable. The distance between each unit must not exceed 100 metres, although this can be extended by using Nodes programmed as address 00 to boost the signal, without losing any zonal capacity. The distance between the control panel and the last unit on any given network must never exceed 1 kilometre.

Cable Routing

When installing cables, the following should be noted:

- ☞ Screened cable may prove necessary if the network is run adjacent to cables that produce R.F. or are switching high current loads.

☞ Ensure that all system cables are kept clear of mains supply cables, telephone cables, R.F. cables and cables supplying bells or sounders.

☞ Mains power supply cables to the system must be connected to an un-switched fused spur that cannot be accidentally switched off, and must enter the housing via its own cable entry point.

☞ In larger installations it may prove necessary to fit remote power supplies to overcome excessive voltage drops in the cable runs. It is recommended that the Menvier Security 519XB is used in these instances, fitted with a 519FM fault monitor to allow this remote power supply to be monitored for AC Failure, Fuse Failure and/or Battery Condition Fault.

NOTE: Under these circumstances, the system will need 1 output and up to 3 circuits, which are required to implement the monitoring function.

Control Panel Layout

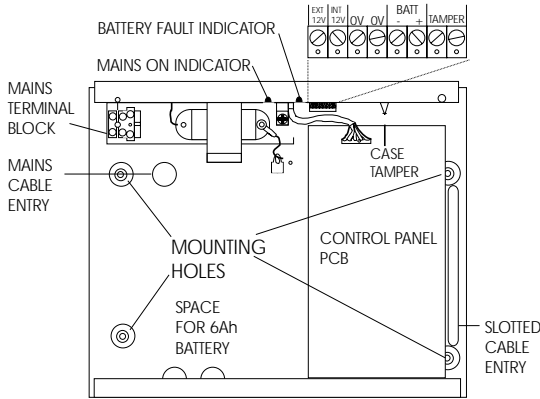


Figure 2 Control Panel Layout

EXT 12V: is fused by FS2 (2A) and is used for powering devices outside of the control panel.
 INT 12V: is NOT fused and is used for powering devices fitted inside the control panel.
 BATT +/-: are fused by FS3 (2A) these terminals provide the connections to the standby battery.
 TAMPER: These terminals are connected to the control panel to give case tamper protection.

