EURO fire EN54

FEUN4, FEUN8 & FEUN16
FEWN4, FEWN8 &FEWN16
4, 8 & 16 ZONE FIRE CONTROL PANELS

COMBINED CONVENTIONAL AND ALARM SENSE
FIRE DETECTION AND ALARM CONTROL PANEL

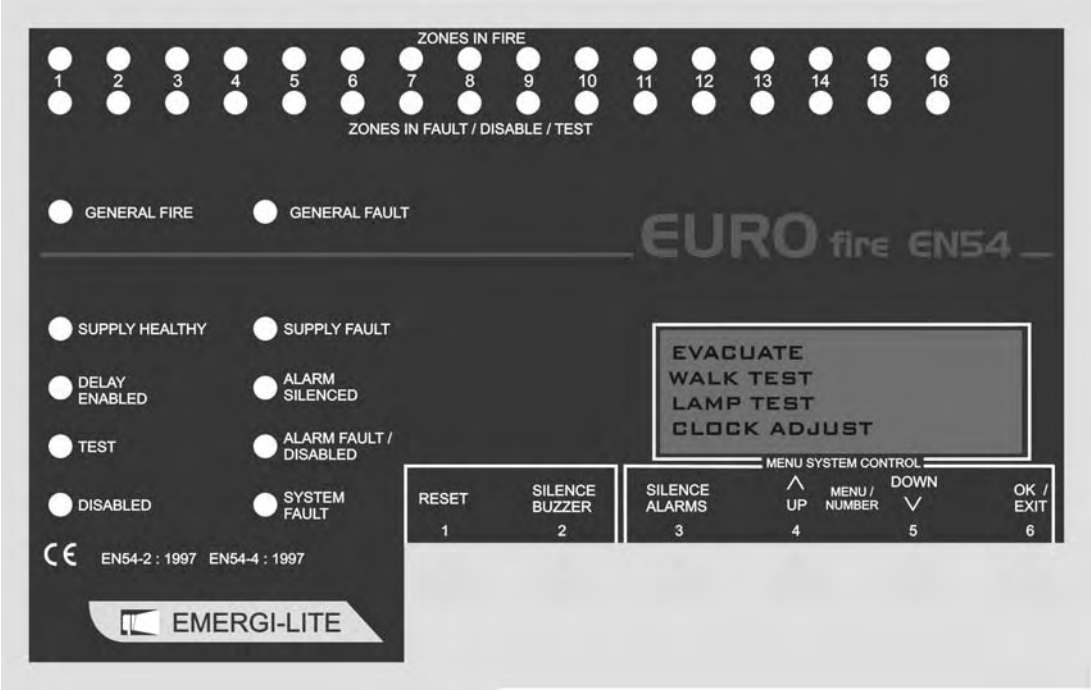
User and Engineers Instructions

Note: This is an important document. It should be read and retained by the user of the Fire Control System

EUROFIRE
User and Engineers Instructions v3
Part No:- 9M347457

CONTENTS

Eurofire Front Panel Layout



INDICATOR DETAILS

GENERAL FIRE	- Illuminates when the panel has detected a fire activation or the Evacuate button has been pressed.
GENERAL FAULT	- Illuminates if a fault has been detected.
SUPPLY HEALTHY	- Is Illuminated whilst power is being supplied to the control panel.
SUPPLY FAULT	- Is made to flash if there is a fault with either the power supply or standby battery system.
DELAY ENABLED	- Illuminates while there is a delay to the external sounders operating.
ALARM SILENCED	- Illuminates when the external sounders have been silenced.
TEST	- Illuminates when the panel is in Walk Test mode.
ALARM FAULT/ DISABLED	- Is made to flash if a fault on the alarm/sounder circuit has been detected. It is illuminated when alarm(s) are disabled – the 'DISABLED' LED is also illuminated.
DISABLED	- Illuminates when there is a disablement on the system – this can be a Fire Zone or an alarm line. When the DISABLED LED is illuminated, the specific 'zone fault' or 'alarm fault' LED is also illuminated to show where the disablement is.
SYSTEM FAULT	- Illuminates if the panel has 'crashed' for any reason and has been restarted by the internal watchdog circuit or if the system software has become corrupted.
ZONES IN FIRE (1-16)	- Illuminates in fire conditions to provide indication of the zone(s) that are activated. In the 'TEST' condition the specific fire led will illuminate when the zone has been tested.
ZONES IN FAULT (1-16)	- Flashes to indicate a fault with a specific zone. Illuminated when zones are 'DISABLED' or in 'TEST' – are used with the general condition indicators above.

A combination of LEDs and a 4 Line * 20 Character Liquid Crystal Display (LCD) is used to simply convey information. Messages displayed on the LCD include:-

- Zone *X* in fire	- Fire activation in zone number 1 to 16
- Fire Panel *Y* Zn *X*	- Another fire panel at address 1 to 32 (*Y*) to which this is networked to, has a Fire activation in zone 1 to 16 (*X*).
- Zone *X* Detectr Fire	- An Alarm Sense detector on zone 1 to 16 has a fire activation.
- Zone *X* Callpnt Fire	- An Alarm Sense Call Point on zone 1 to 16 has a fire activation.
- Alarms Silenced	- Activated alarms have been switched off.
- Alarms Resounded	- Alarms that have been Silenced, have been re-activated.
- Zn *X* Missng/oper/Eol	- Zone 1 to 16 either Detector is missing, or Zone wiring is open circuit or the End of Line device is missing.
- Zn *X* Short Circuit	- Zone 1 to 16 short circuit.
- Zone *X* Det Missing	- An Alarm Sense detector is removed on zone 1 to 16.
- Panel Evacuated	- Evacuate option has been selected.
- Pnl *X* AL *Y* Short Circuit	- Another fire panel at address 1 to 32 (*X*), to which this is networked to, has an fault on Alarm Line 1 to 4 (*Y*).
- Pnl *X* EoL AL *Y* msng	- Another fire panel at address 1 to 32, to which this is networked to, is either Open Circuit or the End of Line EoL device is missing on Alarm Line 1 to 4.
- Fault on Panel *X*	- Another fire panel at address 1 to 32, to which this is networked to, is in a fault condition. This is qualified by a description of the fault that has occurred.
- RPTR *X* AL *Y* Scct Flt	- A repeater panel at address 1 to 32, connected to this panel, has detected a short circuit on Alarm Line 1 to 4.
- RPTR *X* AL *Y* Occt Flt	- A repeater panel address 1 to 32, connected to this panel, has detected an open circuit on Alarm Line 1 to 4.
- RPTR *X* Micro CRC Flt	- An error with the controlling software on a repeater panel address 1 to 32 has been detected.
- Mains Failed	- 230VAC input is disconnected.
- Battery Missing	- The standby battery is disconnected or faulty.
- Aux 12v Fault	- 12v Auxiliary output from the fire panel has failed.
- Aux 24v Fault	- 24v Auxiliary output from the fire panel has failed.
- Temp Sensor Fail	- Temperature sensor used for battery charging is disconnected or short circuit.
- Earth Fault	- A wire/cable connected to the Eurofire panel is shorted to earth.
- Watchdog Reset	- Fire panel has been re-started by the supervision circuitry.

Eurofire EN54 is a combined 2 and 4-wire conventional fire detection system that has been designed to comply with the requirements of EN54 parts 2 and 4.

The standard conventional 4-wire system uses two pairs of wires (4-wire), one pair is used to connect detectors and call points, the other pair to connect alarm devices (sounders, bells or strobe lights).

The 2-wire convention uses a common pair for the connection of Apollo 'AlarmSense' detectors, callpoints and alarm sounders. This gives the scheme designer a greater flexibility of choice, whilst retaining compliance with the relevant standards,
Benefits can be seen with time saving, reduced wiring cost, and ease of installation.

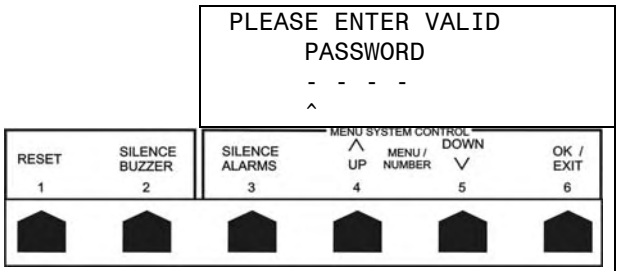
The Eurofire EN54 control panel is available as either 4, 8, 12 or 16 zones of fire cover. Other Eurofire EN54 panels and Repeaters can be networked using the 'CAN Connect' link.

Panel Basics

The fire control panel is operated by the 6 buttons which are mounted below the LCD. In order to gain access to the fire panel functions, it is necessary to enter the 4 digit user code – this is to prevent unauthorised access.

In order to enter the user code, the password screen must be activated. This is done by:-

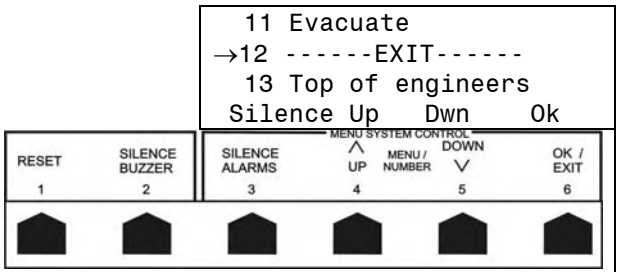
- **Pressing any of buttons 1, 2, 3 or 6.**



The number represented by each button is displayed on the fascia above the button.

- **Enter the user code (Initially this is factory set to 3545)**

If the correct code is entered, the display will now show:-



The bottom line of the LCD shows the functions available with the buttons on which they are directly above.
Note, that buttons 1 & 2 have RESET and SILENCE BUZZER permanently assigned to them.

Button 1 **– RESET** - Returns the Fire Alarm System to a normal clear condition – Resetting fire alarm detectors, silencing all sounders and resetting other devices connected to the control panel.

Button 2 - **SILENCE BUZZER** - Causes the internal buzzer during a Fire or Fault condition to stop sounding. Any subsequent Fire or Fault condition will cause the buzzer to resound.

Button 3 - **SILENCE ALARMS** - Is used to turn off the external alarm sounders after a fire activation. The control panel will however continue to indicate a fire condition and the internal buzzer will continue to bleep. Any subsequent Fire activation will resound the external alarm sounders.
When the alarm sounders have been 'silenced', the LCD option will show **'Resound'.** Pressing Button 3 now, the external sounders will be turned back on and the LCD option reverts back to '**Silence'**.

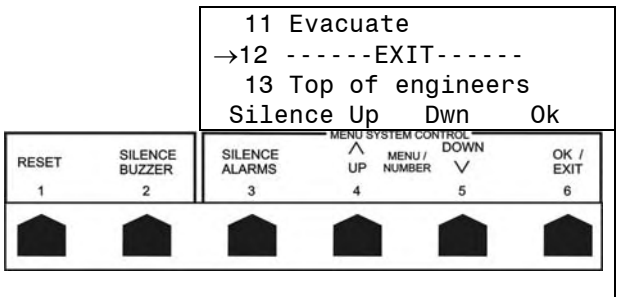
Button 4 - **Up** - Will take you up through the menu system

Button 5 - **Dwn** - Will take you down through the menu system. Note with USER access you **CANNOT** enter the Engineers menu.

Button 6 - **OK** - Is used to enter the menu choice which is highlighted on the LCD.
For example, pressing button 6 on the LCD shown above, 'EXIT' being the highlighted option - would take you out of the menu system.

User Menu Operation

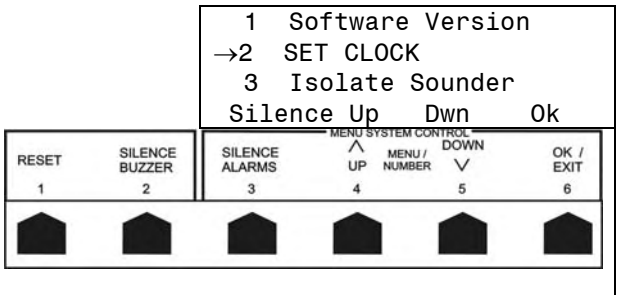
When entering the User menu system, the LCD should display as shown below:-



Pressing **button 4 (UP)** or **button 5 (Down)** will take you through the available USER options, these are:-

1 - Software Version -	Shows the version of software that is controlling the Fire panel.
2 - Set Clock -	Allows user to set the system clock.
3 - Isolate Sounder -	Disables alarm lines, auxiliary relay and zone powered sounders if installed.
4 - Isolate Zone -	Disables zone/s from the Fire system so a fire or fault is not detected.
5 - Zone Sound Test -	When zone/s are set as 2Wire, allows sounders on individual zones to be momentarily sounded.
6 - Bell Test -	Alarm lines AL1 to 4 are individually switched on and off. The Alarm line being tested is continually switched on and off at a rate of 30 seconds until stopped.
7 - Lamp Test -	All LEDs are illuminated for 3 seconds, and the internal buzzer is sounded 2 times.
8 – Walktest -	Allows the user to test the Fire Detectors and Call Points on the system.
9 - Event Log To LCD -	Displays details of previous events on the Fire System.
10 - Overide Delays -	Allows users to immediately activate devices if the system 'DELAY ENABLED' LED is illuminated during a Fire condition.
11 – Evacuate	This causes the Fire alarm sounders and the internal buzzer to sound as well as illuminating the 'General Fire' LED.
12 – Exit	Returns you from the User menu back to the Fire system.

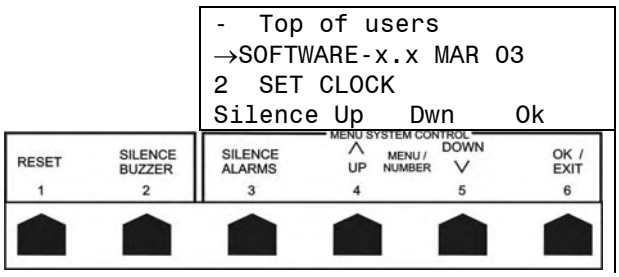
To select an option from the user menu, simply press **OK (button 6)**, when the indicator is pointing at the desired function, i.e.



Pressing **OK (button 6)** would select the function 'Set Clock'.

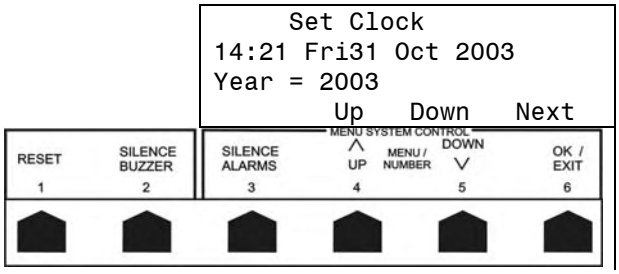
User Menu Functions

→1 SOFTWARE VERSION



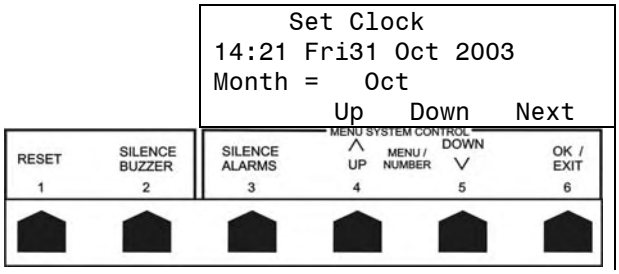
This shows the version and date of controlling software for the Eurofire fire control panel.

→2 SET CLOCK - This function sets the time and date of the panel.



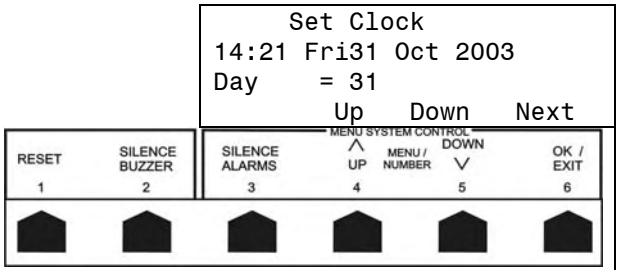
Sets the Year.

Button 4- UP increases YEAR.
Button 5- Down decreases YEAR.
Button 6- Next moves to setting Month.



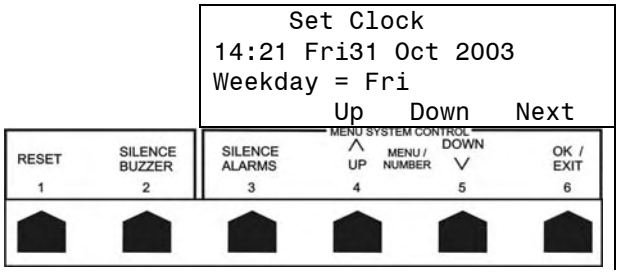
Sets the Month.

