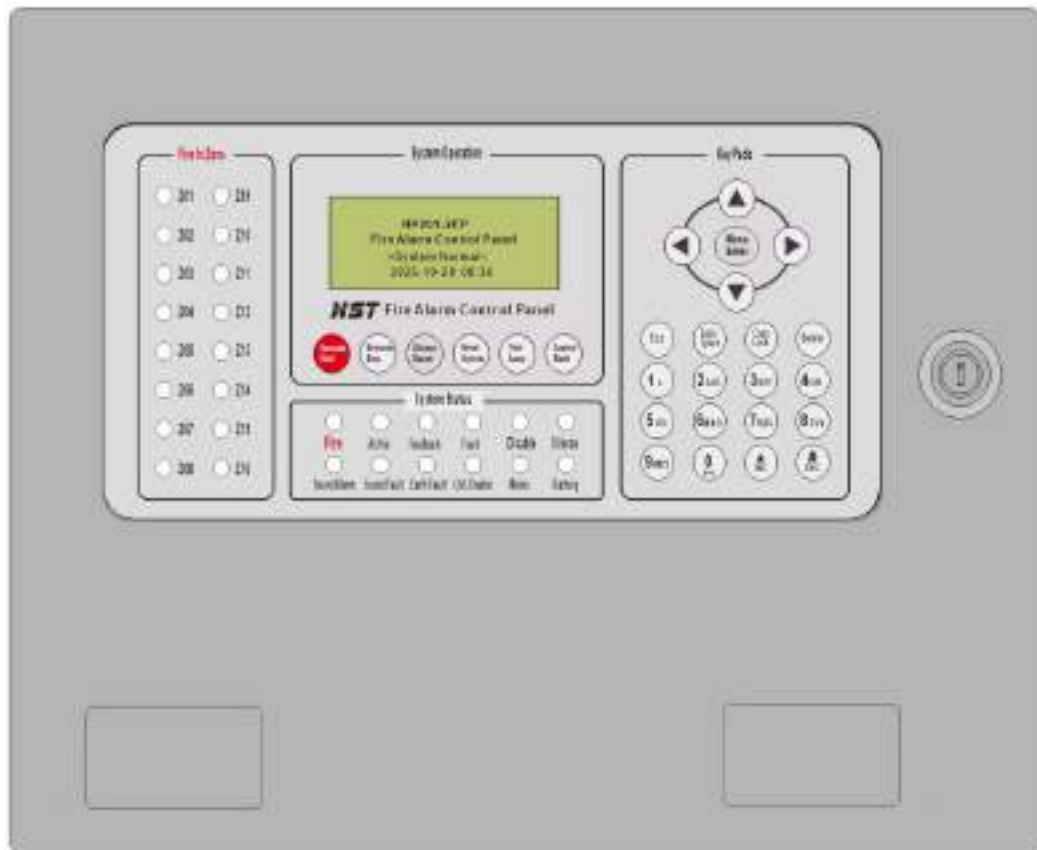

HP201-2EP Addressable Fire Alarm Control Panel Operation and Maintenance Manual



IMPORTANT

This manual should be left with the panel after installation.

We reserve the right to change product specifications without prior notice.

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1. Introduction

This manual contains an information about the limitations in using and operation of the product, as and information about the limits in the responsibility of the manufacturer.

Please read the operation manual carefully before starting the installation.

The addressable fire alarm control panels(FACP) provide all of the sophisticated features required of a leading edge fire alarm system along with the simple operation and efficient installation methods demanded by both installers and building users.

The panel can be surface mounted and the generously sized metal back box allows ample space for rear or top cable entries.

The addressable fire alarm control panel has two addressable loops and capable to connect up to 250 addressable devices per loop.

Each of the system components has been specifically designed to operate as part of the system. This provides assurance that the control panel, smoke detectors, interface devices and the ancillary components are all fully compatible with one another and that the full range of system functionality is supported by each device.

The intelligent detectors and the intelligent modules have internal microprocessors to realize digital filtering and auto-compensation functions; the data collection is true and reliable; the control panel can carry out data processing based on fuzzy control theory and modern fire alarm theory to fundamentally avoid missing alarms and to reduce false alarms, so as to improve reliability.

The detecting bus and the control bus share a two-wire structure and have non-polarity and fully mixed coding of the detectors and modules, and the intelligent detectors and the intelligent modules can be directly connected to them, which greatly simplify the system wiring, engineering installation and circuit maintenance.

The system uses an AC-DC master-standby power supply system which will automatically change between the master and standby power supplies in the event of a power failure of either of the two power supplies to ensure uninterrupted operation of the system.

The panel can be connected to remote fire alarm display panels (or called remote repeater) to display detailed information for fire alarms by standard RS-485.

1.1. Features

- Two onboard detection loops with maximum 500 addressable devices, such as addressable smoke detector, heat detector, call point, input module, output module, interface module, sounder strobe and remote repeater etc.
- Loop circuit can be set to Class A or Class B wiring communication modes.
- One onboard free Fixed 24 voltage output.
- One onboard free Re-settable 24 voltage output.
- Two notification Appliance Circuits(NACs).
- One fire relay output.
- One fault relay output.
- One auxiliary relay output.
- One RS-485 interface for remote repeater or the other display device.
- Six onboard fixed alarm functional keys (Evacuate Start , Evacuate Stop,Silence Buzzer,Reset System, Test Lamp and Control Mode).
- Full navigation keys & full numeric keypad.
- Twelve onboard functional LED indicators for different panel states.

- Sixteen fire zones LED indicators.
- 999 fire event log records, 999 fault event log records and 999 the other event log records.
- Real time clock.

1.2. Specifications

Table 1: Specifications of fire alarm system.

Mains Input	90 to 270VAC 50/60 Hz
	Standby current: 60mA@220VAC(no load) max.
	Standby current: 100mA@220VAC(full load) max.
	Alarm current: 150mA@220VAC max.
	main fuse current: 2A@250VAC
Power supply rating	5Amps @ 24VDC
Battery type and size	2 * 12V/7.0Ah max. sealed lead acid. L*W*H=150*65*95~107mm
Maximum battery charging current	0.9 Amps @ 27VDC
Number of loops	2 loops (Can be set to Class A or Class B)
Addressable loop capacity	250 addressable devices per loop
Detection loop standby current	100mA max(250 loop devices connected).
Detection loop alarm current	250mA max.
Detection loop short current	>300mA max.
24VP Output	Permanent 24VDC output, 1Amp@24VDC
24VR Output	Resettable 24VDC output, 1Amp@24VDC
Cabling type of loop	10-18AWG Twisted pair(2.5mm ² -1.0mm ²)
Load resistance of loop	50 Ohm max.
Load capacitance of loop	300pF max.
Cabling type of terminals	10-18AWG Twisted pair(2.5mm ² -1.0mm ²) Or Single strand copper core wire
NACs (Sound1&2) End-of-line Resistor	10K ohms 1/2W ±5%
Fault relay rating	2A & 30VAC, resistive
Alarm relay rating	2A & 30VAC, resistive
Auxiliary relay rating	2A & 30VAC, resistive
RS485 communication	Can be connected 32 units
Fire zones	16 Zones on board LED indicate
Earth fault	Earth fault indicator
Environmental Limitations	0°C to +50°C
	10% to 93% humidity (non-condensing)
Enclosure Dimensions	L*H*W= 390mm*320mm*85.8mm
Net Weight	5kg (Without batteries)
Material of enclosure	Metal
Color	Grey

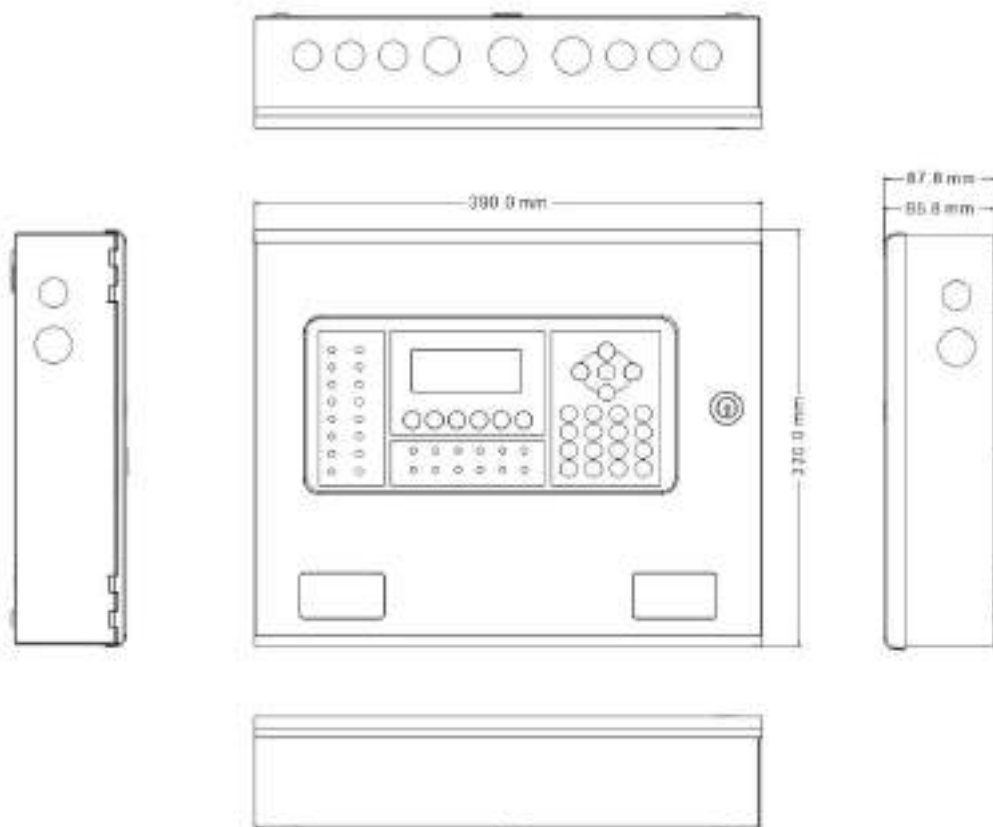


Figure1. Dimension drawing of control panel

1.3. Fire alarm system limitations

An automatic fire alarm system – in general is made up of smoke, heat & other detectors, manual call points, audible warning devices, fire alarm control panels with remote notification capability, which can supply early warning of a developing fire. Such a system, on the other hand, is unable to assure protection against property damage or loss of life resulting from a fire.

The manufacturer recommends that smoke and/or heat detectors must be positioned throughout a protected premise following the recommendations of the current edition of the EN Standard, manufacturer's recommendations contained in the Guide for proper Use of System Smoke Detectors, which is made available at no charge to all installing dealers. A study by the Federal Emergency Management Agency (an agency of the United Europe) indicated that smoke detectors may not go off in as many as 35% of all fires. A fire alarm system may not provide timely or sufficient notice, or might not function, for a diversity of reasons:

Smoke detectors may not sense fire where smoke cannot reach the detectors such as in chimneys, in or behind walls, on 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.

Particles or combustion or "smoke" from a developing fire may not reach the sensing chambers of smoke detectors because:

Barriers such as closed or partially closed doors, walls, or chimneys may inhibit particle or smoke flow.

Smoke particles may become “cold,” stratify, and not reach the ceiling or upper walls where detectors are located.

Smoke particles may be blown away from detectors by air outlets.

Smoke particles may be drawn into air returns before reaching the detector.

The amount of “smoke” present may be insufficient to alarm the smoke detectors. Smoke detectors are designed to alarm at various levels of smoke density. If such density levels are not created by a developing fire at the location of detectors, the detectors will not go into alarm. Smoke detectors, even when working properly, have sensing limitations. Detectors that have photo electronic sensing chambers tend to detect smoldering fires better than flaming fires, which have little visible smoke. Detectors that have ionizing-type sensing chambers tend to detect fast-flaming fires better than smoldering fires. Because fires develop in different ways and are often unpredictable in their growth, both types of detectors are necessarily best and a given type of detector may not provide adequate warning of a fire. A smoke detector cannot be expected to provide adequate warning of fires caused by arson, children playing with matches (especially in bedrooms), smoking in bed, and violent explosions (caused by escaping gas, improper storage of flammable materials, etc.). Heat detectors do not sense particles or combustion and alarm only when heat on their sensors increases at a preset rate or reaches a predetermined level.

Rate-of-rise heat detectors may be subject to reduced sensitivity overtime. For this reason, the rate-of-rise feature of each detector should be tested at least once per year by a qualified fire protection expert. Heat detectors are designed to protect property, not life.

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 located near the control panel, 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. Any warning device may fail to alert people with a disability or those who have recently consumed drugs, alcohol or medication. Please note that:

Strobes can, under certain circumstances, cause seizures in people with conditions such as epilepsy.

Studies have shown that certain people, even when they hear a fire alarm signal, do not respond or comprehend the meaning of the signal. It is the property owner’s responsibility to conduct fire drills and other training exercise to make people aware of fire alarm signals and instruct them on the proper reaction to alarm signals.

