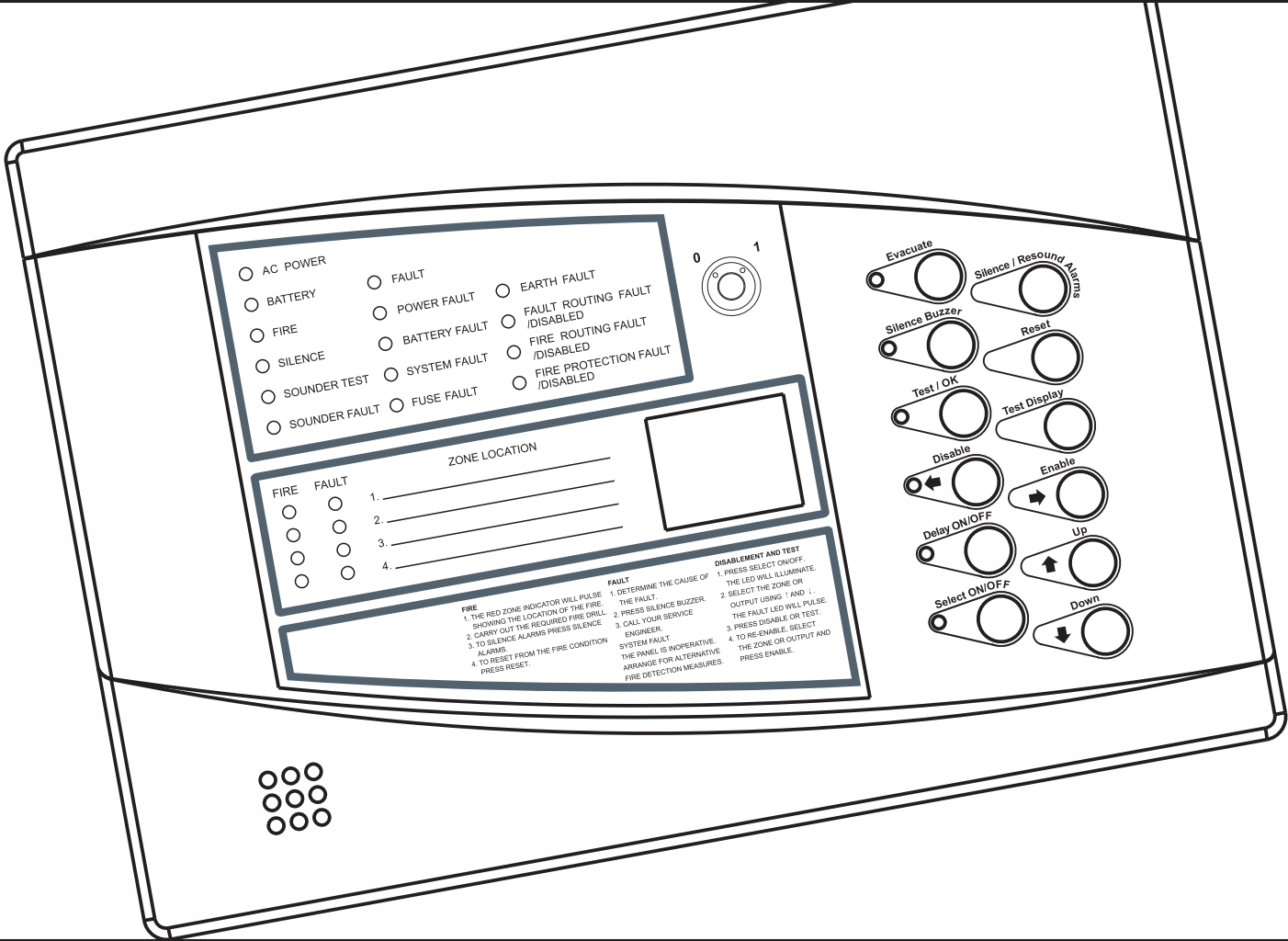


# CONVENTIONAL FIRE ALARM CONTROL PANEL

## INSTALLATION AND OPERATION MANUAL



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## NOTICE!

All information, documentation, and specifications contained in this manual are subject to change without prior notice by the manufacturer.

## 1. FIRE ALARM SYSTEM LIMITATIONS

### NOTICE!

While installing a fire alarm system may make lower insurance rates possible, it is not a substitute for fire insurance!

A fire alarm system - typically made up of smoke detectors, heat detectors, manual pull stations, audible warning devices, and a fire alarm control with remote notification capability can provide early warning of a developing fire. Such a system, however, does not assure protection against property damage or loss of life resulting from a fire.

Any fire alarm system may fail for a variety of reasons:

Smoke detectors may not sense fire where smoke cannot reach the detectors such as in chimneys, in walls, or roofs, or on the other side of closed doors. Smoke detectors also may not sense a fire on another level or floor of a building. A second floor detector, for example, may not sense a first floor or basement fire. Furthermore, all types of smoke detectors - both ionization and photoelectric types, have sensing limitations. No type of smoke detector can sense every kind of fire caused by carelessness and safety hazards like smoking in bed, violent explosions, escaping gas, improper storage of flammable materials, overloaded electrical circuits, children playing with matches, or arson.

### IMPORTANT!

Smoke detectors must be installed in the same room as the control panel and in rooms used by the system for the connection of alarm transmission wiring, communications, signaling, and/or power. If detectors are not so located, a developing fire may damage the alarm system, crippling its ability to report a fire.

Audible warning devices such as bells may not alert people if these devices are located on the other side of closed or partly open doors or are located on another floor of a building. A fire alarm system will not operate without any electrical power. If AC power fails, the system will operate from standby batteries only for a specified time.

Rate-of-Rise heat detectors may be subject to reduced sensitivity over time. For this reason, the rate-of-rise feature of each detector should be tested at least once per year by a qualified fire protection specialist.

Equipment used in the system may not be technically compatible with the control. It is essential to use only equipment listed for service with your control panel.

The most common cause of fire alarm malfunctions, however, is inadequate maintenance. All devices and system wiring should be tested and maintained by professional fire alarm installers following written procedures supplied with each device. System inspection and testing should be scheduled monthly or as required by National and/or local fire codes. Adequate written records of all inspections should be kept.

## 2. INSTALLATION PRECAUTIONS

Adherence to the following will aid in problem-free installation with long-term reliability.

### WARNING!

Several different sources of power can be connected to the fire alarm control panel. Disconnect all sources of power before servicing. Control unit and associated equipment may be damaged by removing and/or inserting cards, modules, or interconnecting cables while the unit is energized. Do not attempt to install, service, or operate this unit until this manual is read and understood.

### CAUTION!

System Re-acceptance Test after Software Changes: To ensure proper system operation, this product must be tested in accordance with EN54-2 Chapter 15 after any programming operation or change in site-specific software. Re-acceptance testing is required after any change, addition or deletion of system components, or after any modification, repair or adjustment to system hardware or wiring.

All components, circuits, system operations, or software functions known to be affected by a change must be 100% tested. In addition, to ensure that other operations are not inadvertently affected, at least 10% of initiating devices that are not directly affected by the change, up to a maximum of 50 devices, must also be tested and proper system operation verified.

This system meets EN54-2 requirements for operation at  $-10^{\circ}\text{C} \sim 55^{\circ}\text{C}$  and at a relative humidity of  $<93\% \text{RH}$  (non-condensing) at  $45^{\circ}\text{C}$ . However, the useful life of the system's standby batteries and the electronic components may be adversely affected by extreme temperature ranges and humidity. Therefore, it is recommended that this system and its peripherals be installed in an environment with a nominal room temperature of  $15\text{-}27^{\circ}\text{C}$ .

