



User Manual

4 ZONE FIRE ALARM CONTROL PANEL
BP-FD-CCP400



Enjoy it.

1 System overview

1.1 System Capabilities List

The BP-FD-CCP400 fire alarm panel has the following characteristics:

- 1.1.1 Maximum number of Analogue Conventional Detector Inputs: 20 detectors each zone**
- 1.1.2 Available Options: 2-4 Zones**
- 1.1.3 4 outputs for Alarm devices: Including 2 bells/1 fire relay/ 1 fault relay**
- 1.1.4 Auxiliary resettable power output: 24VDC/ 100mA limiting protection**
- 1.1.5 Automatic power switchover: mains power and secondary power (from batteries)**
- 1.1.6 Independent functional buttons with indication: User friendly interface for easy operation and recognition**
- 1.1.7 3 Access levels to enter the panel**
- 1.1.8 Fault supervision and notification: inputs, outputs, system, power, earth, fuse**
- 1.1.9 Disablement: zones disablement**
- 1.1.10 Evacuation: Fire drills to simulate fire alarm condition on panel**
- 1.1.11 Silence: sounders and buzzer silence**
- 1.1.12 Walk test: indicators check**

1.2 Inside view of cabinet

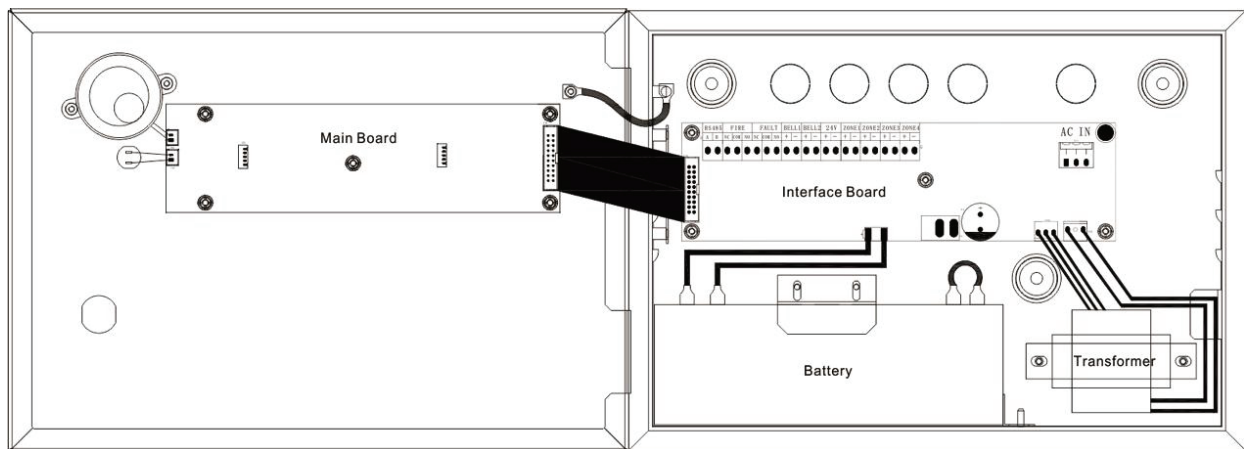
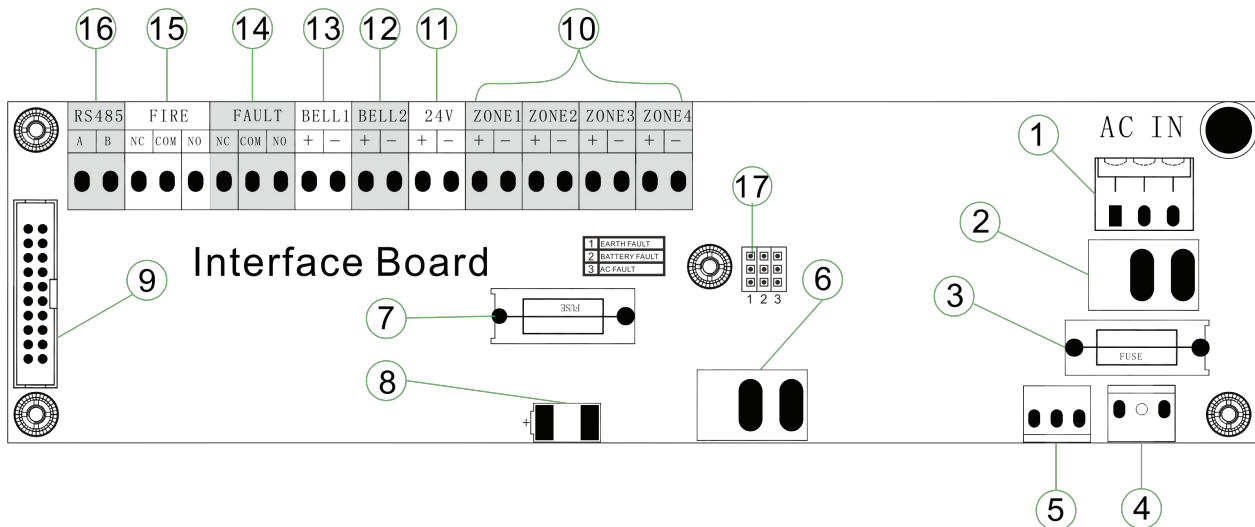