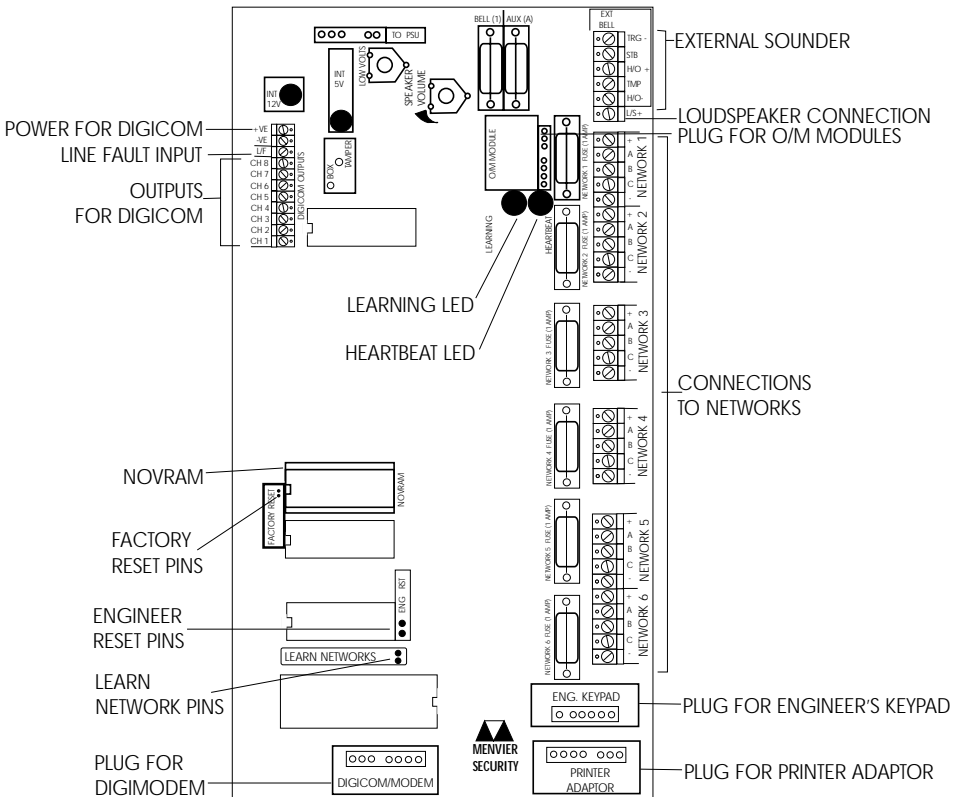


Figure 3 Control Panel PCB Layout

Control Panel Controls and Indicators

The control panel has the following controls and indicator LEDs:-

MAINS	A green LED located on the power supply unit, it indicates the mains 240V power is on.
FAULT	A red LED located on the power supply unit, when flashing it indicates mains power failure or fuse failure (FS2 fitted on the power supply unit).
INT 12V	A green LED located on the control panel pcb, it indicates the system 12V power supply is on.
INT 5V	A green LED located on the control panel pcb, it indicates the system 5V power supply is on.
SPEAKER VOLUME	When a loudspeaker is connected to the control panel the volume of the advisory tones may be adjusted using this control (clockwise to increase).
TAMPER	These are two flying leads that connect to the two tamper terminals on the power supply unit and provide the case tamper protection for the control panel.
LEARNING	A yellow LED located on the control panel pcb, it will illuminate when the system is learning the devices that are connected to the network(s).
HEARTBEAT	A yellow LED located on the control panel pcb, it will continually flash on and off at a rate of about 2 seconds, this is to indicate that system microprocessors are functioning correctly.
FACTORY RESET	If these pins are shorted during power-up all system parameters are reset to the factory reset default settings.
LEARN NETWORKS	When these pins are shorted the system will learn the devices that are connected to the network(s). This is required whenever an Engineer's Keypad is plugged onto the main panel.
ENG RST	When this set of pins are shorted the system will do an Engineer Reset, just as if an Engineer Code had been entered.
NOVRAM	A removable non-volatile memory device which stores all program parameters.

Network Connections

When installing a new system it is recommended that 6 core cable is used for interconnection between the Control Panel and the Nodes/Remote Keypads.

NOTE: If 6 core cable is used, it is advised to double up the -ve connections.

However it is possible to use 4 core cable in cases where the TS2200 is used to upgrade an existing alarm system. When using 4 core cable the terminals A, B, C and - must be used. The power for detectors and Remote Keypad extension loudspeakers must be provided from a separate power supply. The Network connections are:

- + 12V supply to power detectors and Remote Keypad extension loudspeakers.
- A +12V supply for the Node or Remote keypad (Do Not Use For Powering Detectors).
- B Data communication line.
- C Data communication line.
- 0V supply for Node or Remote Keypad, and the 0V supply to power detectors.

Cable Lengths

On installations that have long cable runs between each Node or Remote Keypad, quite considerable voltage drops may develop due to the impedance of the cable. For the system to function satisfactorily the voltage at each Node and Remote Keypad (between the - and A) on the system must NOT drop below 11.5V. Table 1 (below) shows maximum number of Nodes that may be connected to a Network before voltage at the last Node drops below 11.5V.

