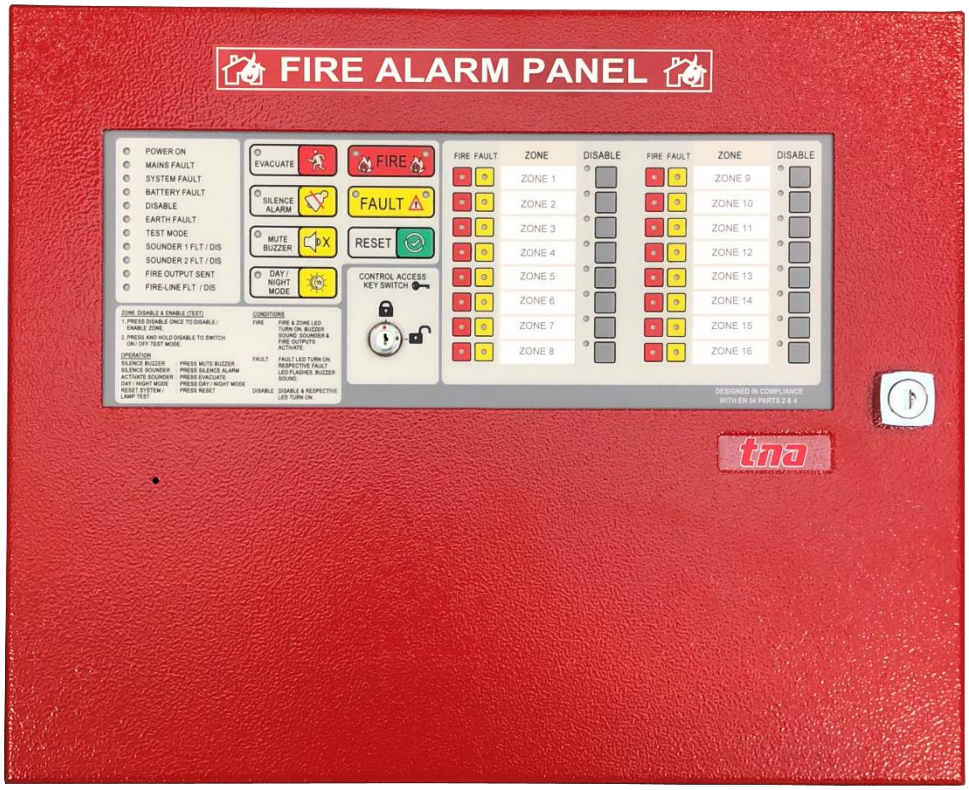
CFP-600L

4/8/12/16 Zone Conventional Fire Alarm Panel



OPERATION & MAINTENANCE MANUAL

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Table of Contents

- Product Description ---------- 2
- Technical Specification---------- 2
- Dimension---------- 3
- Internal View---------- 5
- Main Module Control Board---------- 6
- Main Module Termination Board---------- 8
- Zone Module---------- 9
- Output Module---------- 11
- Input Module---------- 13
- Power Supply Unit---------- 15
- Charger Board---------- 16
- Operation and Display---------- 17
- Panel Setup---------- 19
- Network Connection---------- 21
- Testing and Commissioning---------- 22
- Troubleshooting---------- 23
- Maintenance---------- 24

1. Product Description

CFP 600L series conventional fire alarm panels are designed and manufactured in compliance with EN54 Parts 2 & 4 requirements.

The panel consists of a front operating control board, a switch mode power supply unit and a main CPU board with input and output terminals. The panel comes in fixed 4, 8, 12 and 16 zone configurations, which makes it suitable for small to medium size buildings.

If more zones are required, multiple panels can be connected together in a network to increase the total zone capacity. Settings on the main board enable the panel to operate as a Sub Alarm Panel (SAP) or as a Master Alarm Panel (MAP), with the latter having the control to Sound, Silence and Reset all the panels in a network.

Other features include simple and straight forward installation and operation procedures, key-switch protection against unauthorized access to the system, zone test mode, day/night mode and one man walk test function.

