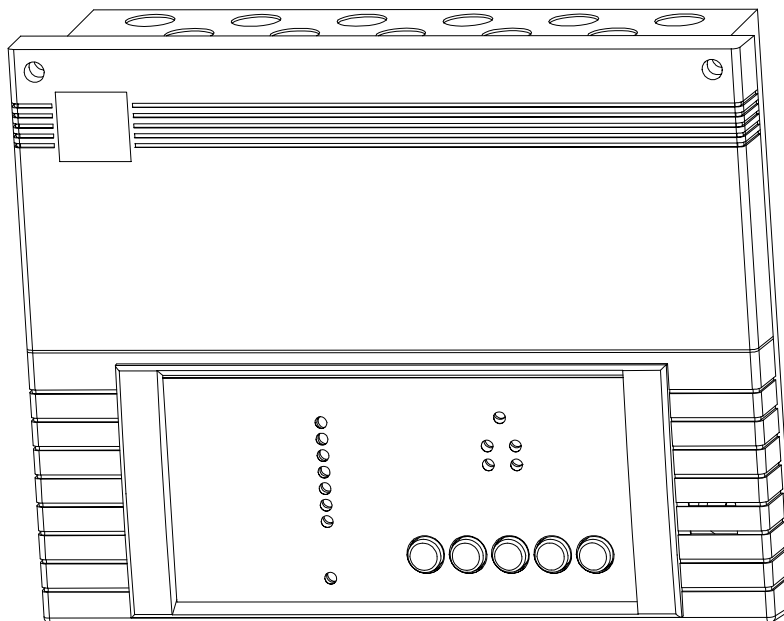


# LC1 & 2

## Fire Alarm Panel

**System installation, operating & maintenance  
instructions**




**ZIRCONLC1 One Zone Conventional Fire Panel**

**ZIRCONLC2 Two Zone Conventional Fire Panel**

Compliant with EN54-2:1998 & EN54-4:1998

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61640610 issue 5

## INSTALLATION INFORMATION

### General

Installation of this product must be carried out using the information given in this leaflet by a qualified electrician.

### BEFORE INSTALLATION ENSURE THE ELECTRICAL SUPPLY IS ISOLATED.

Installation of this product must be carried out using the methods and equipment specified in BS5839 Pt1 and EN54.

Consult the supplier if the equipment is to be installed in an environment where the ambient temperature regularly exceeds 30 °C (86 °F)

### Mounting location considerations

The fire alarm control panel should be mounted near to a permanent, low fire risk, Entry / Exit, for easy access by the Emergency Services. The panel should not be mounted in direct sunlight, or in a place where the ambient temperature is above 30 °C (86°F)

Mains must not be capable of being accidentally disconnected and the isolating switch should clearly state :

