

Data, installation, operation and maintenance

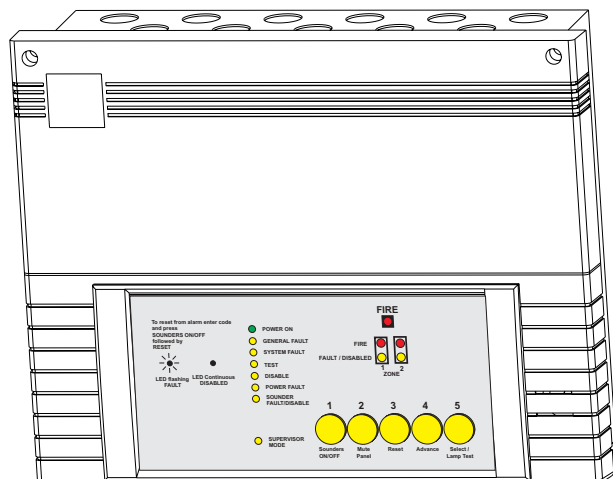
1 & 2 Zone Fire Panels

Zircon range



by Honeywell

ZIRCON



These instructions cover the:

ZIRCONLC1 : One-Zone Conventional Fire Panel

ZIRCONLC2 : Two-Zone Conventional Fire Panel

The panels are designed to meet the requirements of EN54-2:1996 & EN54-4:1996

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

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 1mm² 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) or 3.3Ah (maximum)

Fuse rating - F1.6A

Weight

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

Detection Circuits

20 smoke or heat detectors maximum per zone. (A maximum quiescent current of 1.2mA is allowed per zone circuit)

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.

Cabling

Unless otherwise recommended, and taking into account voltage drop, not less than 1mm² 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.

Installation information

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 in accordance with the requirements of BS5839 Pt1 and EN54.

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

 **Caution: Anti static precautions should be taken when installing the panel.**

Mounting instructions

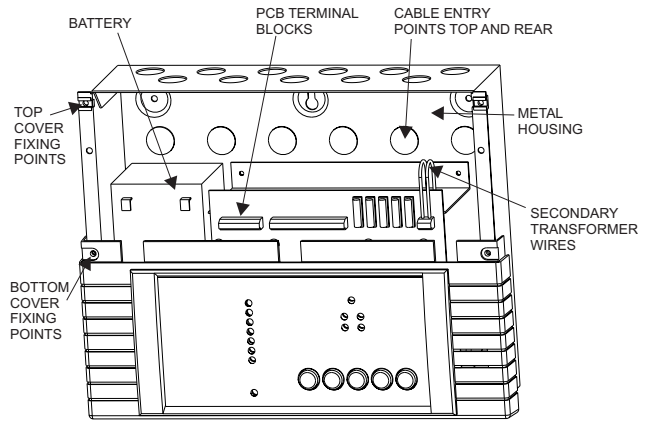


Figure 1 Panel with top cover removed

In order to minimise the installation time, it is strongly recommended, that the following procedure is followed:

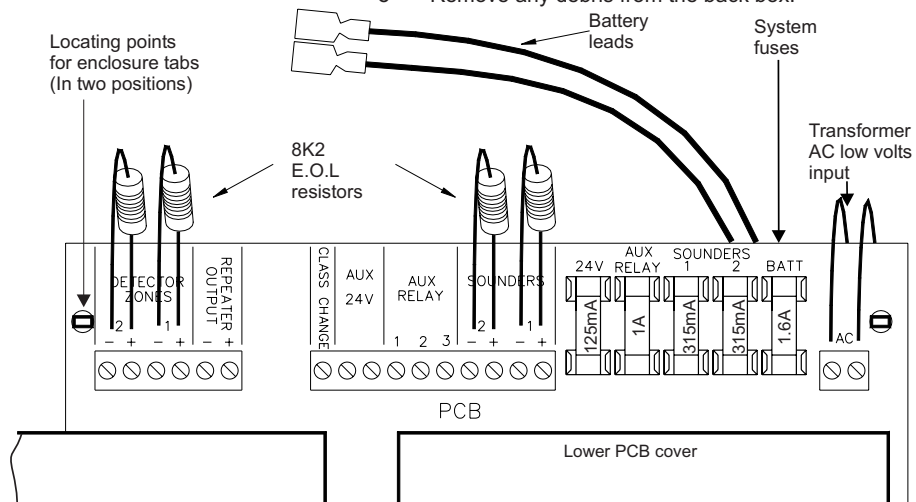
- 1 Remove plastic fascia by removing the two screws from the top plastic cover.
- 2 Disconnect the two secondary transformer wires from the terminals marked 'AC~' on the PCB. These are located on the right-hand side of the fire panel.
- 3 Remove the two screws that hold the bottom plastic cover in place, 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.