Like all solid state electronic devices, this system may operate erratically or can be damaged when subjected to lightning induced transients. Although no system is completely immune from lightning transients and interferences, proper grounding will reduce susceptibility. Overhead or outside aerial wiring is not recommended, due to an increased susceptibility to nearby lightning strikes.

Disconnect AC power and batteries prior to removing or inserting circuit boards. Failure to do so can damage circuits.

Remove all electronic assemblies prior to any drilling, filing, reaming, or punching of the enclosure. When possible, make all cable entries from the sides or rear. Before making modifications, verify that they will not interfere with battery, transformer, and printed circuit board location.

Do not tighten screw terminals more than 9 in-lbs. Over tightening may damage threads, resulting in reduced terminal contact pressure and difficulty with screw terminal removal.

This system contains static-sensitive components. Always ground yourself with a proper wrist strap before handling any circuits so that static charges are removed from the body. Use static suppressive packaging to protect electronic assemblies removed from the unit.

Follow the instructions in the installation, operating, and programming manuals. These instructions must be followed to avoid damage to the control panel and associated equipment. FACP operation and reliability depend upon proper installation.

### 3. PRODUCT DESCRIPTION

This product is a 2-zone to 4-zone FACP (Fire Alarm Control Panel), which uses conventional input devices. The panel accepts two-wire smoke detectors, four-wire smoke detectors, pull stations and other normally-open contact devices. Outputs include four Notification Appliance Circuits, five standard Form-A relays (alarm, fault, fire protection, reset and sounder) and an EIA-485 port to interface with remote annunciators and optional remote relay modules. The FACP is field programmable via the panel keypad. It also supervises all wiring, AC voltage and battery level.

This series of panels are basically the same in application and operation, their differences are shown in Table 1-1.

It will be described as the example in the following sections.

Table 1-1

Model	Number of Detection Zones	Output Delay Settings
2-ZONE FACP	2 zones	0~10 min. delay optional
4-ZONE FACP	4 zones	0~10 min. delay optional

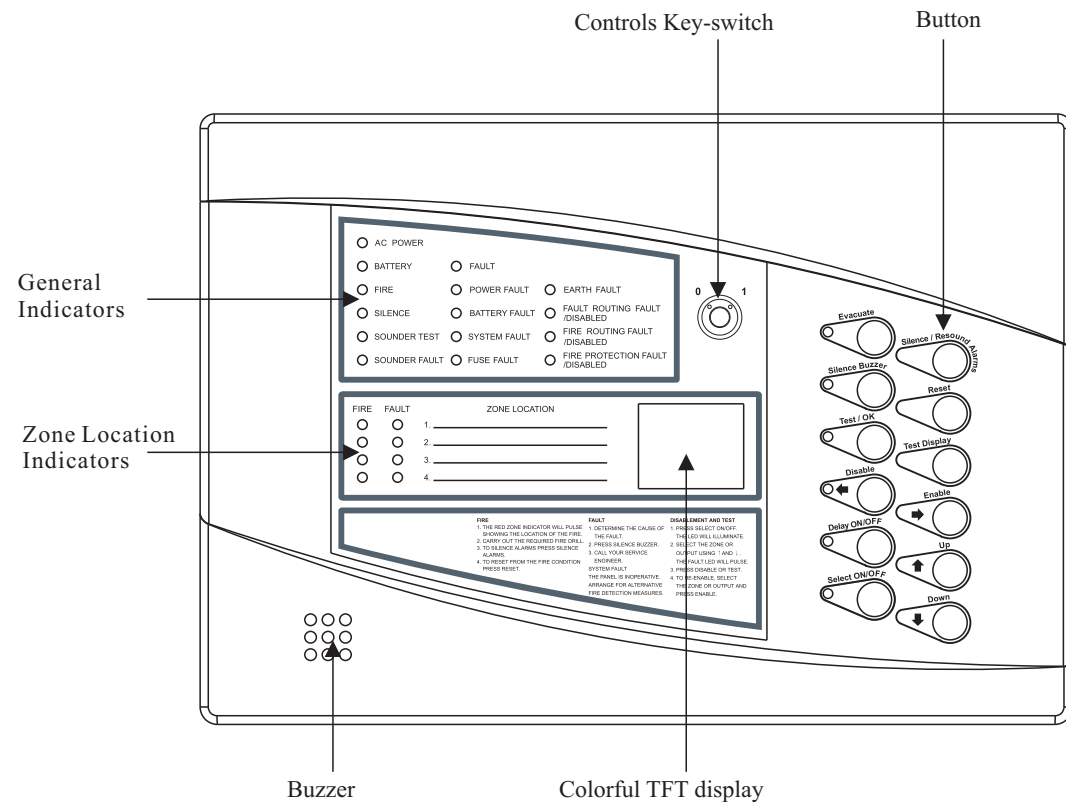
## 4. FEATURES

- Micro-controller technology
- All zones accept conventional detectors and any normally open contact device
- Max 30 conventional detectors in one zone
- 5.0 amps of system power
- 5 standard Form-A relays (alarm, fault, fire protection, reset and sounder)
  - Compatible with many types of two-wire detectors
  - Power limited for limited energy cable
  - Supervised audible/visual signaling circuit operation
- A fault circuit which monitors the following fault conditions:
  - Open detector loop(s)
  - Low battery voltage
  - Missing or disconnected battery
  - Ground fault
  - Low AC voltage (Brown-out condition)
  - Loss of AC power
  - Open or shorted Notification Appliance Circuit
- Control switches
  - Reset for control and detectors
  - Fault Silence with resound
  - Disable to silence alarm
- LED indicating lamps
  - AC power
  - Alarm sounder(s)
  - Fault
- Colorful TFT display
- Designed with standby batteries and space provision for two sealed lead-acid batteries

## 5. SPECIFICATIONS

- Operating Voltage: AC220V±15%, 50Hz, 5.0 amps
- Standby Battery: Two 12V@2.6AH lead-acid batteries standby for 7 days at least
- Standby Consumption: Less than AC220V@0.3W
- Sound Output Device Circuits
  - General Alarm Zones 1 through 4
  - Operation: All zones Class B
  - Normal Operating Voltage: Nominal 24 VDC (ripple = 100 mV maximum)
  - Alarm Current: 15 mA threshold
  - Short Circuit Current: 24 mA maximum
  - End-of-Line Resistor: 4.7K, ½ watt
- Five Relays Output
  - Relay contact rating: 2.0 amps @ 30 VDC (resistive), 2.0 amps @ 250 VAC (resistive)
- Operating Temperature: -10°C~55°C
- Operating Humidity: <93% (non condensing)
- Battery Dimension: 69.8mm(L)\*47.0mm(W)\*97.3mm(H)
- Product Dimension: 300mm(L)\*100mm(W)\*210mm(H)
- N.W.: Appro. 2.2kg (without battery)

## 6. PRODUCT PROFILE



## 7. CONTROLS AND INDICATORS

- Access Controls Key-switch
  - 0 -- Controls locked
  - 1 -- Controls unlocked
- Controls