FIRE ALARM - DO NOT SWITCH OFF

Anti static precautions should be taken when installing the panel

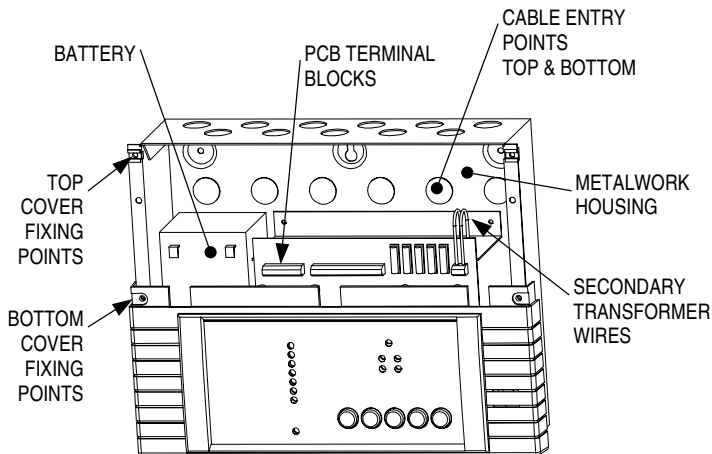


FIGURE 1 - Top cover removed for clarity

## 1 MOUNTING INSTRUCTIONS

- 1.1 In order to minimise the installation time, it is strongly recommended, that the following procedure is followed.
- 1.2 Remove plastic fascia by removing the two screws from the top plastic cover.
- 1.3 Disconnect the two secondary transformer wires from the terminals marked 'AC~' on the PCB. These are located on the right-hand side of the fire panel.
- 1.4 Remove the two screws that hold the bottom plastic cover in place, then lift away from fire panel housing. Store cover assembly in a safe place to prevent damage during initial installation.  
Note: **DO NOT REMOVE THE PCB FROM THE PLASTIC MOULDING.**
- 1.5 Using the back box as a Drill template, mark through fixing positions, prepare the fixing holes, and fit onto wall using an appropriate mounting system.  
Ensure the back box is not contaminated with drilling debris, e.g. brick dust, as this can adversely affect the electronic circuitry.
- 1.6 Prepare cable entries via the 20mm knockouts provided in the top and rear of back box using appropriate glanding system.
- 1.7 Remove any debris from the back box.

## 2 CONNECTING THE MAINS & BATTERY

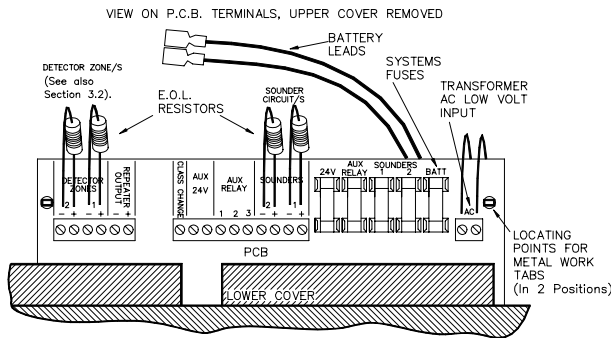
- 2.1 Connect mains wiring to terminal block in the back box as marked. Note: AN EARTH CONNECTION MUST BE MADE TO THE TERMINAL BLOCK AS MARKED.
- 2.2 With the mains supply isolated, replace the lower plastic cover assembly containing the PCB. Ensure the battery wires are routed to the top left-hand side of the back box and the transformer secondary wires are routed towards the right hand side. The PCB locating holes should engage on the metal mounting tabs shown in figure 2.
- 2.3 Reconnect the transformer secondary wires to the PCB terminals marked 'AC'.  
Note: Polarisation of this connection is unimportant
- 2.4 Fit and tighten the two securing screws that hold the PCB moulding in place. Ensure that the moulding has properly engaged at the bottom of the metal back box. Do not over tighten two retaining screws.
- 2.5 Fit battery into left-hand side of the back box and connect battery using leads supplied. Ensure correct polarity is always observed.  
**The panel is now active and will indicate a 'POWER FAULT' and "GENERAL FAULT" until the mains supply is re-instated, and the panel 'RESET'.**
- 2.6 Instate the mains supply, enter access code then press the 'RESET' button.
- 2.7 Check panel is operating normally. The panel should only show the green "POWER ON" indicator.

**2.8 You have now proved that the panel is free of faults.**

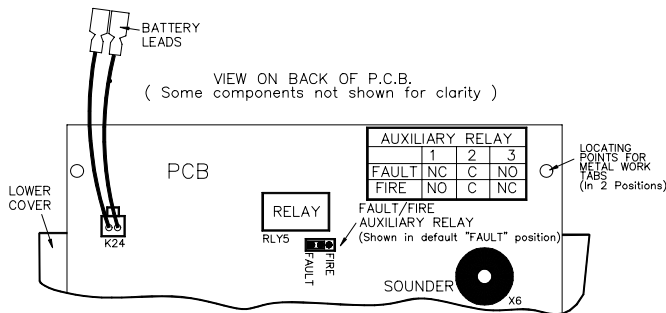
## 3 EXTERNAL WIRING - DETECTOR ZONE CONNECTION

This fire alarm control panel is supplied with End Of Line Resistor/s for the zone circuit/s. This is for use with just manual call points (Break Glass) units, however if removable smoke/heat detectors are used the End Of Line Resistor/s must be replaced with Active End Of Line Device/s (ZF19). Please note these units are polarised.