In rare instances, the sounding of a warning device can cause temporary or permanent hearing loss.

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 and only if the batteries have been properly maintained and replaced regularly.

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.

Telephone lines needed to transmit alarm signals from a premise to a central monitoring station may be out of service or temporarily disabled. For added protection against telephone line failure, backup radio transmission systems are recommended.

The most common cause of fire alarm malfunction is insufficient maintenance. To keep the entire fire alarm system in excellent working order, ongoing maintenance is required as the manufacturer's recommendations, and UL and NFPA 72 shall be followed. Environments with large amounts of dust, dirt or high air velocity require more frequent maintenance. A maintenance agreement should be arranged through the local manufacturer's representative. Maintenance should be scheduled monthly or as required by National and/or local fire codes and should be performed by authorized professional fire alarm installers only. Adequate written records of all inspection should be kept.

1.4. Installation precautions

WARNING – Several different sources of power can be connected to the fire alarm control panel. Disconnect all sources of power before servicing the control unit. 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 fully.

CAUTION – System reacceptance testing requirements. To ensure proper system operation, this product must be tested in accordance with NFPA 72 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 NFPA requirements for indoor dry operation at 0-+50° C and at a relative humidity up to 93 ±2%RH (non-condensing) at 40 ±2° 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 all peripherals be installed in an environment with a nominal room temperature of 15-27°C. Verify that wire sizes are adequate for all initiating and indicating device loops. Refer to the manual specifications section for maximum allowable I.R. drop from the specified device voltage.

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 out-side aerial wiring is not recommended, due to an increased susceptibility to nearby lightning strikes. Consult with the Technical Services Department if any problems are anticipated or encountered.

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 by authorized personnel.

2. Control panel installation

2.1. Important notice

This product should be installed, commissioned and maintained by suitably qualified service personnel with reference to IEE regulations and any statutory requirements, for use in fire alarm signaling systems, only when installed in accordance with this manual and the latest National Fire Protection Association Standards NFPA 72; the National Electrical Code (NFPA 70); the Life Safety Code (NFPA 101); and/or the local authority having jurisdiction (AHJ). It is possible to apply system components incorrectly or arrange system components and installation wiring so that required life safety functions are NOT performed. As a result, lives may be lost.

To minimize this possibility:

DO NOT deviate from any installation instructions contained in this manual.

DO NOT assume any installation details not shown in this manual.

DO NOT alter any mechanical or electrical features of the equipment supplied

BE FAMILIAR with the building code, fire prevention code, and/or requirements of the Authority Having Jurisdiction (AHJ) in the locale of the installation.

CAUTION

Under normal and fault conditions, AC line voltages may be present on any terminal. Touching any component could be hazardous and result in loss of life. A short circuit can result in arcing that could cause molten metal injuries to testing personal. To minimize this possibility, only qualified electrical technicians familiar with electrical hazards should perform these checkout procedures. Safety glasses should be worn by such personnel, and instruments used for voltage measurement should be designed for the purpose and should be in good mechanical and working order.

2.2. Mounting the enclosure

Install the enclosure as follows:

- Carefully unpack the system components and inspect for any damage due to shipping.

- Mount the enclosure in a clean, dry, vibration-free area where extreme temperatures are not encountered. The location should be readily accessible with sufficient room for easy installation and maintenance.
- Mount the cabinet by using the three mounting holes located in the upper back of the cabinet. After the panel has been properly located using the mounting holes, the panel can be secured.
- Complete all conduit connections to the cabinet. Use the knockouts provided in the top and the sides.

Wire must NOT enter the bottom of the cabinet, since this area is intended for batteries only.

cable entries must be cleared before power is applied to the panel.

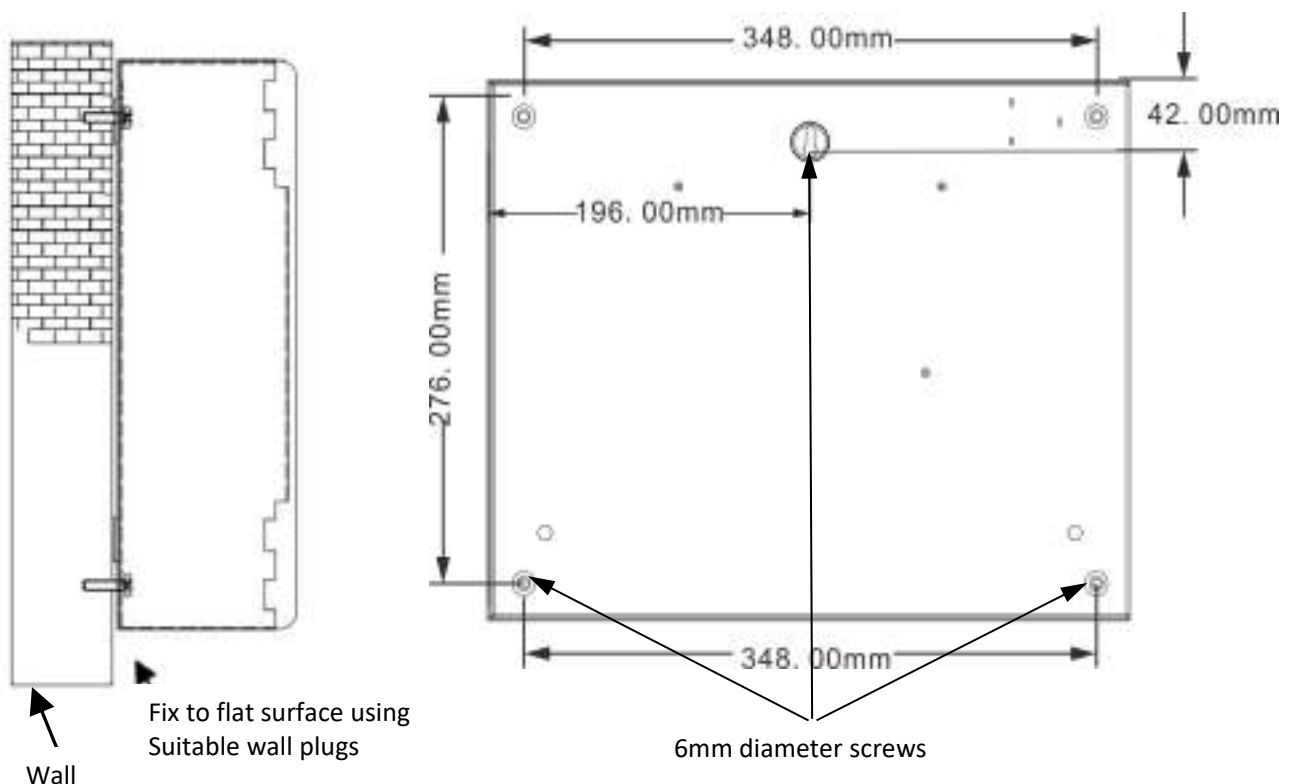


Figure2. Dimensions of mounting enclosure

2.3. General requirements for wiring

- (1). Confirm that the devices, such as smoke detector, heat detector, call point, sounder, release indicator are match the system.
- (2). Recommended to use RVS twisted pair cable for addressable loops with a wire diameter of at least $RVS-2 \times 1.0\text{mm}^2$.
- (3). The cable distance from the farthest device to the panel should be less than 1500 meters.
- (4). Confirm that all EOL resistors are well connected.

2.4. AC Power Connection

The control panel requires connection to a separate, dedicated AC branch circuit, which **MUST** be labelled FIRE ALARM. This branch circuit must connect to the line side of the main power feed of the protected premises. No other non-fire alarm equipment may be powered from the fire alarm branch circuit. The branch circuit wire must run continuously, without any disconnect devices, from the power source to the control panel. Overcurrent protection for this circuit must comply with Article 760 of the National Electrical Code as well as local codes. Use 14 AWG (2.00 mm²) wire with 600 volt insulation for this branch circuit.

WARNING!

To reduce the risk of electrical shock, make sure that all power has been turned off or disconnected prior to attempting to connect AC power to the Power Supply.

Apply the AC Power **BEFORE** connecting the batteries to the Panel!

Provide the Fire Alarm Control Panel with a dedicated AC Circuit rated 4.5 Amps or higher. Refer to figure 3 for the AC power wiring diagram.

Enter the power cable into the Cabinet via a knock out hole.

Attach the brown (live) wire from the source to the terminal labeled "L" terminal.

Attach the blue (neutral) wire from the source to the terminal labeled "N" terminal.

Attach the ground wire from the source to the terminal labeled "E" terminal.

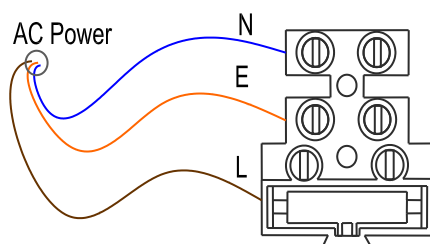


Figure 3. AC power wiring connection

2.5. Battery Installation

The battery charging output is current limited to 1 Amp and is protected such that a short, open or battery polarity reversal will not affect the output of the power supply. If any of these fault conditions do occur they will be indicated on the front panel of the FACP within 30 seconds of the fault occurring. In the case of a short circuit the battery charger resets automatically when the short is removed.

2.5.1 Load Disconnect

A load disconnect feature has been incorporated to prevent deep discharge damage to the batteries during prolonged AC power failure. This feature isolates the batteries from the panel's load if the battery voltage drops below 20VDC causing the panel to power down safely. The battery monitoring circuit current, while in the disconnected mode, is typically less than 1mA.

2.5.2 Battery Protection

The battery charger output connection to the batteries is protected by a self-resetting PTC. The operation of the PTC causes the FACP to indicate a fault.

2.5.3 Battery Connection

2 * 12 volt batteries of the same capacity are wired in series to produce the 24volts required by the FACP and are placed at the bottom of the enclosure. The red wire connects to the positive of the battery, the black wire connects to the negative of the battery, and the short connecting wire is used to connect two batteries in series together. Refer to Figure 4 as show below.

WARNING!

Maximum battery size: L*W*H=150*65*95~107mm, 2 * 12V/7.0Ah sealed lead acid.

After connecting the batteries, fix the batteries in the bottom case of panel with a fixed bracket.

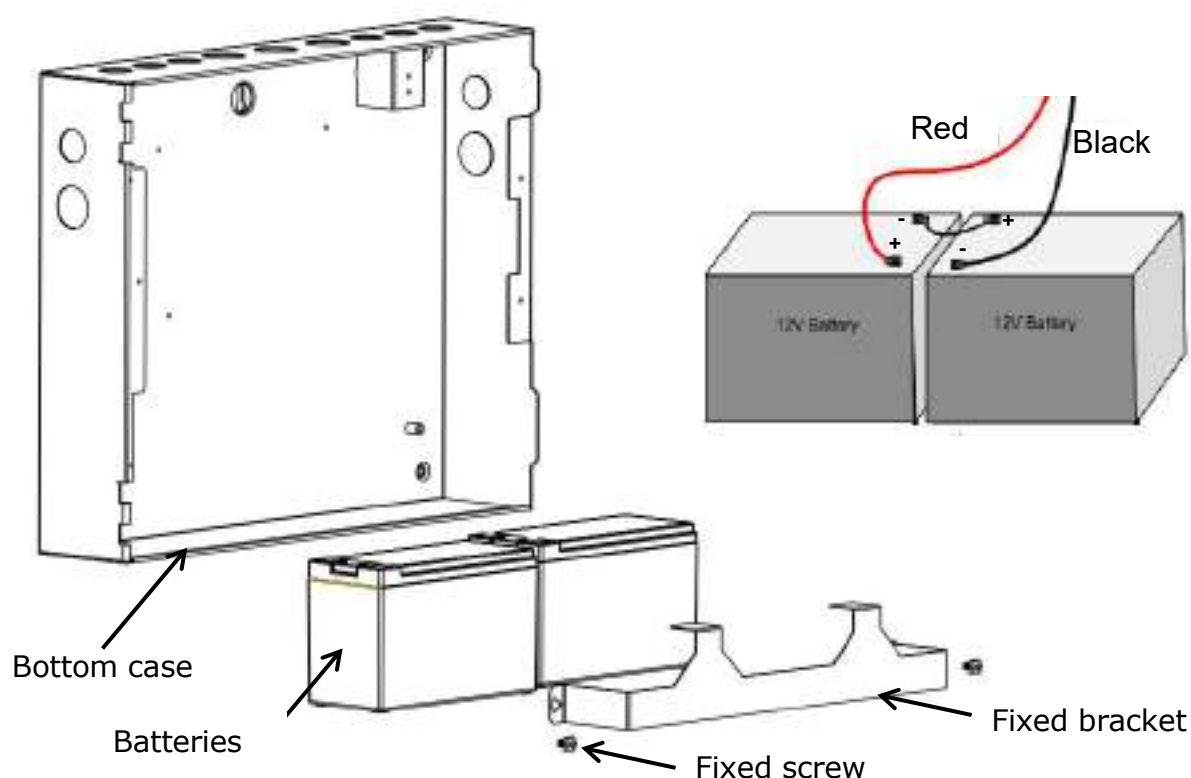


Figure 4. Batteries wiring connection

2.5.4 Battery Maintenance and Replacement

Batteries and battery terminals should be kept clean. Other than that no special maintenance is required. Should battery replacement be necessary it is recommended that both batteries be replaced at the same time to ensure correct AH rating and standby mode reliability.