2. Product Features

a) 4/8/12/16 Fire Alarm Zones

b) 2 Monitored Sounder Outputs

c) 1 Monitored Fire Alarm Output

d) 1 Fire Relay Output

e) 1 Fault Relay Output

f) 1 Resettable 24v Output

g) 1 Aux 24v Output

h) Delay Timer for day/night operation

i) Zone Test Mode

j) One Man Walk Test

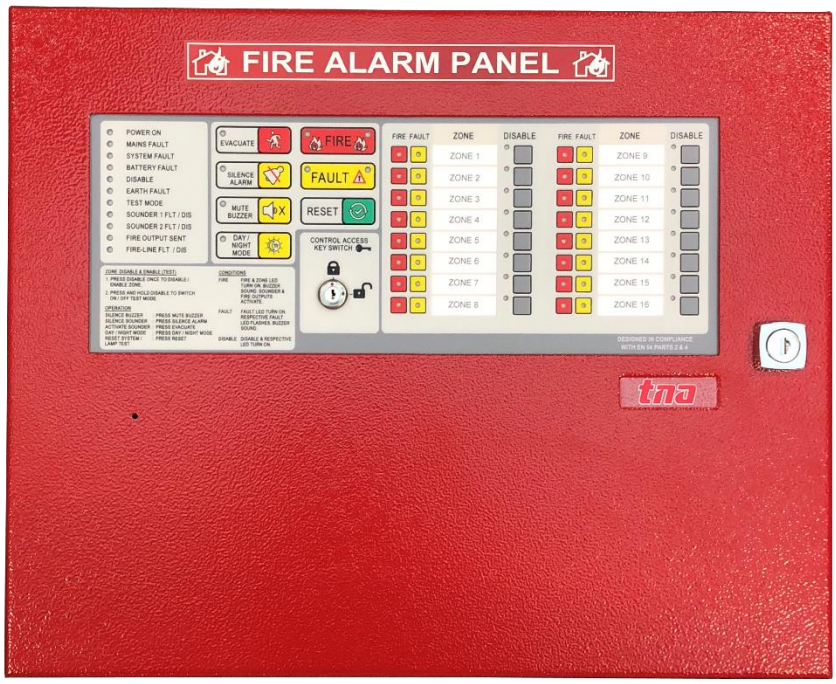
k) Key-Switch Protection

l) CAN output for Repeater

3. Technical Specifications

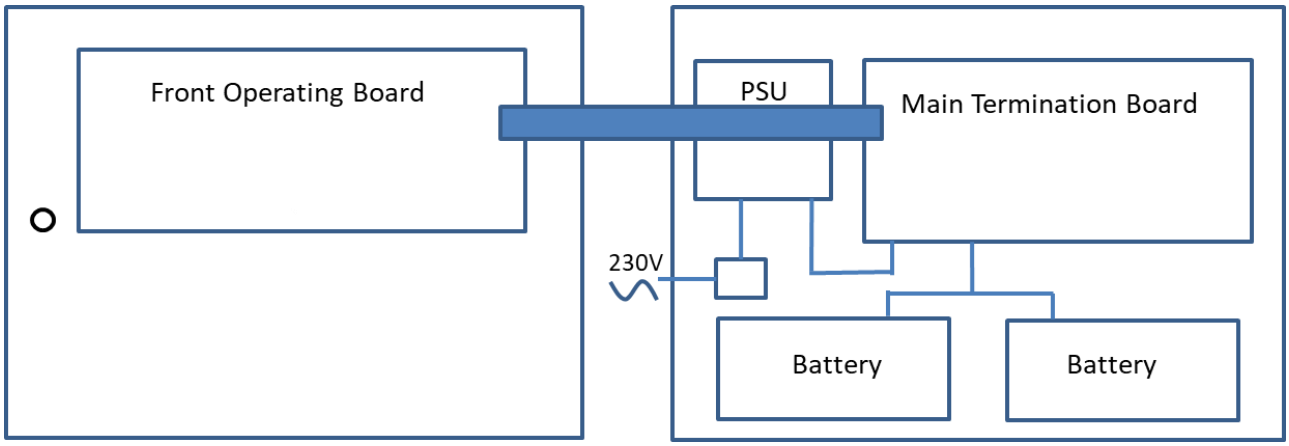
a) Input Voltage: 240VAC
b) Frequency: 50/60Hz
c) Input current: 1.5A
d) Minimum Operating Voltage : 22V
e) Maximum Charging Current : 500mA
f) Maximum Charging Voltage : 30V
g) Battery Type: Sealed lead-acid battery
h) Maximum battery charging Capacity : 2 batteries , 12v/7Ah
i) Maximum internal resistance of battery : 1Ω
j) Maximum operating current : 2.5A
k) Ambient temperature : 0-40℃
l) Relative humidity: ≤95% no condensing
m) Max current for each output : 0.5A
n) End of line resister : 4.7kΩ (For All Zone and Monitored Output Circuits)