Button description	Functionality	Availability
Evacuate	Operates all sounders continuously and lights the Evacuated LED adjacent the button until the silence button is operated.	When controls are unlocked.
Silence/Resound Alarm	<ul style="list-style-type: none"> <li>● Following a fire alarm condition, the first operation stops sounders. The general FIRE LED and the zone FIRE LED will change from flashing to steady.</li> <li>● The second operation restarts the previously silenced sounders.</li> </ul>	When controls are unlocked.
Reset	Clear the panel display and resets the zones.	When controls are unlocked, and (if silence before reset is configured) alarms silence switch has been operated.
Silence Buzzer	Press to stop the buzzer sounding in fire or fault conditions.	When controls are unlocked or locked.
Delay ON/OFF	Turn on or off the delay mode.	<ul style="list-style-type: none"> <li>● When controls are unlocked and delay period is set to a value&gt;0.</li> <li>● When the panel is in the fire condition and the delay is running.</li> </ul>
Select ON/OFF	Enables the user to select feature(select ↑select ↓) for selection of zones or outputs for disablement/reenablement and also the time selection.	When controls are unlocked.
Test Display	Press to illuminate all LEDs on the display and operate the buzzer.	When controls are unlocked.
Enable	Press to clear the disablement or test condition on a zone or output selected via ON/OFF button.	When controls are unlocked, the ON/OFF button has been operated and a zone or output has been selected.
Disable	Press to disable a zone or output selected via ON/OFF button.	When controls are unlocked, the ON/OFF button has been operated and a zone or output has been selected.
Test/OK	Press to initiate the test on sounders or zones as selected via ON/OFF button.	When controls are unlocked, the ON/OFF button has been operated and a zone or output has been selected.
Up/Down	Used to scroll the cursor indication through the zone and output fault LEDs on the display to select a zone or output for disablement or test.	When controls are unlocked, and ON/OFF button has been operated.

● Indicators

General Indicators		
Indicator Description	LED	Condition
AC POWER	Green LED	Steady indication for AC power on.
BATTERY	Green LED	Steady indication for back-up battery on.
FIRE	Red LED	Flashes on any new fire alarm condition, changing to a steady indication on operation of silence alarms.
SILENCE	Yellow LED	Steady indication for a silence alarm.
SOUNDER TEST	Red LED	Steady indication while the sounder walk test is active.
SOUNDER FAULT	Yellow LED	Flashes for any sounder fault.
FAULT	Yellow LED	Flashes for any fault condition.
POWER FAULT	Yellow LED	Flashes for AC power supply/charge fault.
BATTERY FAULT	Yellow LED	Flashes for a battery fault condition.
SYSTEM FAULT	Yellow LED	Flashes for a micro-controller failure.
EARTH FAULT	Yellow LED	Flashes for any AC power earth fault.
FUSE FAULT	Yellow LED	Flashes for any poor contact of the insurance tube or blown fuse.
FAULT ROUTING FAULT/DISABLED	Yellow LED	Flashes for a fault on the Fault Routing Output. Steady when Fault Routing Output is disabled.
FIRE ROUTING FAULT/DISABLED	Yellow LED	Flashes for a fault on the Fire Routing Output. Steady when Fire Routing Output is disabled.
FIRE PROTECTION FAULT/DISABLED	Yellow LED	Flashes for a fault on the Fire Protection Output. Steady when Fire Protection Output is disabled.

Zone Location Indicators		
Indicator Description	LED	Condition
FIRE	Red LED	Flashes for the fire alarm on the corresponding zone.
FAULT	Yellow LED	Flashes for a fault on the corresponding zone.



## 8. OPERATIONS

### 8.1 Fire and Fault Conditions

#### 8.1.1 If a fire is detected

- On the Fire Alarm Panel:
  - FIRE LED will flash and the buzzer will sound.
  - The relevant zone FIRE LED will flash, indicating the location of the fire.
- If the Delay is Off:
  - The Fire Routing output and LED will operate immediately.
  - The Fire Alarm sounders will operate immediately.
  - The Fire Protection output will operate immediately.
- If the Delay is On:
  - The Fire Routing output and LED will operated after a delay (if FIRE ROUTING FAULT/DISABLED LED illuminates).
  - The Fire Alarm sounders will operate after a delay (if SOUNDER FAULT LED illuminates).
  - The Fire Protection output will operate after a delay (if FIRE PROTECTION FAULT/DISABLED LED illuminates).

#### 8.1.2 To silence the fire alarm sounders

- Turn the Access Controls Key-switch on the panel to position “1”.
- Press Silence/Resound Alarms button once only.
- The fire alarm sounders will become silent.
- The general FIRE LED and the zone FIRE LED will become steady.
- Set the Access Controls Key-switch back to position “0” to lock the controls.

#### 8.1.3 To resound the fire alarm sounders after they have been silenced

- Turn the Access Controls Key-switch on the panel to position “1”.
- Press Silence/Resound Alarms button once only.
- Set the Access Controls Key-switch back to position “0” to lock the controls.

#### 8.1.4 To reset the panel from a fire alarm

- After the fire has been extinguished, turn the Access Controls Key-switch on the panel to position “1”.
- Press Reset button.
- The general FIRE LED and zone FIRE LED will clear.
- Set the Access Controls key-switch back to position “0” to lock the controls.

#### 8.1.5 To operate the fire alarm sounders in Evacuate mode

- Turn the Access Controls Key-switch on the panel to position “1”.
- Press Evacuate button.
- Evacuate LED will light and the panel buzzer will operate.
- All fire alarm sounders will operate.
- Press Silence/Resound Alarms button to silence the fire alarm sounders and clear the Evacuate LED.
- Set the Access Controls Key-switch back to position “0” to lock the controls.

### 8.1.6 If a fault is detected

- The panel buzzer will sound.
- FAULT LED will flash.
- One or more fault LEDs will flash, identifying which element of the system is faulty.
- When the fault is corrected the fault indication will clear automatically unless the panel is configured to latched fault mode-in which case, operating Reset button will clear the fault indication.

### 8.1.7 To silence the buzzer

- Press Silence Buzzer button.
- Silence Buzzer button LED will illuminate.
- The buzzer will silence.
- The panel buzzer will sound.

## 8.2 Disablement and Test Conditions

### 8.2.1 To disable/enable any zone or zones

- To access disable/enable mode:
  - Turn the Access Controls Key-switch on the panel to position “1”.
  - Press Select ON/OFF button to enter the select mode.
  - LED in the selected zone will illuminate.
  - The yellow LED will flash to indicate that the panel is under fault/disabled/test status.
- To select the zone
  - Press Down button to move the pulsed cursor indication down through the fault LEDs until it pulses the required zone. (Up button moves the cursor up).
- To disable the selected zone
  - Press Disable button to disable the selected zone.
  - LED in the fault/disabled zone will change to flashing indication while the cursor is on it, changing to steady if the cursor is moved on.
  - Disable LED will be in steady indication.
- To enable the selected zone
  - Press Enable button to Enable the selected zone.
  - LED in the enabled zone will change to flashing indication while the cursor is on it, changing to steady if the cursor is moved on.
  - Disable LED will be cleared if no other disablements are present.
- To exit the disable/enable mode
  - Press Select ON/OFF button to exit the select mode.
  - LED in the selected zone will be cleared. Disable/Enable LED will be cleared.
  - Set the Access Controls Key-switch back to position “0” to lock the controls.

### 8.2.2 To disable/enable all sounders

- To access disable/enable mode:
  - Turn the Access Controls Key-switch on the panel to position “1”.
  - Press Select ON/OFF button to enter the select mode.
  - LED in the selected zone will illuminate.
  - The yellow LED will flash to indicate that the panel is under fault/disabled/test status.

- To select the sounders:
  - Turn the Access Controls Key-switch on the panel to position “1”.
  - Press Select ON/OFF button to enter Disable/Test mode.
  - Move Up button until it pulses the required zone. (The Down button moves the cursor down).
- To disable the sounders:
  - Press Disable button to disable the sounders.
  - SOUNDER FAULT LED and LED in the disabled zone will be in steady indication.
- To enable the sounders:
  - Press Enable button to enable the sounders.
  - SOUNDER FAULT LED and LED in the disabled zone will be cleared.
  - Disable LED will be cleared if no other disablements are present.
- To exit the disable/enable mode:
  - Press Select ON/OFF button to exit the select mode.
  - LED in the selected zone will be cleared. Disable/Enable LED will be cleared.
  - Set the Access Controls Key-switch back to position “0” to lock the controls.