Method

First implement local reporting requirements to prevent any false alarms or calls. So as to reduce the FACP "fault time" have the new fully tested batteries close at hand, open the cabinet, remove the battery leads from the old batteries, a Power Trouble fault will be indicated and the buzzer will sound. Remove the batteries and replace them with the new ones, once connected the Power Trouble fault will no longer be indicated.

Note: Ensure the new batteries are tested and fully charged before proceeding with the replacement process and record on the batteries the date they were placed into service.

2.6. Ground Trouble Monitoring

If a Ground Fault occurs on a circuit, then the Ground Fault and common "Fault" LED's will illuminate, and the identification of the fault is displayed on the LED. Ground Fault monitoring disable/enable is possible via the menu at access level 3 if required. Disabling the Ground Trouble monitoring feature will illuminate the "Trouble" LED on the FACP.

The earth ground detection impedance is approximately 10K ohms.

Refer to item 4.7.4 to enable or disable earth fault detection.

3. Control, Communications and Monitoring

FACP provides a RS485 communication, three form C dry contact relays, two NACs circuits, two communication loops with Class A or Class B and two 24Vdc outputs. Refer to Figure 5.

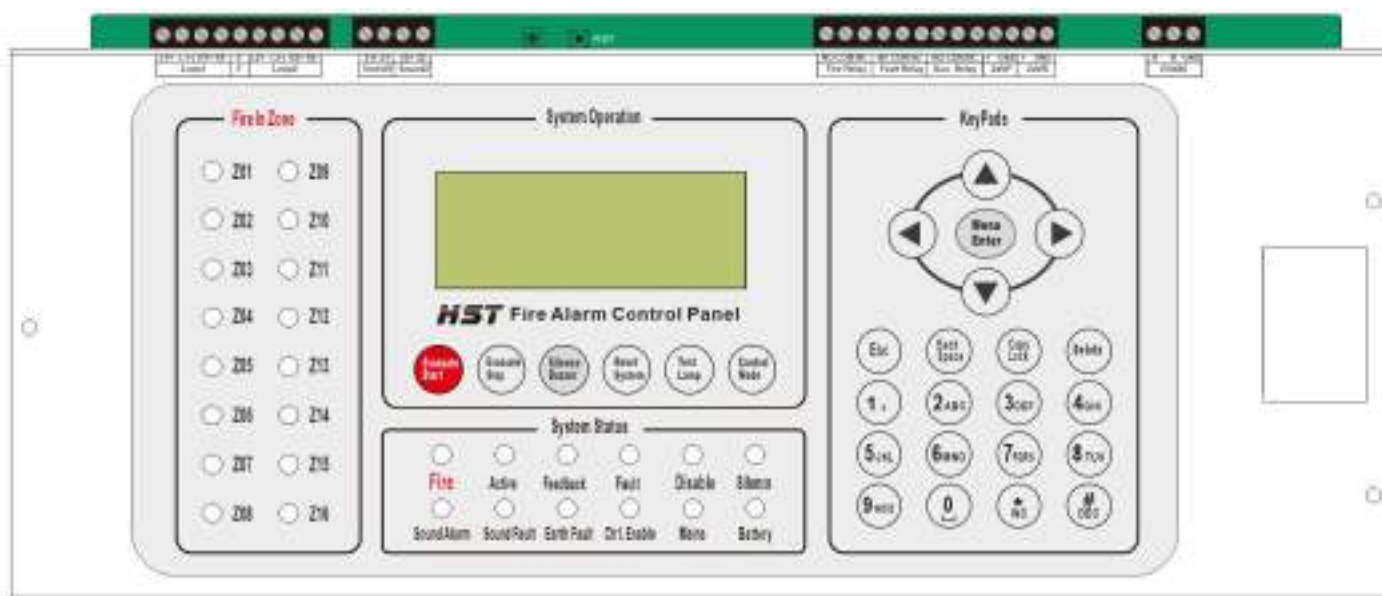


Figure 5 - Wiring terminals

3.1. RS485 External Communications

Consists of four terminals, RS485 A, B, 24VP/24VR and GND(0VDC). If a fault occurs on the communication line then the LCD will display the fault and the Common Trouble LED will illuminate.

The external communications is based on half duplex RS485. The A and B carry the data to allow the panel to communicate with the remote modules.

The +24VDC and GND terminals are current limited to 1 amp and can provide power to the remote modules. When remote modules are powered from the panel, the voltage drop between the panel and remote module cannot exceed the common mode voltage limit of RS485. The voltage drop will depend upon the number and type of remote modules, and the length and type of cable.

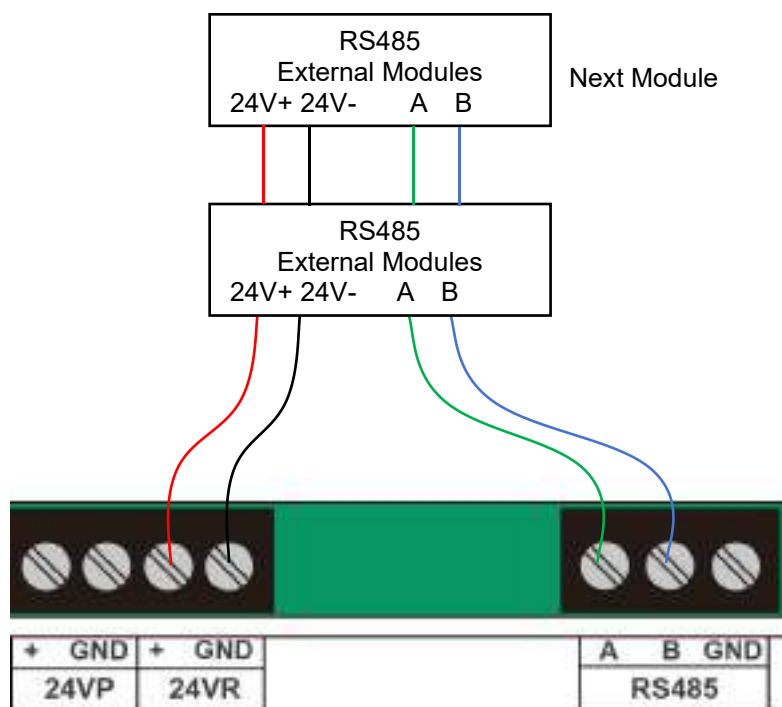


Figure 6 - RS485 external modules wiring connection

3.2. Signaling Loop Circuits(SLC)

The circuit:

- Can be configured for Class A or B operation. Refer to item **4.6.3.**
- Is power limited to 250mA @ 24 – 30.0VDC when operating in either Class A or Class B mode.
- Accommodates a maximum of 250 addressable devices on per SLC circuit.
- The SLC circuit is fully supervised.
- SLC circuit tolerances:
 - Resistance - 50 ohms maximum.
 - Capacitance – less than 1 microfarad (μF).
 - Inductance – less than 1 millihenry (mH).

Compatible SLC Circuit Devices

Addressable Detectors:

- Smoke Detector
- Heat Detector
- Smoke & heat Detector

Addressable Modules:

- Manual Call Point
- Input Module
- Input and Output Module
- Conventional Zone Module
- Sounder strobe
- Short Circuit Isolator

Note: When external notification appliances are installed using addressable modules and more than one notification zone are provided, ensure to use Class A wiring to maintain proper function during single ground, or wire to wire fault on the installation. The faults shall not affect more than one notification zones.

When wiring shielded cables, the terminal **E** is used to connect the shielding layer of the cable. All devices must be addressed with an addressable programmer before installation, with an address range of 1-250.

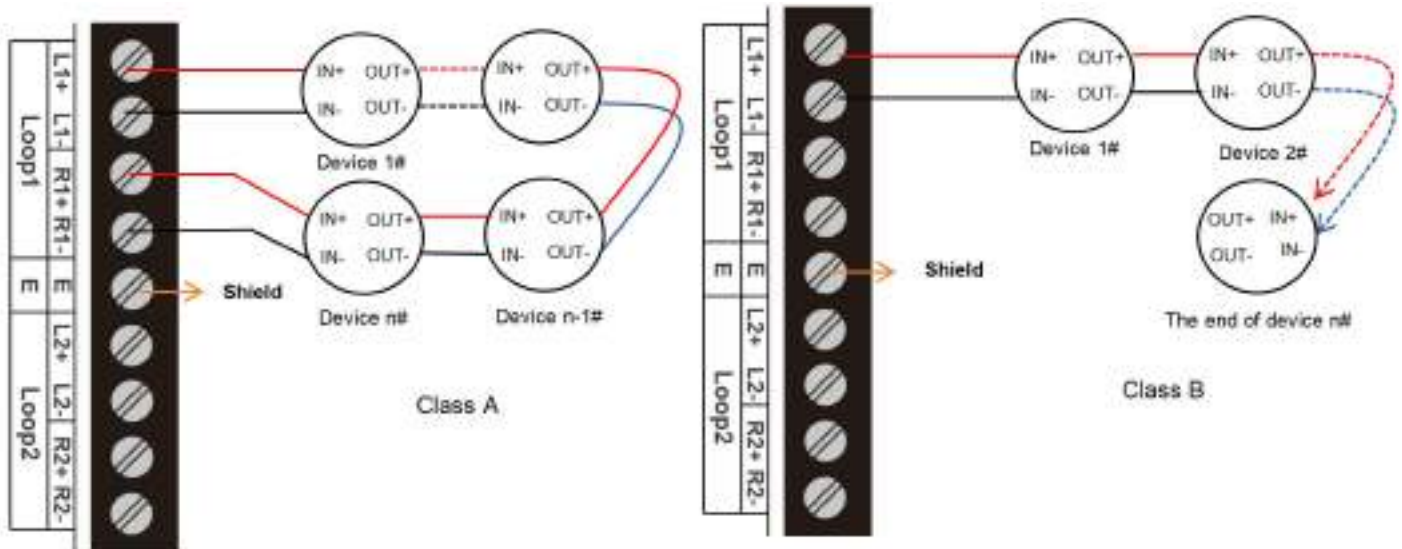


Figure 7 -Class A and Class B detector connection to FACP

3.3. Notification Alarm Circuits(NACs)

FACP provides 2 class B notification alarm circuits **Sound1** and **Sound2** used to connect different conventional sound strobe or bell devices. Each circuit is fused @1A. 10KΩ end of line resistor must be connected for open & short circuit faults detection. Both sounder circuits trigger on any fire alarm conditions.

If the alarm bell or sounder is non-polarized, it should be connected a 1N4007 diode before electronic terminal.

To prevent electromagnetic interference, it is recommended to use twisted pair connection.

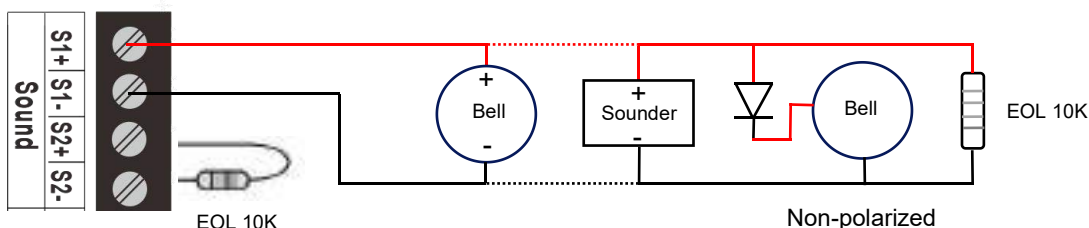


Figure 8 -Conventional bell and sounder connection to NACs

3.4. Output Relays

FACP provides three form C dry contact relays. All relays are rated 2A @ 30VDC. By default Fire Relay & Aux. Relay trigger on any fire alarm conditions, the Fault Relay triggers on any fault condition.

-Fire Relay&Aux. Relay are opened in normal operation on and closed in case of fire alarm.

-Fault Relay is opened in normal operation on and closed in case of fault or power off.

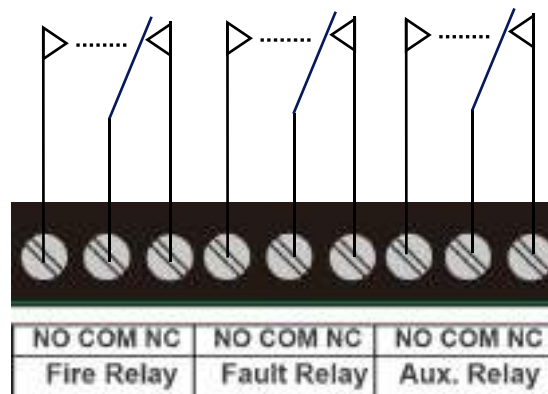


Figure 9 -Relay outputs of FACP

3.5. DC Power Outputs

FACP provides two 24VDC/1amp supplies that one is a permanent 24VDC output and the other is a resettable 24VDC output.