Figure 1 . Inside view of cabinet: 2-4 Zone Panel (inside wires connection)



- | | |
|--|-------------------------------------|
| ① 220V AC input | ⑨ Sockets for main board connection |
| ② AC Input switch | ⑩ Zones input |
| ③ Fuse 250V 1A | ⑪ 24V output 100mA max. |
| ④ 220V AC output | ⑫ Bell2 output 300mA max. |
| ⑤ 24V AC input | ⑬ Bell1 output 300mA max. |
| ⑥ Battery switch | ⑭ Fault routing output/relay |
| ⑦ 24V output fuse/250V1A | ⑮ Fire routing output/relay |
| ⑧ Connect to batteries | ⑯ RS485 to annunciator |
| ⑰ Fault detect setting(only available after version 3.8) | |

Figure 2. Interface board Components identification

1.3 Accessories connection

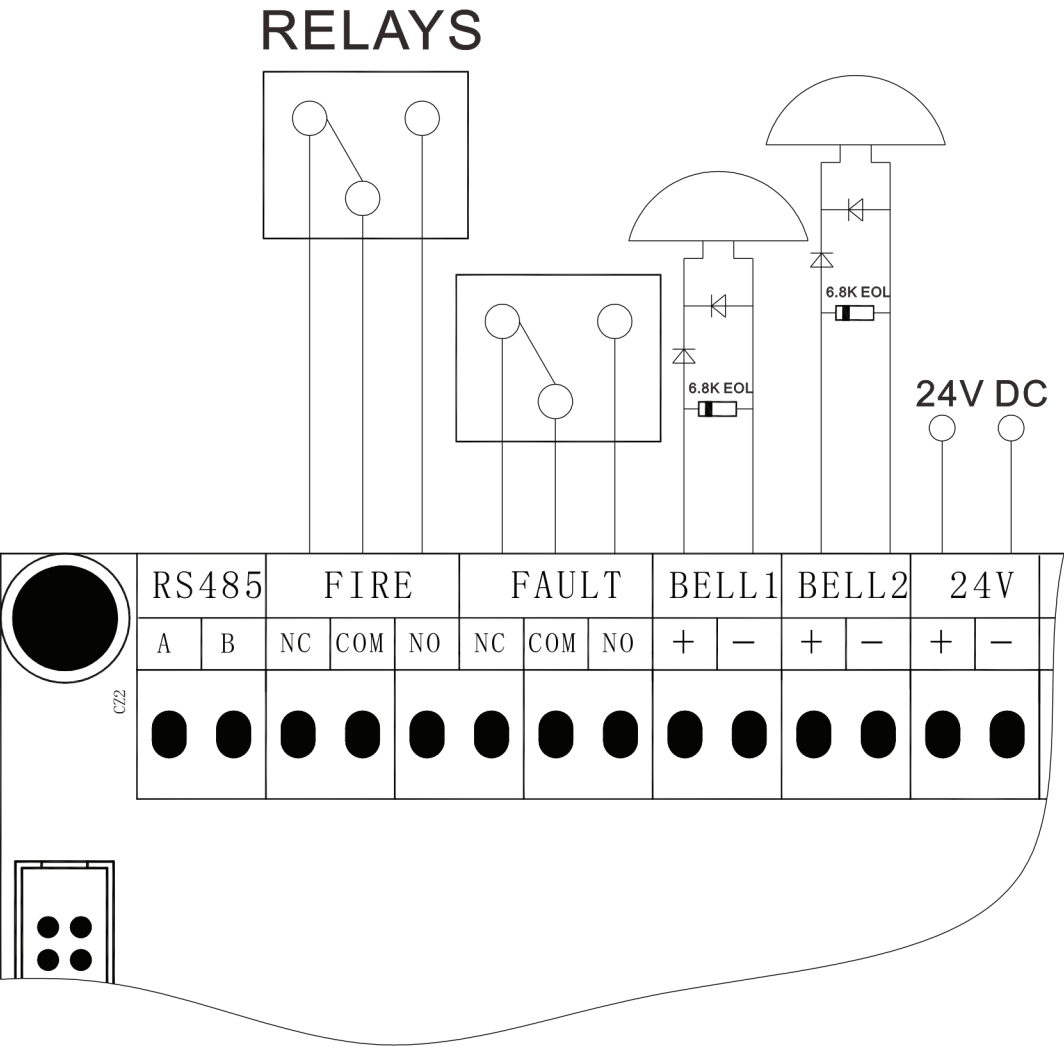


Figure 3 . Output terminals

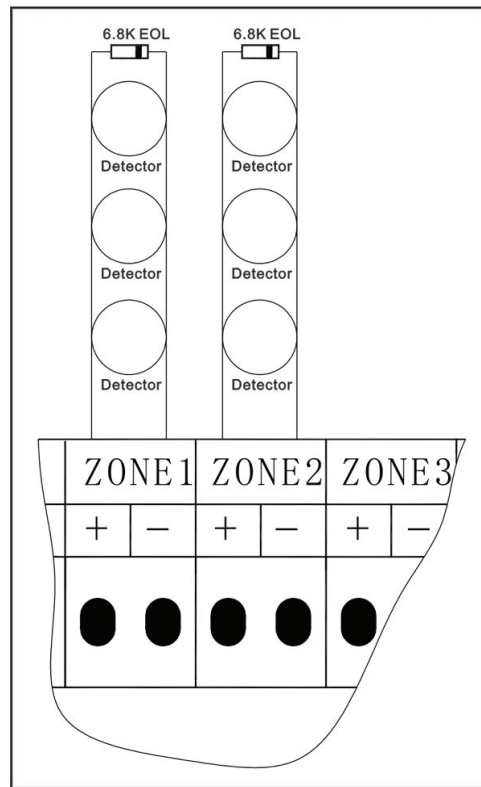


Figure 4 . Detectors connection

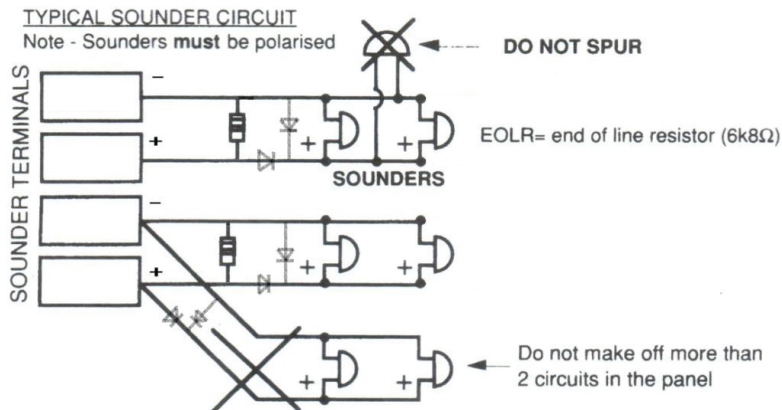


Figure 5. Wrong connection of sounders

2 System installation

2.1 Installation checklist

- 2.1.1 Prepare the site: Make sure the installation location is free from construction dust, debris and other extreme temperature ranges and relative humidity.
- 2.1.2 Unpack the equipment.
- 2.1.3 Install the cabinet: See 'Installing the cabinet' for cabinet dimensions.
- 2.1.4 Install optional components