4. Dimensions

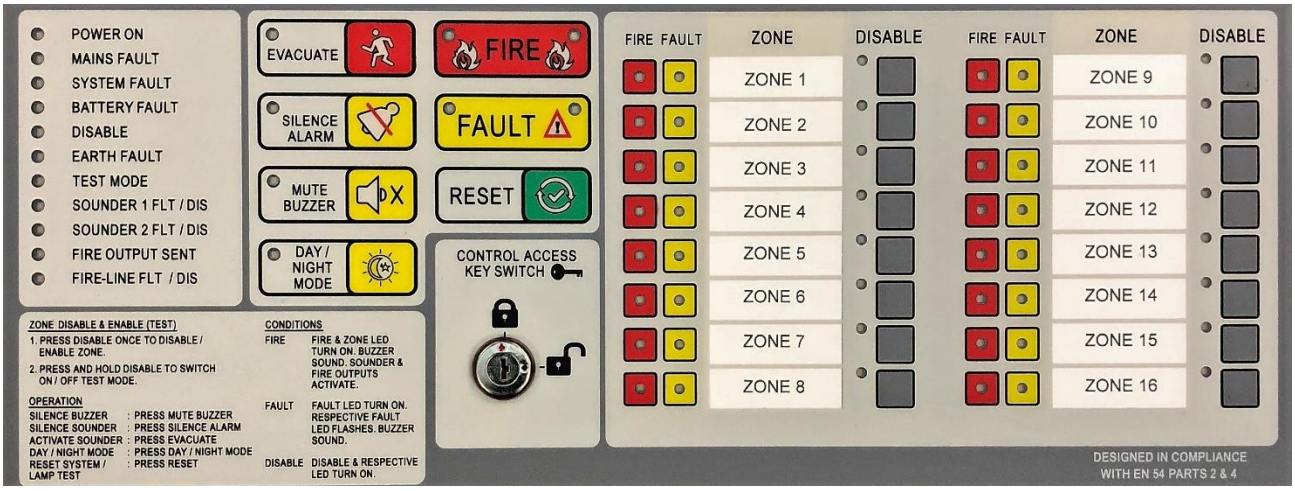


CFP–600 8 Zone Fire Alarm Control Panel (L 380 x H 310 x B 100)

5. Internal View



6. Main Module Control and Termination Board



Main Module Indicator and Control Boards (Front)

6.1 LED Indicators

a) **POWER ON (Green**): Panel is energised.

b) **MAINS FAULT (Yellow):** Incoming supply disrupted.

c) **SYSTEM FAULT (Yellow):** CPU or stored data is corrupted.

d) **BATTERY FAULT (Yellow):** Battery weak or connection failure.

e) **DISABLED (Yellow):** A detection zone or output circuit has been isolated.

f) **EARTH FAULT (Yellow):** Electrical earth fault is detected.

g) **TEST MODE (Yellow):** A detection zone is in Test Mode or the panel is in One Man Walk Test operation.

h) **SOUNDER 1-2 FLT/DIS (Yellow):** Blinking when sounder circuit is shorted or disconnected and Steady when sounder circuit is disabled.

i) **FIRE OUTPUT SENT (Yellow):** Fire alarm output activated

j) **FIRE OUTPUT FLT/DIS (Yellow) :** Blinking when fire alarm output circuit is shorted or disconnected and Steady when fire alarm output circuit is disabled.

k) **FIRE (Red):** Common fire indicator, panel in fire alarm condition, at least one detection zone is activated.

l) **FAULT (Yellow):** General fault Indicator, at least one fault is detected by the panel.

m) **EVACUATE (Red):** Sounders have been activated

n) **SILENCE ALARM (Yellow):** Sounders have been silenced.

o) **Day/Night Mode (Yellow):** Delay function is enabled

6.2 Control Key and Buttons

a) **CONTROL ACCESS KEY SWITCH:** When in locked position, all panel buttons are disabled except for the "Mute Buzzer" button.

b) **EVACUATE:** To activate all sounder outputs on the mainboard. The evacuate indicator lights up when "EVACUATE" button is pressed, and it switches off when the panel is reset or when the sounders are silenced.

c) **SILENCE ALARM:** To silence all sounder outputs on the mainboard. The silence alarm indicator lights up when the "Silence Alarm" button is pressed during fire.