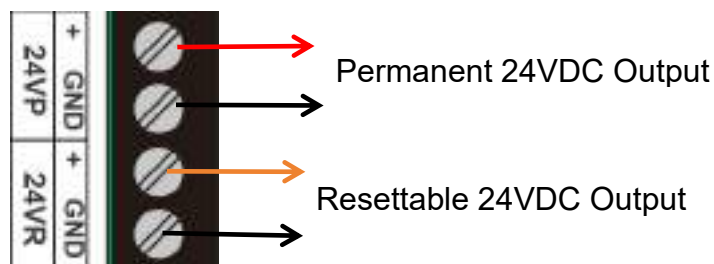


Figure 10 - DC power outputs of FACP

4. Controls Operation

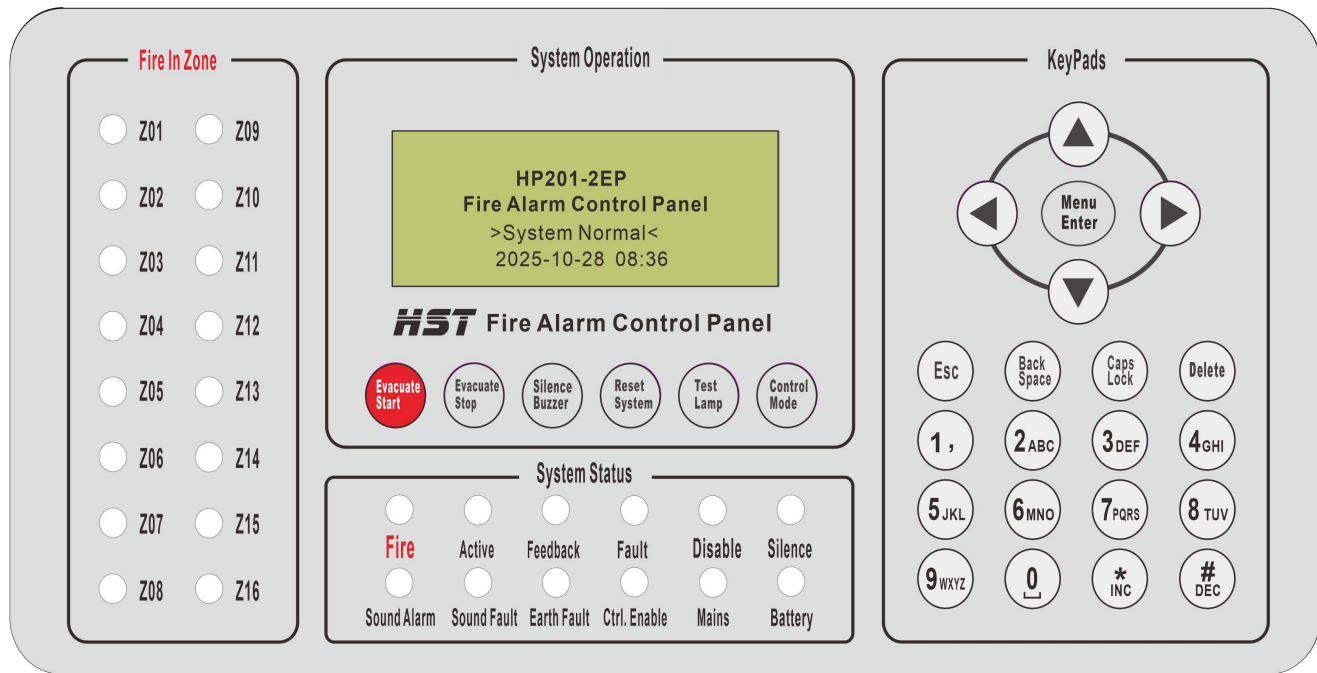


Figure 11. Display and operation fascia

4.1. Access Levels

The control panel has 4 levels of access. The first level is accessible to users without having to introduce a password. Levels 2 ,3 and 4 are accessible only after a password is introduced. The password is entered in the change access level menu. At different access levels users have different restrictions to panel operations.

(1). Evacuate Start Button

The **"Evacuate Start"** button is activated only in access levels 2 ,3and 4. After it is pressed, the sounder and the programmable outputs will be activated, the **"Fire"** and **"Active"** LEDs light up and a warning message is displayed.

(2). Evacuate Stop Button

The **"Evacuate Stop "** button is active at access levels 2 ,3 and 4. Pressing this button will overrule all active sounders and the associated thereto delays.

(3). Silence Buzzer Button

The **"Silence Buzzer"** button deactivates the internal buzzer. The button is active at access levels 1,2 ,3 and 4.

(4). Reset System Button

The **"Reset System"** button is active at access levels 2,3 and 4. Where this button is pressed all activated statuses shall be over-ruled and the panel shall be brought to a normal state.

(5) . Test Lamp Button

The "**Test Lamp**" button is active at access levels 1, 2, 3 and 4. Pressing this button will test internal buzzer, LEDs and LCD.

(6) . Control Mode

The "**Control Mode**" is active at access level 2, 3 and 4. Pressing this button will switch the control mode between manual and automatic mode.

4.2. Passwords

The FACP is supplied with a factory programmed default level 2 password (222222), level 3 password (333333) . Provision is made to edit passwords at level 3. When editing a password it is possible to change the password or the access level.

Button presses must take place within 60 seconds of each other otherwise the FACP shall return to access level 1.

Note. Level 4 is a maintaining passwords and is not provided to users. If necessary, please contact the manufacturer for it.

4.3. Before Operation

(1) . Before FACP puts into operation, the clock battery should be turned **ON** to ensure that the FACP's clock time can be maintained during power off. If the FACP is not used for a long time, it is recommended to turn **OFF** the clock battery switch on the main PCB.

(2) .When the LCD display is not clear enough, a small screwdriver can be used to adjust the LCD contrast. Insert a small screwdriver into the hole of the LCD Adjust and rotate clockwise or counterclockwise until the appropriate display contrast is adjusted. Refer to Figure 12.

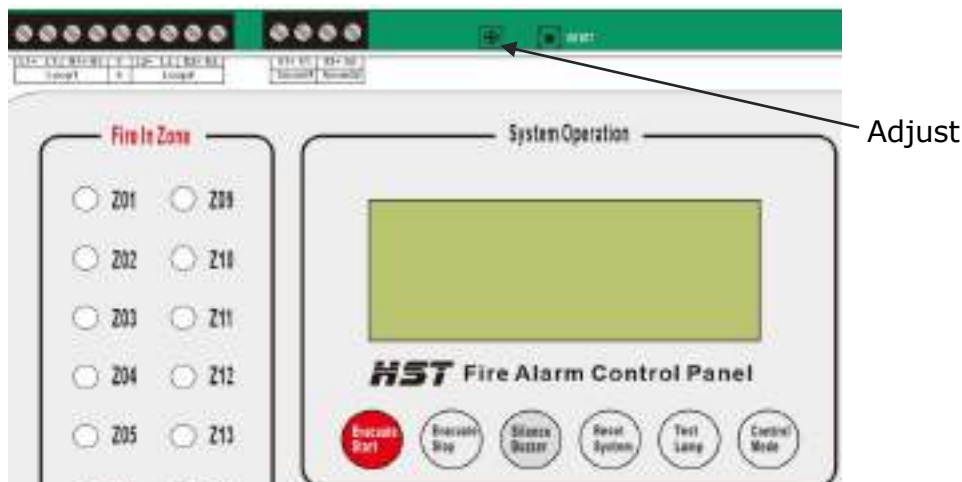


Figure 12. Adjust LCD Contrast

4.4. Keyboard Description

There are 27 buttons on the face plate, 10 numeric buttons and 17 function buttons.

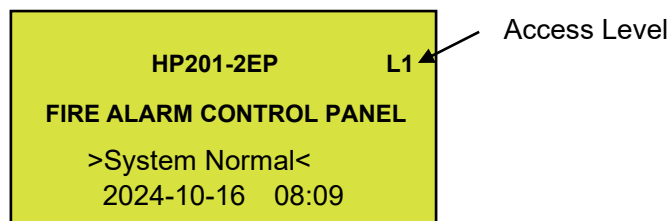
(1) . 【◀ ▶ ▲ ▼】 Used for moving the cursor or choose the functions.

(2) . 【Enter/Menu】 It is a menu button in the main interface, and used to enter the main menu interface. In the operation interface, it's a confirm action button and save the setting.

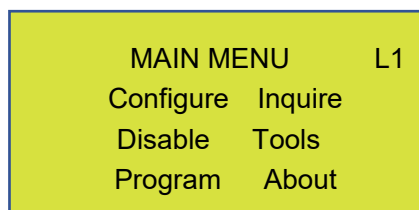
- (3) . **【Evacuate Start】** Used to activate the NACs conventional sounders and all output devices in the 00# output group.
- (4) . **【Evacuate Stop】** Used to stop the NACs conventional sounders and all addressable sounders & strobes.
- (5) . **【Silence Buzzer】** Press the “**Silence Buzzer**” button to acknowledge the case of fire or fault and the buzzer of FACP will stop and the silence LED (yellow) will be on.
- (6) . **【Reset System】** When in the case of fire or fault and after press “**Silence Buzzer**” to acknowledge then press “**Reset System**” button, the FACP will be reset.
- (7) . **【Test Lamp】** Under the main interface, it is a **Test lamp** button to use for self - check of the unit.
- (8) . **【Control Mode】** Automatic or Manual control mode switch.
- (9) . **【Esc】** Escape button to go back to the previous interface.
- (10) . **【BackSpace】** Step back and delete a character with a space.
- (11) . **【CapsLock】** Capital Lock button use to switch input case letters.
- (12) . **【Delete】** Delete a character.
- (13) . **【1-9 Numerical】** Used to enter numbers and characters.
- (14) . **【*/INC】 , 【#/DEC】** It has different functions under different interfaces. It is generally used to increase or decrease the address number.
- (15) . **【0/↵】** It has different functions under different interfaces, in the edit state, it is a space button.

4.5. Function Menu

The main interface of display is show as bellow:



To set the system and other equipment press the “ **Enter/Menu** ” to enter the main menu of the setup functions as follows:



Press “ ◀ ▶ ▲ ▼ ” buttons to move the cursor to the wanted function, and then press “**Enter/Menu**” for further operation, after the operation, press the “ **Esc** ” to go back to the previous interface.

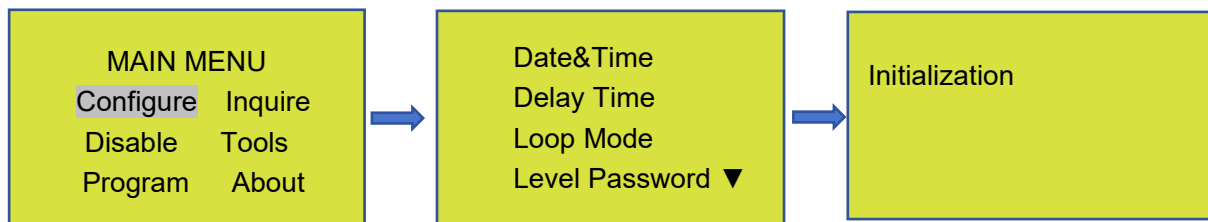
If there are no any operation of button is done with 60 seconds, the system will exit the main menu, return to the main interface.

If needs save setting, press " **Enter/Menu**" to save the settings then press " **Esc**" to go to the previous interface.

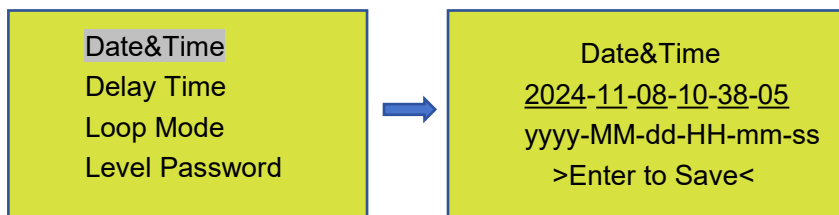
If do not needs save setting, press " **Esc**" to go to the previous interface.