- 3.1 DISCONNECT MAINS SUPPLY & BATTERY.
- 3.2 Connect the zone wiring, one zone at a time, transferring either the End Of Line Resistor or Active End Of Line Device (ZF19), if removable smoke/heat detectors are being employed. The ZF19 devices are polarised and should be connected with Red/Orange wire to the +ve and Black to the -ve. See Figure 3 & 6 for typical application.
- 3.3 Repeat the above procedure until all the required circuits are connected.
- 3.4 Connect the sounder wiring one circuit at a time, transferring the end of line resistor to the last sounder on that circuit.
- 3.5 Repeat the above procedure until all the required sounder circuits are connected.
- 3.6 ReInstate the mains supply, enter access code then press the 'RESET' button.
- 3.7 Refit plastic fascia. Do not over tighten two retaining screws.



**FIGURE 2a - TERMINAL ARRANGEMENT**



**FIGURE 2b - FAULT / FIRE AUXILIARY RELAY**

**GENERAL DESCRIPTION**

Options included that are covered by EN54  
 Test Condition (10.0)  
 Fire Alarm Devices (7.8)

Ancillary functions provided but not required by EN54  
 Class change  
 Repeater

**Accessories:**

The panel is designed for use with CHLORIDE BARDIC ZF range of fire accessories.

**TECHNICAL SPECIFICATIONS**

**Power Supply requirements**

230Vac +10 - 15% 50Hz  
 Maximum Power consumption 50VA  
 Fuse rating - T125mA

The mains supply should be carefully wired using flat twin and earth of not less than 1mm<sup>2</sup> between the mains connector block and an externally mounted secure switched fused spur outlet with contact separation of at least 3mm. The switched spur unit should be fused with a 2A fuse.

**Battery**

24 Hour standby 1 x 12 V 2.6 Ah (minimum)  
 Fuse rating - F1.6A

**Weight**

4.2 Kg (including 2.6 Ah battery & carton) approx.

**Detection Circuits**

No more than 30 devices of any type per zone.  
 20 smoke or heat detectors maximum per zone.  
 30 Call Points maximum per zone.

**Alarm Sounder Circuits**

300mA total through 2 circuits.  
 Nominal Voltage 25.3V (+2.7V / -1V)  
 Fuse rating - F315mA

**Auxiliary 24V Supply**

This is specifically not for fire protection devices.  
 50mA maximum.  
 Nominal Voltage 25.3V (+2.7V / -1V)  
 Fuse rating - F125mA

**Auxiliary Relay**

Volt free change over contacts rated at 1A 30VDC  
 Fuse Rating 1A

Note, the Auxiliary relay is configured as a fault relay, as standard (EN54 requirement), however the relay can be configured as an auxiliary fire relay, by moving a jumper link from the fault position to the fire position on the back of the PCB.

AUXILIARY RELAY			
	1	2	3
FAULT	NC	C	NO
FIRE	NO	C	NC

The N/C and N/O contacts change position, when the jumper is moved to the fire position.

**Class Change**

Activated by using volt free N/O contacts between the -ve of AUX 24V output and the CLASS CHANGE output. See Figure 5 for typical application.

**Cablig**

Unless otherwise recommended, and taking into account voltage drop, not less than 1mm<sup>2</sup> is recommended.  
 Sounder circuits should use cable that is fire proof.  
 All cabling should be earthed to the metal back box via the cable gland.  
 Conductors carrying fire alarm power signals should be separated from conductors used for carrying other systems.

**OPERATING INSTRUCTIONS**

**Access to "SUPERVISOR MODE" for panel operation:-**

To operate this fire alarm control panel, it is necessary to gain access to the "Supervisor Mode", to do this enter the four digit security password code, on the yellow push buttons. This security code should have been given to the responsible person on system hand over.  
 After entering the correct code the "Supervisor Mode" LED will illuminate.

The panel will time out of "Supervisor Mode" if the 'RESET' button is pressed or 20 seconds have elapsed since the last button was pressed.

**The following functions can all be employed in the "Supervisor Mode".**

- **'SOUNDERS ON/OFF'**  
 If the sounders are silent, because either the panel is in alarm and the sounders have been "Silenced", or if there is no alarm, the sounders will be activated by pressing this button. If the sounders are on, and they are to be switched off, then press the 'SOUNDERS ON/OFF' push button to silence the alarm.
- **'RESET'**  
 This will cause all faults and fires conditions to be cancelled, if a fault still exists then it will re-appear within 10 seconds of this reset.
- **'MUTE PANEL'**  
 To silence the panel's internal buzzer press 'MUTE PANEL' push button. The panel will continue to beep at a reduced rate until the condition causing the buzzer to sound is rectified or reset.
- **'LAMP TEST'**  
 Hold down 'SELECT / LAMP TEST' push button for a minimum of two seconds. Release once the test is complete.