Button 4- UP increases Month.
Button 5- Down decreases Month.
Button 6- Next moves to setting Date.



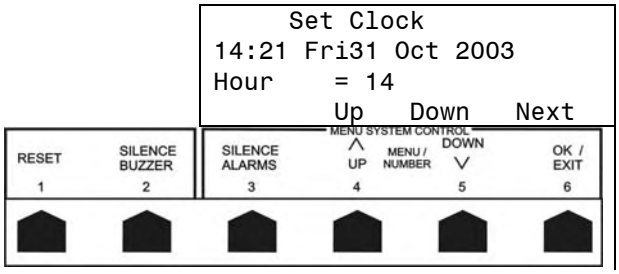
Sets the Date

Button 4- UP increases Date.
Button 5- Down decreases Date.
Button 6- Next moves to setting Day.



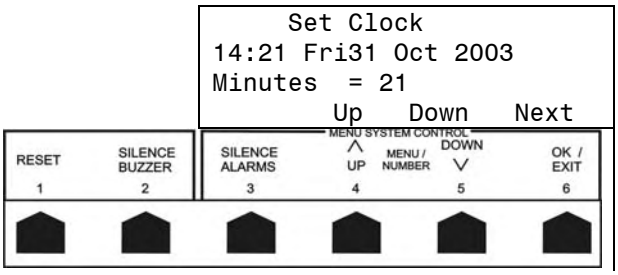
Sets the Day of Week

Button 4- UP increases Day.
Button 5- Down decreases Day.
Button 6- Next moves to setting Hour.



Sets the Hour.

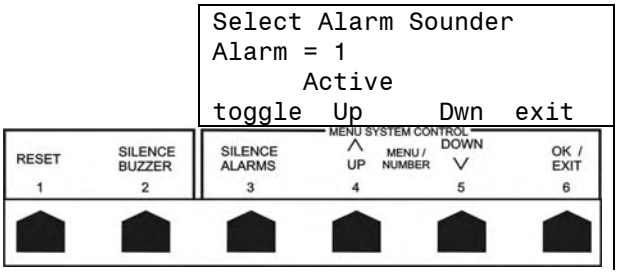
Button 4- UP increases Hour.
Button 5- Down decreases Hour.
Button 6- Next moves to setting Minutes



Sets the Minutes.

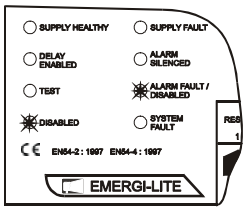
Button 4- UP increases Minutes.
Button 5- Down decreases Minutes.
Button 6- Next Finishes setting clock and returns back to menu system.

→ 3 ISOLATE SOUNDER – If a fault occurs or work is being carried out on an alarm circuit, it is possible to disable the alarm circuit without it affecting the other alarm circuits. If the system is configured with Alarm Sense devices, it is also used to disable zone powered sounders.
Please Note, When disabling zone powered sounders, Detectors and Callpoints on that zone will still be monitored and signal fires and faults if they are detected.

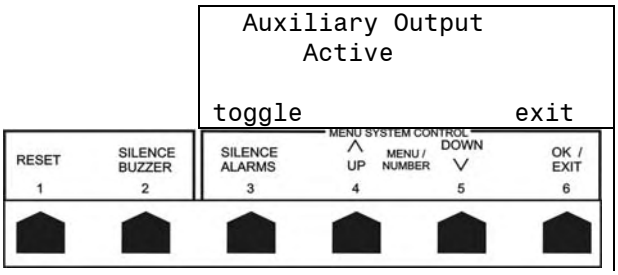


Button 3- toggle isolates/re-activates the alarm line.
Button 4- Up increments to next alarm line.
Button 5- Dwn decrements to previous alarm line.
Button 6- exit moves onto isolating the Auxiliary Relay output

If an alarm is disabled the 'Disabled' and 'Alarm Fault/Disabled' LEDs are illuminated.



Pressing **Button 6 – exit** moves from isolating Alarm Lines on to isolating Auxiliary Relay output.

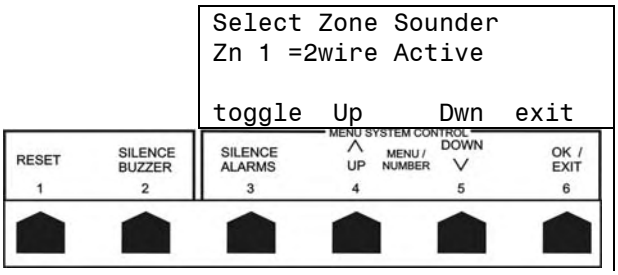


Button 3- toggle isolates/re-activates the Auxiliary Output.

Button 6- exit moves to isolating zone powered sounders.

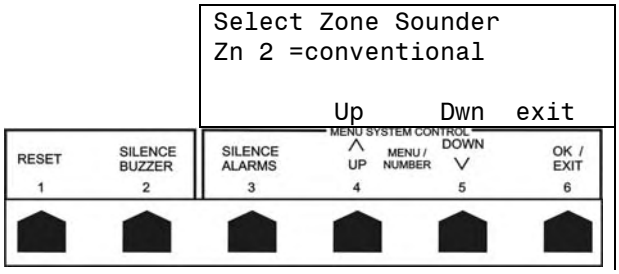
The 'DISABLED' LED is illuminated if the Auxiliary Relay is isolated.

Pressing **Button 6 – exit** moves from isolating Auxiliary Relay output to isolating zone powered sounders.



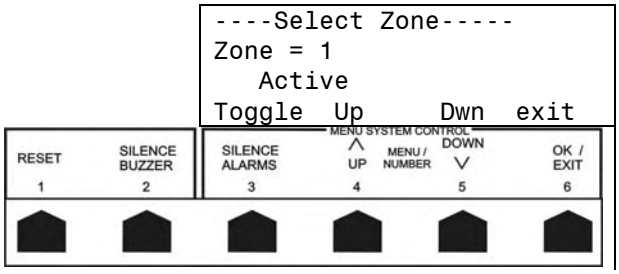
Button 3- toggle isolates/re-activates the alarm line.
Button 4- Up increments to next zone.
Button 5- Dwn decrements to previous zone.
Button 6- exit returns to menu system.

If a zone is set as conventional – no zone powered sounders fitted:-



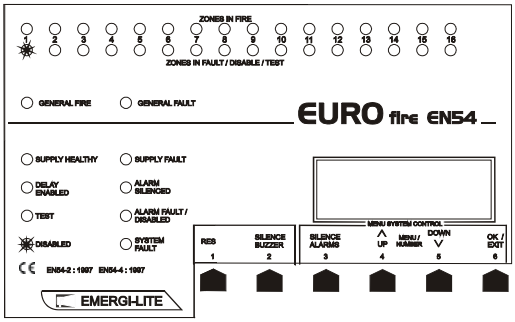
Button 3- Is Not available
Button 4- Up increments to next zone.
Button 5- Dwn decrements to previous zone.
Button 6- exit returns to menu system.

→ 4 ISOLATE ZONE – If a fault occurs or work is being carried out on a zone, it is possible to disable that zone without it affecting the other zones. Fire and fault activations from a disabled zone will be ignored.

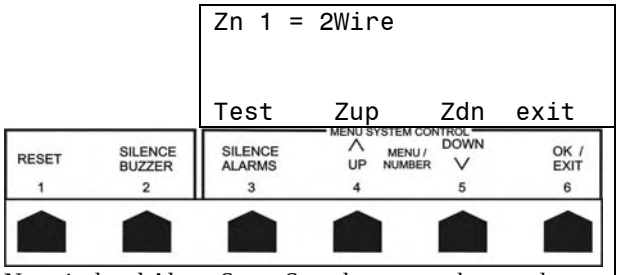


Button 3- toggle isolates/re-activates the Zone.
Button 4- Up increments to next Zone.
Button 5- Dwn decrements to previous Zone.
Button 6- exit returns to menu system.

When a zone is isolated, the 'Disabled' and the specific zone fault LEDs are illuminated – eg. Zone1 is isolated.



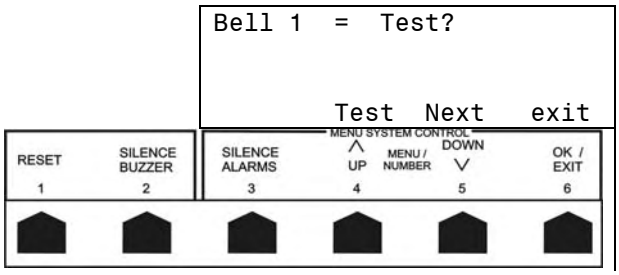
→ 5 ZONE SOUND TEST– Will momentarily sound any zone powered sounders if system is configured to have zone powered on that zone.



Note, isolated Alarm Sense Sounders cannot be tested.

Button 3- Test – activates Alarm Sense sounders on the zone for 3 seconds.
Test not available if zone is conventional or is isolated.
Button 4- Zup increments to next Zone.
Button 5- Zdn decrements to previous Zone.
Button 6- exit returns to menu system.

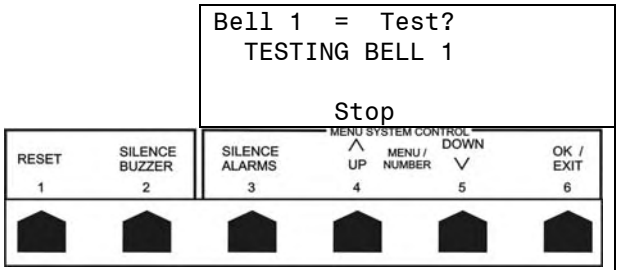
→ 6 BELL TEST– Activates individual Alarm Lines. The selected alarm line is repeatedly switched on and off at a rate of 30 seconds until stopped. Note, An alarm line that is isolated cannot be tested.



Button 4- Test activates the Alarm Line at a rate of 30sec. on and 30sec. off.
Button 5- Next increments to the next alarm line.
Button 6- exit returns to menu system.

Note, isolated Alarm Lines cannot be tested.

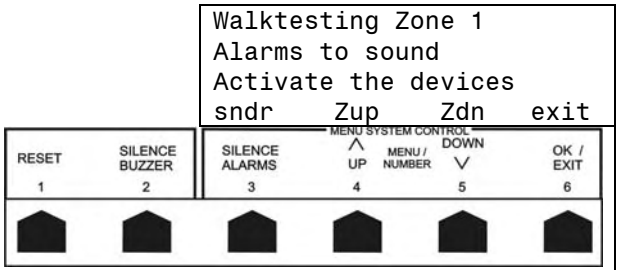
If an Alarm Line is being tested, the display will show the following:-



Button 4- Stop Will switch off testing the alarm.

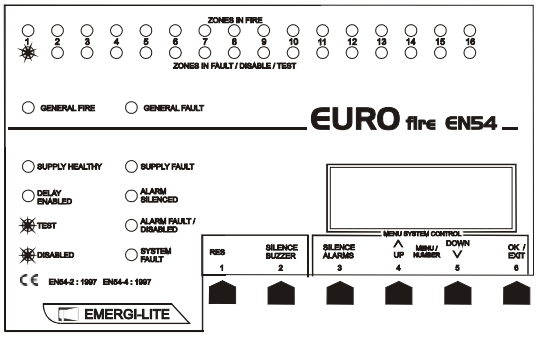
→ 7 LAMP TEST– Will momentarily activate all LEDs and sound the buzzer.

→ 8 WALK TEST– Enables the user to test the fire detectors and call points on the fire alarm system.



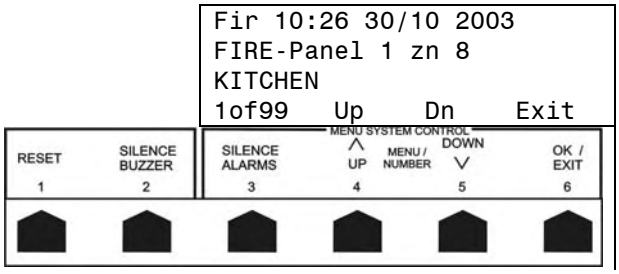
Button 3- sndr selects whether or not to activate the alarms when a device is tested.
Button 4- Next moves test to next zone.
Button 5- Next moves test to previous zone.
Button 6- exit returns to menu system.

Only one zone is placed into WALKTEST - All other zones are actively detecting fires and faults.
Note, A zone that is disabled cannot be put into walktest.
When WALKTEST is selected, the 'DISABLED' and 'TEST' LEDs are illuminated along with the Fault LED of the zone that is being tested.



When a zone in test detects a callpoint or detector being activated, the fire LED of the zone will be illuminated and if selected, the sounders will ring for 2seconds. Thus the user can verify the operation of each of the detectors/callpoints on each zone of the fire system.
Note, the panel will automatically exit from Walktest if there is no activation for 15minutes.

→ 9 EVENT LOG TO LCD – Allows the user to view the history of previous events.
Upto 99 events with the time and date can be stored.
The LCD will display the last/most recent event - given event no.1. New events are always given event no.1.
Events are given numbers in ascending order to when they occurred from 1-most recent to 99-the oldest event.



Button 3- NOT available
Text above button 3 is the event number.

Button 4- Up moves up event log to more recent events.
Button 5- Dn moves down event log to older events.
Button 6- exit returns to menu system.

Event types are as follows:-

- Zone *X* in fire	- Fire activation in zone number 1 to 16
- Fire Panel *Y* Zn *X*	- Another fire panel 1 to 32 (*Y*), to which this is networked to, has a Fire activation in zone 1 to 16 (*X*).
- Zone *X* Detectr Fire	- An Alarm Sense detector on zone 1 to 16 has a fire activation.
- Zone *X* Callpnt Fire	- An Alarm Sense Call Point on zone 1 to 16 has a fire activation.
- Alarms Silenced	- Activated alarms have been switched off.
- Alarms Resounded	- Alarms that have been Silenced, have been re-activated.
- Zn *X* Missng/oper/Eol	- Zone 1 to 16 either Detector is missing, or Zone wiring is open circuit or End of Line device is missing.
- Zn *X* Short Circuit	- Zone 1 to 16 short circuit.
- Zn *X* Fire Cleared	- A fire activation in an Un-Latching zone number 1 to 16 is cleared.
- Zone *X* Det Missing	- An Alarm Sense detector is removed on zone 1 to 16.
- Panel Evacuated	- Evacuate option has been selected.
- Pnl *X* AL *Y* Short Circuit	- Another fire panel 1 to 32 (*X*), to which this is networked to, has an fault on Alarm Line 1 to 4 (*Y*).
- Pnl *X* EoL AL *Y* msng	- Another fire panel 1 to 32, to which this is networked to, is either Open Circuit or the End of Line EoL device is missing on Alarm Line 1 to 4.
- Fault on Panel *X*	- Another fire panel 1 to 32, to which this is networked to, is in a fault condition. This is qualified by a description of the fault that has occurred.
- NetTimeout @ addr *X*	- Panel 1 to 32 (*X*) to which this fire panel is networked to is not responding.
- Micro CRC Fault	- The fire control panel software has become corrupted.
- Dual Address	- Another panel with same address 1 to 32 has been detected.
- Mains Failed	- 230VAC input is disconnected.
- Battery Missing	- The standby battery is disconnected or faulty.
- Aux 12v Fault	- 12v Auxiliary output from the fire panel has failed.
- Aux 24v Fault	- 24v Auxiliary output from the fire panel has failed.
- Temp Sensor Fail	- Temperature sensor used for battery charging is disconnected or short circuit.
- Earth Fault	- A fault to Earth on the system wiring has been detected.
- Watchdog Reset	- Fire panel has been re-started by the supervision circuitry.
- Panel Reset	- The fire panel has been reset to its quiescent condition – No fires, faults etc.
- Zn *X* Walktested	- Zone 1 to 16 of the fire panel has been fire tested.
- Engnr Panel Default	- Panel has been restored to factory settings.

→ 10 OVERRIDE DELAYS – In a fire condition, if there is a delay before the alarms are sounded, this function will cause the alarms to ring immediately.
If there is a delay operating, the 'DELAY ENABLED' LED will be illuminated. This will be switched off when the Over ride Delays has been selected.

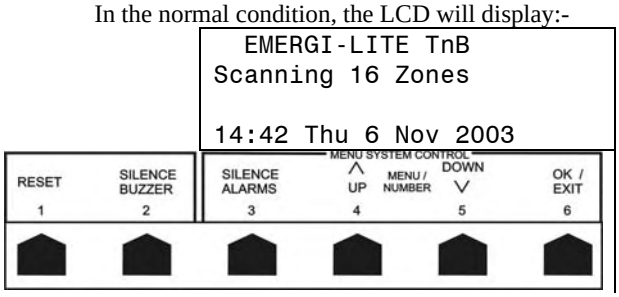
→ 11 EVACUATE – This will cause the main fire alarm sounders to ring. The internal buzzer in the panel will be made to sound and the 'GENERAL FIRE' LED will be illuminated.