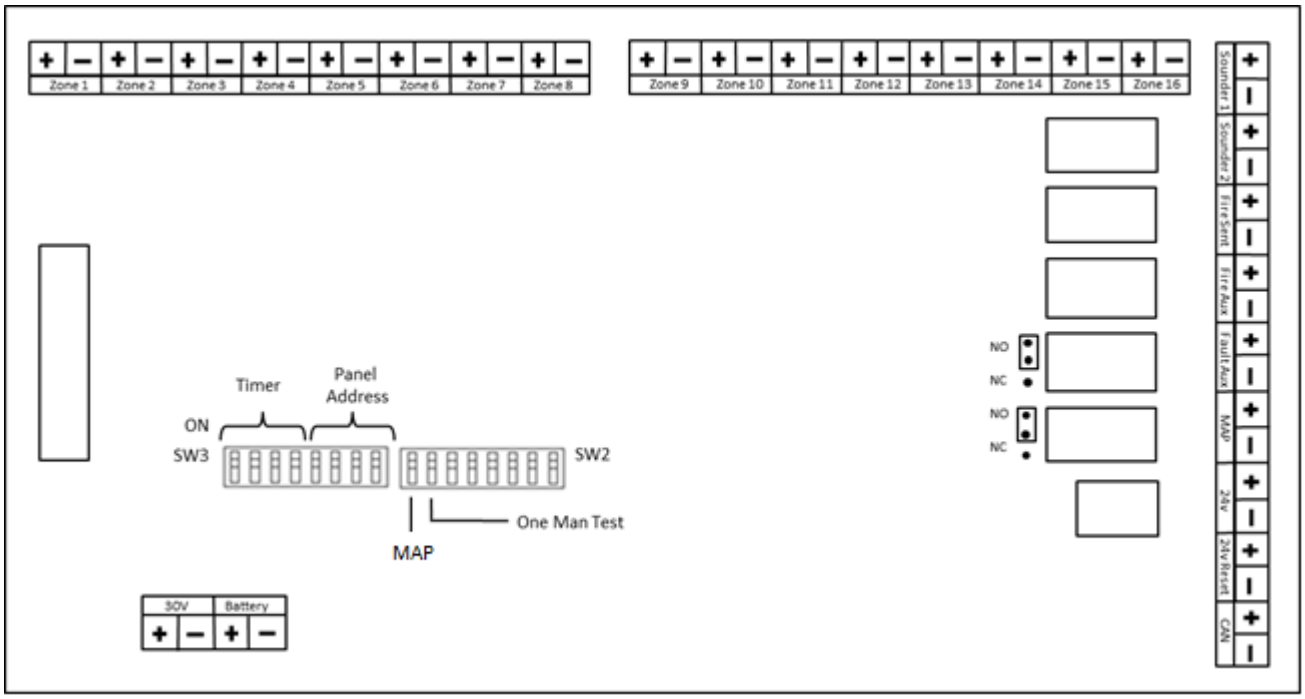
d) **MUTE BUZZER:** To silence panel's internal buzzer. The yellow Mute Buzzer indicator lights up when the "Mute Buzzer" button is pressed during fire or fault condition.

e) **RESET SYSTEM:** To refresh all zone circuits. Zone under disablement and test condition will not be affected.

f) **DAY / NIGHT MODE:** To switch ON/OFF day mode operation. In day mode operation, a fire from a detector will not cause the fire alarm panel to change into fire alarm state immediately, instead the panel will initiate a pre-set delay (of 1-10 minutes) before the fire is registered and activates all its outputs. This feature allows operator with sufficient time to investigate the situation. To use this feature, the zone has to be configured as a Detection Zone. An activation from a Zone configured as a MCP Zone will send the panel into fire state immediate even when the Day mode operation is active.

g) Refer to page 20 to configure between Detector and MCP zones. In night mode the panel will operate without delay, fire alarm outputs will activate immediately as long a zone is on fire. Day mode will cancel immediately when a second zone is activated or after a duration of 8 hours.

7. Main CPU and Termination Board



a) **4/8/12/16 Fire Alarm Zones:** Input terminals for conventional smoke and heat detectors, Manual Callpoint, Sprinkler Flow Switch and Sub Alarm Panel.