4.6. Configure Operation

Configure operation is allowed at access level3, it contains date&time,delay time, loop mode,level password,output delay time, sound delay time operations,initialization and select the host protocol.**The initialization operation is active at access level4.**



4.6.1. Date&Time Configuration

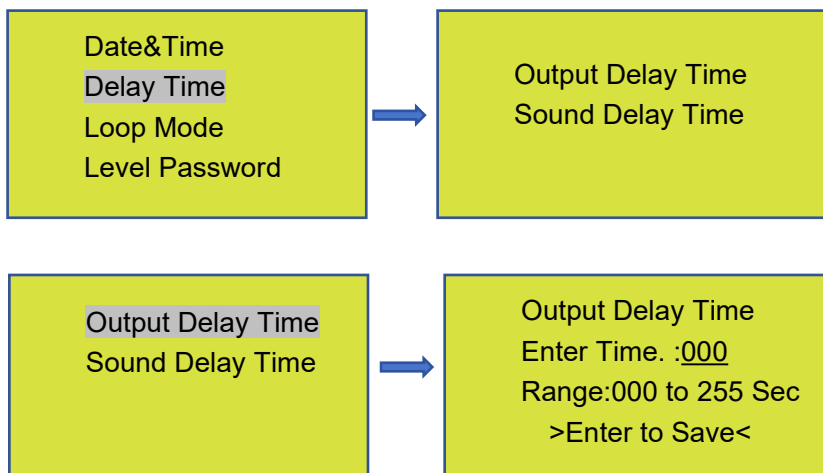


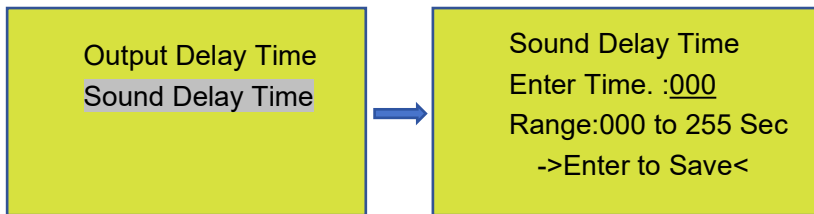
yyyy-MM-dd-mm-ss: year-month-data-hour-second

4.6.2. Delay Time Configuration

Delay time configuration contains output delay time and sound delay time. Output Delay Time is configured the delay time of all output module or addressable sounder in the case of fire.

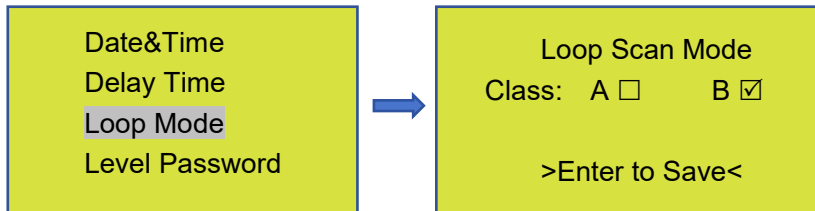
Sound Delay Time is configured the delay time of NACs conventional sounders in the case of fire.



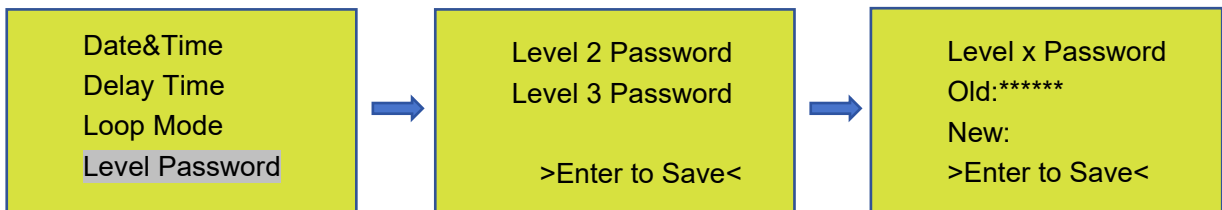


4.6.3. Loop Mode Configuration

The communication loop has two connections mode Class A and Class B. Default is Class B.



4.6.4. Level Password Configuration



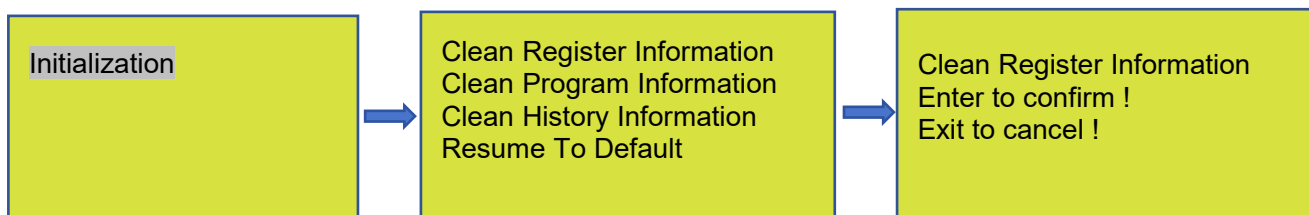
4.6.5. Initialization

Initialization operation is a maintenance operation that requires operation at access level 4, contains clean register information, clean program information, clean history information and resume to default (Factory settings status). To avoid mistake operation, the FACP will request confirmation again after selecting the project.

Warning!

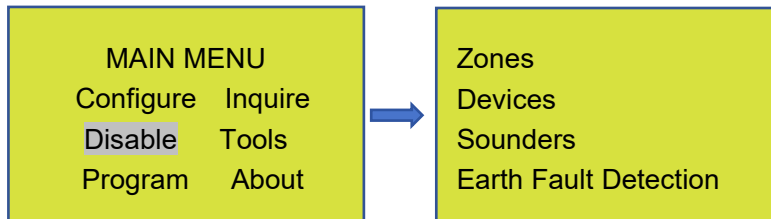
Initialization an irreversible operation, and the initialized data will not be recoverable. Caution should be exercised during the operation!

Level 4 is a maintaining passwords and is not provided to users. If necessary, please contact the manufacturer for it.



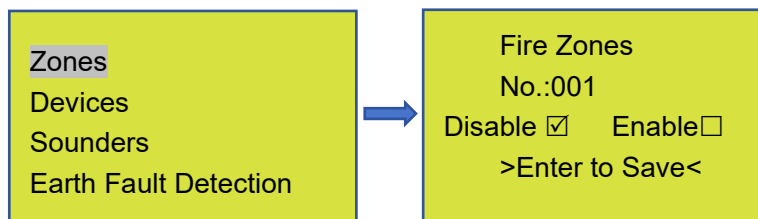
4.7. Disable Operation

Disable operation is allowed at access level3, it contains fire zones, Devices, Sounders, Earth Fault Detection disablement.



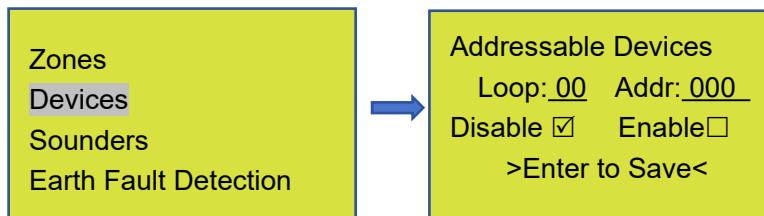
4.7.1. Disable/Enable Fire Zones

Input the number of a fire zone (000 to 250) then select disable or enable.



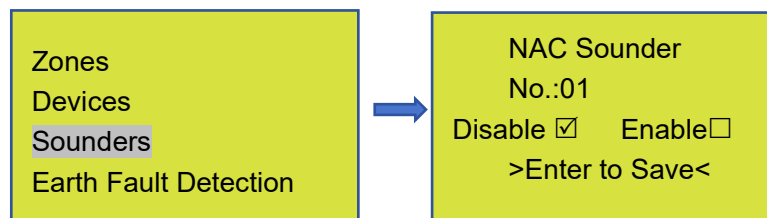
4.7.2. Disable Devices

Input the number of a addressable device (000 to 250) then select disable or enable.
Default number of loop is 00.



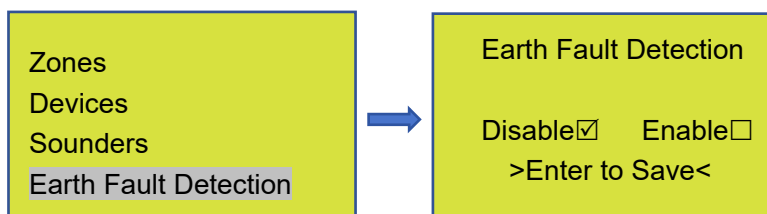
4.7.3. Disable NAC Sounders

Input the number of NACs conventional sounder (01 or 02) then select disable or enable.



4.7.4. Disable Earth Fault Detection

Setting for Enable or disable the earth(ground) fault detection function.

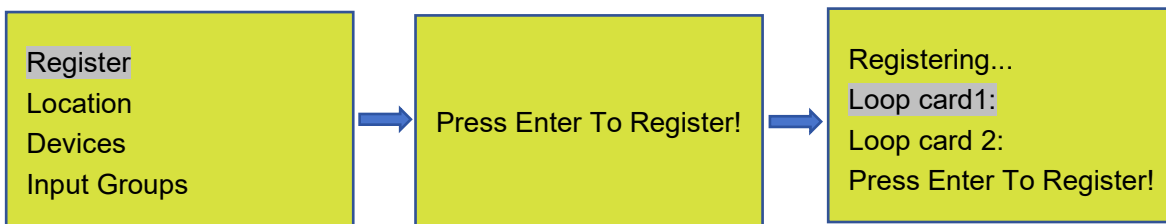


4.8. Program Operation

Program operation is allowed at access level3, it contains Register, Location, Devices, Input Groups, Output Groups and Output Diagram functions.



4.8.1. Program/Register



The registering time depends on the quantity of devices connected to the loop. After registering, "Data saving ..." will be displayed on the last line of the LCD. Then all the information will be saved. After registering, the system will reset once. Each loop needs to be registered separately.

Description of information:

Total:xxx/yyy---xxx: Total of devices registered successfully.

---yyy: Total of all devices connection with loop.

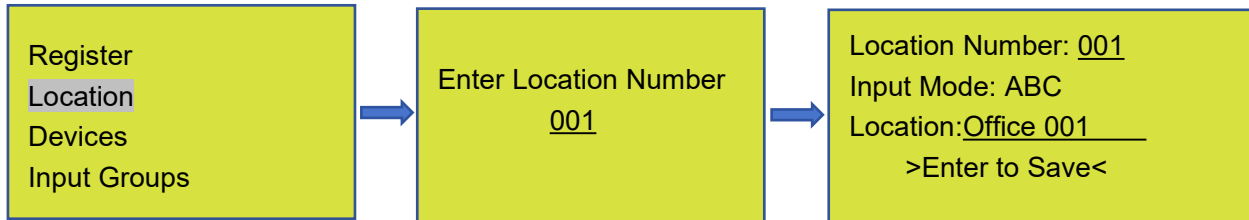
Address:xxx , current address of device. Type:xxx,current type of device.

Table 2: Type of device description and abbreviations

Number	Abbreviations	Product name
1	Smoke or Smok Det	Smoke Detector
2	Heat or Heat Detector	Heat Detector
3	CallPt or Manual CallPt	Manual Call Point
4	IFMod or Interface Module	Interface Module
5	Input or Input Module	Input Module
6	NA	Reserve
7	NA	Reserve
8	NA	Reserve
9	Output or Output Module	Output Module
10	Sound or Sound Strobe	Sound strobe

4.8.2. Program/Location

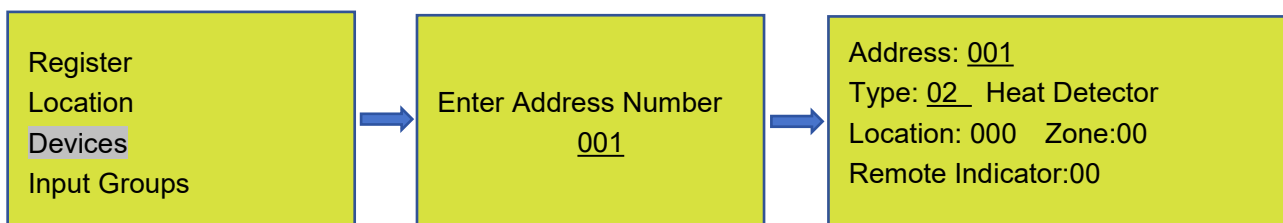
The FACP provides 250 sets (001-250) of editable installation location information. Each device can directly reference the Location group number of installation information in **Devices** programming. Each set of Location Number can contain up to 16 characters or numbers.



There are two ways to edit a new Location Number:

- 1). Directly enter the Location Number.
- 2). After editing current Location Number, it can edit new information of the next or previous Location Number by pressing the "***/INC**" or "**#/DEC**" button.
- 3). When inputting incorrect information, it can be deleted using the **BackSpace** or **Delete** button.
- 4). Use the **CapsLock** button to switch the Input Mode between inputting uppercase letters, lowercase letters, and numbers.

4.8.3. Program/Devices



-Type:

The FACP will read the product type during registration automatically. If want to modify the product type manually, Refer to Table 2 of **4.8.1** to enter the required product type.

-Location:

Input the already edited Location Number. Refer **4.8.2** Program/Location.

-Zone

Assign the device to a fire zone with effective fire zone numbers 1-64, where fire zones 1-16 have LED alarm indicators on the panel as show bellow Figure 11.

-Remote Indicator

The fire alarm and fault information can be mapped to remote indicator displays, and the specific address of the display mapped to is determined by programming. The effective number range is 1-32.