#### 8.2.3 To disable/enable the fire routing output

- To access disable/enable mode:
  - Turn the Access Controls Key-switch on the panel to position “1”.
  - Press Select ON/OFF button to enter the select mode.
  - LED in the selected zone will illuminate.
  - The yellow LED will flash to indicate that the panel is under fault/disabled/test status.
- To select the fire routing output:
  - Press Up button to move the pulsed cursor indication up through the fault LEDs until it pulses the required zone. (Down button moves the cursor down).
- To disable the fire routing output:
  - Press Disable button to disable the fire routing output.
  - FIRE ROUTING FAULT LED and LED in the disabled zone will change to flashing indication while the cursor is on it, changing to steady if the cursor is moved on.
  - Disable LED will be in steady indication.
- To enable the fire routing output:
  - Press Enable button to enable the fire routing output.
  - FIRE ROUTING FAULT LED and LED in the disabled zone will change to flashing indication while the cursor is on it, changing to steady if the cursor is moved on.
  - Disable LED will be cleared if no other disablements are present.
- To exit the disable/enable mode:
  - Press Select ON/OFF button to exit the select mode.
  - LED in the selected zone will be cleared. Disable/Enable LED will be cleared.
  - Set the Access Controls Key-switch back to position “0” to lock the controls.

#### 8.2.4 To disable/enable the fault routing output

- To access disable/enable mode:
  - Turn the Access Controls Key-switch on the panel to position “1”.
  - Press Select ON/OFF button to enter the select mode.
  - LED in the selected zone will illuminate.
  - The yellow LED will flash to indicate that the panel is under fault/disabled/test status.

- To select the fault routing output:
  - Press Up button to move the pulsed cursor indication up through the fault LEDs until it pulses the required zone. (Down button moves the cursor down).
- To disable the fault routing output:
  - Press Disable button to disable the fault routing output.
  - FAULT ROUTING FAULT LED and LED in the disabled zone will change to flashing indication while the cursor is on it, changing to steady if the cursor is moved on.
  - Disable LED will illuminate.
- To enable the fault routing output:
  - Press Enable button to enable the fault routing output.
  - FAULT ROUTING FAULT LED and LED in the disabled zone will change to flashing indication while the cursor is on it, changing to steady if the cursor is moved on.
  - Disable LED will be cleared if no other disablements are present.
- To exit the disable/enable mode:
  - Press Select ON/OFF button to exit the select mode.
  - LED in the selected zone will be cleared. Disable/Enable LED will be cleared.
  - Set the Access Controls Key-switch back to position “0” to lock the controls.

#### 8.2.5 To disable/enable the fire protection output

- To access disable/enable mode:
  - Turn the Access Controls Key-switch on the panel to position “1”.
  - Press Select ON/OFF button to enter the select mode.
  - LED in the selected zone will illuminate.
  - The yellow LED will flash to indicate that the panel is under fault/disabled/test status.
- To select the fire protection output:
  - Press Up button to move the pulsed cursor indication up through the fault LEDs until it pulses the required zone. (Down button moves the cursor down).
- To disable the fire protection output:
  - Press Disable button to disable the fire protection output.
  - FIRE PROTECTION FAULT LED and LED in the disabled zone will change to flashing indication while the cursor is on it, changing to steady if the cursor is moved on.
  - Disable LED will illuminate.
- To enable the fire protection output:
  - Press Enable button to enable the fire protection output.
  - FIRE PROTECTION FAULT LED and LED in the disabled zone will change to flashing indication while the cursor is on it, changing to steady if the cursor is moved on.
  - Disable LED will be cleared if no other disablements are present.
- To exit the disable/enable mode:
  - Press Select ON/OFF button to exit the select mode.
  - LED in the selected zone will be cleared. Disable/Enable LED will be cleared.
  - Set the Access Controls Key-switch back to position “0” to lock the controls.

#### 8.2.6 To select/clear one zone test

- To access test mode:
  - Turn the Access Controls Key-switch on the panel to position “1”.
  - Press Select ON/OFF button to enter the select mode.
  - LED in the selected zone will illuminate.
  - The yellow LED will flash to indicate that the panel is under fault/disabled/test status.

- To select the zone to be tested:
  - Press Down button to move the pulsed cursor indication down through the fault LEDs until it pulses the required zone. (Up button moves the cursor up).
- To apply the test mode to the selected zone:
  - Press Test/OK button to activate the test condition on the selected zone.
  - LED in the fault/disabled zone will change to flashing indication while the cursor is on it, changing to steady if the cursor is moved on.
  - Test/OK LED will illuminate.
- To clear the test mode in the selected zone:
  - Press Test/OK button again or press the Enable button to clear the test condition enabling the normal operation of the selected zone.
  - LED in the fault/disabled zone will change to flashing indication while the cursor is on it, changing to steady if the cursor is moved on.
  - Test/OK LED will be cleared if no other circuits are in the test condition.
- To exit the select mode in the tested zone:
  - Press Select ON/OFF button to exit the select mode.
  - The LED will be cleared.
  - Set the Access Controls Key-switch back to position “0” to lock the controls.

#### 8.2.7 To select/clear one sounder test

- To access test mode:
  - Turn the Access Controls Key-switch on the panel to position “1”.
  - Press Select ON/OFF button to enter the select mode.
  - LED in the selected zone will illuminate.
  - The yellow LED will flash to indicate that the panel is under fault/disabled/test status.
- To select the sounders:
  - Press Up button to move the pulsed cursor indication up through the fault LEDs until it pulses the required zone. (Down button moves the cursor down).
- To activate the sounder test:
  - Press Test/OK button to start the sounder test.
  - LED in the sounder-tested zone will change to flashing indication while the cursor is on it, changing to steady if the cursor is moved on.
  - Test/OK LED will illuminate.
- To terminate the sounder test:
  - Press Test/OK button again or press Enable button to clear the test condition enabling the normal operation of the sounders.
  - The sounder will be silenced.
  - LED in the sounder-tested zone will change to flashing indication while the cursor is on it, changing to steady if the cursor is moved on.
  - Test/OK LED will be cleared if no other circuits are in the test condition.
- To exit the test mode:
  - Press Select ON/OFF button to exit the select mode.
  - The LED will be cleared.
  - Set the Access Controls Key-switch back to position “0” to lock the controls.

#### 8.2.8 To enable/disable delay mode

- To access test mode:
  - Turn the Access Controls Key-switch on the panel to position “1”.

- To enable the delay:
  - Press Delay ON/OFF button once to enable the delay mode.
  - The Delay ON/OFF LED will illuminate.
  - The Disable button LED will illuminate.
- To disable the delay:
  - Press Delay ON/OFF button once to disable the delay mode.
  - The Delay ON/OFF LED will be cleared.
  - The Disable button LED will be cleared.
- To exit delay mode selection:
  - Set the Access Controls Key-switch back position “0” to lock the controls.

#### 8.2.9 To override the delay mode

- When the delay is running:
  - The Delay ON/OFF LED will flash.
  - The general FIRE and zone FIRE LED will flash.
  - The panel buzzer sounds.
- Press Delay ON/OFF button while Delay ON/OFF LED is flashing to override the delay allowing all delayed outputs to operate immediately.