- 2.1.5 Review wire routing: See page 5.
- 2.1.6 Connect the field wiring: See Figure 5.
- 2.1.7 Check for opens, grounds, and shorts before connecting.
- 2.1.8 Connect batteries.
- 2.1.9 Connect ground then AC power, we strongly suggest connect mains power by minimum of 16AWG(1.3mm²) wire.
- 2.1.10 Test for proper operation.
- 2.1.11 If permissible, please use shielded wire for detectors and alarm devices connection, and buckle each wire out from panel to accessories or from anywhere outside of panel into the control panel by magnet ring.



Ensure that the AC circuit breaker is OFF before connecting high voltage wires (220-240 VAC) to the mains connector.

2.2 Installing the cabinet

Cabinets can be surface or flush mounted. See Figure 6 and Figure 7 for framing and mounting dimensions.

To wall mount the cabinet:

- 2.2.1 Position the cabinet on the finished wall surface.
- 2.2.2 Fasten the cabinet to the wall surface where indicated.

Cabinet dimensions:

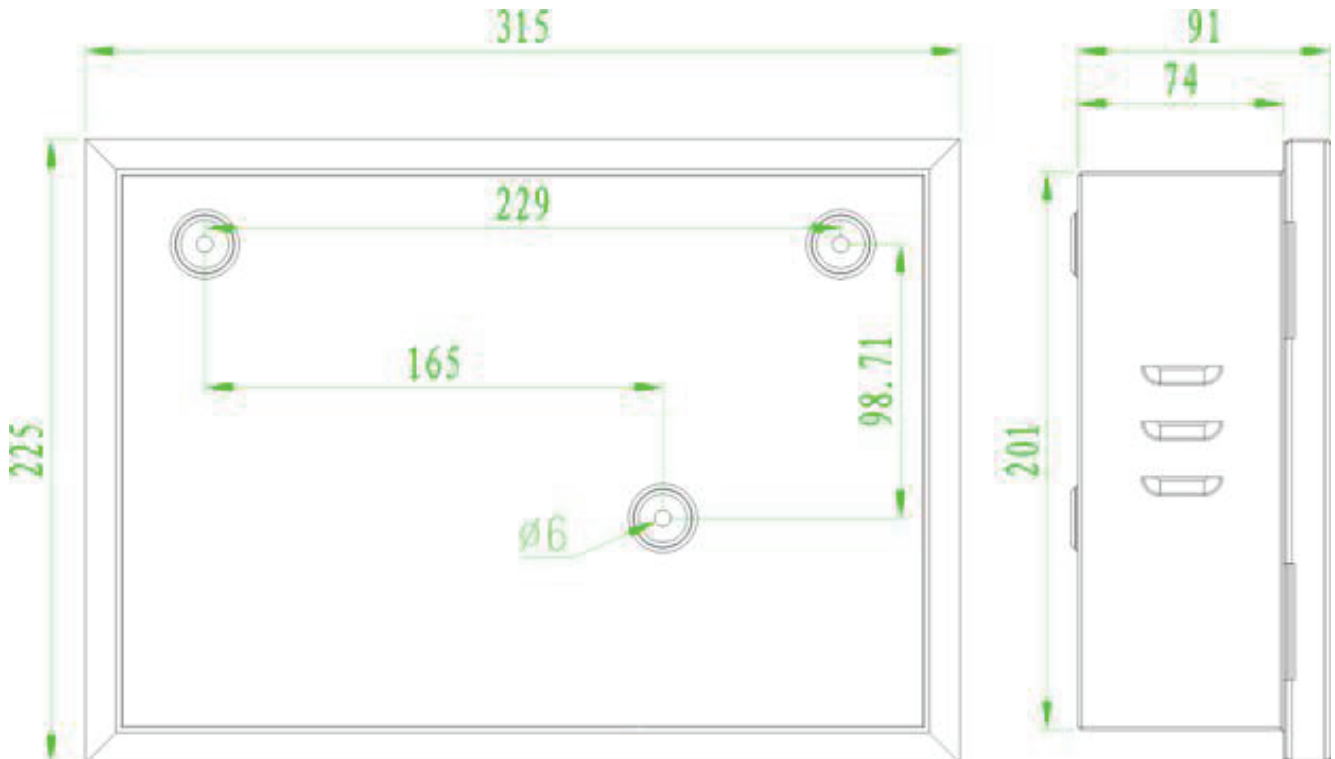


Figure 6 . 2-4 Zones panel installation dimensions

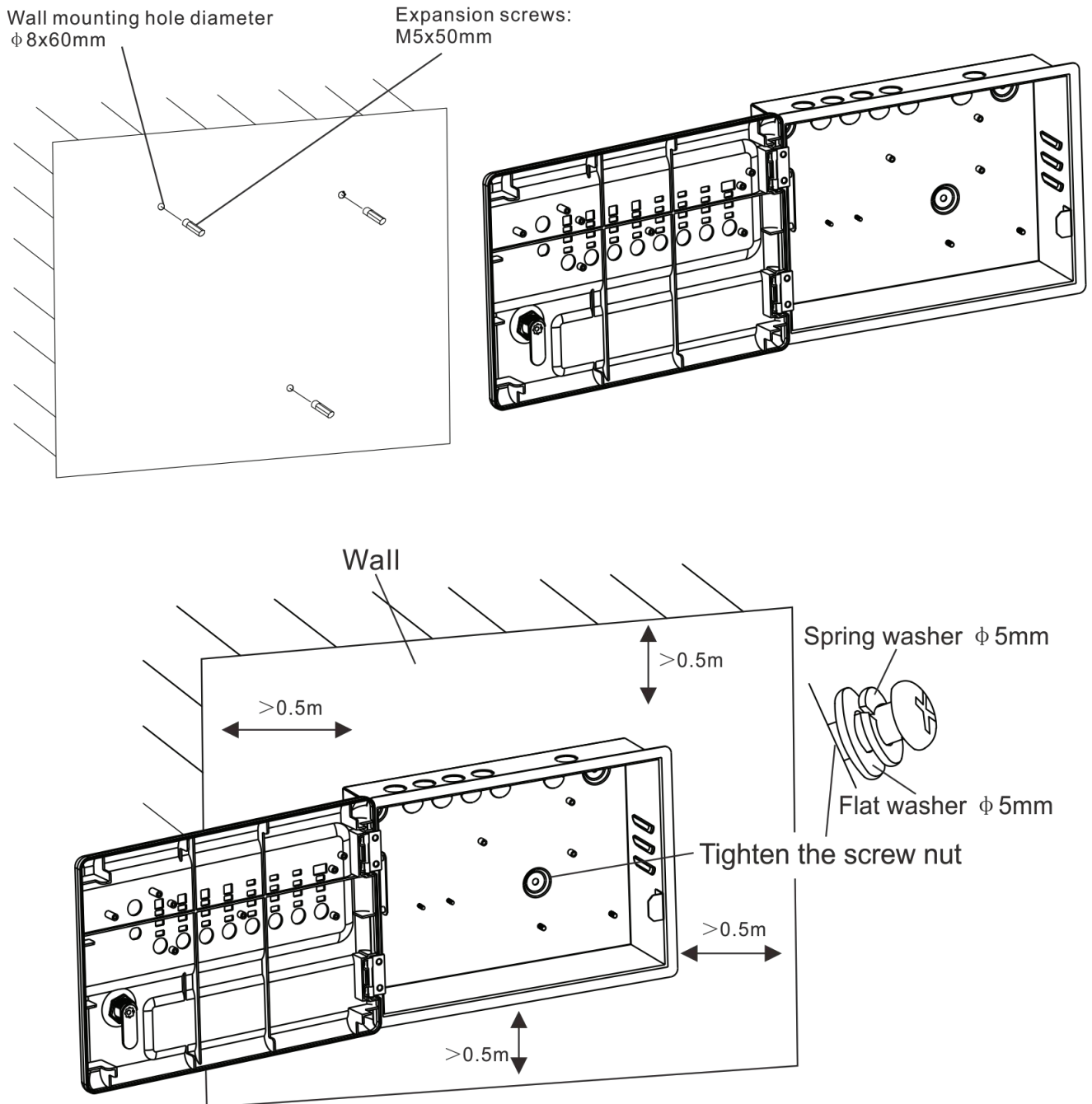


Figure 7 . 2-4 Zones panel installation diagram

2.3 Mains connection