There are two ways to edit a new Device Number(Address of device):

- 1). Directly enter the Device Number.

2). After editing current Device Number, it can edit new information of the next or previous Device Number by pressing the “*/INC” or “#/DEC” button.

4.8.4. Programming Output Logical Relationship

The programming output logical relationship contains input groups, output groups and output diagram programming.

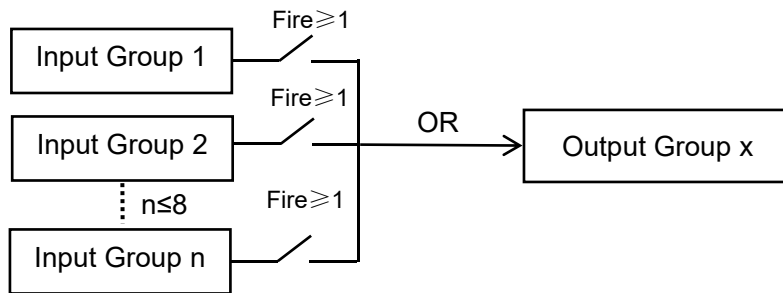
The input group provides the triggering condition for the automatic fire alarm control system, and the programming of the input group, output group, and output diagram relationships together for the automatic fire detection, automatic control output linkage evacuation, and fire extinguishing device of the fire system according to the set output logic.

The implementation of automatic linkage output must be at automatic mode of FACP.

The logical relationship diagram is shown in the following:

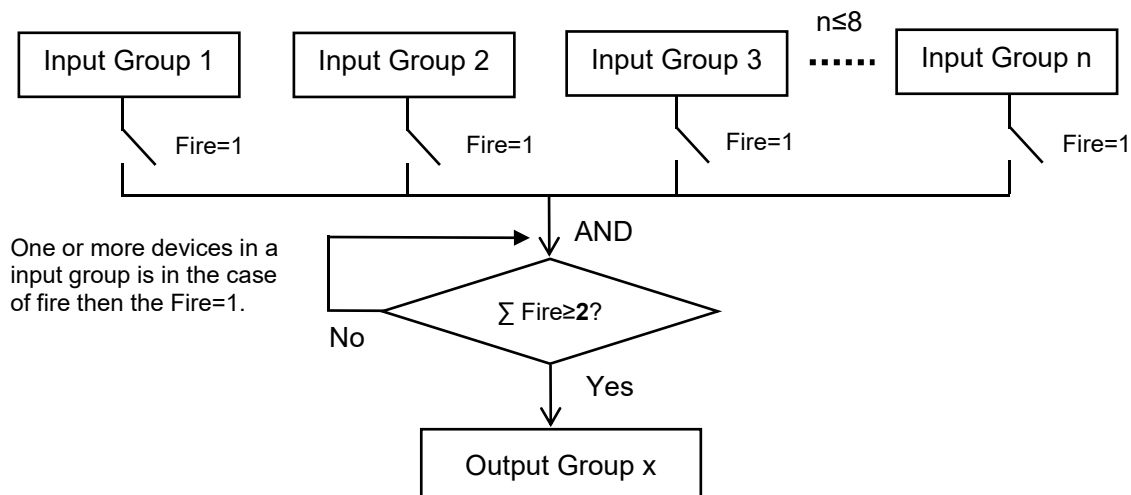
OR logical relationship:

A fire alarm from the devices in the input groups (such as smoke detectors, heat detectors, manual call points, input modules and zone modules, etc.) will trigger the activation of all output devices in the output group (such as sound strobes, output modules, etc.)



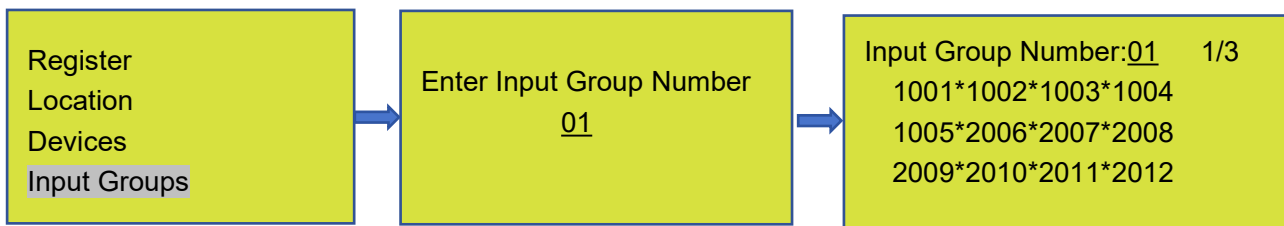
AND logical relationship:

Two or more fire alarms from the devices in the different input groups (such as smoke detectors, heat detectors, manual call points, input modules and zone modules, etc.) will trigger the activation of all output devices in the output group (such as sound strobes, output modules, etc.)



By the default the output delay time is 0 second, If need to configure the output delay time, refer to **4.7.5 Delay Time Configuration**.

4.8.4.1. Program/Input Groups



-Input Group quantity

There are a total of 64(01-64) input groups, each input group contains 32 devices of input type, such as smoke detector, heat detector, manual call point, input module etc.

-Data format

Yxxx*Yxxx*Yxxx: 'Y' is loop number 1 or 2, 'xxx' is a address of input device from 1 to 250, '*' is a connection symbol.

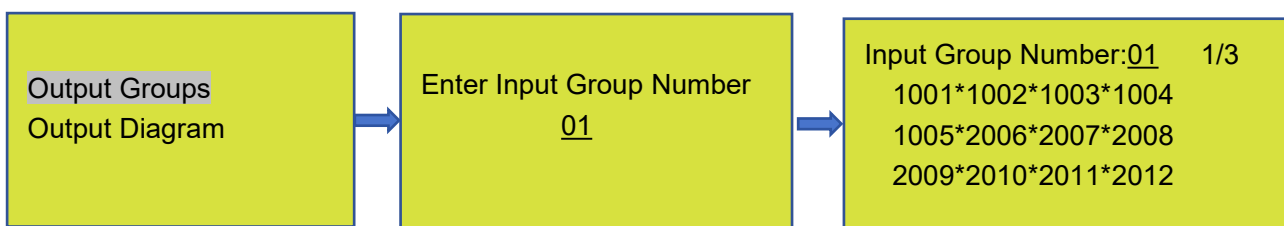
-Previous and Next Pages

Switch the input page by pressing the up or down button.

There are two ways to edit a new Input Group:

- 1). Directly enter the Input Group Number.
- 2). After editing current Input Group, it can edit new information of the next or previous Input Group by pressing the **"*/INC"** or **"#/DEC"** button.

4.8.4.2. Program/Output Groups



-Output Group quantity

There are a total of 65 (00-64) output groups, each output group contains 32 devices of output type, such as output module, sounder strobe etc.

Note.

The 00# Output Group is a special output group, The FACP will activate all devices in 00# output group when press the **Evacuate** button or any fire alarm.

-Data format

Yxxx*Yxxx*Yxxx: 'Y' is loop number 1 or 2, 'xxx' is a address of input device from 1 to 250, '*' is a connection symbol.

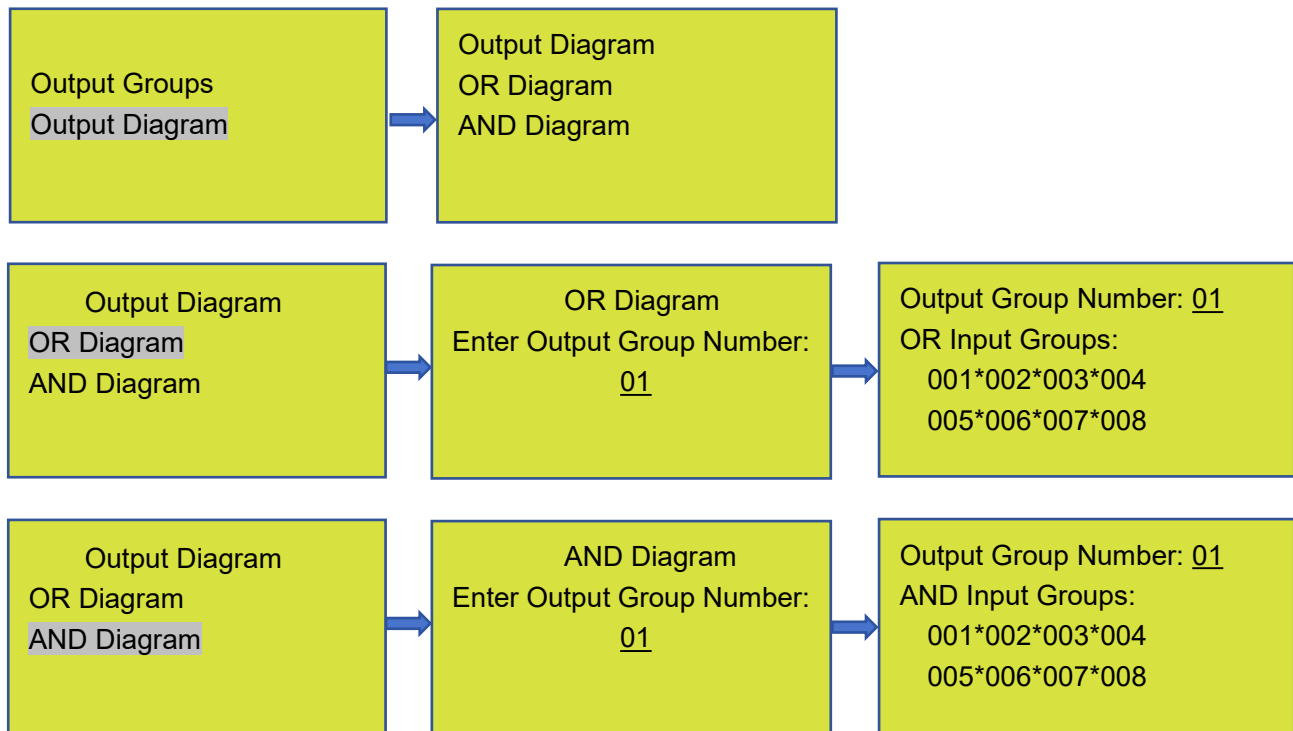
-Previous and Next Pages

Switch the input page by pressing the up or down button.

There are two ways to edit a new Output Group:

- 1). Directly enter the Output Group Number.
- 2). After editing current Output Group, it can edit new information of the next or previous Output Group by pressing the **"*/INC"** or **"#/DEC"** button.

4.8.4.3. Program/Output Diagram



-OR/AND input Groups quantity

An Output Diagram allows for the association of 8(001-008) input groups.

-Data format

xxx*xxx*xxx: xxx is a Input Group Number, * is a connection symbol.

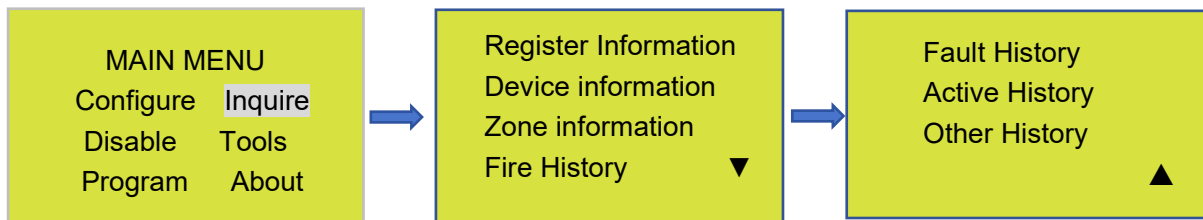
There are two ways to edit a new Output Diagram:

- 1). Directly enter the Output Diagram Number.
- 2). After editing current Output Diagram, it can edit new information of the next or previous Output Diagram by pressing the **"*/INC"** or **"#/DEC"** button.

4.9. Inquire Information

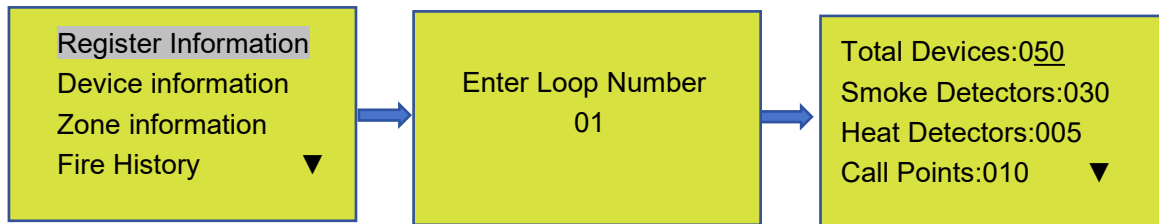
Inquire information function is at access level 1.

FACP provides inquire the register , device, zone information and fire, fault, active, other history Records.