- Voltage Output 24vdc
- End of line (EOL) monitoring resistor (4.7kOhm) must be placed at the end of every circuit.
- Zone current parameter :

Open circuit	0 – 2.8mA
Normal	2.8 – 14.4mA
Fire	14.4 -32.2mA
Short circuit	32.2 – 38.8mA

b) **2 Monitored Sounder Outputs:** Output terminals for conventional sounder or alarm bell. Output can be off and on manually by the silence alarm and evacuation buttons

- Voltage Output: 24vdc 0.5mA
- End of line (EOL) monitoring resistor (4.7kOhm) must be placed at the end of every circuit.

c) **1 Monitored Fire Alarm Output (Fire Sent):** Output terminals for fire alarm equipment. Output will only activate upon fire, it will remain activated until the fire is reset by the panel.

- Voltage Output: 24vdc 0.5mA
- End of line (EOL) monitoring resistor (4.7kOhm) must be placed at the end of every circuit.

d) **1 Fire Relay Output:** Output terminals for fire alarm equipment. It provides a voltage free output when panel detects a fire, it will remain activated until the fire is reset by the panel. Normally Open or Normally Closed selection by jumping setting and contract rating at 24v 1Amp.

e) **1 Fault Relay Output:** Output terminals for fault monitoring purpose. The output relay is energised during normal condition and de-energised when in fault condition. Normally Open or Normally Closed selection by jumping setting and contract rating at 24v 1Amp.

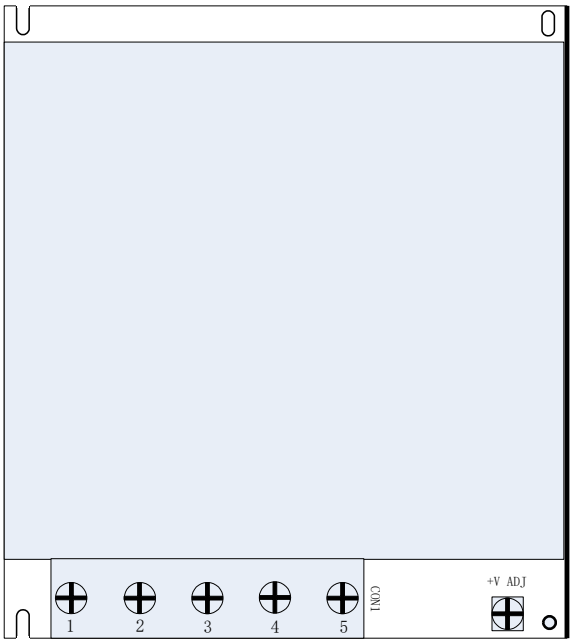
f) **1 Resettable 24v Output:** This 24v, 0.5Amp output will cut off for 5 seconds each time the reset button is pressed.

g) **1 Aux 24v Output:** Auxiliary 24v 0.5Amp

h) **MAP:** Connection to Main Alarm Panel, this connection is only applicable for Sub Alarm Panel only

i) **CAN:** Network command for Sound, Silence and Rest.

8. Power Supply Unit



30vdc Power Supply Unit

Technical Specifications;

- **Power:** 75W
- **AC INPUT:** 100 ~ 240V / Max 1.5A
- **AC Frequency:** 50 ~ 60Hz
- **DC output:** 30V / 2.3A
- **+ V ADJ:** Output voltage adjustment pot
- **CON1 terminals as follows;**
- 1= Neutral, 2= Live, 3= Earth, 4= - 24V, 5= +24V

9. General Display and Operation

9.1 **Normal**

In normal condition the panel should only have a ”Power On” LED lighted up while all other LEDs off.

9.2 **Fire**

When a Fire is registered by the panel, the Common Fire and Zone Fire LED indicators will light up. All the fire alarm outputs (Sounder, Fire Alarm and Fire Auxl Outputs)from the panel will activate.

Press “Silenced Alarm” button to silence the sounder outputs and investigate area

or

Press “Reset” button if found to be a false alarm or “Evacuate” button to resound all sounders when a real fire is detected.

9.3 **Fire in Delay Mode**

The fire zone indicator will blink quickly and panel buzzer will sound, once the delay is up the fie indicator will become steady and all sounders and fire outputs will activate.

9.4 **Fault**

When a Fault is registered by the panel, the Common Fault LED indicator will light up, internal buzzer will beep and fault relay will de-activate. Fault detail will also be displayed on the panel.