Table 1

Cable length between Nodes	Maximum Number of Nodes that can be connected					
	Current taken from the + and - terminals from each Node					
	0	20mA	40mA	60mA	80mA	100mA
20 metres	5	4	4	3	3	3
40 metres	3	3	2	2	2	2
60 metres	2	2	2	1	1	1
80 metres	2	2	1	1	1	1
100 metres	2	1	1	1	1	1

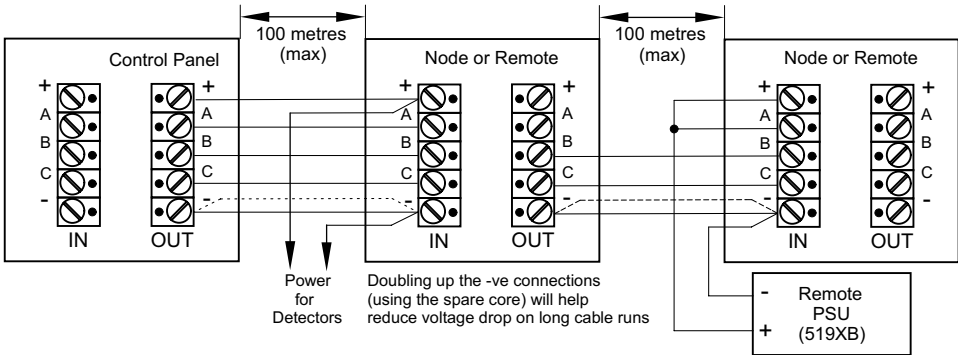


Figure 4 Network Wiring Diagram

Node Installation Sequence

- (1) Separate the lid and base by using a screwdriver to push 2 of the clips on the left or right hand side inward from the base indents, then lift the cover.
- (2) Mark and drill the wall as required taking care not to damage the PCB assembly. Finally, pass all cables into the Node via the cable entry points as appropriate and secure the housing to the wall.
- (3) Connect network cables to the appropriate IN and OUT terminals.

Node Addressing

All Nodes on the system must be addressed and the following should be noted:-

- ☞ No two Nodes should have the same address.
- ☞ The maximum address number is 25.

- ☞ Node address 01 gives circuits 01 to 05 and Node address 02 gives circuits 06 to 10 etc.
- ☞ Nodes DO NOT have to be addressed sequentially on a given network but it is advised to keep them as sequential as possible so as to aid fault finding and programming.
- ☞ If address 0 is selected the Node will not be monitored by the system. In this case the Node can be used as a "Buffer Node" allowing the network data signals to be amplified. This may be required when the network cabling between two Nodes exceeds the 100mtrs limit.

The Node address number is set by using a combination of two jumper links "TENS" and "UNITS". See Figure 5