#### 8.2.10 To set the delay

- When the panel is configured to extended delay (generally the delay period is initialized as 0):
  - Press Up button to move the pulsed cursor indication up until it pulses SET THE DELAY. (Down button moves the cursor down) .
  - Press Select ON/OFF button to display the delay period.
  - Press Up or Down Button to plus or minus the delay period. (Press Up or Down Button once to plus or minus 30 sec., and max. delay period is 600 sec.)
  - Press Test/OK button to save the delay period setting.
  - Set the Access Controls Key-switch back position “0” to lock the controls

#### 8.2.11 To silence the alarms during the delay

- Turn the Access Controls Key-switch on the panel to position “1”.
- Press the Silence/Resound Alarms button:
  - The general FIRE and zone FIRE LED become steady.
  - The sounders will not operate after the delay has timed out.
- Select the Access Controls Key-Switch back to position “0” to lock the controls.

#### 8.2.12 To resound the alarms after the delay (Alarms previously silenced)

- Turn the Access Controls Key-switch on the panel to position “1”.
- Press Silence/Resound Alarms button:
  - The general FIRE LED will flash.
  - The sounders sound.
- Select the Access Controls Key-Switch back to position “0” to lock the controls.

## 8.3 Settings

### 8.3.1 To query the history

- Turn the Access Controls Key-switch on the panel to position “1”.
- Press Up button to move the pulsed cursor indication up until it pulses QUERY THE HISTORY. (Down button moves the cursor down).
- Press Select ON/OFF button to query the history.
- Press ← or → button to move the digit.
- Press ↓ button to decrease the number. The max. alarm count is 1000 from 000 to 999. (↑ button to increase the number)
- Press Test/OK button to display all the alarm events and the alarm zones.
- Select the Access Controls Key-Switch back to position “0” to lock the controls.

### 8.3.2 To set the time

- Turn the Access Controls Key-switch on the panel to position “1”.
- Press Up button to move the pulsed cursor indication up until it pulses SET THE TIME. (Down button moves the cursor down).
- Press Select ON/OFF button to display the time.
- Press ← or → button to move the digit.
- Press ↓ button to decrease the year/month/date. The max. time range is 100 years from 2000 to 2099. (↑ button to increase the number)
- Press Test/OK button to display the time after setting.
- Select the Access Controls Key-Switch back to position “0” to lock the controls.

### 8.3.3 To set the password (the factory setting is 000)

- Turn the Access Controls Key-switch on the panel to position “1”.
- Press Up button to move the pulsed cursor indication up until it pulses SET THE PASSWORD. (Down button moves the cursor down).
- Press Select ON/OFF button to display the original password and the new password.
- Press ← or → button to move the digit.
- Press ↓ button to decrease the number. Altogether 3 digits can be set. (↑ button to increase the number)
- Press Test/OK button to replace the old password with the new one.
- Select the Access Controls Key-Switch back to position “0” to lock the controls.

### 8.3.4 To restore the factory password setting

- Turn the Access Controls Key-switch on the panel to position “1”.
- Press and hold Reset button to energize the panel till one beep sounds.
- The password will restore to the factory setting.

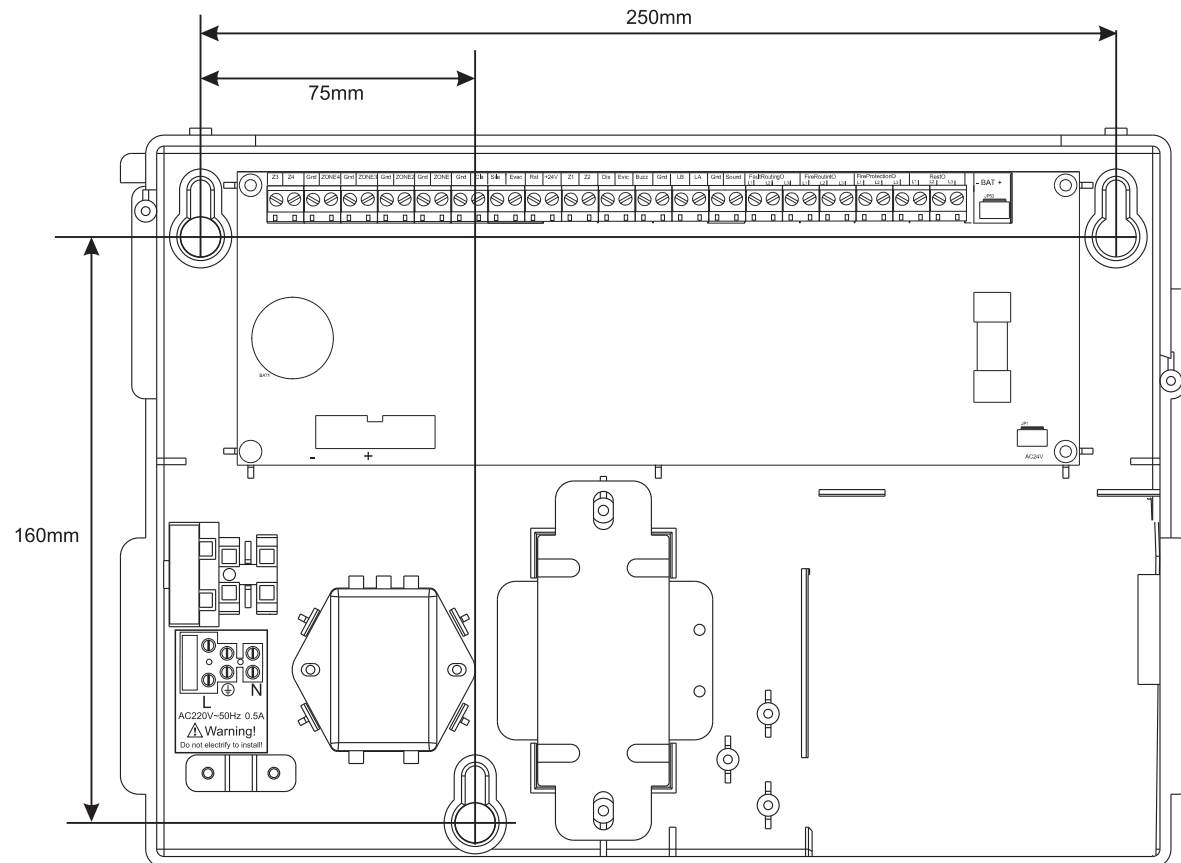
## 9. INSTALLATION

The control panel must be installed by suitably qualified engineers familiar with the installation of fire detection systems. In addition, it is recommended to refer to the following information:

- Current edition of the IEE wiring regulations.
- Current edition of EN54-4 or the installation standards for the relevant country.
- Any specific site requirements.
- Any field device installation instructions.
- Any data sheet provided for the installation of intrinsically safe devices.

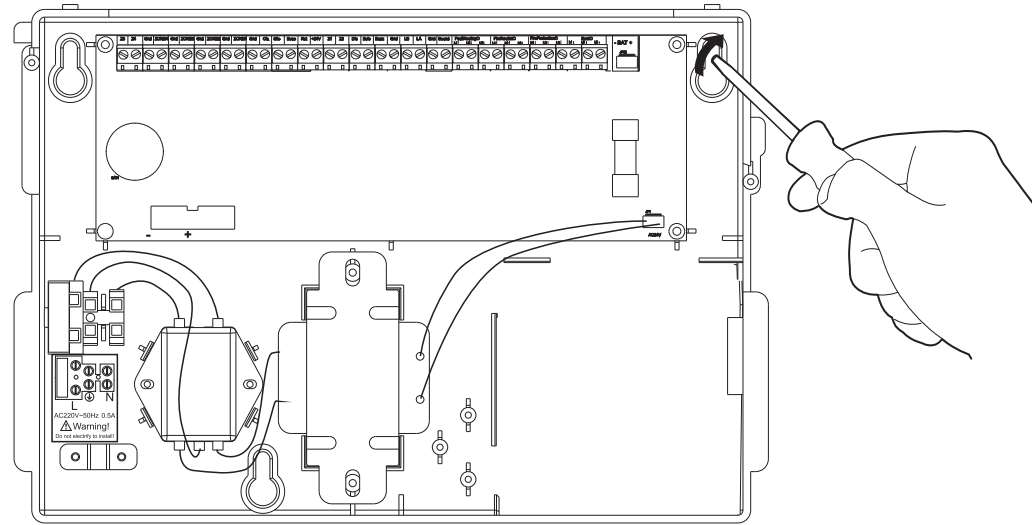
### 9.1. Installation Steps

9.1.1 Choose a suitable place for installation, and mark three points as below picture illustrated. Fix screws and anchor plugs into the wall at the places of those three points.