- 4 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.
- 5 Prepare cable entries via the 20mm knockouts provided in the top and rear of back box using appropriate glanding system.

- 6 Remove any debris from the back box.

Figure 2
Terminals and fuses



Wiring mains and battery

- 1 Configure the Auxiliary relay link for fire or fault operation. The factory default setting is activation on fault.

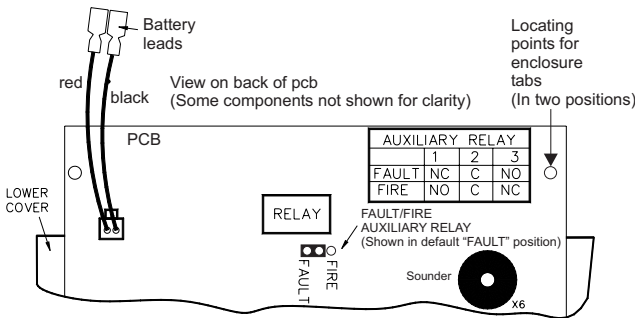


Figure 3 Setting the auxiliary relay operation

- 2 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.
- 3 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.
- 4 Reconnect the transformer secondary wires to the PCB terminals marked 'AC'.
Note: Polarisation of this connection is unimportant
- 5 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.
- 6 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'.
- 7 Instate the mains supply, enter access code then press the 'RESET' button, see operating instructions.
- 8 Check panel is operating normally. The panel should only show the green "POWER ON" indicator.
- 9 You have now proved that the panel is free of faults.

External wiring

The external wiring should now be connected to the fire panel.

The fire panel is supplied with End Of Line Resistors for the zone and sounder circuits, these must be transferred to the last device in the circuit.

The End Of Line Resistor must be replaced with Active End Of Line device if removable smoke/heat detectors are used on the zone circuit.. Please note these units are polarised.

- 1 DISCONNECT MAINS SUPPLY & BATTERY.
- 2 Connect the zone wiring, one zone at a time, transferring either the End Of Line Resistor or Active End Of Line Device, if removable smoke/heat detectors are being employed. The active end-of-line devices are polarised and should be connected with Red/Orange wire to the +ve and Black to the -ve.

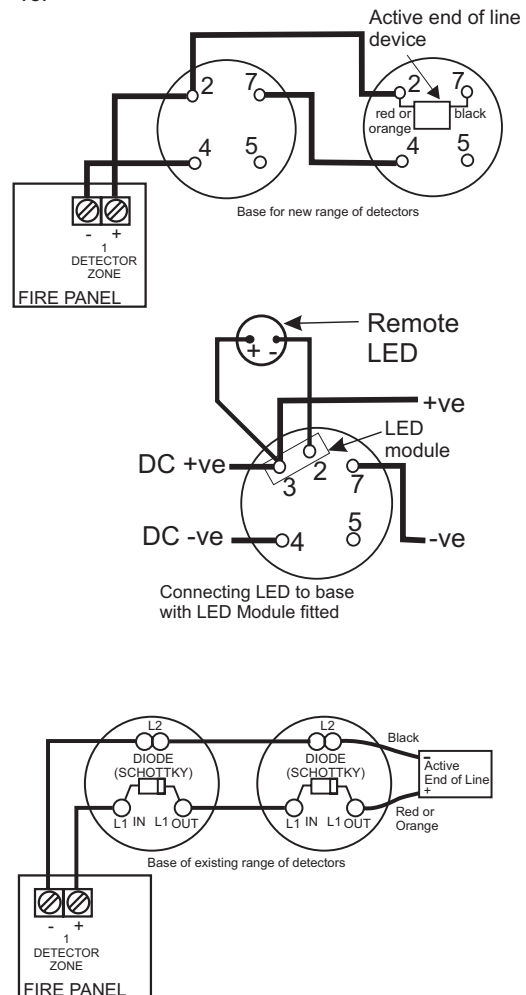


Figure 4 Connecting the Fire Detector and remote LED to a zone circuit

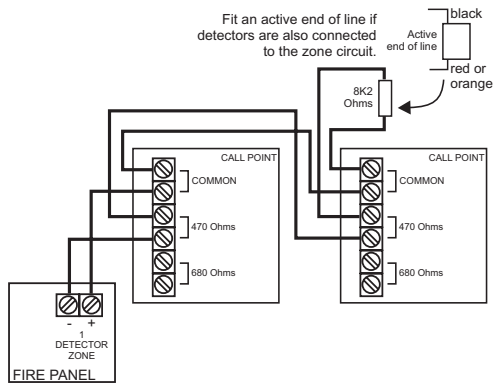


Figure 5 Connecting the manual call points

- 3 Repeat the above procedure until all the required circuits are connected.
- 4 Connect the sounder wiring one circuit at a time, transferring the end of line resistor to the last sounder on that circuit.