→ 12 EXIT – Returns out of menu system back to fire alarm panel.

Panel Operation

Normal Condition

In the normal condition, the LCD will display:-



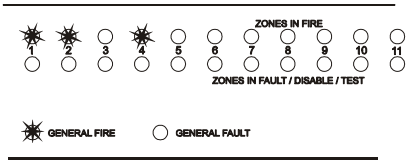
Line 1- User Display Message. This is set on commissioning.

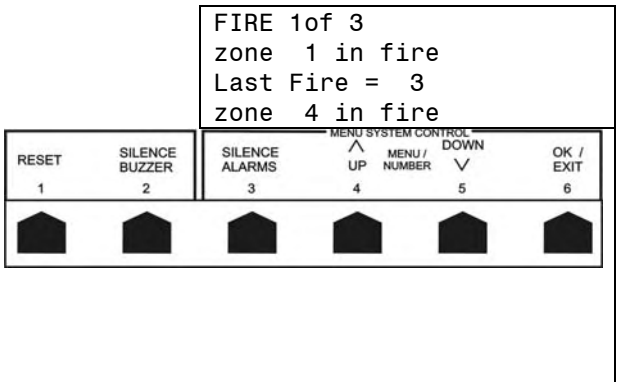
Line 2- Displays the number of detection zones on the fire panel.

Line 4- Displays Time.

Fire Condition

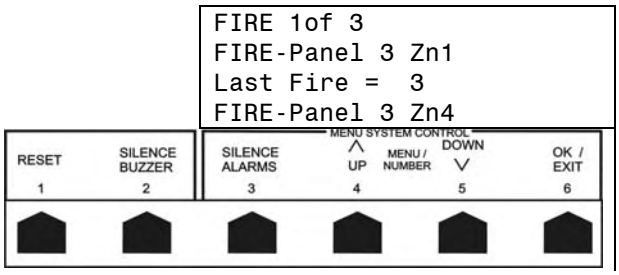
In the event of a fire activation, the panel will sound the internal buzzer and activate the external alarm sounders in the sequence pre-programmed at the commissioning stage. The 'GENERAL FIRE' and the relevant zone fire LEDs will be illuminated. i.e Zones 1,2 & 4 are in fire.





Line 1- Shows which fire is being displayed on line 2 and the total number of fire detected.
Line 2- Alternates between the zone number and the zone description of the fire.
Using **buttons 4&5** you can scroll and display all fires individually on line 2.
Line 3- Shows last fire that has occurred which is also the total number of fires.
Line 4- Alternates between the zone number and the zone text of the last fire.

Fires signalled from Networked Panels are shown in the same way as local fires but also show the network address of the panel where the fire was detected as well as the zone number eg.



To silence external sounders -

- Enter User Code, then press Button 3 – SILENCE ALARMS.

To resound external sounders (only allowed if sounders have been silenced first) -

- Enter User Code, then press Button 3 – RESOUND.

To silence the panel internal buzzer -

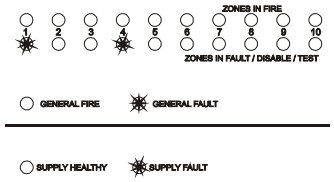
- Enter User Code, then press Button 2 – SILENCE BUZZER.

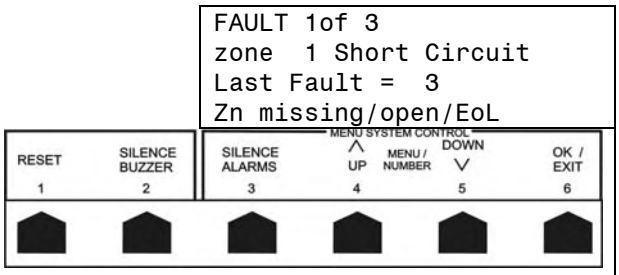
To reset the panel -

- Enter User Code, then press Button 1 – RESET.

Fault Condition

In a fault condition, the internal buzzer will sound and the 'GENERAL FAULT' LED will be illuminated. LED's specific to the fault will be made flash. Devices connected to the fault relays will be triggered e.g. digital communicator.
Eg. Shown below is a fault with the power supply and zones 1 & 4 are in fault also.





Line 1- - Shows which fault is being displayed on line 2 and the total number of faults detected.
Line 2- Alternates between the zone number and details of the fault.
Using **buttons 4&5** you can scroll and display all faults individually on this line
Line 3- Shows the last fault to have occurred – which is also the total number of faults.
Line 4- Gives details of the last fault showing the fault and zone number.

Faults detected and displayed by the Eurofire are:-

- **Zn *X* missing/open/EoL**
  Indicates that the zone *X* (1 to 16) is in fault with either a missing detector, a break in the wiring or the End of Line device is missing.

- **Zn *X* Short Circuit**
  Indicates that the zone *X* (1 to 16) has a short circuit on the wiring.

- **Zn *X* Det Missing**
  Detected only on zones set as Two Wire. Indicates that a detector has been removed from zone *X*.

- **Pnl *X* AL *Y* Short Circuit**
  Indicates that the panel at address *X* (1 to 32) has a short circuit on the Alarm *Y* (1 to 4) wiring.

- **Pnl *X* EoL AL *Y* msng**
  Indicates that the panel at address *X* (1 to 32), Alarm *Y* (1 to 4) has either the End of Line device missing or the wiring is open circuit.

- **Mains Failed**
  Indicates that the 230V AC mains supply to the panel has become disconnected.
  The fire panel installation will have the capability to run the fire alarm system for nominally 48 hours in the event of a mains failure. After this period, fire monitoring by the system will be lost. The cause of failure will need investigating and rectifying to prevent loss of cover.

- **Battery Missing**
  The standby battery system has become disconnected. The cause of failure will need investigating and rectifying.

- **Temp Sensor Fail**
  Indicates that the temperature sensor used as part of the battery charging has failed.
  However, the battery is still charged, but at a nominal rate of 20°C. The cause of failure will need investigating and rectifying.

- **Aux 12V Fault**
  Indicates that an Auxiliary 12V Output has failed. The cause of failure will need investigating and rectifying.

- **Aux 24V Fault**
  Indicates that an Auxiliary 24V Output has failed. The cause of failure will need investigating and rectifying.

- **Earth Fault**
  Indicates that a fault has occurred with the system earthing.

- **Fault of Panel *X***
  Indicates that the panel at address *X* (1 to 32) is in a fault condition.
  This line is alternated every 2 seconds with a line describing the nature of the fault.

- **Micro CRC Fault** and **NVRAM CRC Fault**
  Indicates that the panels internal self check procedures has detected an error.

- **Watchdog Reset**
  This indicates that the microprocessor inside the fire panel has failed and has been restarted by the watchdog circuit. If the circuits inside the panel have been damaged, it may not be possible for the watchdog circuit to successfully restart the fire panel system, in which case the above message may NOT appear. However, any devices connected to the fault relay will be triggered. The 'SYSTEM FAULT' LED will be illuminated and the internal buzzer will be sounding.

  If the panel has 'crashed' completely, fire cover will be lost. This will need rectifying immediately. If the microprocessor has been successfully restarted, the '**Watchdog Reset**' message will appear on the LCD and the panel will function as normal. The reason for failure will need investigating by a fire alarm engineer.

Summary of the Maintenance Requirements of BS5839-1: 2002

Note: This information is provided for the general guidance of fire detection and fire alarm system users. As it is a summary, it omits much of the information included in the clauses listed below. It is therefore not intended to be a replacement for the detailed recommendations included within BS5839-1.

Clause 44 Routine Testing

Clause 44.1 Commentary

- It is vital for a regular test to be undertaken to ensure that there has not been a major failure of the entire fire detection and fire alarm system that may otherwise go unnoticed.

Clause 44.2 Weekly Testing by the User

- Test a manual call point during working hours to check that the control panels and alarm sounders operate satisfactorily.
- Each week, a different manual call point should be tested.
- Voice alarm systems should be tested weekly in accordance with BS5839-8

Note : If the system is connected to an Alarm Receiving Centre (ARC) for calling the fire brigade, it is very important that the ARC is notified before testing commences and when it is completed

Clause 44.3 Monthly Attention by the User

- Testing of any automatically started generator used for the fire detection and fire alarm system.
- Inspection of any vented batteries used as a standby power supply for the fire detection and fire alarm system.

Clause 45 Inspection and Servicing

Clause 45.1 Commentary

- The inspection and servicing should be undertaken by organisations with the appropriate competence. This can be assured by the used of organisations that are third party certificated, by a UKAS accredited certification body, specifically to carry out inspection and servicing of fire detection and fire alarm systems.

Clause 45.2 Quarterly inspection of vented batteries

- Vented batteries should be examined by a person with relevant competence and topped up if necessary.

Clause 45.3 Periodic Inspection and Testing

- The period between visits to undertake inspection and service should be based upon a risk assessment but the maximum period between visits should not exceed six months.
- The logbook should be inspected.
- A visual inspection should be made to check whether structural or occupancy changes have been made that require changes to the fire detection and fire alarm system.
- False alarm records should be checked and relevant action taken if necessary.
- Batteries should be checked and tested.
- Control panel functions should be checked and tested.
- Fire alarm devices should be tested.
- Facilities for automatic transmission of alarm signals to an alarm receiving centre (ARC) should be checked after advising the ARC of the proposed actions.
- All fault indicators and circuits should be tested and checked.
- Printers should be tested.
- Other checks and tests recommended by the manufacturer should be carried out.
- Outstanding defects should be reported and the logbook completed and servicing certificate issued.

Clause 45.4 Inspection and Test of a System Over a 12 Month Period

- The switch mechanism of every manual call point should be tested.
- Every automatic fire detector should be examined and functionally tested. Note: this includes, but is not limited to; smoke detectors, most heat detectors, optical beam smoke detectors, aspirating fire detection systems, carbon monoxide fire detectors and flame detectors.
- Additional checking is required for some analogue fire detectors and for multi-sensor detectors.
- All fire alarm devices should be tested.
- Certain filament lamps should be replaced.
- Radio fire detection and fire alarm system signal strengths should be checked.
- Visual inspection of readily accessible cable fixings should be undertaken.
- The cause and effect programme should be checked.
- The standby power supply capacity should be checked.
- Other annual checks and tests recommended by the system component manufacturers should be undertaken.
- Outstanding defects should be reported and the servicing certificate issued.

Clause 46.4.4 Recommendations for action to address an unacceptable rate of false alarms

- This Clause recommends that any false alarm investigation and subsequent modifications to the system takes into account the guidance provided in Section 3 of BS5839-1 : 2002. Note: Any organisation undertaking false alarm investigations and related remedial work should be able to demonstrate their competence to undertake such work.

Section 3 of BS5839-1 : 2002

- This section contains comprehensive information on all aspects of limitation of false alarms. The measures to limit false alarms are divided into eight groups:
    - Siting and selection of manual call points.
    - Selection and siting of automatic fire detectors.
    - Selection of system type.
    - Protection against electromagnetic interference
    - Performance monitoring of newly commissioned systems.
    - Filtering measures.
    - System management.
    - Regular servicing and maintenance.

SYSTEM LOG BOOK

Date	System Healthy	Lamp Test	Callpoint-Sensor Check	Callpoint Used	Battery Test	Comments	signed

ENGINEERS MANUAL

INTRODUCTION

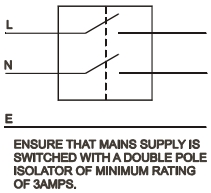
This manual provides the necessary guidance for the correct installation and commissioning of a 'Eurofire' control panel. Persons carrying out system design and installation should be familiar with the relevant code of practice relating to the installation of fire detection and alarm systems within buildings. The 'Eurofire' panel is an advanced fire detection system based on microprocessor control circuitry. It is therefore recommended that Emergi-lite Safety Systems Ltd are contacted for initial commissioning and future service requirements of any 'Eurofire' equipment.

SYSTEM DESIGN GUIDE

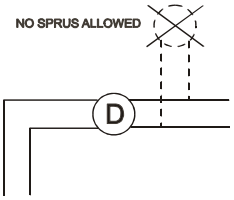
When installing the Eurofire, the system designer should ensure:-

1. The installation complies with the relevant code of practise for installations.

2. The mains supply is switched via a double pole isolator.



3. All detectors and sounders are sighted in accordance with British Standard recommendations and the circuits have NO SPURS.



4. Sounder current consumption should not exceed the panel maximum. The maximum load for each alarm output is 1A, however, the total sounder current should not exceed the panel maximum of 1.25A. If higher sounder output levels are required, an external high current power supply can be connected. Contact ESS for more information.

5. The total current consumption for each zone does not exceed 4mA.

6. It is recommended that the cabling used for detector and alarm circuits is Fire Protected, 2-core+screen complying with the requirements in BS5839-1 : 2002

7. Detectors and callpoints used are compatible with the panel, and only devices recommended by the supplier are used.

8. The correct End of Line (EoL) devices on the zones and alarm lines (including those not in use). These devices must be fitted after the last detector, callpoint or sounder.

9. The detector bases are connected as shown in figs. 1-3 and are fitted with a diode for detector removed fault. Otherwise, removal of a detector from a base will prevent subsequent detectors and callpoints on the zone from functioning.

10. The sounders have a series blocking diode fitted so that they only operate when the supply is polarized in accordance with the markings on the control panel PCB sounder terminals.

11. If the 12V or 24V auxiliary outputs are used, the battery standby period should be checked to ensure that the maximum duration for the installation can still be achieved.

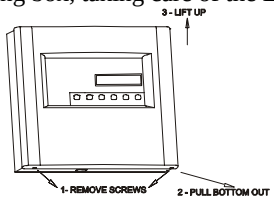
12 That all earths are bonded and a connection is made to the earth monitoring circuit which is located on the Printed Circuit Board. Without connection to the earth monitoring circuit, the fire control panel will be unable to monitor any voltages (+VE and –VE) on the earth.

INSTALLATION PROCEDURE

It is recommended that installation is delayed until all building or maintenance work has been completed. If building work is being carried out in the vicinity of the installation it may result in damage to the panel.

1. Remove fire panel from its packing and retain the packing for storage of panel parts during installation.

2. To remove the front – remove two screws located under the bottom edge, pull the bottom edge out then lift up. Store it face down in the packaging box, taking care of the LED light guides on the back.



3. Disconnect battery, earth and transformer wires. Remove the 6 * 4mm screws securing the main printed circuit board from the box. It is essential that once the main PCB has been removed it is stored safely, observing anti-static precautions. Use the Eurofire packing if no anti-static containers are available. Keep the 4mm screws in a safe place.

4. Once the cable entry routes have been decided remove the appropriate knock-outs from the top of the enclosure. **Only use the knockouts near the mains terminal block for mains entry.**

5. Note two 11mm-6mm keyhole slots and two 6mm holes set in dimples are cut in the back of the enclosure. The enclosure can be securely fixed to the fabric of the building in the following way. Hold the enclosure on the wall in the desired mounting position and mark the location of the fixing holes. The panel should be mounted at a height such that the liquid crystal display is at eye level to the user.

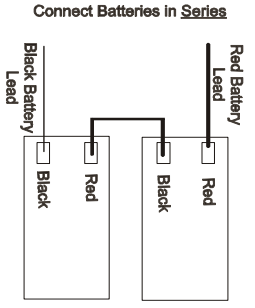
6. Drill and plug wall in the four marked positions then fit enclosure with the appropriate fixing screws.

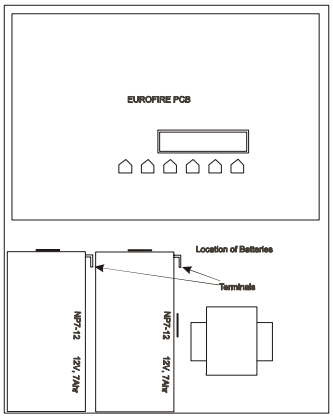
7. Feed the required cables into the enclosure then make off a reasonable working length (identify each cable). Remove any debris from the enclosure. Conduct all insulation tests (note insulation tests must be done with the detectors and any other electronic devices disconnected from the wiring involved, failure to observe this could result in severe damage to the electronic parts in the fire panel and associated detectors etc).

8. Refit control panel PCB taking into account anti-static precautions. Any further insulation tests are prohibited once the PCB has been re-fitted. Do not terminate cables in the terminals on the control panel PCB.

9. Fit the two 12 volt batteries in the enclosure but do not connect the batteries into the control panel PCB yet.

IMPORTANT NOTE: The two 12v batteries are connected in SERIES.





Location of batteries in enclosure.