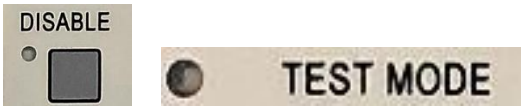
Press “Mute Buzzer” button to silence the internal buzzer and investigate or rectify the fault. Fault indicator will switch off automatically once the fault condition is cleared.

9.5 **Disable / Enable**

Press the Disable Button to disable a Zone.

Common disable indicator will light up along with the zone being disabled. Press the Disable button again to enable the point.

9.6 **Test**



Press and hold the zone disable button for 3 seconds, you will notice the fault LED blinks quickly, next release the button and zone disable LED will blink to indicate zone in test mode condition. Press and hold the “zone disable” button again for 3 seconds to cancel test mode and switch off the zone Disable LED.

Zone in test mode will not activate the fire alarm outputs on the panel and modules when the circuit detects a fire, however the panel will still register the Fire with the activation of visual and audible warnings to alert the operator. Note this feature is only applicable for zone configured as Detector.

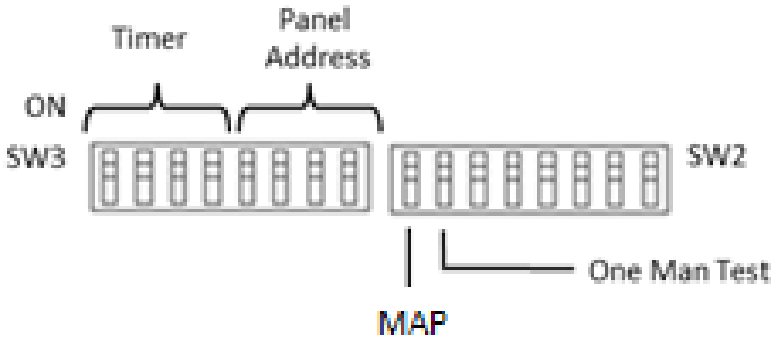
9.7 **One Man Walk Test**

Set “Testing” jumper on the main display board to NC for one man walk test operation, it will prevent all general outputs on the main terminal board and modules from activating when fire. The panel will continue to register the fire and activate the sounders for 3 seconds, thereafter panel will reset automatically. This feature will reduce the additional serviceman needed to standby at the panel to reset the panel after each simulation test.

10. Panel Settings

10.1 SW2 on the main board is used to set the panel as MAP, to switch turn on One Man Test Function and to set the number of zones in used

10.2 SW3 on the main board is used to set the day / night mode delay time and panel address.



CFP700 SETTING				
MAIN BOARD	**SW**	**Settiing**	**Bit**	**Value**
	SW2	MAP	bit1	
		ONE_MAN_TEST MODE	bit2	
		SYSTEM FAULT TEST	bit3	
		0:0-4zones 0:1-8zones 1:0-12zones 1:1-16zones	bit4	
			bit5	
		no use	bit6	
			bit7	
			bit8	
	SW3	Delay Time Setup For Day/Night Miode	bit1	8 sec
			bit2	4 Sec
			bit3	2 Sec
			bit4	1 Sec
		Panel Address Setting When Using Repeater Panel	bit5	8
			bit6	4
			bit7	2
			bit8	1

10.3 Pressing the 'Reset' button for 5 seconds will set the panel into a service mode which allows the followings:

10.3a Disable/Enable Sounder 1 by pressing the Silence Alarm Button.

10.3b Disable/Enable Sounder 2 by pressing the Mute Buzzer Button.

10.3c Disable/Enable Fire Aux and Fire Sent Outputs by pressing the Day/Night Mode Button.

10.3d Configure zone device by pressing the zone disable button.

 Zone setting for **Manual Callpoint, Flowswitch or SAP**

 Zone setting for **Smoke or Heat Detector** (for Day/Night mode operation)

11. Testing and Commissioning

- Install panel (do not connect the zone, input and output cables to the panel at this moment).
- Turn on panel if mains supply is available, if not turn on using temporary supply or standby battery.
- Check panel functionality to ensure panel is working normally.
    - Visual and audible warnings (Lamp Test)
    - Basic Operations (Sound, Silence, Reset, Disable…)
    - No unusual faults
- Measure each pair of zone and input and output cables
    - Ensure cables are not shorted to Earth.
    - Ensure cables are not shorted or open circuit.
    - Ensure cables are free from any external voltage.
    - Able to read the EOL resistor value (4.7k ohm)
- Connect the cables to the panel once you have done the above checks
- Test all zones and inputs in the panel.
    - Trigger the fire detection and input devices physically. (Eg Smoke Detector, Manaual Callpoint, Flowswtich, Tamper switch)
    - Simulation fault by removing a detector in the zone or disconnecting the zone or input cables on site.
    - Ensure the panel is able to receive the simulated events and the locations tally with the panel zone labels.
- Test all fire alarm outputs
    - Ensure Sounders can be activated and silenced with the "Evacuation" and "Silence" buttons.
    - Ensure all outputs activate during fire.
    - Simulate output fault by remove cable from the device.