## DISABLEMENT AND TEST FUNCTIONS: -

### Test Zone –

This feature allows one person to check the detectors and sounders without having to return to the panel during the testing routine. When the appropriate zone is in test mode and a detector is activated, the sounder circuit/s will operate for a few seconds and then automatically reset.

- **Access “SUPERVISOR MODE”**
- Hold down ‘ADVANCE’ push button for at least 2 seconds.
- The “Test” LED will light and the Zone 1 Fault LED will flash at a fast rate (faster than the fault warning flash rate).
- If you do not wish to test this zone then press ‘ADVANCE’ to move to the second zone.
- To put the zone into “Test” press ‘SELECT / LAMP TEST’.
- If the zone is in “Test”, the LED is constant, and if it is to be deselected then press ‘SELECT / LAMP TEST’ again.
- Press ‘RESET’ button at any stage to accept settings and revert to normal operating mode.

### Disable Zone –

- Repeat the above process until the “Test” LED goes out and the “Disabled” LED illuminates.
- Use the ‘ADVANCE’ and ‘SELECT / LAMP TEST’ keys as previously described to select/deselect zones that are to be disabled.
- Press ‘RESET’ button at any stage to accept settings and revert to normal operating mode.

### Disable Sounders –

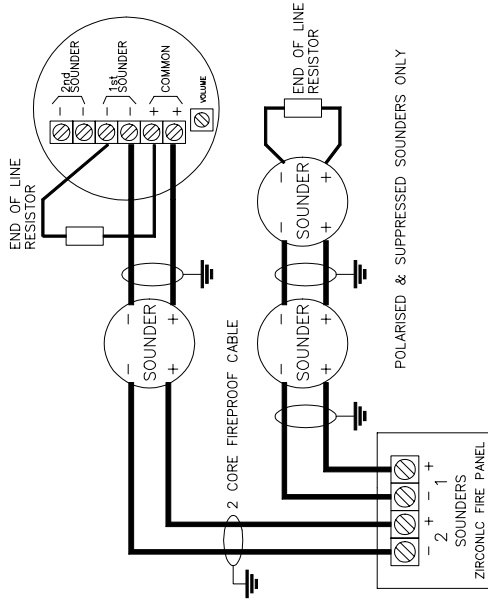
- After progressing through all the Test & Disable zones functions the “Sounder Fault / Disable” LED will illuminate.
- If the sounders are to be disabled/enabled use ‘SELECT / LAMP TEST’ push button.
- Press ‘RESET’ button at any stage to accept settings and revert to normal operating mode or press ‘ADVANCE’ once more to exit the panel from this test/disable loop.

## MAINTENANCE INFORMATION

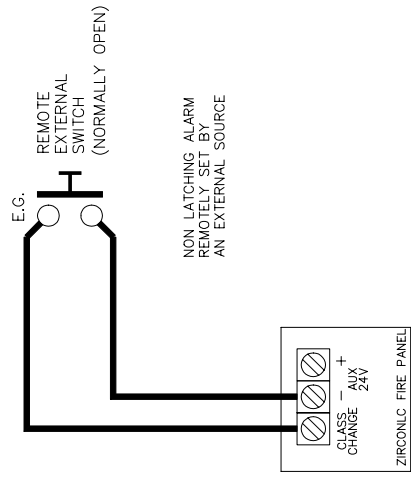
All the components of this panel have been selected for the intended purpose, and are expected to operate within their specification when the environmental conditions outside the panel comply with class 3k5 of IEC 721-3-3.

The battery has a manufacturers recommended life expectancy of 3-5 years.