10. Refit the outer lid using the two 4mm screws and contact Emergi-lite Safety Systems to arrange commissioning of the fire alarm system.

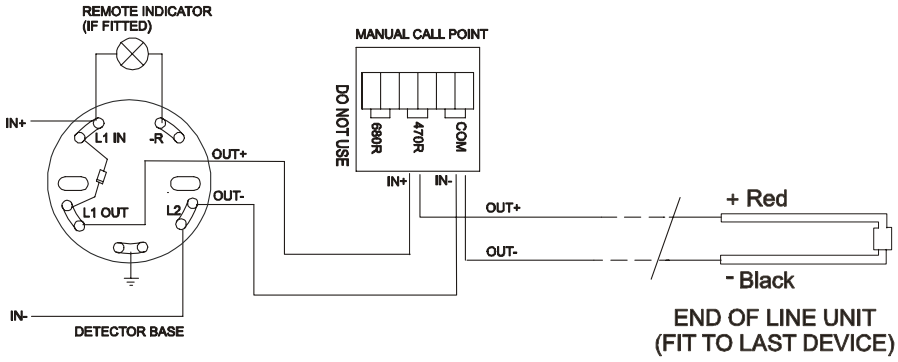


Fig.1 CONVENTIONAL DETECTOR AND CALLPOINT WIRING

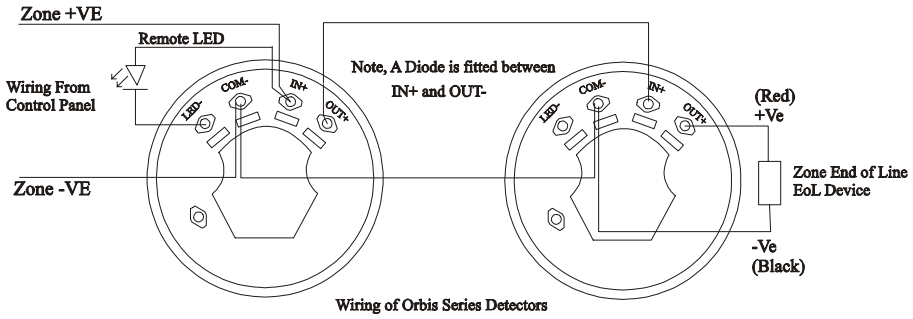


Fig.2 ORBIS DETECTOR

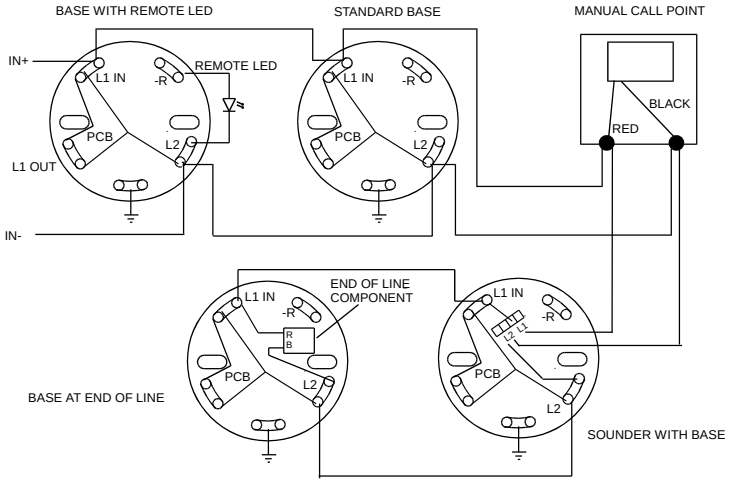


Fig.3 ALARM SENSE - 2 WIRE, WIRING DETAILS

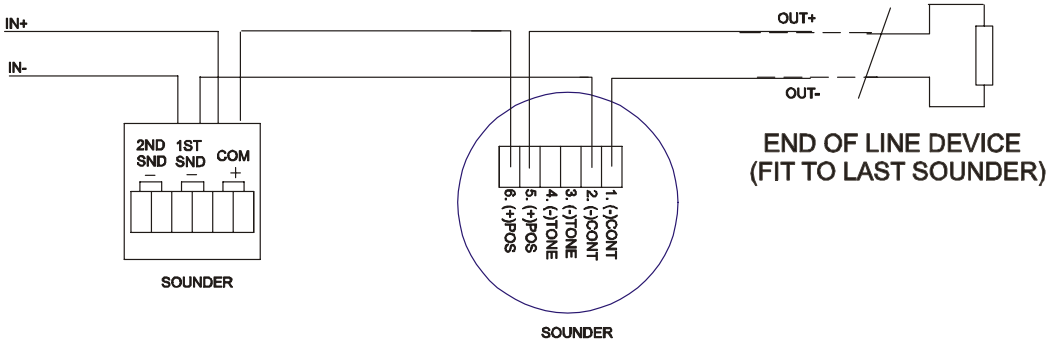


Fig.4 CONVENTIONAL SOUNDER WIRING

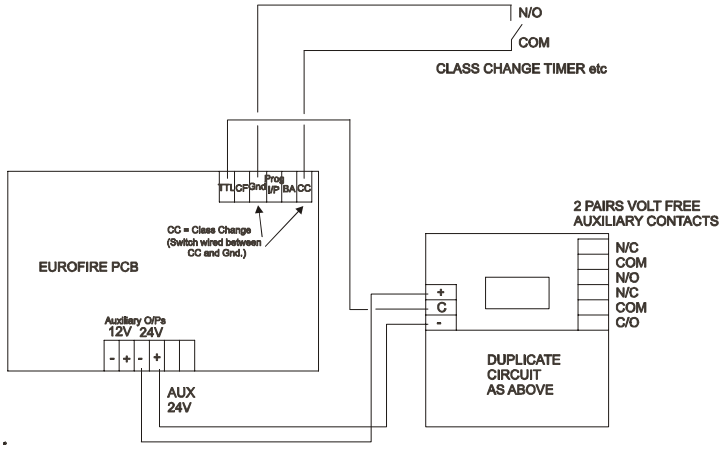


Fig.5 4WAY AUXILIARY RELAY PCB WITH TWIN CONTROL CIRCUITS

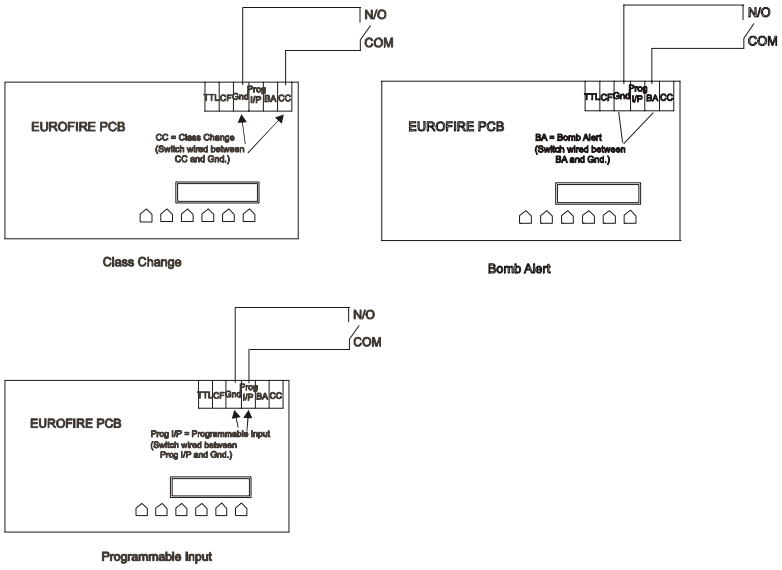


Fig.6 Class Change, Bomb Alert & Programmable I/P

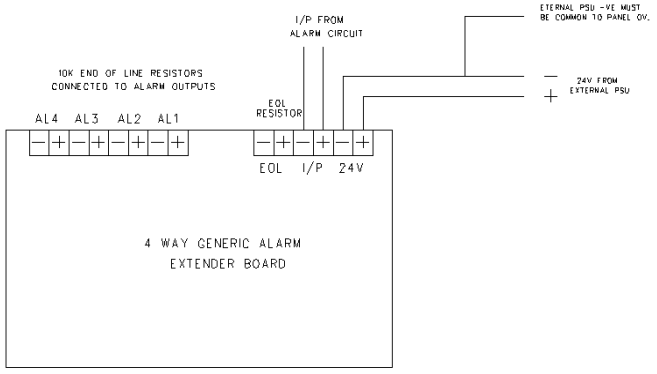


Fig.5 4WAY ALARM EXTENDER PCB

PANEL SPECIFICATION

Panel Order Code	FEUN-4	FEUN-8	FEUN-12	FEUN-16
No. of Zones (25 detectors per zone max)	**4 Zone conventional / 2wire**	**8 Zone conventional / 2wire**	**12 Zone conventional / 2wire**	**16 Zone conventional / 2wire**
No. of alarm lines	4 (expandable to 16 programmed in groups of 4)			
Maximum alarm load	Total = 1.25A. Maximum per line or circuit = 1A			
Auxiliary outputs	• Two sets of volt-free aux. programmable contacts (rated 2A @ 30V d.c.) • Two sets of volt-free fault contacts (rated 2A @ 30V d.c.)			
Inputs	Class change, Bomb Alert and Programmable			
Display	4 x 20 character LCD + zone fire and fault LED's			
Mains input voltage	230Vac + 10%, -6%. 50Hz			
Output d.c. voltage	24V d.c. @ 250mA, 12V d.c @ 250mA			
Battery size	12V 7AH x 2 (connected in SERIES)			
Panel aesthetics	Metal back box with moulded polycarbonate front panel in cool grey			
Panel dimensions (mm) hwd	469 x 373 x 103			
Standby duration	Minimum 24 Hours (please contact technical sales for further information.)			
Detector units	Apollo 60 and Orbis series smoke and heat with diode base. 220-680 Ohm call-point			

*** For networking please specify the isolated CAN Network driver.**

Alarm Sense (2-Wire) Specification.

Product code	FEWN-4	FEWN-8	FEWN-12	FEWN-16
No. of zones	4 Zone	8 Zone	12 Zone	16 Zone
Detectors per zone	25 maximum	25 maximum	25 maximum	25 maximum
Sounders per zone	25 maximum	25 maximum	25 maximum	25 maximum
	Low	Medium	High	
Sounder current	4ma	8ma	16ma	note [1]
Sounders per panel	200	160	80	note [1]
Inputs	Class change, Bomb Alert, Programmable			
Display	4 x 20 character LCD + zone fire & fault LED's and system LED's			
Mains input voltage	230 vac = 10% -6% 50Hz			
DC output auxiliary voltage	24V d.c. @ 250mA, 12V d.c @ 250mA			
Battery size	12V 7AH x 2 (connected in SERIES)			
Battery standby	Minimum 24 Hours (please contact technical sales for further information.)			
Panel dimensions (mm) hwd	469 x 373 x 103			
Programmable features	Extensive via buttons and LCD display			
CAN Network	Panel and repeater combinations via CAN 2.0b link			
Ancillary outputs:				
Alarm Lines	4			note [2]
Alarm current total	Is 1.25A-Zone Sounder Current			note [3]
Auxiliary outputs	2 sets of volt free contacts, rated @ 2A 30Vdc			
Fault outputs	2 sets of volt free contacts, rated @ 2A 30Vdc			

Notes.

[1] – Current is dependent on sound level and tone outputs. Total current must not exceed 80 high output sound levels. Or 200 low output sound levels.

[2] – Alarm lines – AL1 to AL4.

[3] – Total Panel Alarm Current is 1.25A, therefore zone sounder current must be taken into account when deciding how much loading is allowed on Alarms AL1 to AL4.

Alarmsense is a registered trade name of Apollo Fire Detectors Ltd.

INDICATORS:-

20*4 character LCD display.
16*Zone fire LED's
Common fire LED
16*Zone fault LED's
Common fault LED
Supply Healthy LED
Supply fault LED
Delay Enabled LED
Test LED
Disabled LED
Alarm silenced LED
Alarm Fault / Disabled LED
System fault LED

CONTROLS:-

Panel reset button
Silence buzzer button
Silence / Resound alarms button
Menu up button
Menu down button
Ok / accept button

CAN Interface – For communication to remote repeater or to another EN Eurofire control panel.

INTERNAL SOUNDER - min level 50dBa @ 1m.

FEATURES:

Zones selectable as either conventional or 2 Wire
User zone isolation
User sounder isolation
User 2 Wire sounder isolation
User lamp test
99 event history log (with time and date)
20 Character description for each zone.
Programmable Alarm and Aux relays.
Unlatched Zone option
Short – circuit fire option
Panel networking option (upto 32 panels and repeaters)
Alarm ringing patterns can be sent on the network from panel to panel.
Repeater option with programmable 4 * alarm outputs at the repeater.
Configurable system message
Automatic restart in the event of software failure
Panel configuration stored in non-volatile memory
If zone set as 2 wire, it will display whether a callpoint or detector has been activated
Zones monitored for open / short circuits and end of line removal
Alarm outputs monitored for open / short circuits and end of line removal
AC mains and battery supply monitored
Temperature compensated battery charging
Earth fault monitoring

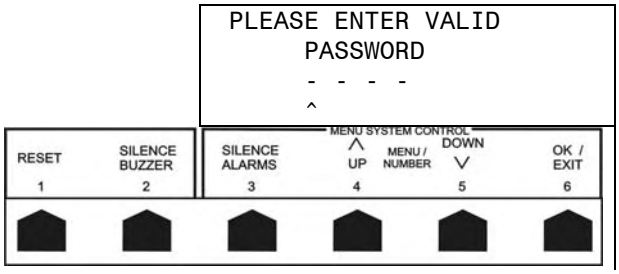
ENGINEERING MODE

The Engineers Code is **5344.**

In the full EN54 version. In order to gain access to the engineering menu, remove the front of the fire panel by removing the two 4mm screws on the bottom edge of the front.

In order to enter the engineers code, the password screen must be activated. This is done by:-

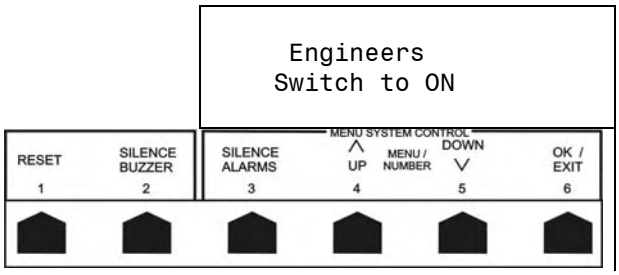
- **Pressing any of buttons 1, 2, 3 or 6.**



The number represented by each button is displayed on the fascia above the button.

- **Enter the engineers code**

If the correct code is entered, the display will show the following:-



In order to gain access to the Engineers Functions, the 'Engr's Switch' must be switched to the 'ON' position.
This is located on the Eurofire EN54 PCB.
The front cover must be removed in order to access the switch.

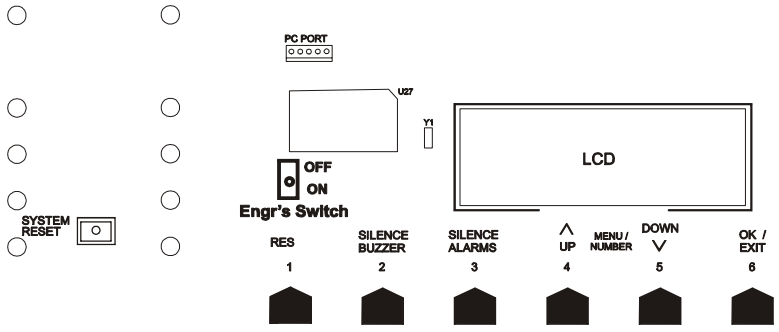
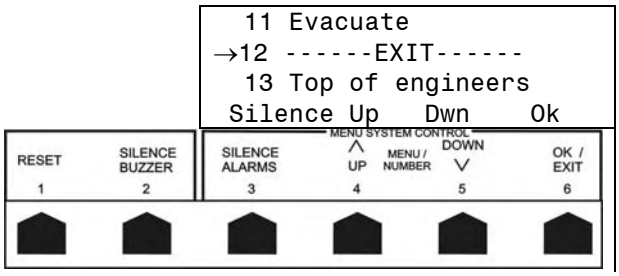


Fig 1. Location of Engr's Switch

When engineers mode has been accessed, the initial entry point for the menu system is the same as that for the user. Engineers access allows you to scroll UP and DOWN through the menu system..



Engineers access allows you to scroll UP and DWN through the menu options.

The bottom line of the LCD shows the functions available with the buttons on which they are directly above.
Note, that buttons 1 & 2 have RESET and SILENCE BUZZER permanently assigned to them.

Button 1 – **RESET** - Returns the Fire Alarm System to a normal clear condition – Resetting fire alarm detectors, silencing all sounders and resetting other devices connected to the control panel.