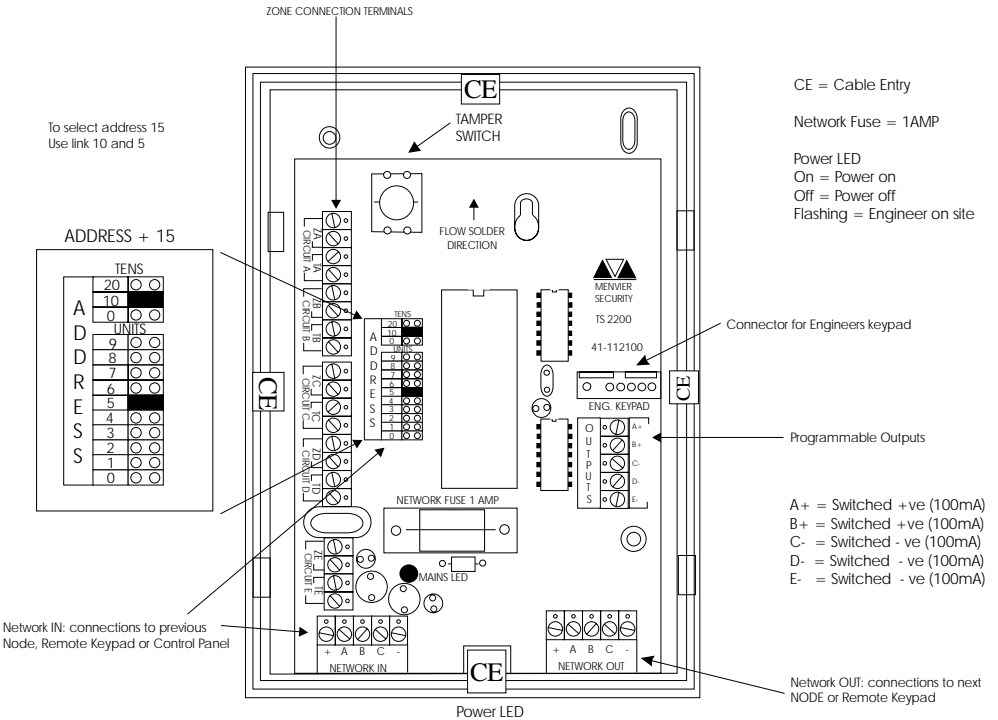


Figure 5 Node Layout and Address Selector

Remote Keypad Installation Sequence

- 1) Separate the lid and base by using a screwdriver to push 2 of the clips top or bottom inward from the base indent, then lift the cover assembly, noting that the PCB is connected to the under side of the lid.
- 2) Mark and drill the wall as required. Finally, pass all cables into the Remote Keypad via the cable entry points as appropriate and fit the housing to the wall.
- 3) Connect network cables to the appropriate IN and OUT terminals (Figure 6).
- 4) If required connect a loudspeaker (min 16 Ohms) between "LS" and "-" terminals. Note: The loudspeaker will only function if there is 12V on the Network "+" terminal (figure 6). The volume of the loudspeaker may be adjusted using volume control pot. Note: only the system advisory tone will be affected by the volume control pot.

Remote Keypad Addressing

All Remote Keypads on the system must be addressed and the following should be noted:-

- ➡ No two Remote Keypads should have the same address.
- ➡ Remote Keypad address 1 equals KPAD 01 and address 2 equals KPAD 02 etc.
- ➡ Remote Keypads DO NOT have to be addressed sequentially on a given network but it is advised to keep them as sequential as possible so as to aid fault finding and programming.
- ➡ If address ENG is selected the Remote Keypad will act as an Engineer's Keypad allowing it to be plugged onto the control panel or any Node so that system programming and testing may be carried out anywhere on the system.

NOTE: Only one Engineer's Keypad may be connected to the system, and an Interface lead (B.EKI) is required to allow this facility.

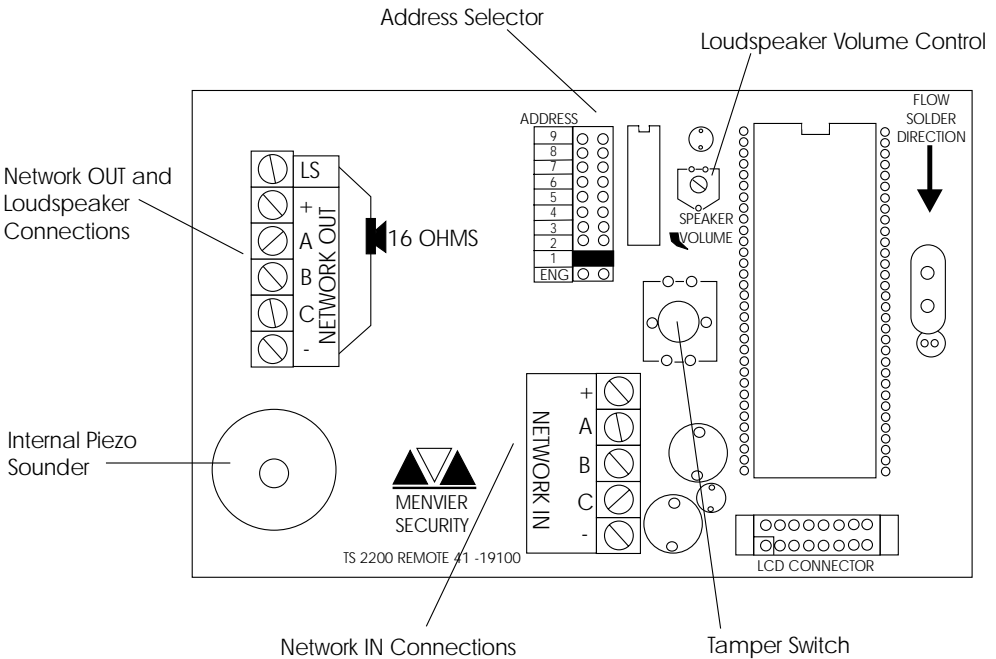


Figure 6 Remote keypad PCB layout and connections

Zone Connections

The detection circuits may be wired as EOLR (End of Line Resistor) or DP (Double Pole). The two methods may be mixed on the same system.