Use the terminal (Item 1 in Figure 2) to connect the AC power cable to the panel. Ensure that the power cable is safe to handle (has no power). Pay attention to the order of L/N/E, pull them in the 3 pin terminal (5mm space between) and screw down. Then pull the terminal in the 3 pin socket on the interface board. The diameter of the wires must be between 0.75 and 2.5 mm².

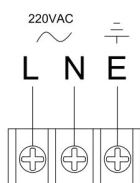


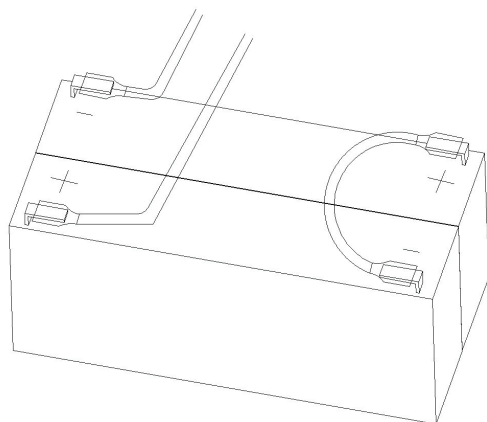
Figure 8. Mains connection

(Ensure that there is no power when connect this terminal!)

2.4 Battery installation

The panel uses two lead acid gel 12V/2.3Ah batteries connected in series. Connect the batteries with the supplied free lead and the batteries to the power supply unit with the red (positive) and black (negative) wires.

Then fix them by two right-angle metal plate with nuts.



(Pay attention to the colours of + and – wires)

Figure 9. Batteries connection

2.5 Wires connection

- 2.5.1 Plug the 20 cable for 2-4 zone panels into main board and interface board (right side of main board, left side of interface board). For the interface board and main board communication.