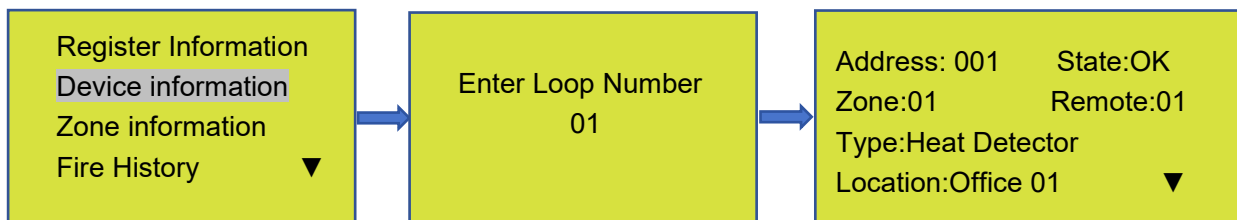
4.9.1. Register Information

After registering the device, it is necessary to check whether the registration information of the device (such as device type, quantity, etc.) matches the actual installed devices.



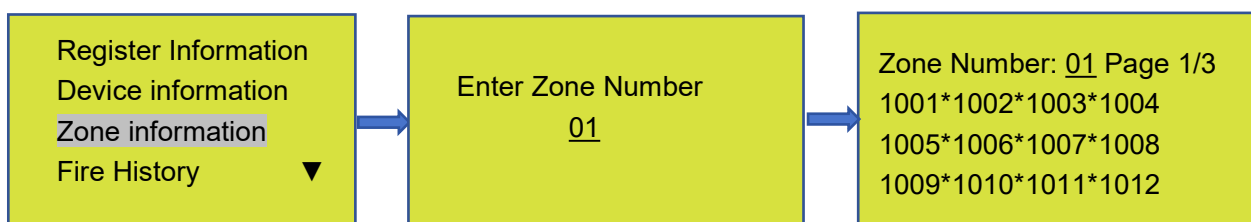
4.9.2. Device Information

Check the device information is correct or not.



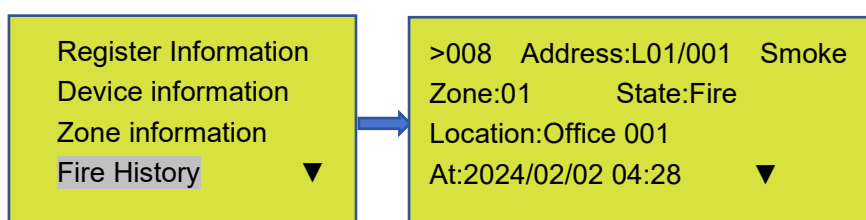
4.9.3. Zone Information

Check the fire zone information is correct or not.



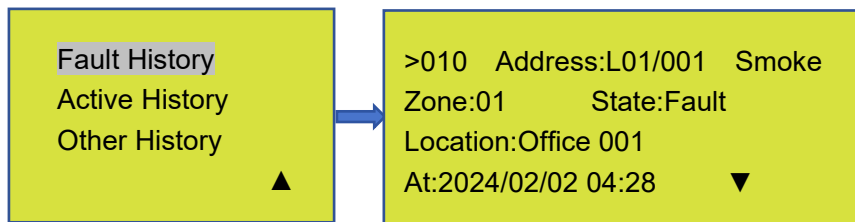
4.9.4. Fire History

The FACP saves the current 999 fire alarm records. When the number exceeds 999, the FACP will overwrite the earliest record automatically. Address Lxx is loop number 01 or 02.



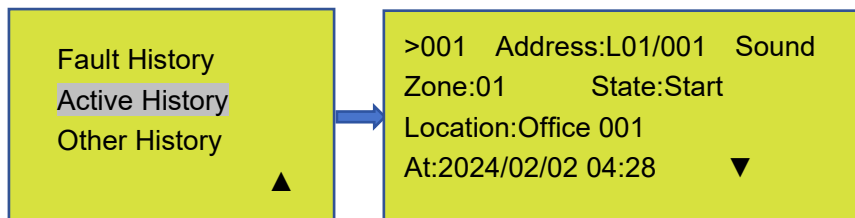
4.9.5. Fault History

The FACP saves the current 999 fault records. When the number exceeds 999, the FACP will overwrite the earliest record automatically. Address Lxx is loop number 01 or 02.



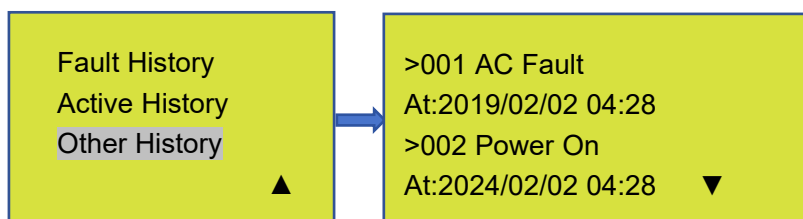
4.9.6. Active History

The FACP saves the current 999 active and stop records. When the number exceeds 999, the FACP will overwrite the earliest record automatically. Address Lxx is loop number 01 or 02.



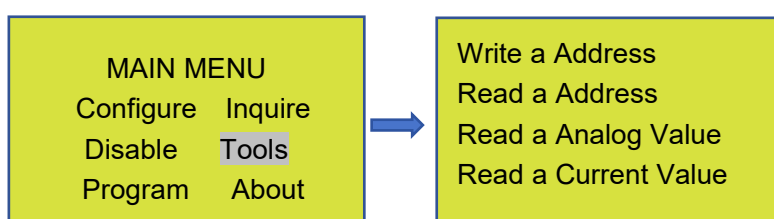
4.9.7. Other History

The FACP saves the current 999 records of the status of FACP. When the number exceeds 999, the FACP will overwrite the earliest record automatically.



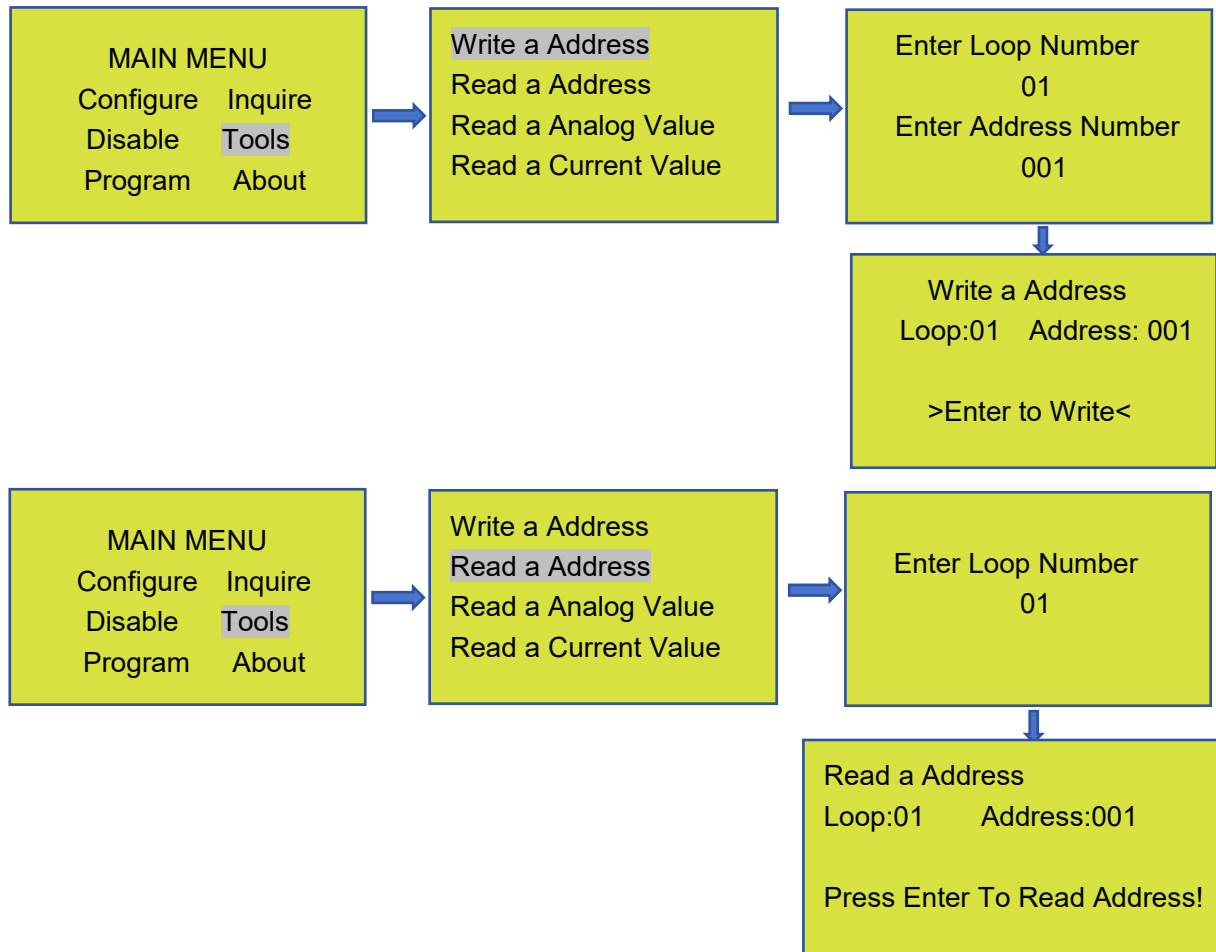
4.10. Tools

The FACP provides tools for auxiliary debugging and inspection testing, contains write a address, read a address, read a analog value and read a current value.



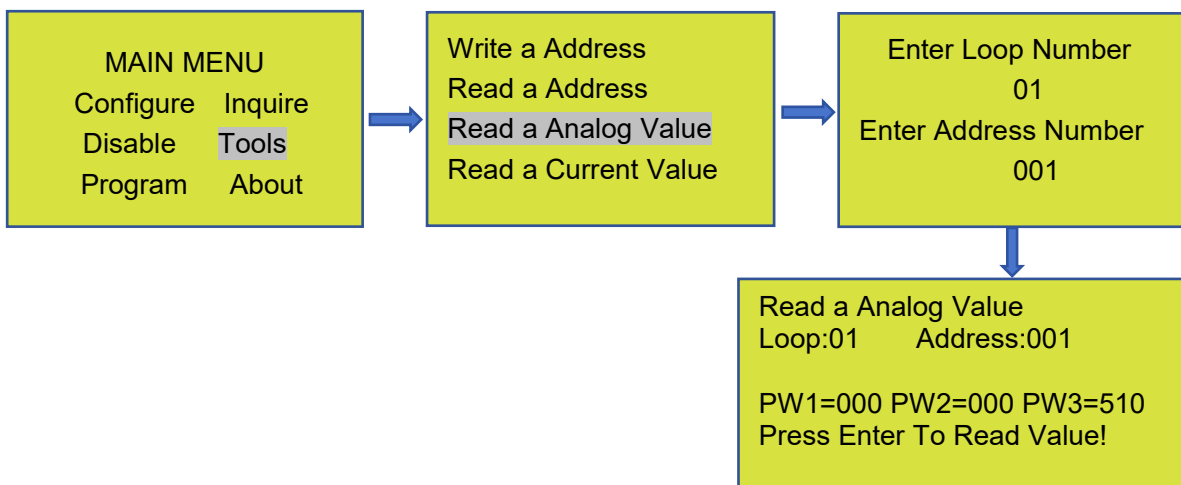
4.10.1. Write And Read Address

When there is no handheld address programmer, can be use the FACP to read or write addresses to addressable devices. It should be noted that this operation must ensure that there is only one device on the loop, otherwise operation will be failure.



4.10.2. Read Analog Value

This function is used to assist engineers in checking whether the communication status of a certain device is normal.

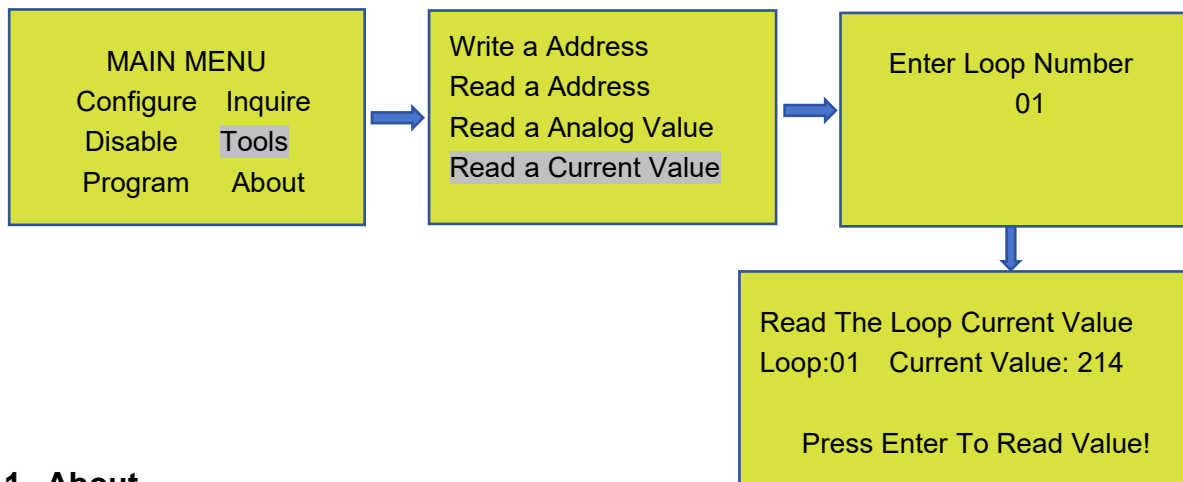


4.10.3. Read Current Value

These functions are used to assist engineers in checking whether the loop is normal.