EOLR system

- ☞ Detector alarm contacts must have a 4K7 shunt resistor fitted;
- ☞ A 2K2 End of Line (EOL) resistor must be fitted at the point in the circuit furthest from the control panel;
- ☞ Loop resistance with the EOL resistor shorted must be less than 100 Ohms;
- ☞ The maximum number of devices allowed in a circuit is ten;
- ☞ Links can be fitted across the zone and tamper loops if the circuit is not required or may be programmed as SPARE in the ALTER CIRCUIT TYPES menu.

DP wired system

- ☞ Loop resistance of alarm and tamper must be less than 100 Ohms;
- ☞ The maximum number of devices allowed in a circuit is ten;
- ☞ Links can be fitted across the zone and tamper loops if the circuit is not required or may be programmed as SPARE in the ALTER CIRCUIT TYPES menu.

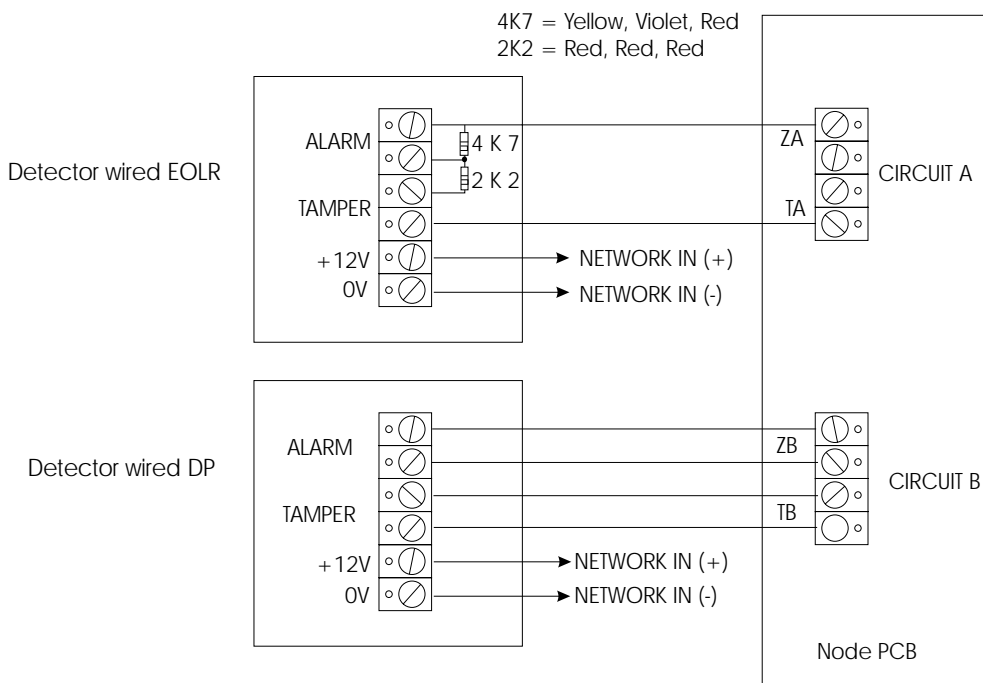


Figure 7. Zone Connections

Key Functions

Engineer's Reset

1. Enter the Engineer's Code default 1234.
2. Display reads, Press YES to Alter System Program.
3. Press [ESC] to return to System Open.

Resetting Engineer's Code

If the Engineer's Code has been lost:

1. Open the end station and then enter a User Code to silence the sounders.
2. Short out the Factory Restart pins.
3. At this point you will hear a confirmation tone.
4. The Engineer's Code will now be 1234.