Button 2 - **SILENCE BUZZER** - Causes the internal buzzer during a Fire or Fault condition to stop sounding. Any subsequent Fire or Fault condition will cause the buzzer to resound.

Button 3 - **SILENCE ALARMS** - Is used to turn off the external alarm sounders after a fire activation. The control panel will however continue to indicate a fire condition and the internal buzzer will continue to bleep. Any subsequent Fire activation will resound the external alarm sounders.
When the alarm sounders have been 'silenced', the LCD option will show **'Resound'.** Pressing Button 3 now, the external sounders will be turned back on and the LCD option reverts back to '**Silence'**.

Button 4 - **Up** - Will take you up through the menu system. These are the User available options.

Button 5 - **Dwn** - Will take you down through the menu system. Theses are the Engineer available options.

Button 6 - **OK** - Is used to enter the menu choice which is highlighted on the LCD.
For example, pressing button 6 on the LCD shown above, 'EXIT' being the highlighted option - would take you out of the menu system.

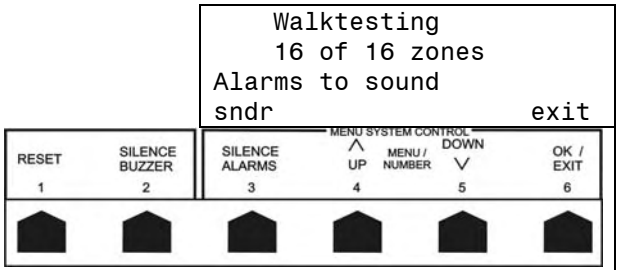
When exiting from engineers menu, switch the 'Engineers' switch to the 'OFF' position.

The available Engineers options are:-

14 - Wlktst All Zones	Walktest is conducted on <u>all</u> zones – can only test individual zones in user mode.
15 - Auxiliary Test	Allows Auxiliary relays to be tested
16 - Edit Patterns	Is where alarm, auxiliary and 2Wire sounder 'Ringing' patterns are setup.
17 - Assign Patterns	This is where 'Ringing' patterns are assigned to fire events
18 - Assign Class Pat	This is where a 'Ringing' pattern is assigned to Class Change.
19 - Assign Bomb Pat	This is where a 'Ringing' patterns is assigned to Bomb Alert.
20 - Assign Specl Pat	This is where a 'Ringing' patterns is assigned to Programmable Input.
21 - Assign Evac Pat	This is where a 'Ringing' patterns is assigned to Evacuate.
22 - Test Patterns	Allows you to test / verify the operation of a 'Ringing' pattern.
23 - Set Zone Config	Sets up the configuration of a zone ie, conventional / 2wire, latching / unlatching etc.
24 - Enter Zone Text	Allows zone description text to be edited.
25 - Edit User Text	Allows system description text to be edited.
26 - Blank	This function is currently unused.
27 - Setup Network	Sets up networking of panel to panel or other devices
28 - Event Log to PC	Down loads contents of event log to a PC.
29 - Data PC>Panel	Uploads data and panel settings from a PC to the panel.
30 - Data Panel>PC	Downloads data and panel settings from the panel to PC.
31 - Clear Event Log	Clears all previous events from the event log.
32 - Default Panel	Restores fire panel back to factory settings.
33 - Change User Code	Allows you to change the User access code.
34 - Level 3X Entry	
35 - Exit	Returns you from the User menu back to the Fire system.

Engineers Menu Functions

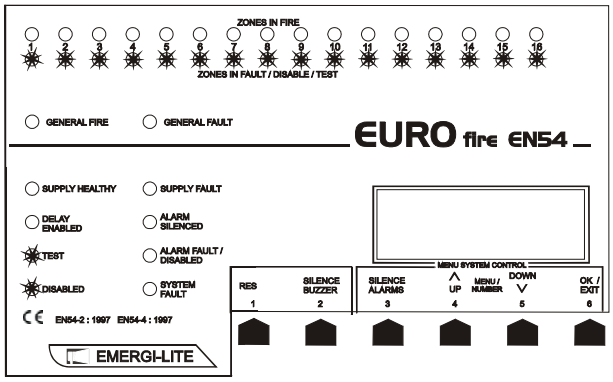
→ 14 WLKTST ALL ZONES – Enables the user to test the fire detectors and call points on all zones of the fire alarm system.



Button 3- sndr selects whether or not to activate the alarms when a device is tested.

Button 6- exit returns to menu system.

Selecting Walktest all zones, will illuminate the 'DISABLED', 'TEST' and all Zone Fault LEDs:-



When a callpoint or detector is activated, the fire LED of the zone tested will be illuminated. If alarm to sound is selected, the sounders will ring for 2seconds. Thus the operation of each detector and callpoint on the fire system can be verified.

Note, The panel will automatically exit from Walktest if there is no activation for 15minutes.
During walktest, devices connected to the panel via the auxiliary contacts or devices on the network will not be triggered.

→ 15 AUXILIARY TEST – Switches the Auxiliary contacts over .
To end testing auxiliaries, press **'END'** – This will return you to the menu system.

→ 16 EDIT PATTERN –

The Eurofire panel uses patterns to switch On/Off devices (alarms, zone sounders and auxiliary relays.) Patterns must be created and then assigned to zones, otherwise, the devices will not operate as required. The Eurofire has a total of 32 patterns available. Each zone can be allocated a number of patterns.

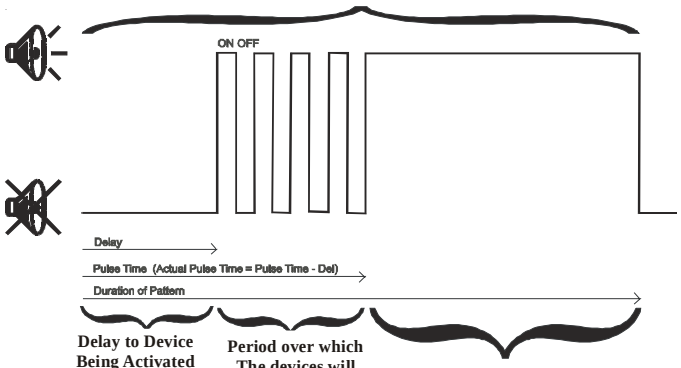
The Eurofire panel has been designed to allow flexible programming of the alarm and auxiliary relays. Each of the alarm and auxiliary relays can be programmed to be continuous or pulsed with or without an initial turn-on delay.

They can be programmed to operate for a period of upto 3600 seconds or until reset. Each Zone can be allocated a number of patterns. For example, pattern 1 could be programmed to activate alarm relay 1 and zone 3 is allocated to this pattern. Therefore when zone 3 is triggered the sounders on alarm circuit 1 will operate. Likewise Pattern 2 could be programmed to trigger alarm relay 4. This pattern could then be allocated to zones 3 to 9. Thus if a zone, between Z3 and 9 were to be activated then alarm relay 4 would be triggered. A pattern can be used/assigned to more than 1 zone. E.g. pattern 0 can be used/assigned to zone1, zone3 and zone5.

Patterns can be assigned to any zone or combination of zones as required. Thus the fire systems alarm response can be programmed to the individual needs of any particular installation.

Format of a pattern is shown below:-

The overall period of operation for the pattern. It is given by setting Pattern time. This can be to any time between 0-3600sec or until it is reset.



Delay to Device Being Activated From 0 to 600Sec

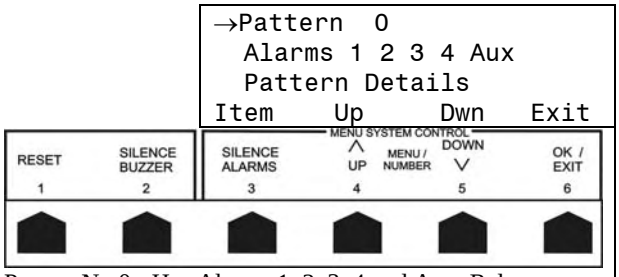
Period over which The devices will Be switched On/Off Pulse is adjustable In seconds from 0-3600 or until reset

Period over which the devices will be Activated. It is worked out by:- Subtracting pulse time from pattern time (pattern time - pulse)

If pulse time and pattern time are the same, set to CONT, the device will pulse until reset.

If pulse time is 0 and pattern time is set to CONT, the device will be activated until reset.

Selecting option 16 → **16 EDIT PATTERN**, from the Engineers menu will bring up a display similar to the one shown below:-



Pattern No 0 - Has Alarms 1, 2, 3, 4 and Aux. Relay assigned to it.
The contents of this pattern ie how it will operate, is found in **Pattern Details**.
You have to select **Pattern Details** and edit them to make the devices function how you require them - otherwise, they may not function how you intend them to.

→ Indicates line being altered.

The display shows-
Pattern No 0
Has Alarms 1, 2, 3, 4 and Aux. Relay assigned to it.

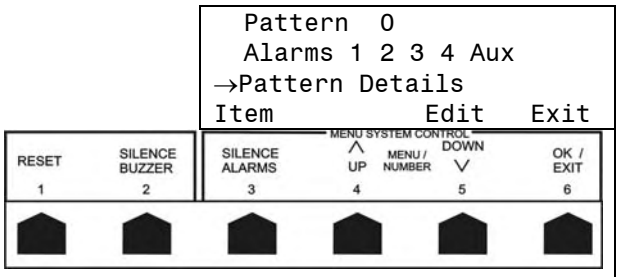
Details of the pattern format is found in- Pattern Details.

Button 3 Item, Moves →, to next line.
Button 4 Up, Increments what → is pointing to.
Button 5 Dwn, Decrements what → is pointing to.
Button 6 Exit, Exits from editing patterns.

1) To view a different pattern number:-
Using **Button 3 – Item**. Move pointer (→**)** until it is at:- **→Pattern 0 (or another number)**
Using either **Button 4 or 5** to scroll up and down through the list of patterns.

2) To alter the Alarm devices:-
Using **Button 3 – Item**. Move pointer (→**)** until it is at:- **→ Alarms 1 2 3 4 Aux (or other)**
Using either **Button 4 or 5** to scroll up and down through the list / combination of available devices.

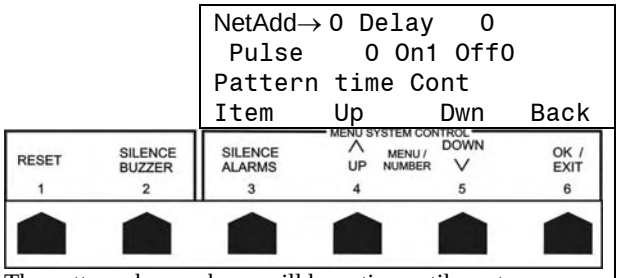
3) To view and/or edit the details of the pattern
Using **Button 3 – Item**. Move pointer (→**)** until it is at:- **→Pattern Details**
Then press **Button 5 – Edit** – To access the pattern details.



→ Indicates that pattern details to be edited or viewed.

Button 3 Item, Moves →, to next line.
Button 5 Edit, This will allow you to edit the details of pattern 0.
Button 6 Exit, Exits from editing patterns.

Pressing Button 5, to edit the pattern details will display the details associated with the pattern:-
For example, selecting – Edit to pattern 0 shown above, will display the details of pattern 0, for example:-



The pattern shown above will be active until reset.

→ Indicates which option will be modified

Button 3 Item, Moves →to next option.
Button 4 Up, Increments option being pointed to.
Button 5 Dwn, Decrements option being pointed to.
Button 6 Exit, Exits from editing pattern the pattern details.

Please Note, A pattern with NetAdd 0, will cause the devices to ring locally on the panel.

NetAdd:- This is the network address of the panel where the pattern will operate. Network addresses where patterns can be sent to is 1 to 31. If a pattern is to ring locally on the panel, NetAdd is set to 0 – it should also be set to address 0 if the panel has been given a network address other than 0.

If a pattern is to operate on another panel, NetAdd should be set to the address of the panel where the pattern is to operate.

Only 1 network address can be assigned to a pattern. If a pattern is to ring on a number of panels, then other patterns will have to be created, each of which contains a different network address of where the pattern is to ring.

Delay:- Is a delay before devices are activated – it can be set between 0 to 600Sec, default is 0Sec.

Pulse:- This is the length of time in seconds for which devices will be switched on and off as per the ON & OFF settings. Pulse time is set in seconds from 0 to 3600 and then continuous. Default is not pulsing and is set as 0.

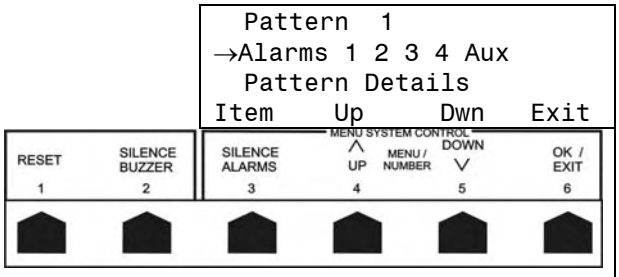
On:- If the pattern is to be pulsing, this is the pulse ON time in seconds. If the pattern is not to be pulsing ON is set as 1 for default.

Off:- If the pattern is to be pulsing, this is the pulse OFF time in seconds. If the pattern is not to be pulsing OFF is set as 0 for default.

Pattern Time:- Is the overall duration of which the pattern will operate. It is set in seconds from 0 to 3600 and then continuous. Default duration is continuous.

For example, pattern 1 consisting of all alarms and Auxiliary relay is to be activated at another panel whose network address is no 2. The pattern should be alarms1,2,3&4 and auxiliary relay on until reset (one out-all out situation) without there being a delay to activation.

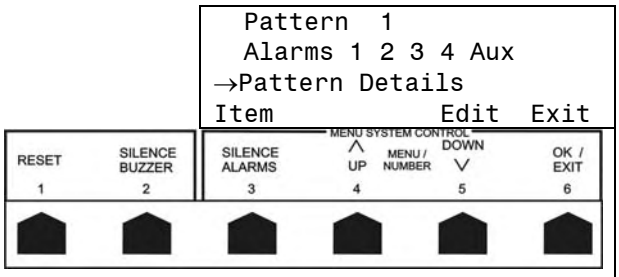
1) Set pattern 1 and alter devices until Alarms 1, 2, 3, 4 and Aux. Relay:-



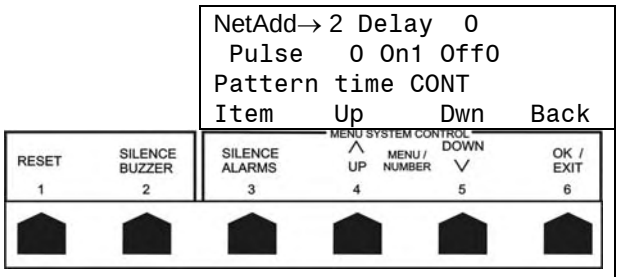
→ Indicates that pattern devices are being edited.

Button 3 Item, Moves pinter(→) to next line.
Button 4 Up, Alters devices upwards.
Button 5 Dwn, Alters devices downwards.
Button 6 Exit, Exits from editing patterns.

When pattern number and devices are correct, Press button3 (Item) until at, **→Pattern Details.** Then press button 5 (Edit) ie.



2) Set pattern details to NetAdd 2, delay 0, Pulse 0, On 1, Off 0 and Pulse Time CONT:-



→ Indicates option to be modified.

Netadd = network address No2 (where the pattern will be activated.)
Delay = 0 Seconds.
Pulse time = 0 Seconds.
(alarms will be pulsed for 0 sec)
On time = 1 sec Off time = 0sec.

Pattern Time = CONT (until reset.).

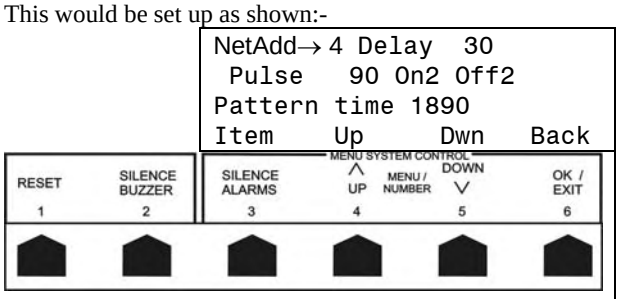
Button 3 Item, Moves →to next option.
Button 4 Up, Increments option being pointed to.
Button 5 Dwn, Decrements option being pointed to.
Button 6 Exit, Exits from editing pattern the pattern details.

The pattern must then be assigned to a zone or number of zones – this is done in option 17 ASSIGN ZN PTRNS.

Therefore when a zone goes into fire, all patterns that are assigned to that zone will be activated.

A more complex pattern would be for example:-
The pattern has a 30 second delay, then pulses for 60 seconds with a period of 2 seconds On and 2 seconds Off. The alarms are then to be On for 30 minutes (1800 seconds). The pattern is to be active on panel 4.