- 2.5.2 On the transformer, you can find 2 terminals, the one is two red wires, the another is multicolor (black, red and blue) Plug the red wires terminal into the 2 pin socket , 220 VAC output(Item 4 in Figure 2). And Multicolor wires terminal into the 3 pin socket 24 VAC input(Item 5 In Figure 2).
- 2.5.3 The last one is the access 2 switch lock, you can find a lock with words “enable/ disable” on the panel beside main board, inside cabinet, 2pin terminal like a tail after. Plug it into main board. Now all wires connect completely.

All terminals designed fool-proof. So you cannot plug them wrong.

2.6 Setting the interface board function fault detection

This function only available after version 3.8.

This allows you to choose whether to enable AC FAULT/BATTERY FAULT/EARTH FAULT detection or not.

When the DIP switch set to OFF, it means disable that function, and set to ON to enable the function.

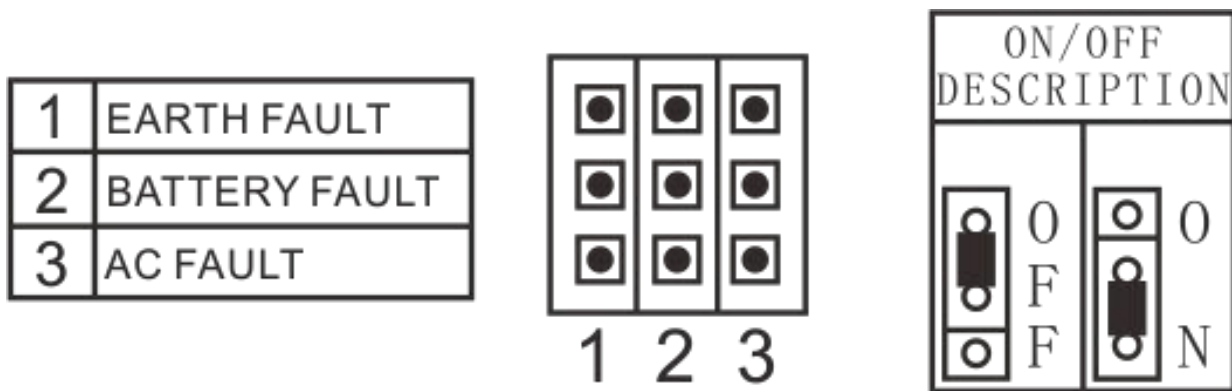


Figure 10. Fault detection setting

2.7 Initial Power up

Check and confirm all the wires are connected well. Back to the interface board, which has 2 rocker switches, the right one is mains switch (Item 2 in Figure 2), the other one is battery switch (Item 6 in Figure 2). If use battery only, turn battery switch on.