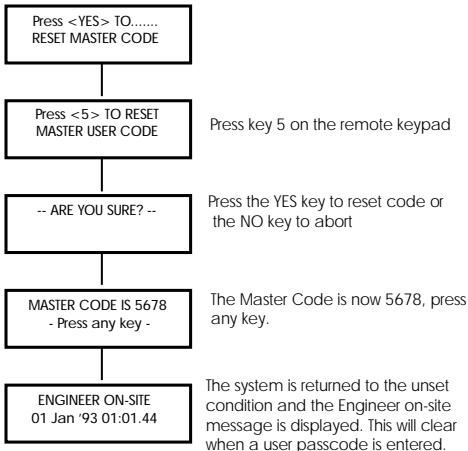
Loading Defaults

1. Power down the panel mains and battery.
2. Short out the Factory Restart pins.
3. Power up battery and mains.
4. Remove short and enter 1234.
5. The system is now back to Factory Default Programming.

Bell Test/Walk Test

Please refer to page 13

Reset Master Code



Custom Set Text

For each of the CUSTOM SET WARDS, 20 characters of text may be entered to simplify the setting procedure for the user.

(Eg. Mode 1 = wards 1234 = SET ALL THE OFFICES)

The text for mode 0 (SET THE WHOLE SYSTEM) may also be changed if desired.

The text is entered by using the keypad keys which function as follows:-

- 1 = A
- 2 = E
- 3 = I
- 4 = 0
- 5 = U
- 6 = Z
- 7 = ?
- 8 = Space
- 9 = Change case
- YES = Accept character
- 0 = 0
- No = Cursor back 1 character
- ↑ = Move up the alphabet 1 letter
- ESC = Accept all text
- ↓ = Move down the alphabet 1 letter

Other standard text characters can be selected by strolling beyond the numbers i.e. ! # * etc.

Engineers Menu Map

Default Engineers code. 1234

- 1 START SET PROCEDURE
- 2 OMIT/INSTATE CCT(S)
- 4 VIEW THE CIRCUITS
- 5 START BELL TEST
- 6 START WALK TEST
- 7 CHANGE YOUR PASSCODE
- 8 SELECT CHIME ON/OFF
- 9 USE MANAGER OPTIONS

- 1 VIEW EVENT LOG
- 2 USE PRINTER

- 1 CANCEL PRINTING
- 2 PRINT EVENT LOG
- 3 PRINT USER DATA
- 4 PRINT ALL
- 5 PRINT CCTS AND OUTPUTS
- 6 PRINT SYSTEM OPTIONS
- 7 PRINT WARD OPTIONS
- 8 PRINT CCT RESISTANCE
- 9 PRINT NETWORK CONFIG.

- 3 ALTER SYSTEM CLOCK
- 4 CHANGE CIRCUIT TEXT
- 5 ALTER CHIME CIRCUITS
- 6 ALTER TIME SWITCH

- 1 FIRST ON TIME
- 2 FIRST OFF TIME
- 3 SECOND ON TIME
- 4 SECOND OFF TIME
- 5 DAYS OF OPERATION
- 6 SWITCH MANUALLY

ALTER SYSTEM PROGRAM

- 1 ALTER CCT TYPES
- 2 ALTER PANEL OUTPUT TYPES
- 3 NODE OUTPUT TYPES
- 4 MODES OF OPERATION

- 1 PASSCODES = four/six DIGITS
- 2 SYSTEM RESET BY = Engineer /User
- 3 USER REMOTE RESET = Enabled/Disabled
- 4 SET WITH POWER OFF = Disallowed/Permitted
- 5 SET WITH LINE-FAULT = Disallowed/Permitted
- 6 PA CCT IN WALK TEST = PA Alarm/Test tone
- 7 24HR (UNSET ALARM) = No/Local Audibles
- 8 FIRE (UNSET ALARM) = No/Local Audibles
- 9 FIRE (UNSET ALARM) = No Output /Output Active
- KEYPAD ALARM SOUND = Ward Only/Global
- O/M MODULES MIMIC = Mimic/Alarm
- KEYPAD SET CONTROL = Enabled/Disabled
- TEST PSU EVERY HOUR = Disabled/Enabled
- MAIN PANEL BELL IS = SAB/SCB
- WARD1 FOYER MODE = Enabled/Disabled
- REMOTE SERVICE CALL = User Authorised/At any time