This would be set up as shown:-



Netadd = network address No4 (where the pattern will be activated.)
Delay = 30 Seconds.
Pulse time = 90 Seconds.
(alarms will be pulsed for 90-30=60 sec)
At a rate of :-
On time = 2 sec Off time = 2sec.

Pattern Time = 1890
(which is 1890-90=1800sec or 30mins).

The Eurofire control panel is supplied with the following settings as default:-

Conventional - FEUN

Pattern	Device	Period	Where Assigned to
Ptrn 0	Alarms 1,2,3,4	Continuous	Evacuate & Class Change
	(NetAdd=0; Delay=0; Pulse=0; On=1; Off=0; Pattern Time=CONT)		
Ptrn 1	Alarms 1,2,3,4	Pulsing (1sec on/off)	Bomb Alert
	(NetAdd=0; Delay=0; Pulse=CONT; On=1; Off=1; Pattern Time=CONT)		
Ptrn 2	Alarms 1,2,3,4 & Auxiliary Relay	Continuous	All Zones
	(NetAdd=0; Delay=0; Pulse=0; On=1; Off=0; Pattern Time=CONT)		

Alarm Sense - FEWN

Pattern	Device	Period	Where Assigned to
Ptrn 0	Alarms 1,2,3,4	Continuous	Evacuate & Class Change
	(NetAdd=0; Delay=0; Pulse=0; On=1; Off=0; Pattern Time=CONT)		
Ptrn 1	Alarms 1,2,3,4	Pulsing (1sec on/off)	Bomb Alert
	(NetAdd=0; Delay=0; Pulse=CONT; On=1; Off=0; Pattern Time=CONT)		
Ptrn 2	Alarms 1,2,3,4 & Auxiliary Relay	Continuous	All Zones
	(NetAdd=0; Delay=0; Pulse=0; On=1; Off=0; Pattern Time=CONT)		
Ptrn 3	All Zone Sounders	Continuous	All Zones, Evacuate, Class Change
	(NetAdd=0; Delay=0; Pulse=0; On=1; Off=0; Pattern Time=CONT)		
Ptrn 4	All Zone Sounders	Pulsing (1sec on/off)	Bomb Alert
	(NetAdd=0; Delay=0; Pulse=CONT; On=1; Off=0; Pattern Time=CONT)		

In order to set up patterns:-

1) Decide on how the pattern is to operate:-
Delays, Continuous or Pulsing, devices to be active, network address of where the pattern is to ring etc.

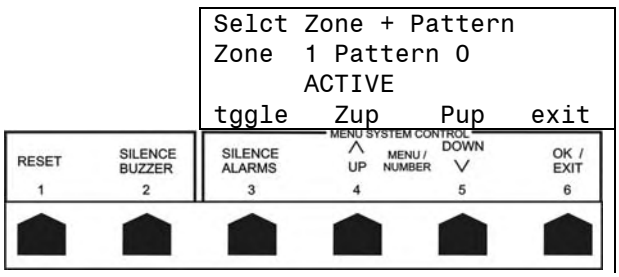
2) Check what patterns are currently active on the panel – use menu options 16 'edit patterns' and 17 'assign zn pttrns'.

3) Using option 16 'EDIT PATTERNS'.
Create the required pattern or patterns.

4) Once all patterns have been created, assign them to the zones that they are to be activated from – use option 17 'ASSIGN ZN PTTRNS'. Any number of patterns can be assigned to any or all of the zones.

→ 17 ASSIGN ZN PTTRNS –

Assigns patterns to a zone or number of zones. When a fire is detected on a zone, the patterns assigned to that zone will operate as per the pattern programming from Option 16 EDIT PATTERN.

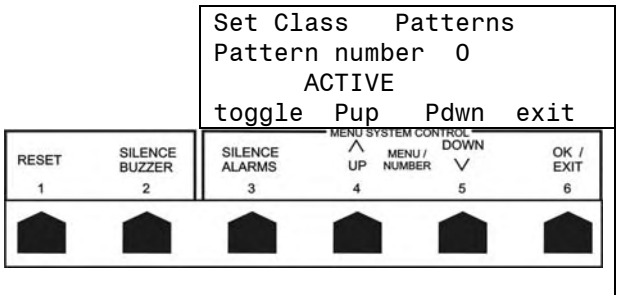


Shows that when Zone 1 is in fire Pattern 0 will Activate.
Button 3 – tggle will make the pattern Active or Unused for that zone.
Button 4 – Zup moves to next zone.
Button 5 – Pup moves to next pattern.
Button 6 – exit returns back to menu system saving the settings at same time.

Please note, any or all of the patterns can be assigned to any or all of the zones.

→ 18 ASSIGN CLASS PAT –

This assigns Class Change to a pattern. When Class Change is activated then the patterns assigned to it will operate.



Shows that when class change is activated Pattern 0 will Activate.

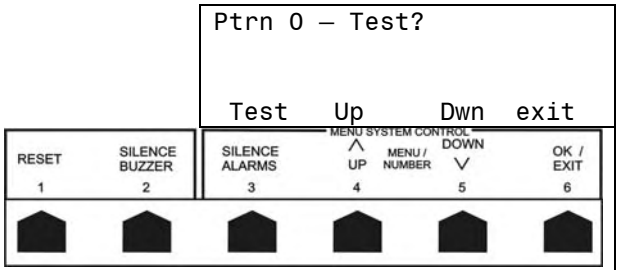
Button 3 – toggle will activate and deactivate the pattern.
Button 4 – Pup moves to next pattern.
Button 5 – Pdwn moves to previous pattern.
Button 6 – exit returns back to menu system saving the settings at same time.

By default Pattern 0 is assigned to Class Change (Pattern 0 is AL1,2,3 &4 activated continuously)

→ 19 ASSIGN BOMB PAT – Assigns pattern to Bomb Alert in the same way as Class Change.
→ 20 ASSIGN SPECL PAT – Assigns pattern to the Programmable Input in the same way as Class Change.
→ 21 ASSIGN EVAC PAT – Assigns pattern to Evacuate in the same way as Class Change.

→ 22 TEST PATTERN –

Allows you to operate the pattern without having to put the panel into a fire condition. This allows you to verify that a pattern is correct before it is assigned to a condition.



Allows a pattern to be operated before assigning it to a condition.

Button 3 – Test causes the pattern to operate.
Button 4 – Up next pattern.
Button 5 – Dwn previous pattern.
Button 6 – exit returns back to menu.

→ 23 SET ZONE CONFIG – Sets zone configuration ie. Conventional, Two Wire, Latching/Unlatching etc.

Zones can be individually configured to be either conventional or Two Wire (Alarm Sense.) The control panel can therefore be configured as either:-

- All zones are Conventional only.
- All zones are Alarm Sense (Two Wire) only.
- Or a mixture of Conventional and Alarm Sense zones, i.e some zones are configured as Conventional and some configured as Two Wire (Alarm Sense.)

When setting a zone as conventional, the options available are:-

- Latching or Unlatching zone.
- 470Ohm or Short Circuit fire detection.

When a zone is set as conventional, these should also be set as required for the installation.

When setting a zone as Two Wire (Alarm Sense), option available for the zone setting is:-

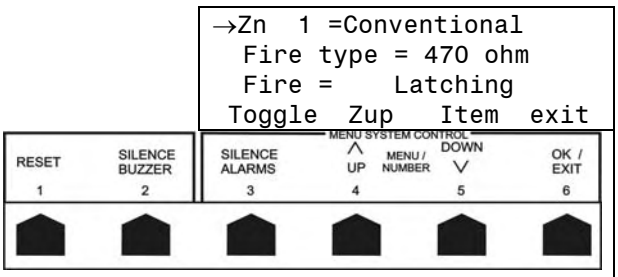
- Latching or Unlatching zone.

This should be set as required for the installation.

The Eurofire panels are supplied as either:-

- Conventional only (470Ohm and Latching fire condition) – FEUN. or
- Alarm Sense (Two Wire) only (Latching fire condition) - FEWN.

On entering option **23 SET ZONE CONFIG**, the LCD will display the following menu.



→ Indicates which line of options is being modified.

Button 3 – Toggle changes the setting of the line being modified.
Button 4 – Zup moves to next zone.
Button 5 – Item moves the pointer --> to the next line on the LCD.
Button 6 – exit returns back to menu system and saving settings

On the Eurofire PCB each zone contains a mini jumper - these are used to program voltages onto the zone.

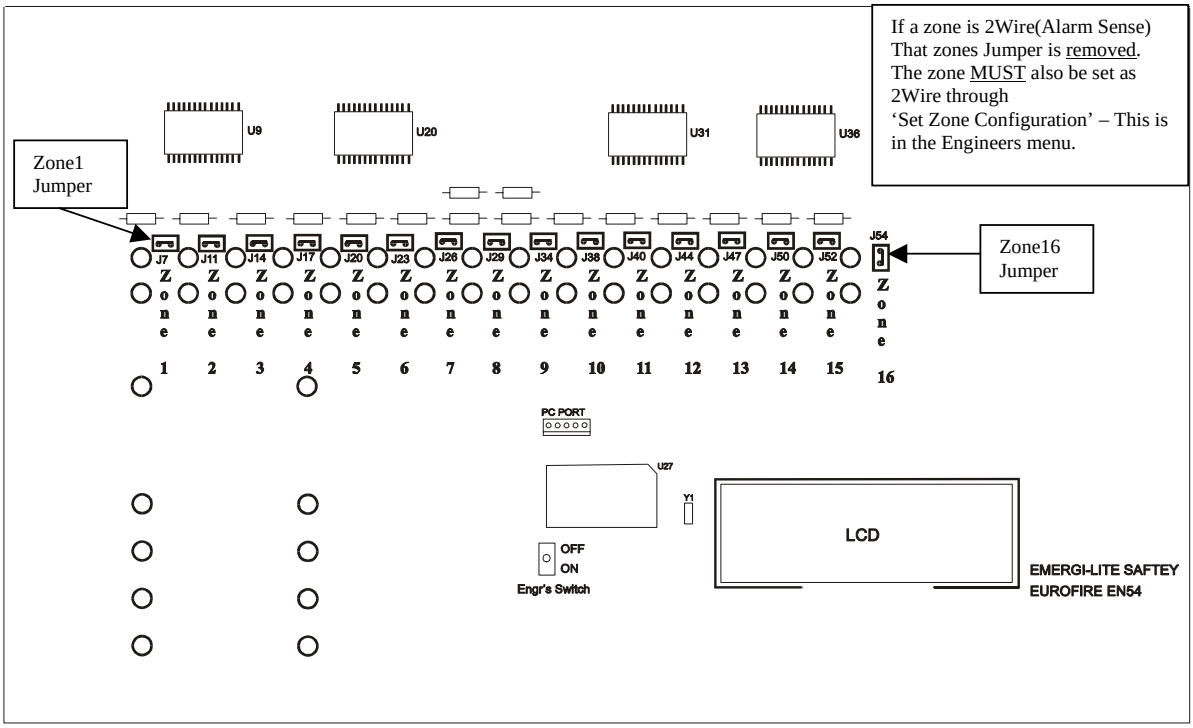
Depending on the method of fire detection on the zone, the jumper is either left in place (Conventional 470Ohm) or removed (Two Wire Alarm Sense.)

REMOVING OR LEAVING THE JUMPERS WILL ENSURE THAT THE CORRECT VOLTAGE IS SUPPLIED TO THE DETECTORS.

IF THE JUMPERS ARE SET INCORRECTRLY FOR THE DETECTORS - IT WILL RENDER THE FIRE PANEL INCAPABLE OF DETECTING FIRES.

- **IF A ZONE IS SET AS CONVENTIONAL – THE JUMPER FOR THAT ZONE IS LEFT ON THE PCB.**

- **IF A ZONE IS SET AS TWOWIRE (ALARM SENSE) – THE JUMPER IS REMOVED.**

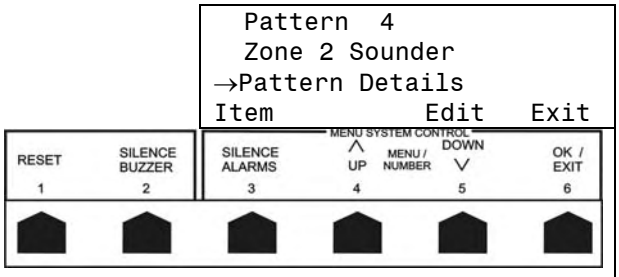


Note, When the configuration of a zone is altered (conventional to TwoWire or TwoWire to conventional,) all alarm ringing patterns assigned to the zone must be checked to see that they are still valid.

IF ZONE SOUNDERS ARE USED, PATTERNS WILL HAVE TO BE ALTERED/CREATED SO THE SOUNDERS ARE ACTIVATED AS REQUIRED WHEN THERE IS A FIRE ACTIVATION. SEE OPTIONS 16 EDIT PATTERNS & 17 ASSIGN ZONE PATTERNS

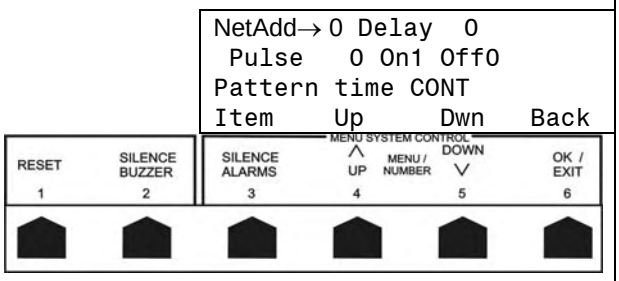
To alter a Conventional zone in to a TwoWire (Alarm Sense) zone, for example Zone 2:-

- Remove Link J11 – This will ensure that the correct voltage is put on to the zone 2.
- Through option 23. → **23 SET ZONE CONFIG,** Set the configuration of Zone 2 to **TwoWire**.
- If sounders have been installed onto the zone, alarm patterns will have to be created so that the sounders activate in a fire condition:-
- Through option 16 - → **16 EDIT PATTERN** – Create a pattern that will activate zone 2 sounders.



Ensure that Zone 2 Sounder is selected in the pattern.

Then edit the pattern details so that the sounder will operate as required, for example, sound until reset:-
See below:-



NetAdd 0 – To ring locally on the panel.
Delay = 0 Seconds.
Pulse time = 0 Seconds.
(alarms will not be pulsed)
Durn = CONT (sounder will be activated until panel is reset or silenced)
On time = 0 sec Off time = 0sec.

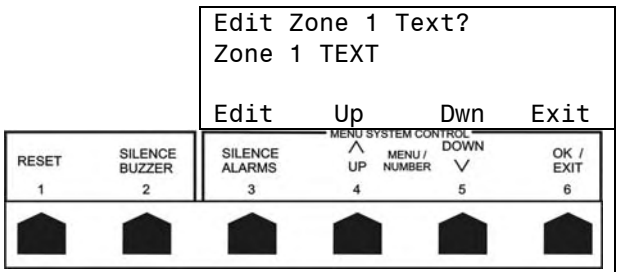
- Through option 17 - → **17 ASSIGN ZN PTTRNS** – Assign this pattern to all zones.
  The sounder will now activate when any zone goes into fire.

To alter a zone to Conventional from Two wire – for example change zone 2 to Conventional from TwoWire.

- Insert link into J11 – This will put the correct voltage on to zone 2 for conventional detectors.
- Through option 23. → **23 SET ZONE CONFIG,** Set the configuration of Zone 2 to **Conventional**.
- Through option 16 - → **16 EDIT PATTERN** and option 17 → **17 ASSIGN ZN PTTRNS** – Check that the patterns for zone 2 are still correct and valid – They may require modifying or removing.

→ 24 ENTER ZONE TEXT –

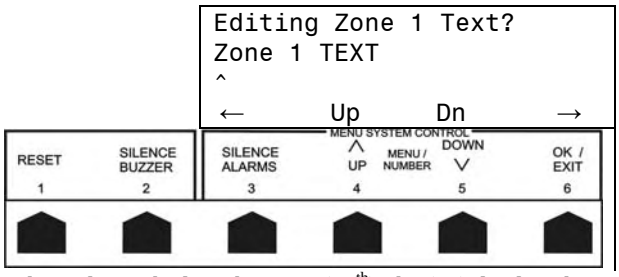
This function allows text to be entered against each of the available zones. The text is one line of 20 characters which is displayed on the LCD when there is a fire condition on the zone.



Button 3 – Edit will allow you to edit the text shown on line 2.

Button 4 – Up moves to next zone text
Button 5 – Dwn moves to previous zone text.
Button 6 – exit returns back to menu system saving the changes.

When **button 3 Edit** is selected, will bring up the editing menu:-



Button 3 – ← moves cursor (^) to previous character.