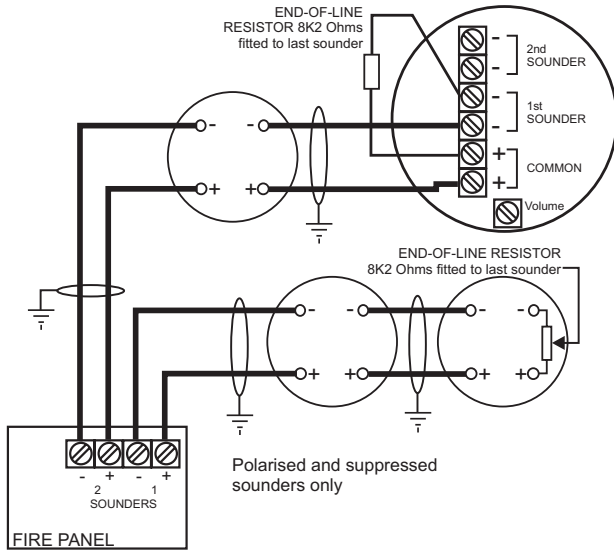


Figure 6 Connecting the Sounder circuit

- 5 Repeat the above procedure until all the required sounder circuits are connected.
- 6 Connect other external circuits as required

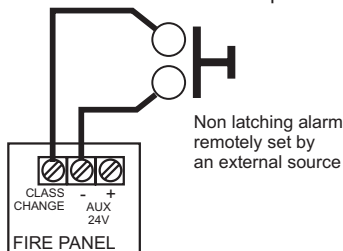
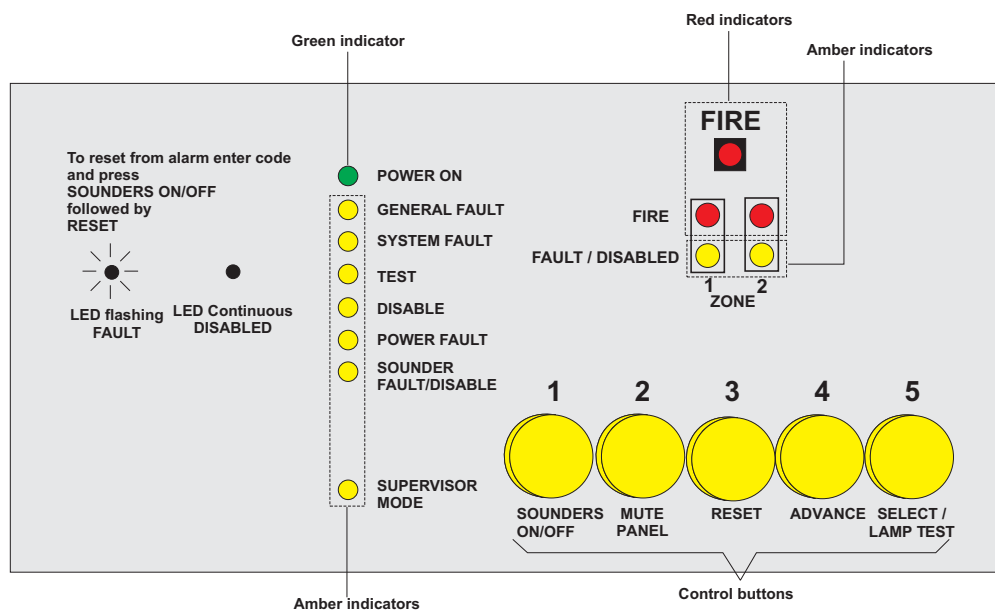


Figure 7 Connecting the Class change circuit

- 7 Reinststate the mains supply, enter access code then press the 'RESET' button.
- 8 Refit plastic fascia. Do not over tighten two retaining screws.

Operating instructions

Figure 8
Controls and
indicators



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”.

SOUNDER ON/OFF

If the panel is in alarm the sounders will sound, the sounder circuits may be silenced by pressing this button. If the sounders are silent by pressing this button they will be activated.

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.

SELECT - LAMP TEST

Hold down ‘SELECT / LAMP TEST’ push button for a minimum of two seconds. Release once the test is complete.

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.