After start up, all LEDs on the panel light lit one by one. It is easy to check if any LED has fault. Check if a green power indicator lights from outside.

3 Panel Indication

Whenever anything new happened (alarm or fault), buzzer will give out alarm sound.

3.1 Main indication on main board

3.1.1 Fire alarm indication

At the top area of the panel is the main display. When enter to fire alarm, the red FIRE LED lights. If the outputs: Bells/ Fire routing are connected they will be activated as yellow Sounder Active LED lights.

3.1.2 Fault display on main board

Any fault occurs, General Fault indicator lights. On the panel, main display area has sounder output for Bells if any fault occurs it will be indicated on the panel for example short and open. On the left, other faults include mains fault/ battery fault/ earth fault/ fuse fault/ system fault.

3.1.2.1 Mains fault : When there is no mains power comes to panel. Pull mains plug up, check if wires connect hard. Or fuse is broken on the interface board. Of course, premise your lamp is lighting.

3.1.2.2 Battery fault: When there is no power comes from batteries. Check the battery switch on, if wires connected well. Of course, premise you have got 2 batteries inside. If all these above are OK, batteries are too old to supply power, change them.

3.1.2.3 Earth fault: there are some points on PCBs contact to enclosure. Insure wires are connected clearness.

3.1.2.4 Fuse fault: the fuse on interface board broken. Get it out and put another one

inside.

3.1.3 Disablement indication

For any disablement condition, corresponding “disable” lights and “General Disable” lights will lit.

3.1.4 Indication of operation

Panel also have another 4 buttons: Test and Reset/ Evacuate/ Panel Buzzer Silence/Remote sounder silence, when touch off, the LED belongs to lights and trigger corresponding outputs.

3.2 Zonal Indication

Each zone has 4 LEDs. As you see directly, if FIRE, red LED light means there is/are fire event(s).

If fault, that can be open or short so fault LED lit (Yellow LED) .

And if you switch for the zone being disablement, disable LED light goes on.

3.3 Inside indication

On the power board, there are 2 indicators also. The right one is mains indicator, the other one is battery fault indicator. Only if batteries have fault can you see it.

4 Operation on the panel (need access level 2)

Turn access level 2 switch lock to “enable”, allow control the panel now.

4.1 Access level

Access level 1: can inspect the panel only, any operation conductively closed. Now the access level 2 switch lock turned to “disable”, door is closed.

Access level 2: turn access level 2 switch lock to “enable”, but the door closed. Now you can control the panel by buttons.

Access level 3: open the door, you can check if panel working well, can change batteries or do some other safe operation. But if you are not professional, please don't do this!

4.2 Function of buttons on main board

4.2.1 Test

It is “Reset/Test” word on the panel. Press this button, all indicators light one by one, for check if LEDs work normally.

4.2.2 Switches for disablement

All those switches are for zones disablement. If you don't want one of output active, or some zones transforming, just switch it. And touch off again to cancel it.

4.2.3 Evacuation

Press to enter the evacuation condition, all outputs likes a zone fire alarm, but only cannot find zonal fire alarm indication. One can use this function for accessories connection test or quality detection. Touch off again to cancel.

4.2.4 Panel Buzzer Silence

Silence any voice from buzzer when a new event occurs. Touch off again to cancel.

4.2.5 Reset

After one zone fire alarm condition, and there is no longer really fire in the zone. Now need

to return to standby mode. So, it is required to press the “Reset/Test” button, then all information before will be cleared, if fire alarm signal comes still exist, panel will enter to alarm again. During reset, detectors have no power.