Button 4 – Up edits character upwards.
Button 5 – Dn edits character downwards.
Button 6 – → moves cursor (^) to next character.

When editing the last character (20th), the (→**)** display changes to 'EXIT'. This will return you to the previous menu.

→ 25 EDIT USER TEXT – This is the text that is displayed as the 'system healthy message ' Please refer to 'Enter Zone Text' above when editing the user text.

→ 26 Blank

→ 27 SETUP NETWORK –

Networking allows the signalling of fires, faults, evacuates, and alarm ringing patterns to other Eurofire EN54 panels and Repeater panels. Networking allows the reporting and control of information from panels located in adjacent buildings etc.

The panel signals using a two wire (4 for repeaters – 2 power and 2 signal) interconnection based on CAN (Control Area Network) Networking. This allows the devices to be up to 1000M apart (using the appropriate cable to meet requirements of BS5839-1 : 2002.)

The devices that can be networked are:- 1) Other Eurofire EN54 panels. 2) Eurofire EN54 Repeaters.

1) Eurofire EN54 Panels

Fire: The Eurofire EN54 will signal fires to other Eurofire EN54 panels. It will pass the panel network address, the zone number and zone text. The panel also sends ringing information (patterns) on the network.
The Eurofire EN54 sends ringing information (patterns) to repeater panels networked to it.

Evacuate: Alarm patterns if programmed are sent to other Eurofire EN54 panels and Repeaters.

Class Change: Alarm patterns if programmed are sent to other Eurofire EN54 panels and Repeaters.
Bomb Alert:
& Prog. Input:

Silence: Alarm silence signals are sent to other Eurofire EN54 panels and Repeaters.

Resound: Alarm resound signals are sent to other Eurofire EN54 panels and Repeaters.

Reset: Reset signals to other Eurofire EN54 panels and Repeaters.

Fault: The Eurofire EN54 will signal faults to other Eurofire EN54 panels and Repeaters.
It sends panel network address, zone no. if applicable, and also the nature of the fault.

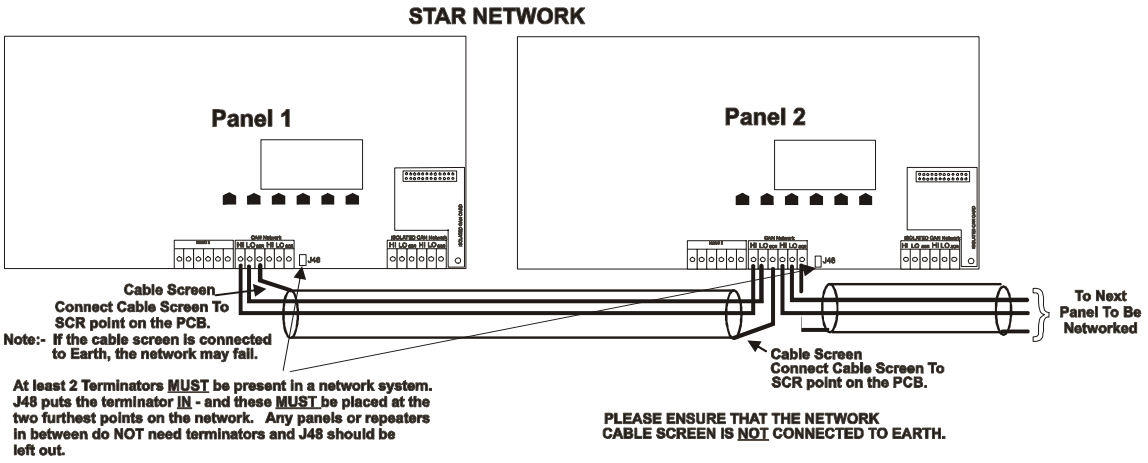
2) Eurofire EN54 repeaters

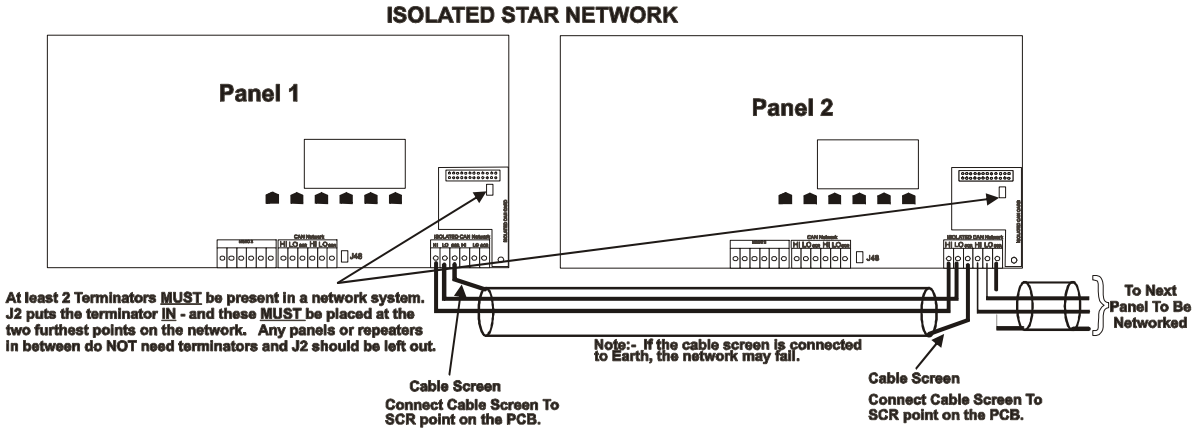
The repeater gives all visual indications and allows control of a Eurofire EN54 control panel remotely - all user functions are available at the repeater. Contact Emergi-lite safety systems for more information.

There are three methods of networking Eurofires and Repeaters together:-

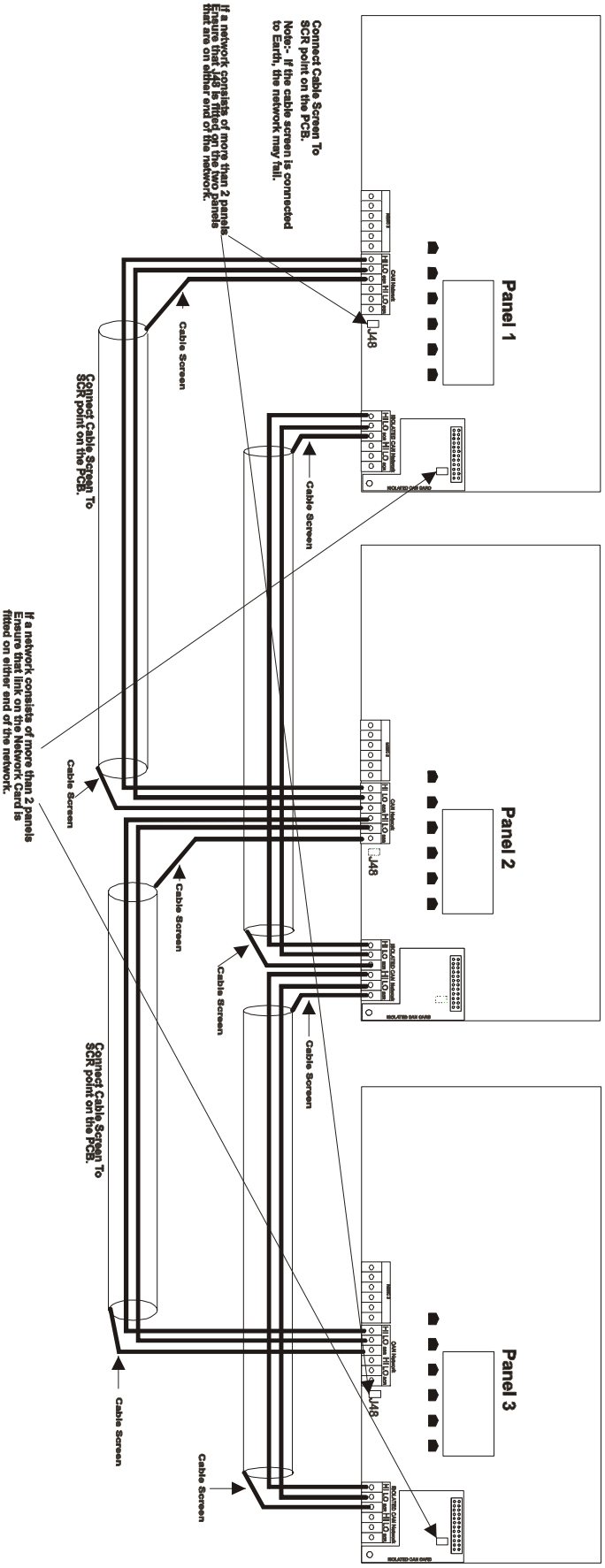
- Star.
- Isostar - This is Isolated Star connection, using a network isolator card
- DualStar- This configuration, requires a network isolator card.
  With the DualStar, the network is wired as both Star and Isostar. Should a fault occur on any one set of the wiring, the network will still operate using the other set of wiring.

Panel To Panel Networking

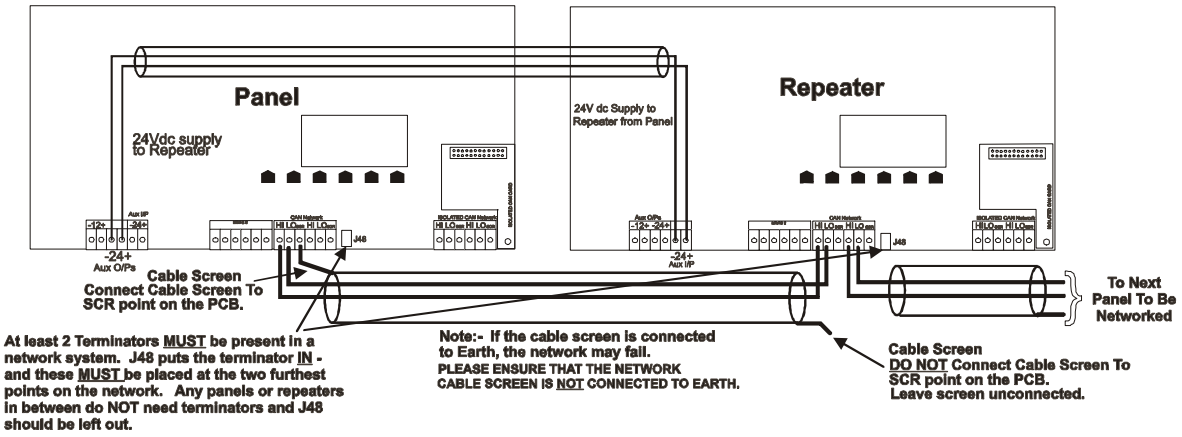




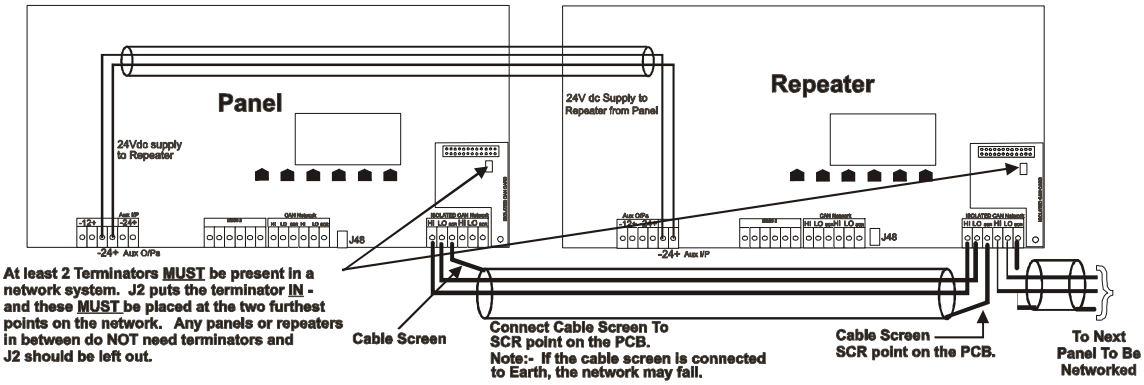
DualStar Panel Networking



STAR NETWORK



ISOLATED STAR NETWORK



To set up a network:-

1) Ensure that the wiring of the network is correct, and the network terminators are correctly placed for the installation. 2 terminators must be present in the networked system – they must be placed on panels or repeaters that are at the two furthest points on the network. Failure to do this could result in the network operating incorrectly or not operating at all.

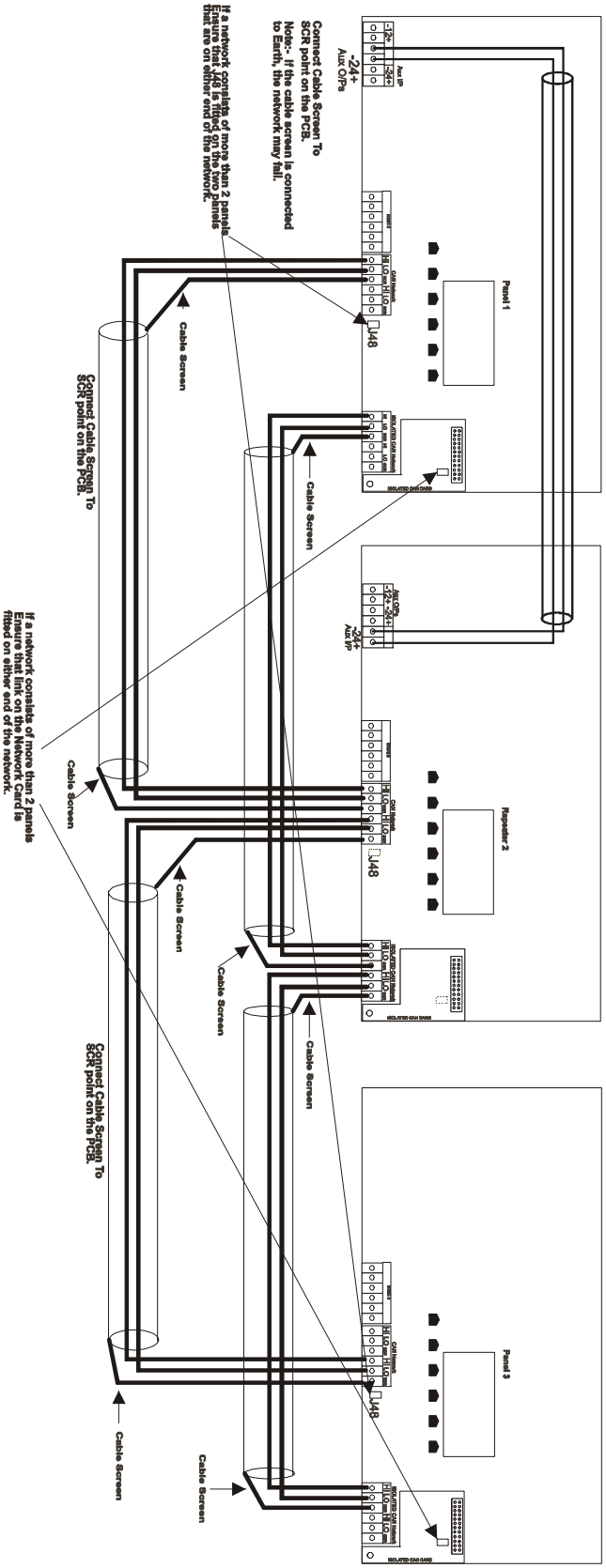
2) Each Panel/Repeater to be networked, must have its network address, method of networking (net mode) and the network speed set. If the net speed or method of networking (net mode) is set different to other devices on the network, the network will NOT operate.

   Ensure that each panel/repeater is given a different network addresses. Failure to do so will cause faults to occur with the networking.

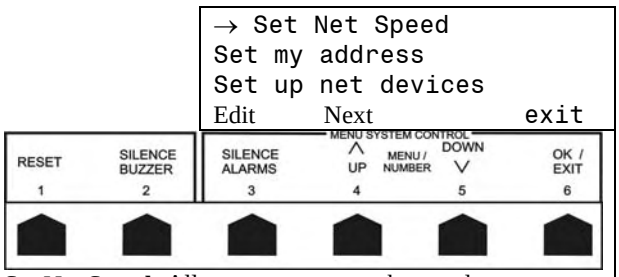
3) After all panels/repeaters have been addressed, go to each Panel and Repeater, and through the networking menu connect them to one another. This will ensure that all devices are networked to each other.

4) The network should now be setup. On each panel, if required, you should create ringing patterns – when a fire is detected on the panel, it will send all alarm ringing patterns that have been given a NetAddress to the other panels that are networked to it.
   The pattern is created like normal but you give the NetAdd address of the panel to where the pattern is to go to. A new pattern, one for each network address to where the pattern is to be activated will have to be created. This is done through options 16 Edit Pattern and 17 Assign Zn Pttrns.