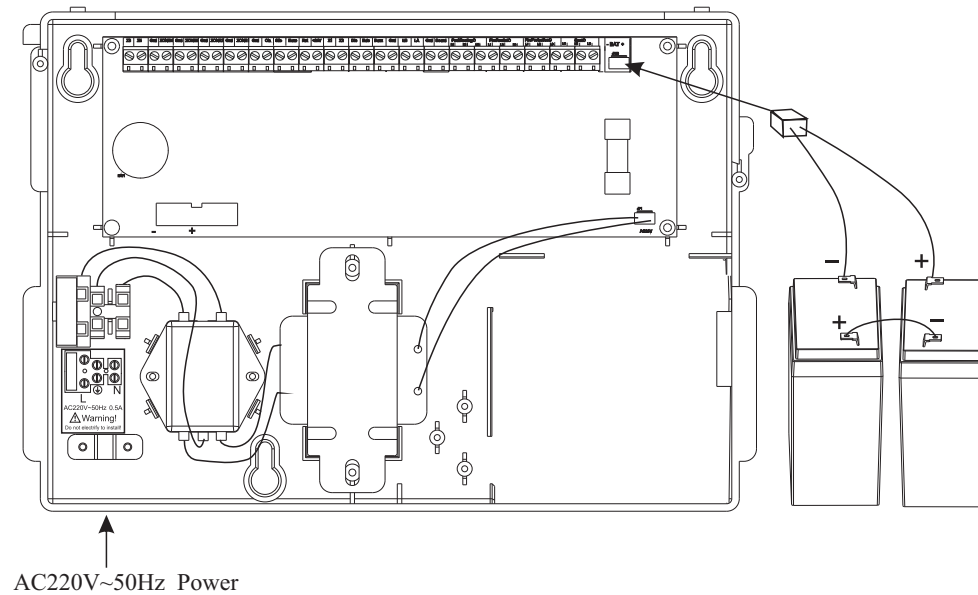




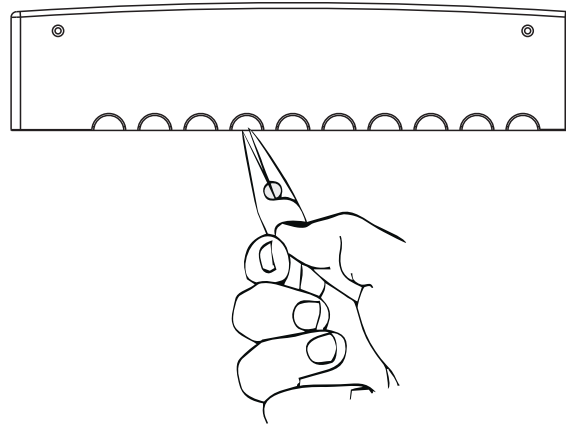
9.1.2 Open the top cover with the screwdriver. Hang the bottom cover onto the screw, and then lock the screw.



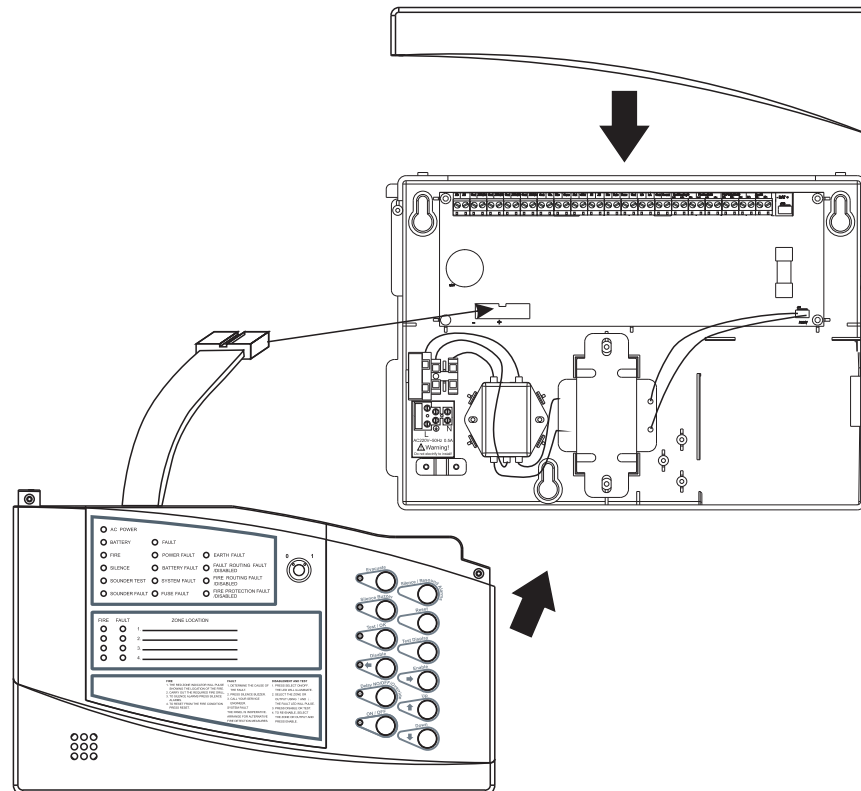
9.1.3 Install AC220V~50Hz power as per the label instructed (Note : Do not electrify to install) Connect two 12V batteries in series. Install the series batteries into the battery compartment. Fix the batteries with the battery holder. Insert the battery output into the backup battery input port of the circuit.