4.2.6 Remote Sounder Silence

Press to silence the remote bells and strobes.

4.3 Zone disable

Each zone has a switch for disablement. When a zone enter to disablement, means it has no power, so cannot report any information. Include if fault happen. Touch off again for disablement cancellation.

5 Electrical specifications

Mains supply	110VAC /220VAC(-15%,+10%).50/60 Hz
Auxiliary output	18~28VDC(24VDC typical). 100 mA max, current limited
Detectors connection allowed each Zone	20 (including MCPs)
Sounder output (Bells)	2*0.3A maximum
Batteries	2*12V 2.3Ah sealed lead acid gel, self-regulated*
Battery low-voltage protection	21V
Power rating	I _{max.a} =0.15A;I _{max.b} =0.75;I _{min} =0.1A
Zone alarm current	8~20mA
Fire Relay Capacity	1A @30VDC maximum
Fault Relay Capacity	1A @30VDC maximum
Communication protocol	2 wires RS485 bus system
EOL resistor for Zones	6.8K Ohm 1W
EOL resistor for outputs (Bell1 & Bell2)	6.8K Ohm 1W
Fuse for AC Power	1 A/ 250V glass tube fuse slow blow 5 X 20mm
Fuse for DC Power	1 A/ 250V glass tube fuse slow blow 5 X 20mm
Environmental	Class A temperature range: -5 to 40°C (23~104°F) Humidity: 5 to 95% RH, non-condensing
Terminal blocks rating	All terminals rated for 12 to18 AWG(0.75 to 2.5 mm ²)

Table 1 . Electrical specifications

*Batteries are optional, usually bought based on design requirement

Warning: Don't pull in or out any cable or board when power is on!

6 Maintenance

6.1 Procedure

6.1.1 Before commencing testing, notify all personnel within the areas where the alarm sounds or locations that monitor alarm and trouble transmissions, that testing is in progress.

- 6.1.2 Records of all testing and maintenance shall be kept as required by the authority having jurisdiction.
- 6.1.3 Required tools:
 - A. Slotted screwdriver, insulated
 - B. Cross screwdriver, insulated
 - C. 6.8K Ohm, 1 W resistors
 - D. 470 Ohm, 1W resistors
 - E. 1N4007 diode
 - F. Wire stripper
 - G. Digital multimeter
 - H. Tweezer
 - I. Panel's enable switch-lock key
 - J. Panel's door key
 - K. Glass tube fuse: 250V/ 1A
- 6.1.4 A complete check of installed field wiring and devices should be made at regular intervals. This includes testing all alarm and supervisory initiating devices and circuits.
- 6.1.5 Panel operation should be verified in the alarm, fault and standby modes.
- 6.1.6 To ensure that the panel can be powered when primary power is lost, the batteries should be periodically inspected, and replaced (at least) every three years.

6.2 Batteries Maintenance

- 6.2.1 The batteries must be inspected semiannually as follows:
 - A. Visually to verify that they are free of damage.
 - B. Voltage tests under load.
- 6.2.1 An annual charger test.

The system is performing an automatic battery test by loading the batteries with the system current and measuring the voltage. In case of a battery or charger problem a battery fault will eventually be indicated.

6.3 Preventative Maintenance Schedule

- 6.3.1 For detector sensitivity and functionality testing, refer to the detector manufacturer's installation instructions.
- 6.3.2 Tests for earth, open, and short require that you test earth fault, open circuit, and short circuit indications.
- 6.3.3 Tests for system fault/ disablement condition furthermore occur to corresponding indications.

It is recommended that all tests from the user should be performed periodically, in order to detect any malfunctions of the system.

Appendix A: Weight

Weight		
Panel	weight	
	with battery	without battery
2-4 Zones Panel	4.6 Kg	2.9 Kg

Table 2 . Weight

Appendix B: Record

Installed by

Name: _____

Company: _____

Address: _____

Phone: _____

For service contact

Company: _____

Address: _____

Phone: _____

Acceptance Inspection by

Date: _____

ZONES DESCRIPTION

Zone 1: _____ Zone 2: _____

Zone 3: _____ Zone 4: _____

Zone 5: _____ Zone 6: _____

Zone 7: _____ Zone 8: _____

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