DualStar Panel To Repeater Networking



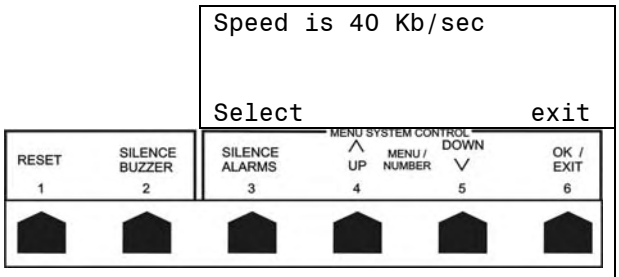
Setting the Network Address of a panel
On entering the networking menu, the LCD should display the following:-



Set Net Speed: Allows you to set up the panels networking speed – **ensure that the net speed is set the same for all panels otherwise the network will fail.**
Set my address: This allows you to set the network address of the panel.
Set up net devices: This allows you to connect other Panels or Repeaters to this panel.

button 3 Edit. This allows you to enter the function that is indicated by the cursor (→)
button 4 Next Moves the cursor between the available functions.
button 6 exit This returns back to the menu system saving all changes that have been made.

1) On selecting **Set Net Speed,** the display will change to:-

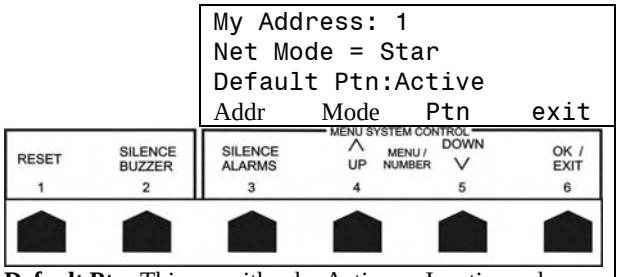


The network speed of this panel is set to 40Kbits per second

Button 3 – Select Allows you to change the network speed of this panel:-
- 15Kbits/sec
- 20Kbits/sec or
- 40Kbits/sec

Button 6 exit Returns back to previous menu saving all changes.

2) On selecting **Set my address,** the display will change to:



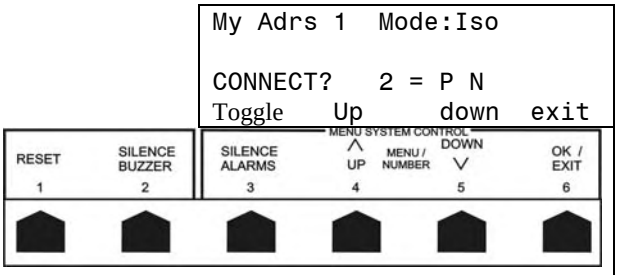
Default Ptn, This can either be Active or Inactive only. The default pattern, if active, is one that if a fire signal is received from another Eurofire EN54 panel, all alarms and auxiliary relay are activated on this panel. Therefore the panel from where the fire signal originates from does not have to send out patterns to other panels on the network if a one out – all out situation is required.
Note, If the one out – all out situation is required, then all panels on the network should have the default pattern set to active – if it set to inactive on any of the panels, the alarms and auxiliary relay will NOT activate on those panels when a fire signal is received.

This is factory set as active and also after a default panel.

The address of this panel is set to No.1 and the method of networking is Star (Star Connection)

Button 3 – Addr This allows you to change the network address of this panel. Moves through all available addresses from 1 to 32.
Button 4 sets the network configuration. This can be either:
OFF – Switched OFF
Star – Star mode.
Isostar – Isolated Star mode using isolating network cards
DualStar – Network wired as Star and IsoStar configurations.
Button 5 Ptr This toggles the default pattern as either Active or Inactive.
Button 6 exit Returns back to previous menu saving all changes.

3) On selecting **Set up net devices,** the display will change to:



button 3 Toggle Connect / Disconnects devices
button 4 & 5 Up & Dwn scrolls through network list
button 6 exit Returns to menu system saving all changes

The top line shows the address of this panel is 1 and is connected in Isolated Star configuration

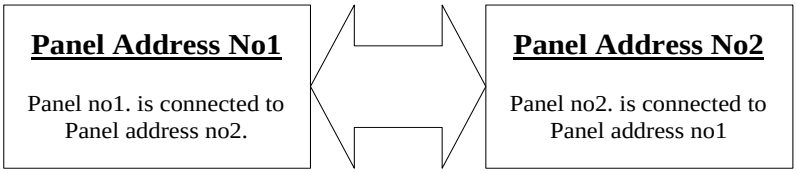
Line 3 shows that at address 2 there is a Panel (P), which is not connected (N) to this panel.

Pressing button3 toggle will connect panel2 to this panel (the 'N' will change to 'Y'.) Please note. For the network to be set up correctly, you must go to panel2 and connect panel 1 to it.

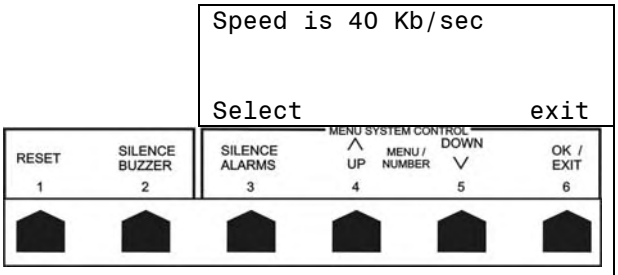
Devices seen on the network are shown as either P = Eurofire EN54 Panel or R = Eurofire EN54 Repeater, Their status is shown as Y=connected or N=not connected to this panel.

Should only be done when the network addresses and net modes for all panels/repeaters on the network have been set. For example:-
A network consisting of 2 panels, address 1 and address 2 networked in a star configuration.

Networking Together Two Panels.



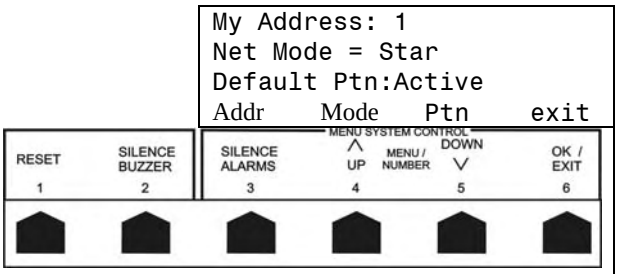
1) At both panels, set Net speed to 40 Kb/sec i.e. through **Set Net Speed**



Set network speed to 40Kbits per second
Button 3 – Select Allows you to change the network speed of this panel:-
- 15Kbits/sec
- 20Kbits/sec or
- 40Kbits/sec

Button 6 exit Returns back to previous menu saving all changes.

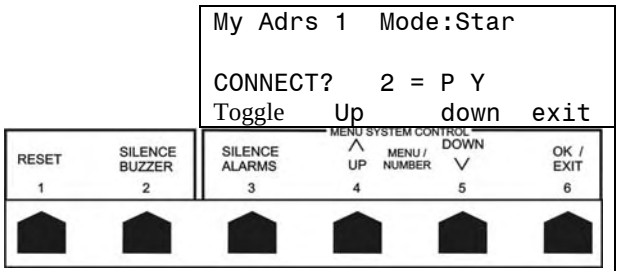
2) At each panel, set:- through **Set my Address**
   - Its network address (one to address 1, other to address2)
   - Set net mode for both panels to Star.
   - Set Default Ptn to Active on both panels.



The address of this panel is set to No.1 and the method of networking is Star (Star Connection)
Button 3 – Addr This allows you to change the network address of this panel.
Button 4 sets the network configuration.
Button 5 Ptr Toggles the default pattern
Button 6 exit Returns back to previous menu saving all changes.

3) The panels can now be networked to each other:- through **Set up net devices**

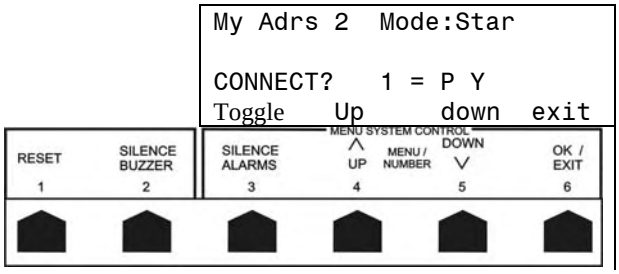
At Panel address No1, connect to it, the Panel address no2.



The top line shows the address of this panel is 1 and is connected in Isolated Star configuration
At address 2 there is a Panel (P), which is connected (Y) to this panel.

Pressing button3 toggle will connect / disconnect panel2 (this is indicated by the 'Y' or 'N'.)

At Panel address No2, connect to it, the Panel address no1.

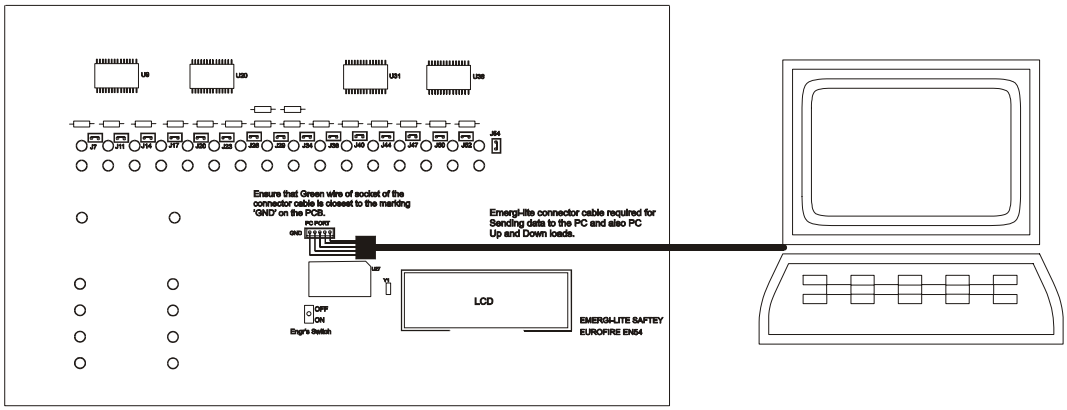


The top line shows the address of this panel is 2 and is connected in Isolated Star configuration
At address 1 there is a Panel (P), which is connected (Y) to this panel.

Pressing button3 toggle will connect / disconnect panel2 (this is indicated by the 'Y' or 'N'.)

→ 28 EVENT LOG TO PC – This sends the event (history) log to a PC.
ONLY SELECT THIS OPTION WHEN THE PC IS SET UP AND READY TO RECEIVE DATA FROM THE PANEL. **An Emergi-Lite Converter Cable is Required.**

Prior to sending data to the PC, connect the Converter Cable from the 'PC PORT' connection on the Eurofire EN54 PCB to the COM port of the PC.



A program such as 'HyperTerminal' is required to connect the PC to the Eurofire EN54 panel. The settings on 'HyperTerminal' for the connection are:-

Bits Per Sec = 4800, Data Bits = 8, Parity = None, Stop Bits = 1, Flow Control = None.

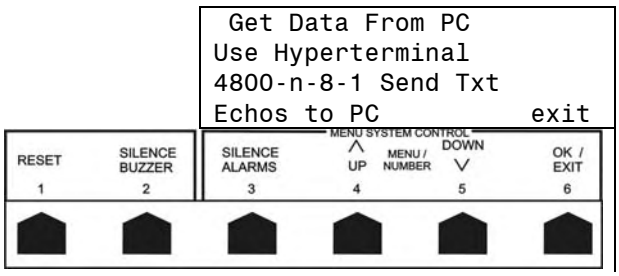
In 'HyperTerminal' choose the 'Transfer' tab and then select 'Capture Text', select a name and location where the file is to be saved.
Once the PC is set up to receive data from the Eurofire EN54 panel **Then select → 28 EVENT LOG TO PC**
The event log will now be sent to the PC.

→ 29 DATA PC>PANEL –

This function allows text and ringing patterns to be sent to the Eurofire EN54 from a PC.
In order to do this the following is required:-

- Text and ringing patterns created in a file.
- A PC with 'HyperTerminal' installed on it
- An Emergi-Lite Converter Cable.

1) Firstly set up the PC to Panel connection as shown above in 'EVENT LOG TO PC'.
2) Select option **→ 29 DATA PC>PANEL –** from the menu system of the Eurofire EN54. The Eurofire EN54 panel is now ready to received data from the PC, the LCD will show:-



The panel is ready to receive data from the PC

button 6 exit - Should you not want to get data from the PC. This will return you to the menu system.

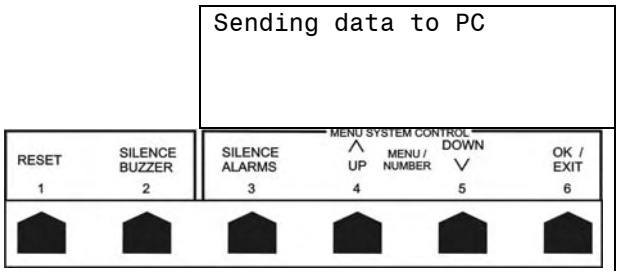
3) Start 'HyperTerminal' with the following settings:-
   Bits Per Sec = 4800, Data Bits = 8, Parity = None, Stop Bits = 1, Flow Control = None.
4) In 'HyperTerminal', from the 'TRANSFER' tab select the 'Send file…' option.
   Then select the file, which contains the text and ringing patterns, and then press 'send'

→ 30 DATA PANEL>PC – Sends text and ringing patterns of the Eurofire EN54 to a PC.

The following is required:-

- A PC with 'HyperTerminal' installed
- An Emergi-Lite Converter Cable.

1) Set up PC to Panel connection as shown above in 'EVENT LOG TO PC'.
2) Start 'HyperTerminal' with the following settings:-
   Bits Per Sec = 4800, Data Bits = 8, Parity = None, Stop Bits = 1, Flow Control = None.
3) In 'HyperTerminal', select 'TRANSFER' tab and then 'Capture Text', choose a name and location where the file is to be saved.
4) From the menu system of the Eurofire EN54, select option **→ 30 DATA PANEL>PC**. Text and ringing patterns will now be sent to the PC.



The panel is sending text and ringing patterns to the PC.

→ 31 CLEAR EVENT LOG –

This function clears all events from the event long.

→ 32 DEFAULT PANEL –

This function restores the panel to factory settings.
The default is done in stages so that specific settings can remain unaltered if required.

→ 33 CHANGE USER CODE –

This function allows the user code to be changed.
The user code can only be changed to one containing a combination of 3, 4, 5, and 6 only.
The user password is only changed if the new password is twice typed in the same.

EUROFIRE PROGRAMMING SHEET

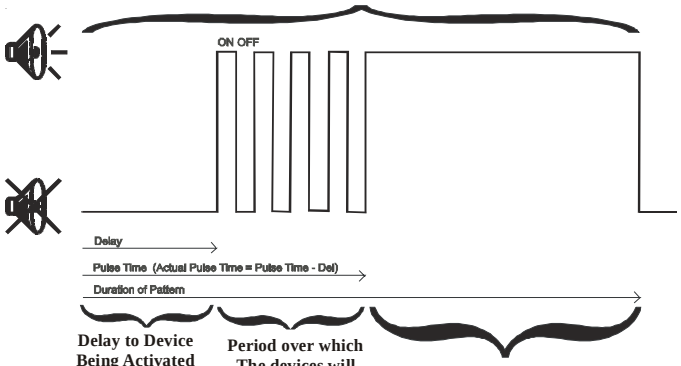
Customer:_____
Site:_____
Commission Date:_____/_____/_____
Panel Serial No:_____

ZONE	PAT	ZONE TEXT (20 characters)																			
1																					
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					
16																					

SYSTEM HEALTHY MESSAGE (20 Characters)																			

PATTERN PROGRAMMING

The overall period of operation for the pattern. It is given by setting Pattern time.
This can be to any time between 0-3600sec or until it is reset.



Delay to Device Being Activated From 0 to 600Sec

Period over which The devices will Be switched On/Off Pulse is adjustable In seconds from 0-3600 or until reset

Period over which the devices will be Activated. It is worked out by:-
Subtracting pulse time from pattern time (pattern time - pulse)

If pulse time and pattern time are the same, set to CONT, the device will pulse until reset.

If pulse time is 0 and pattern time is set to CONT, the device will be activated until reset.

Pttrn No	Device	Delay (sec)	Pulsing			Continuously Sounding (sec)
			Time (sec)	ON time (sec)	OFF time (sec)	
0						
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
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30						
31						

NETWORK PROGRAMMING

Type, P = Eurofire EN54 Panel, R = Eurofire EN54 Repeater Panel

ADDR	On/Off	TYPE	LOCATION TEXT (20 characters)																			
1																						
2																						
3																						
4																						
5																						
6																						
7																						
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