- 1 Enter the access code to get into “supervisor mode” if not already entered.
- 2 Hold down the ‘ADVANCE’ push button for at least 2 seconds until you hear a double bleep.
- 3 The “Test” LED will light and the Zone 1 Fault LED will flash at a fast rate (faster than the fault warning flash rate) the flashing LED at this stage indicates that the zone is not in test!
- 4 If you do not wish to test this zone then press ‘ADVANCE’ to move on to the next zone.
- 5 To put the zone into “Test” press ‘SELECT / LAMPTEST’ (repeated pressing of this button will toggle the zone in and out of test mode!).
- 6 After you have pressed the select button you will see that the zone is now constantly lit, this indicates that the zone is now in test!
- 7 Once the site tests have been completed you may find that the keypad access timer has elapsed and that you will have to repeat points 1-4 to get to the appropriate zone in test.
- 8 To cancel the test mode and return a zone back to normal operation simply press ‘SELECT / LAMP TEST’ to toggle the zone from constant to flashing.

Once you have returned the zone/zones to normal operation you can then press reset to exit supervisor mode. Note: Pressing reset whilst a zone is in test will not revert the panel to normal operation!

Disable Zone

- 1 Repeat points 1-3 (from the Test zone procedure listed above).
- 2 Repeatedly press the advance button until the test LED extinguishes and the disabled LED illuminates and Zone 1 LED flashes at a fast rate (identical to the situation in point 3 of Test zone procedures listed above, with the exception of the test LED!)
- 3 To disable and subsequently enable a zone follow the steps detailed in points 5-8 listed above.

Once you have returned the zone/zones to normal operation you can then press reset to exit supervisor mode.



Pressing reset whilst a zone is disabled will not revert the panel to normal operation!

Disable Sounders

- 1 Repeat points 1-3 (from the Test zone), progressing through all the Test & Disable zones features until the "Sounder Fault/Disable" LED flashes (the flashing LED at this stage indicates that the sounders are not disabled!).
- 2 To disable the sounders press the 'SELECT/LAMP TEST' push button to toggle the LED from flashing to constant.
- 3 Once the site tests have been completed you may find that the keypad access timer has elapsed and you will have to repeat point 1b to get to get back to sounder disable menu.
- 4 To cancel the disable mode and return the sounders back to normal operation simply press 'SELECT/LAMP TEST' to toggle the "Sounder Fault/Disable" from constant to flashing.

Once you have returned the sounders to normal operation you can then press reset to exit supervisor mode.



Pressing reset whilst the sounders are disabled will not revert the panel to normal operation!

Cause and Effect Chart

Sounder	General Fire	General Fault	Zone Fault	Zone Fault / Disable / Test	Sounder Fault / Disable	System Fault	Power	Power Fault	Disabled	Test	Supervisor Mode	Code Entry Mode	Buzzer	
○	○	○	○	○	○	○	●	○	○	○	○	●	○	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 been disabled by engineer for maintenance or test purposes..
			●				●	●						Disabled zone. Zone circuit has been disabled by engineer for maintenance or test purposes.
○				●			●		●					Disabled sounder contacts. Contacts have been disabled by engineer for maintenance or test purposes. Auxiliary relay disabled.
		●				●	●						●	ROM/RAM failure. Watchdog tripped.
●	●	●	●				●			●			☆	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 ruptured fuse.
		●				●	●						● ☆	System Failure.
							●				●	○		Supervisor Mode (Resets after 20 seconds after last button press)

○ = 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.

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 manufacturers recommended life expectancy of 3-5 years. We recommend that this control panel and all associated equipment be periodically tested and inspected in accordance with the relevant British Standards for the installation and servicing of fire alarm equipment.

Fire Panel Log Book

Site name _____

Site address _____

Person(s) responsible _____ Date _____

System installed by _____ Telephone _____

Date installed _____ Date commissioned _____

Maintained under contract by _____

Service contact No.: _____ Until _____

Type and Quantity					Location	
No	Detector	Call point	Sounder	Qty	Zone 1	Zone 2
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

Example of Logs

Events other than false alarms or maintenance work

Date	Time	Event	Zone	Device	Action	Date completed	Initials

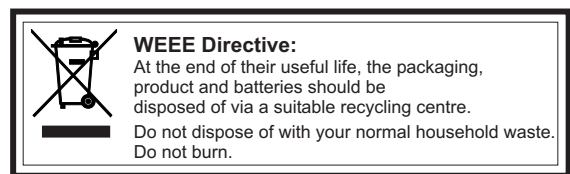
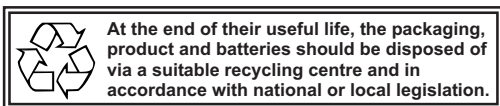
False Alarms

Categories: Unwanted - unwanted false alarm, Equipment - equipment false alarm, Good intent - false alarm with good intent, Malicious - malicious false alarm and Unknown - cause of alarm not known.

Date	Time	Device that triggered the alarm signal	Cause (if known)	Brief circumstances	Maintenance visit required (yes/no)	Finding of maintenance	Category #	Action completed

Maintenance Work

Date	Time	Zone	Device	Reason for work	Work carried out	Further work required	Signature



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