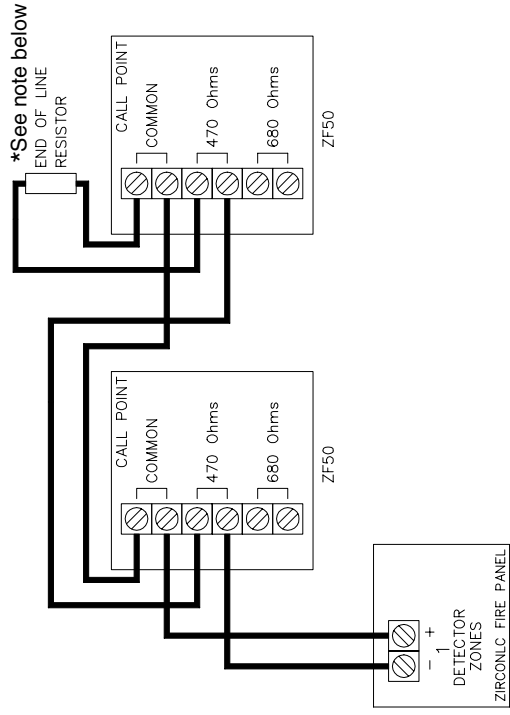
## TYPICAL FIRE PANEL APPLICATIONS



**Figure 3 - DETECTOR CIRCUIT**



**Figure 4 - SOUNDER CIRCUIT**



**Figure 5 - CLASS CHANGE**

**Figure 6 - CALL POINT**

\* If removable Detectors are used on the Zone Circuit, the End of Line Resistor MUST be replaced with an active End Of Line Module ZF19.

# CAUSE AND EFFECT CHART

Sounder	General Fire	General Fault	Zone Fire	Zone Fault/Disable/Test	Sounder Fault/Disable	System Fault	Power	Power Fault	Disabled	Test	Supervisor Mode	Code Entry Mode	Buzzer	Notes
○	○	○	○	○	○	○	●	○	○	○	○	●	○	Normal condition. System operating correctly in standby mode.
●	●						●			○			●/⊕	Fire condition. Detector or call point operated.
		●	*				●						*/⊕	Detector zone circuit fault. A detector has been removed or circuit wiring open or short-circuited.
		●		*			●						*/⊕	Alarm sounder circuit fault. Alarm circuit has open or short circuited or its protection fuse has ruptured.
			●				●		●					Disabled zone. Zone circuit has been disabled by Engineer for maintenance or test purposes.
○					●		●		●					Disabled sounder circuits. Contacts have been disabled by engineer for maintenance or test purposes.
		●				●	●						●	Watchdog tripped.
		●				*	●						*	ROM/RAM failure.
●/○	●/○		●				●			●			⊕	Test mode. Selected zone is being tested.
○	○	○	○	○	○	○	○	○	○	○	○	○	○	Total power failure.
		●				●	●	*					*/⊕	Partial power failure. a) Battery flat / failed / disconnected or rupture of battery cable or fuse (Fast flashing). b) Mains supply faulty or charger fault.
		●					●	*					*/⊕	c) 24V supply voltage faulty - used for detector and alarm zones.
		●				*	●						*/⊕	Auxiliary 24V supply voltage faulty or rupture fuse.
		●				*	●						*/●/⊕	System Failure.
							●				●	○	○	Supervisor Mode (Resets after 20 seconds after last button pressed)

○ = OFF

● = ON

\* = Pulsed on/off with equal duty cycle

⊕ = Pulsed intermittently every 8 seconds when alarm or fault indication has been silenced; or for Test Mode this state occurs 10 minutes after last triggered zone under test, as a reminder that the panel is still in Test Mode.

# FIRE PANEL LOG BOOK

SITE NAME ..... \_\_\_\_\_

SITE ADDRESS ..... \_\_\_\_\_

PERSON RESPONSIBLE... \_\_\_\_\_ DATE \_\_\_\_\_

SYSTEM INSTALLED BY.... \_\_\_\_\_ TELEPHONE \_\_\_\_\_


DATE INSTALLED ..... \_\_\_\_\_ DATE COMMISSIONED \_\_\_\_\_

MAINTAINED UNDER CONTRACT BY \_\_\_\_\_

SERVICE CONTRACT No. \_\_\_\_\_ UNTIL \_\_\_\_\_

No	TYPE & QTY				LOCATION	
	DETECTOR	CALL POINT	SOUNDER	QTY	ZONE 1	ZONE 2
1						
2						
3						
4						
5						
6						
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11						
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