- 5 PANEL & WARD TIMERS
- 6 WARD SETTING MODES
- 7 PART SET ALARM MODES
- 8 NO. OF AUTO REARMS
- 9 RESET ALGORITHM NUMBER

ALTER CUSTOM MODES

- 1 NODES ASSIGNED WARDS
- 2 KPADS ASSIGNED WARDS
- 3 CUSTOM SET WARDS
- 4 CUSTOM SET TEXT

USE CCT TEST OPTIONS

- 1 PUT CIRCUIT ON TEST
- 2 START TIMED TEST
- 3 CANCEL TIMED TEST
- 4 REVIEW TEST FAILS
- 5 CLEAR TEST FAILS

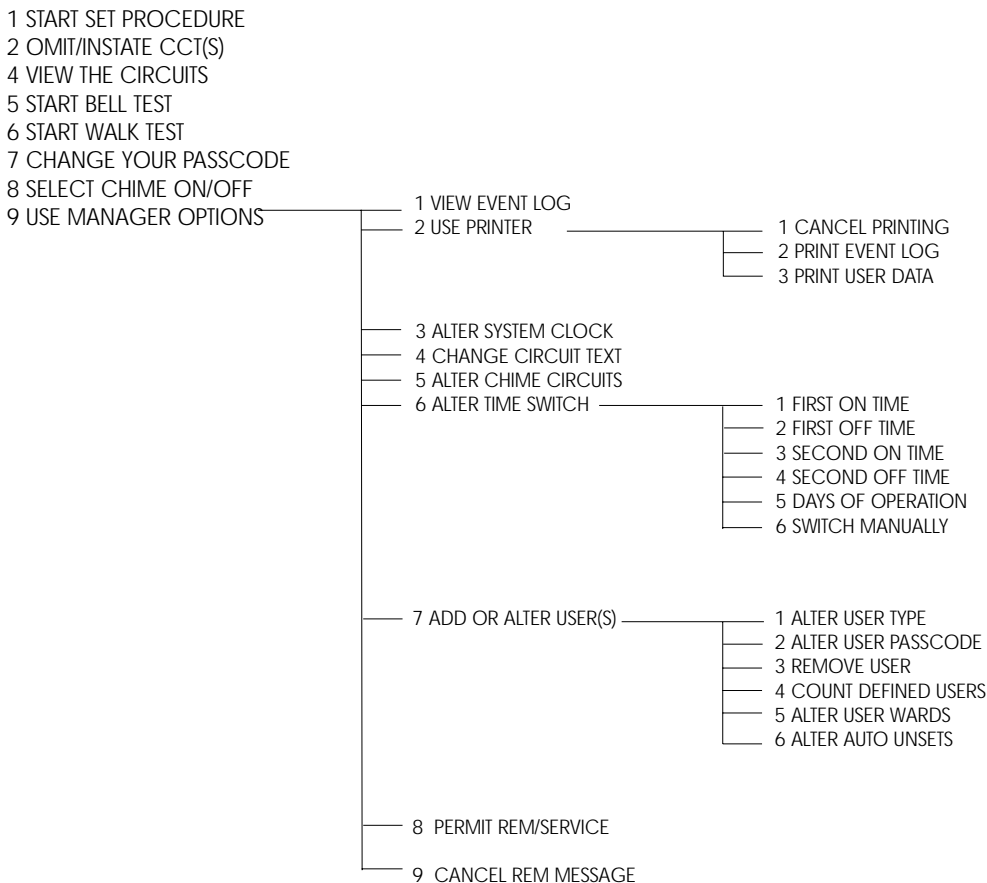
USE DIAGNOSTICS

- 1 RESET NETWORK(S)
- 2 VIEW NODE/CIRCUITS
- 3 MONITOR NETWORKS
- 4 RESET MONITOR
- 5 READ CCT RESISTANCE
- 6 REVIEW CCTS WARDS
- 7 SEE VERSION
- 8 ALTER SOFT SWITCHES