- Ensure the panel is able to receive the simulated fault.

- Power failure test
  - Ensure panel is connected with the standby battery
  - Switch off incoming supply.
  - Ensure visual and audible warnings are activated for power failure.
  - Trigger a fire at any zone and check if panel operated as described in Fire condition.

12. Troubleshooting

The table below describes some common faults, the possible causes and the ways to rectify the faults.

No	Trouble	Possible Causes	Action
1	System On LED not lighted	Refer to 2 and 3	Refer to 2 and 3
2	Mains Fault	1) No incoming supply 2) No 24v output from power supply unit 3) Charger board MP Fuse blown	1) Check incoming supply 2) Check PSU 24v output 3) Replace fuse
3	Battery Fault	• Battery not connect • Battery Weak • Charger board BT Fuse blown • Battery switch (BT SW) on charger board not on	1) Connect battery 2) Check battery voltage is within 24v, Replace battery if necessary 3) Replace fuse 4) Swtich on BT SW
4	System Fault	• CPU hang or Memory Corrupted	1) Shut down panel and reboot
5	Earth Fault	1) Cables connected to the panel is check to panel earth	1) Remove all cables to the panel individually and identify the cable that is shorted
6	Zone Fault	1) 4.7kOhm End of line resistor not connected 2) Detector removed 3) Cable open/short circuit	1) Place EOL at the end of the circuit 2) Check for missing detector 3) Check cable
7	Sounder Fault	1) 4.7kOhm End of line resistor not connected 2) Cable open/short circuit	1) Place EOL at the end of the circuit 2) Check cable
8	Output Fault (General and FPE)	Refer to 7	Refer to 7
9	Fault signal received instead of Fire/Input active. (Applicable for contact device only)	1) No 470Ohm triggering resistor	1) Place resistor in series with the contract
10	Module not responding	1) Address on display and termination boards miss match	1) Check module address
11	Sounder output in module cannot be silenced	1) Setup error in output module	1) Change setup to Sounder

12	Panel cannot silence or reset when fire	1) 3 min delay is enabled 2) key switch is lock	1) Disable 3 minute delay
13	Delay mode not working	1) Zone setup error 2) Delay time not set 3) Day/Night Mode not enabled	1) Set zone to detector 2) Set Delay Time 3) Enable Day/Night mode

13. Maintenance

Fire alarm panel should only be maintained by trained personnel, failure to do so may result damaging the panel or even injuries.

To ensure continuous reliability of the fire alarm system it should be checked and serviced regularly. It is also a good practice to keep a log book at the panel to record all activities.

The followings are general guides on the interval and scope of works.

13.1 Daily Check

- Check panel for any fault.
- Keep a record for any fault in log book.
- Rectify fault immediately.
- Take necessary action such as increase surveillance of affect area.

13.2 Monthly Test

- Monthly test check should include all the inspections described in daily check
- Simulate fire and fault condition on all zones to ensure system is operational.
- Confirm with monitoring station that fire and fault signals have been received.
- Check charger voltage and standby battery.
- Test power failure condition.
- Check panel visual and audible warning with lamp test button.
- Check operation of all fire alarm output.
- Visually inspect the condition of components, termination and cables.
- Ensure panel is clean and tidy.

13.3 Annual Test

- Annual test should in include all the inspections described in monthly test.
- The maintenance/servicing personnel should arrange to check the operation of at least 20% of the detectors in an installation each year. The selection of detectors to be tested should be spread over as many zones as possible and should be made in such a way that all detectors in an installation should have been checked at least once in 5 years.
- Where the heat-sensitive element of thermal detectors or the enclosure of other detectors are found to be coated with paint, dust or any material likely to affect the operation of the detectors, such material should be cleaned off or if necessary have the detector replaced.