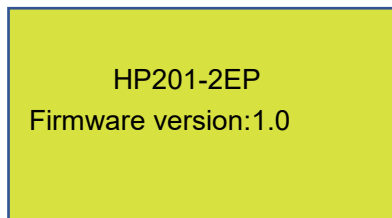
The Loop Current Value depending on the number of devices connected to the loop. The normal state should be between 0-280. If it exceeds 280 without fire alarms, it is necessary to check

whether the circuit is damaged, leaked, or if any device is abnormal. If the loop current value exceeds 380, there may be the loop in shorted.



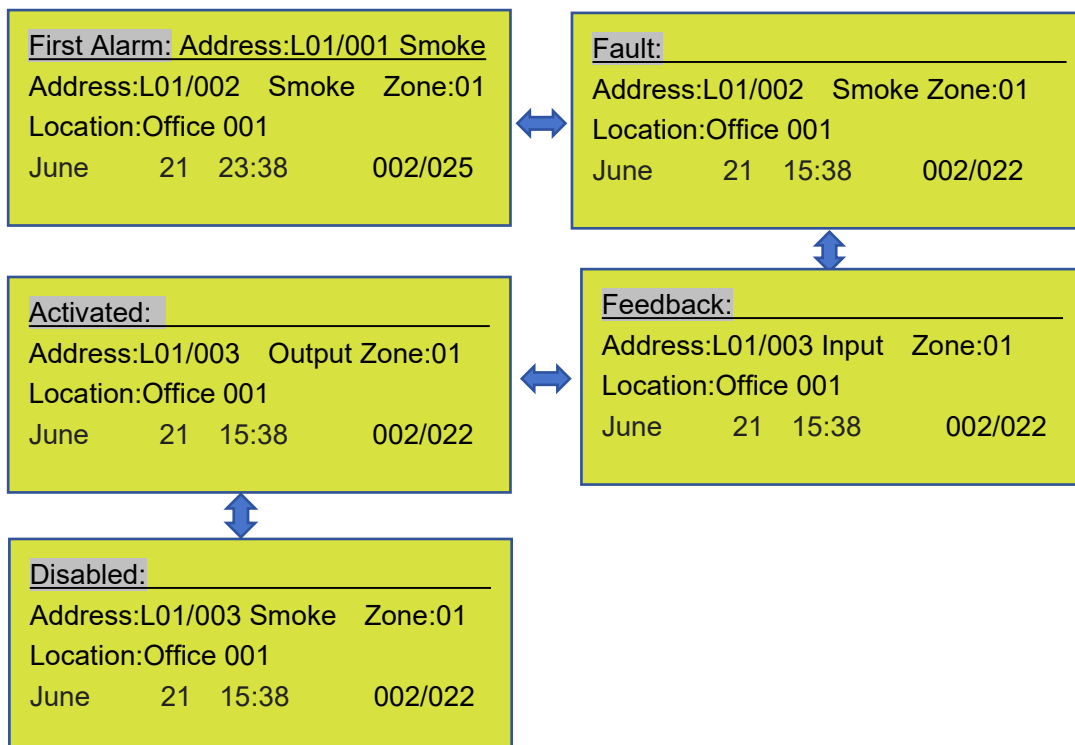
4.11. About

There is no need to set this menu. It shows the details about the manufacturer such as the firmware version.



5. Event Interface

FACP has fire, fault, active, feedback and disable display event interface of LCD. When there are two or more different types of events in the system, can be switch to view the events by using the left or right arrow button.



6. LED Indicators

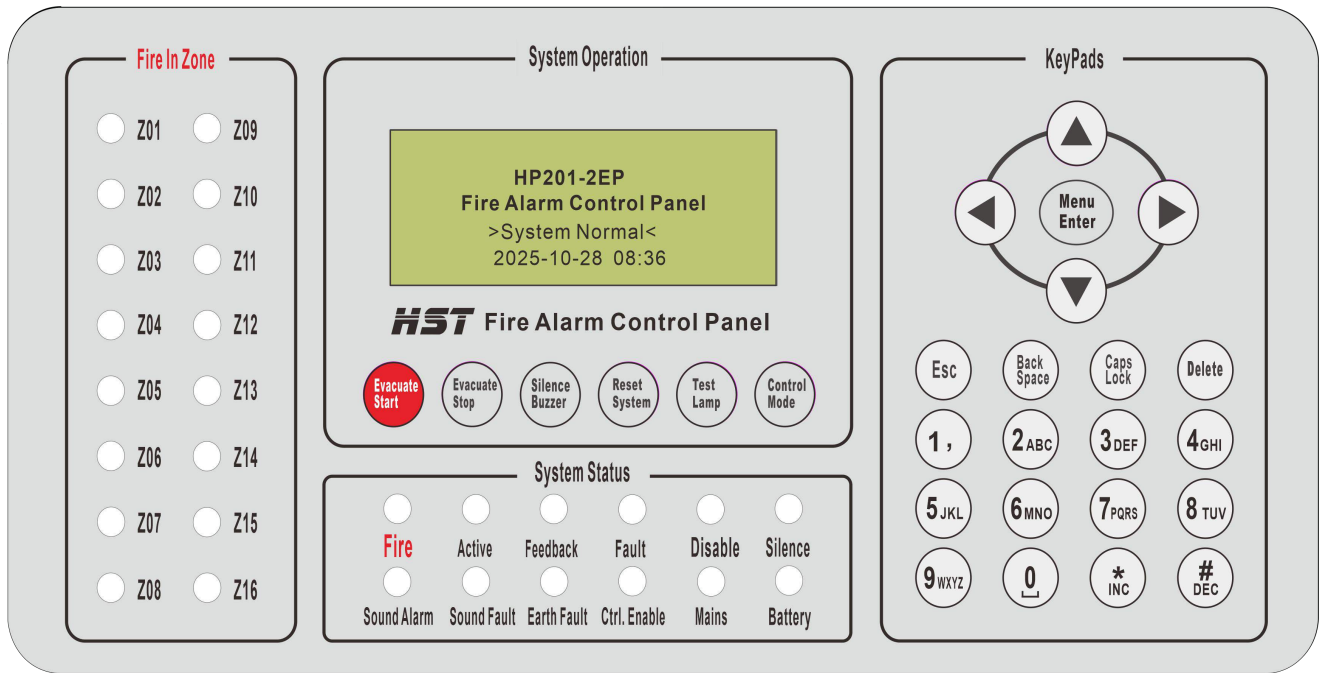


Figure 13. LED Indicators

Table 3. LED indicator state

LED indicator	Normal state	Alarm state
Fire	Light off	Red indicator light on in any fire event.
Active	Light off	Red indicator light on in any activated. Red indicator flash with 1hz in activate delay.
Feedback	Light off	Red indicator light on in any feedback event.
Fault	Light off	Yellow indicator light on in any fault event.
Disable	Light off	Yellow indicator light on in any disabled event.
Silence	Light off	Yellow indicator light on in buzzer silenced.
Sound Alarm	Light off	Red indicator light on in NACs is alarm.
Sound Fault	Light off	Yellow indicator light on in NACs is fail.
Earth Fault	Light off	Yellow indicator light on in Grounding is error.
Ctrl.Enable	Green	Control enable is green, Control disable is off.
Mains	Green	Yellow indicator light on in AC power is fail.
Battery	Green	Yellow indicator light on in Battery is fail.
16 Fire Zones	Light off	Red indicator light on in fire event.

7. Trouble shooting methods for common faults

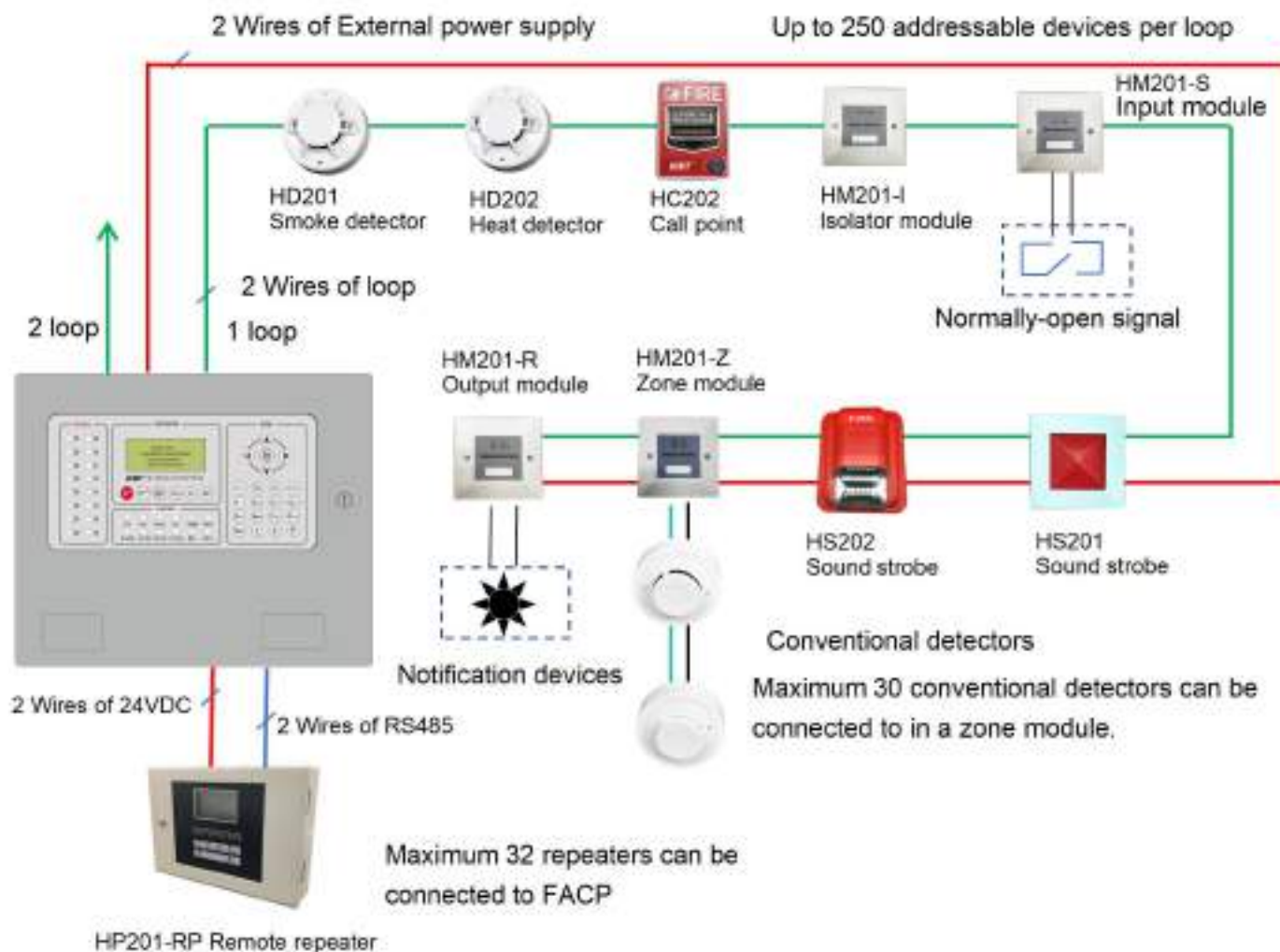
- (1). There is no display on the LCD. Please check the LCD wire connected to the main board is ok.
- (2). There is no fire or fault sound. Please check the speaker wire is well connected to the main board.
- (3). The devices don't work. Please check loop or 24V output wire is well connected.
- (4). Don't change or disassembly the parts and wiring of devices.
- (5). The unit emits fault of backup battery. Please check the battery is damaged or the power supply wire is broken or the batteries are on the low voltage.
- (6). The time parameter cannot be maintained after the control panel is powered off. Please replace the CR1220 3V battery on the main board.

8. Product list of addressable fire alarm control system

Table 4. List of products matching the system

No.	Name of device	Model
1	Addressable smoke detector	HD201
2	Addressable heat detector	HD202
3	Addressable manual call point	HC202
4	Addressable isolator module	HM201-I
5	Addressable output module	HM201-R
6	Addressable zone module	HM201-Z
7	Addressable input module	HM201-S
8	Addressable sound strobe	HS202
9	Remote repeater panel	HP201-RP
10	Hand help programmer	AP200
11	Addressable fire alarm control panel	HP201-2EP

Annex A Connection diagram of fire alarm control system



Annex B Fire Alarm Control System Simple operation guides