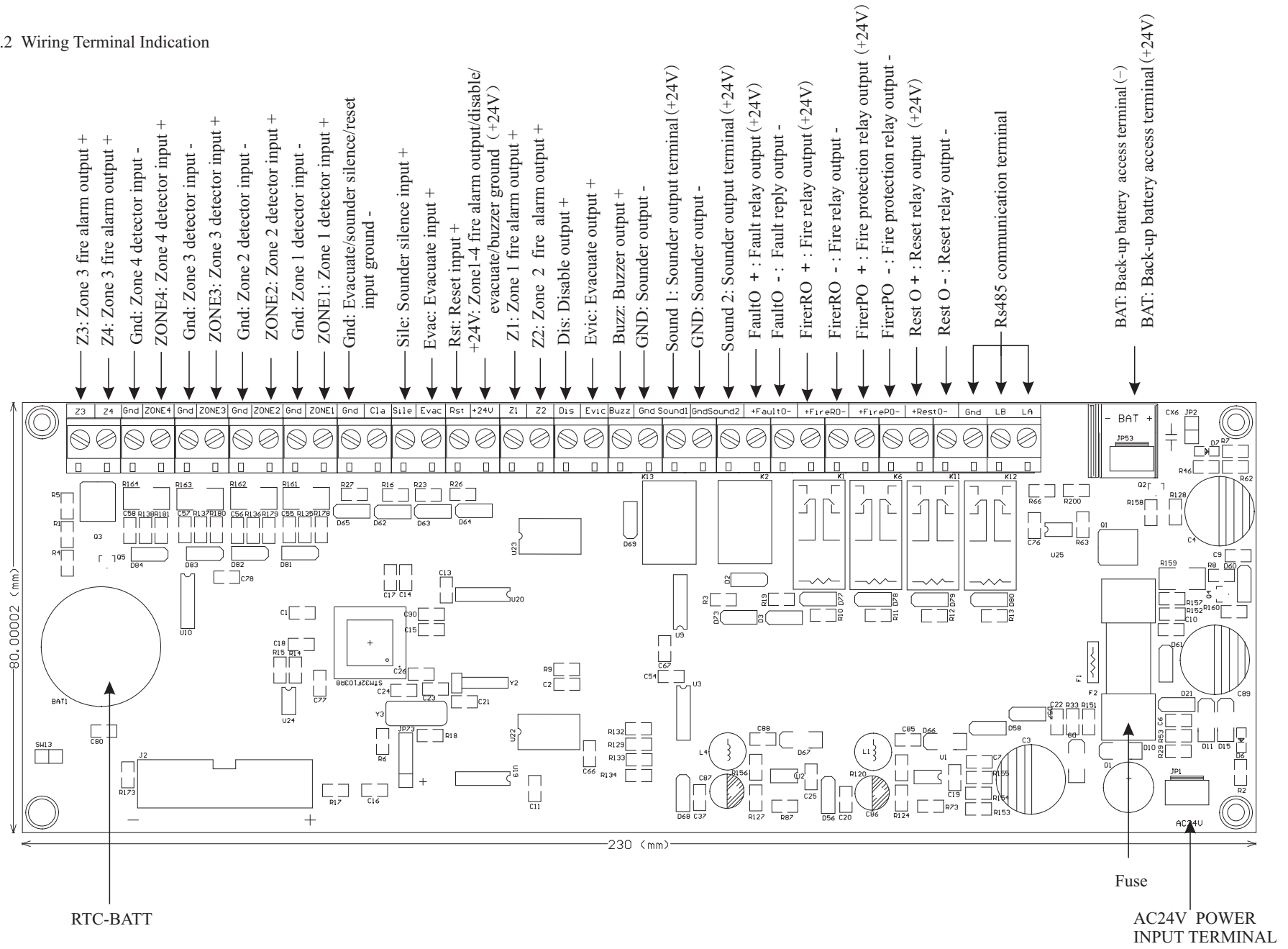
9.1.4 Cut through the wiring holes with the plier.



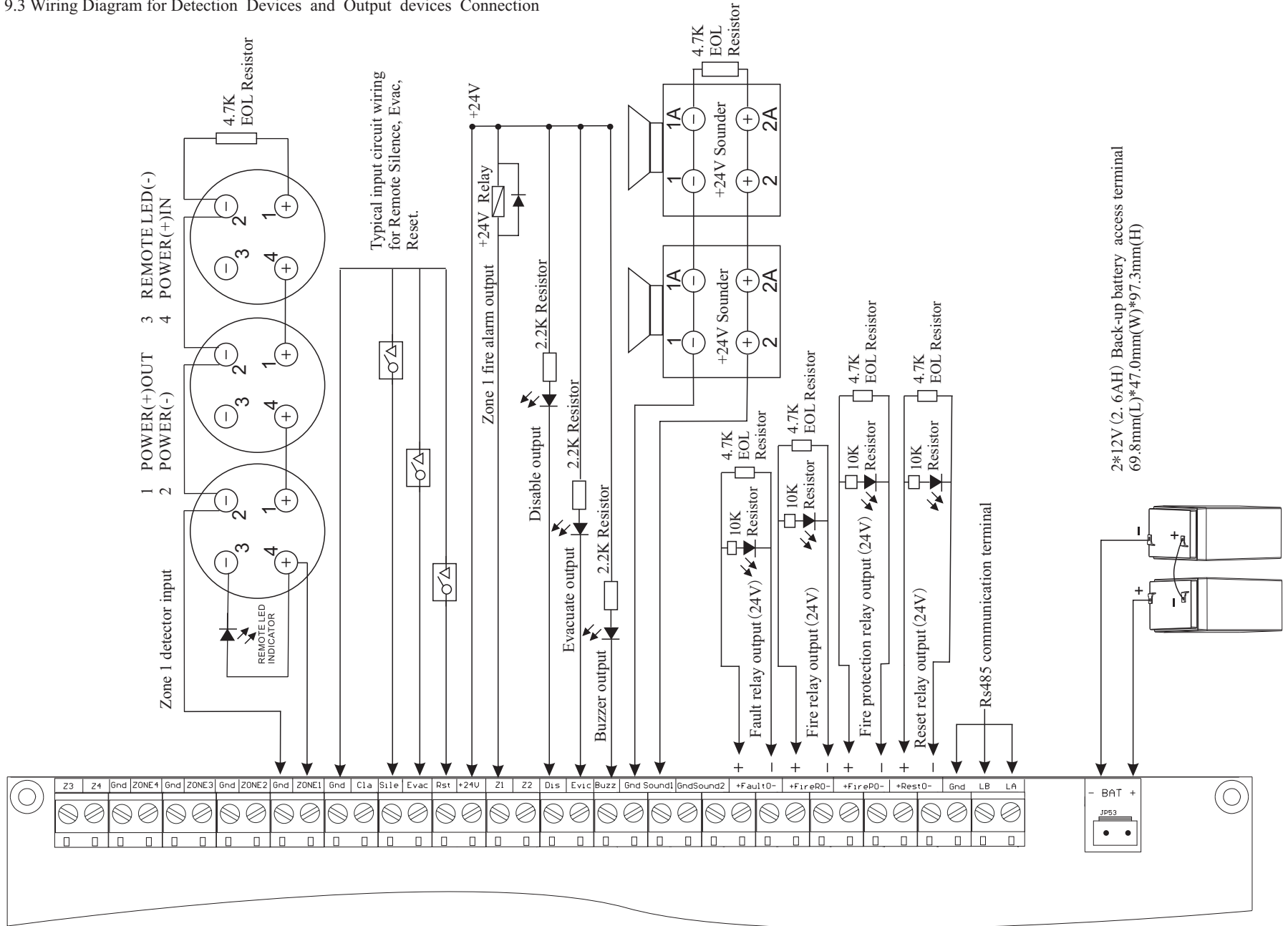
9.1.5 Insert the line terminal into the base to connect the panel cover with the circuit part. Put the top cover and the front cover into the place, and lock with screws.