- RESET MASTER CODE
- INSTALL NETWORK(S)
- INSTALL DIGI/MODEM

CIRCUIT TYPES	OUTPUT TYPES	SYSTEM TIMERS
NIGHT	CIRCUIT ALARM	BELL DELAY TIME
24 HOUR	CIRCUIT TAMPER	BELL DURATION TIME
SILENT PA	CIRCUIT TEST FAIL	PART SET SIG DELAY
AUDIBLE PA	CIRCUIT CHIMED	LIGHTS OFF DELAY
FIRE SENSOR	CIRCUIT OMITTED	MAINS OFF TIME
MEDICAL INPUT	CIRCUIT 2ND ALARM	MENU TIME-OUT
AUXILIARY INPUT	CIRCUIT MIMIC	DOUBLE KNOCK TIME
LAST EXIT	CIRCUIT TAGGED	LINE FAULT TIME
EXIT TERMINATOR		SECOND ENTRY TIME
EXIT WARD KEY (KEYSWITCH)	WARD SET	EXIT SETTLING TIME
BOX TAMPER	WARD SET-FAIL	EXIT TIME WARD 1
SPARE CIRCUIT	WARD ALARM	ENTRY TIME WARD 1
SECURITY KEY	WARD ENTRY	EXIT TIME WARD 2
LATCH WARD KEY (SHUNT LOCK)	WARD 2nd ENTRY	ENTRY TIME WARD 2
PSU - MAINS	WARD EXIT	EXIT TIME WARD 3
PSU 12V FAIL	WARD SETTLING	ENTRY TIME WARD 3
PSU - BATT LOW	WARD EXIT ERROR	EXIT TIME WARD 4
MONITORED	WARD CHIMED	ENTRY TIME WARD 4
24 HOUR SHUNT	WARD WALK TEST +VE	EXIT TIME WARD 5
	WARD WALK TEST -VE	ENTRY TIME WARD 5
	WARD +12V RESET	EXIT TIME WARD 6
	WARD SW12V	ENTRY TIME WARD 6
	WARD PA	EXIT TIME WARD 7
	WARD FIRE	ENTRY TIME WARD 7
	WARD MEDICAL	EXIT TIME WARD 8
	WARD AUXILIARY	ENTRY TIME WARD 8
	WARD 24 HOUR	
	WARD 24HR SHUNT	
	WARD TAMPER	
	WARD SAB MIMIC	
	WARD STROBE	
	WARD SCB MIMIC	
	WARD ACCESS	
	WARD PC DRIVE A	
	WARD PC DRIVE B	
	SYSTEM ALARM	
	SYSTEM PA	
	SYSTEM SET	
	SYSTEM FIRE	
	SYSTEM MEDICAL	
	SYSTEM AUXILIARY	
	SYSTEM 2nd ALARM	
	SYSTEM SITE ENGR	
	SYSTEM PSU TEST	
	SYSTEM AC OFF	
	SYSTEM AC ALARM	
	SYSTEM BATT FAULT	
	SYSTEM BELL (SAB)	
	SYSTEM BELL (SCB)	
	SYSTEM STROBE	
	SYSTEM 24 HOUR	
	SYSTEM TIME SWITCH	
	SYSTEM LINE FAULT	
	SYSTEM BACK LIGHT	
	SYSTEM TAMPER	
	SYSTEM DC ACTIVE (DC3)	
	SYSTEM DC SUCCESS (DC3)	
	SYSTEM DC FAILED (DC3)	
CIRCUIT ATTRIBUTES		
POWER RESET (Rst)		
OMIT (Omt)		
INVERT (Inv)		
DOUBLE KNOCK (D-K)		
ACCESS (Acc)		

Master User Menu Map



RESET BY REMOTE CODE

Default Master code. 5678

This page intentionally left blank