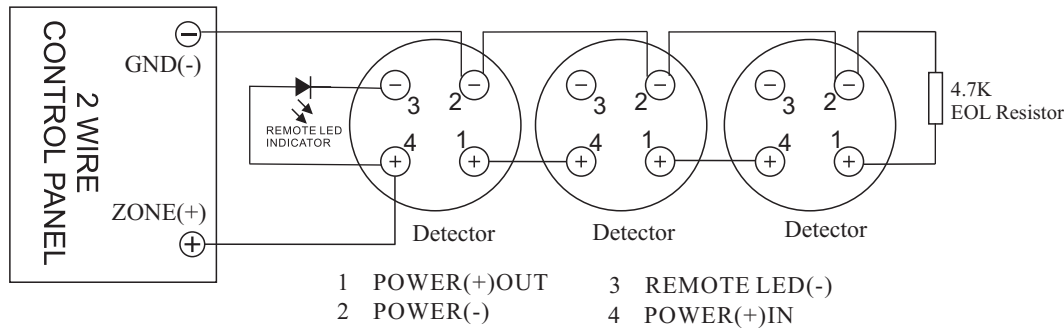
## 9.2 Wiring Terminal Indication



9.3 Wiring Diagram for Detection Devices and Output devices Connection

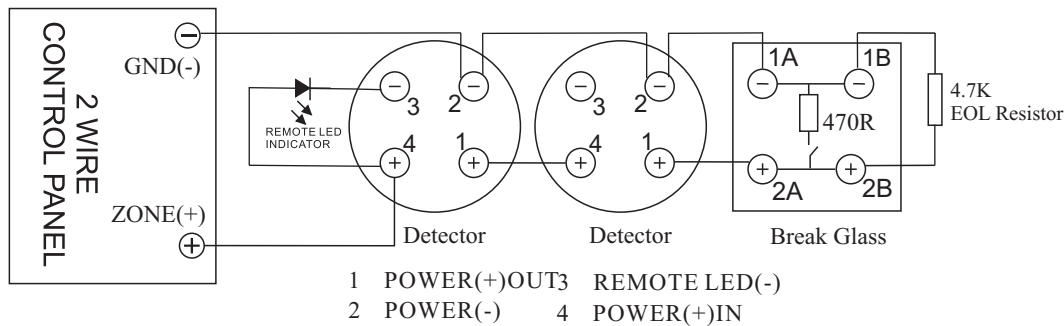


### 9.4 2-Wire Detector Wiring Diagram



Base terminals “2” and “4” for DC power input, non-polarized. “1” for DC power anode or cathode output. “3” for remote indicator cathode. When remote indicator is used, “4” must be connected with the positive power input line.

### 9.5 2-Wire Detector + Break Glass Wiring Diagram



Base terminals “2” and “4” for DC power input, non-polarized. “1” for DC power anode or cathode output. “3” for remote indicator cathode. When remote indicator is used, “4” must be connected with the positive power input line.

## 10. REGULAR TEST AND MAINTENANCE

### 10.1 Weekly Test Routine

**WARNING:** Before testing, the operator must be aware both of the operation of all devices fitted to any auxiliary circuits and the consequences of their operation.

- The guidelines below should be followed:
  - Contact the alarm-receiving center immediately before and after the weekly test to prevent unwanted alarms and confirm alarm receipt.
  - A manual call and a fire detector (on different zones) should be operated during working hours on the same day each week at approx. the same time of day.
    - \* Zone operated should be varied each month.
    - \* The manual call points and fire detectors should be tested on a rotating basis so that all installed units are checked.
  - Operation of the sounders should be confirmed, identifying any area of poor audibility.
  - The receipt of the fire signal at any remote monitoring centers should be confirmed.
  - The operation of auxiliary items such as door closer should be confirmed.
- If shift working is operated, additional fire tests should be arranged to ensure all staff are familiar with the alarm signals.
- To avoid confusion, the sounder operation during the test should be limited to 1 minute.

## 10.2 Maintenance

- The following checks should be made:
  - A visual inspection should be made to check whether structural or occupancy changes have affected the siting of manual call points or sounders.
  - A record of false alarm should be checked and appropriate action taken if the rate of false alarms exceeds the recommendations of EN54-4.
  - The batteries should be disconnected and a full load alarm simulated.
  - The batteries and their connections should be examined to ensure they are in good serviceable condition and are likely to fail before the next inspection. The battery should be subjected to a momentary load test.
  - The fire alarm functions of the control and indicating equipment should be checked by operating a device in each zone.
  - The operation of the fire alarm device (sounders) should be checked.
  - All controls and indications on the fire panel should be checked.
  - The operation of any automatic signal link to a remote monitoring location should be checked.
  - All ancillary functions of the fire alarm panel should be checked.
  - All fault indicators and their circuits should be checked, when practicable, by simulation of the fault condition.
  - Every manual call point should have been operated at least once.
  - All automatic fire detectors should have been examined and tested via the appropriate means.
  - All fire alarm devices should have been tested and checked for correct location.
  - A visual inspection should be made to confirm that all cable fittings and equipment are secure, undamaged and adequately protected.
  - The standby power capacity should be verified as sufficient for the system.

## 11. TROUBLESHOOTING

Symptom	Analysis	Solution
AC power disconnected, AC Power LED on, Power fault LED off.	Damaged D9.	Replace main circuit board.
AC Power LED off. Power fault LED flash.	Loss of main power.	Check incoming AC power.
	Damaged AC power fuse.	Replace fuse (250V2A).
	Damaged D22 LED.	Replace display circuit board.
	Damaged power supply.	Replace power transformer( spec. IN-AC220V, OUT-22V, 5A)
Battery LED off. Battery fault LED flash.	Missing or disconnected battery.	Connect batteries.
	Low or damaged battery.	Replace batteries. (spec. 12V/2.6Ah,70*47*103MM)
Battery LED on. Fuse fault LED flash.	Damaged battery fuse.	Replace fuse (250V2A).
Fault routing fault /disabled LED flash.	Loss of fault routing wiring.	Check fault routing wiring and end-of-Line Resistor.
Fire routing fault /disabled.	Loss of fault routing wiring.	Check fire routing wiring and end-of-Line Resistor.
Fire protection fault /disabled LED flash.	Loss of fire protection wiring.	Check fire protection wiring and end-of-Line Resistor.
Zone Fault LED flash.	Loss of detector connection.	Check the zone loop and end-of-Line Resistor.
Sounder LED flash.	Loss of sound driving connection.	Check the sound driving loop and end-of-Line Resistor.

## 12. LIMITED WARRANTY

The manufacturer warrants its products to be free from defects in materials and workmanship for 12 months from the date of manufacture, under normal use and service. Products are date-stamped at time of manufacture. The sole and exclusive obligation of the manufacturer is to repair or replace, at its option, free of charge for parts, any part which is defective in materials or workmanship under normal use and service. For products not under the manufacturer's date-stamp control, the warranty is 12 months from date of original purchase by the manufacturer's distributor unless the installation instructions or catalog sets forth a shorter period, in which case the shorter period shall apply. This warranty is void if the product is altered, repaired, or serviced by anyone other than the manufacturer or its authorized distributors, or if there is a failure to maintain the products and systems in which they operate in a proper and workable manner. In case of defect, secure a Return Material Authorization form from our customer service department. Return product, transportation prepaid, to the manufacturer.

This writing constitutes the only warranty made by this manufacturer with respect to its products. The manufacturer does not represent that its products will prevent any loss by fire or otherwise, or that its products will in all cases provide the protection for which they are installed or intended. Buyer acknowledges that the manufacturer is not an insurer and assumes no risk for loss or damages or the cost of any inconvenience, transportation, damage, misuse, abuse, accident, or similar incident.

THE MANUFACTURER GIVES NO WARRANTY, EXPRESSED OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR OTHERWISE WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. UNDER NO CIRCUMSTANCES SHALL THE MANUFACTURER BE LIABLE FOR ANY LOSS OF OR DAMAGE TO PROPERTY, DIRECT, INCIDENTAL, OR CONSEQUENTIAL, ARISING OUT OF THE USE OF, OR INABILITY TO USE THE MANUFACTURER'S PRODUCTS. FURTHERMORE, THE MANUFACTURER SHALL NOT BE LIABLE FOR ANY PERSONAL INJURY OR DEATH WHICH MAY ARISE IN THE COURSE OF, OR AS A RESULT OF, PERSONAL, COMMERCIAL, OR INDUSTRIAL USE OF ITS PRODUCTS.

This warranty replaces all previous warranties and is the only warranty made by the manufacturer. No increase or alteration, written or verbal, of the obligation of this warranty is authorized.

