KETTON
Power and Safety

Instruction Manual for Installation and Application of KET-CP-100 Intelligent Fire Alarm Control Panel

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CONTENTS

Preface

KET-CP-100 Intelligent Fire Alarm control panel is a new generation of alarm control panel that is designed and developed by our company through researching the fire-fighting market demand and summarizing the fire engineering experience for many years.

This control panel adopts wall-mounted and modular design. And it has features of strong function, high reliability and flexible configuration. The system adopts large screen and color LCD display. The printer can print all system information, such as fire alarm, fault and so on. It is compatible with a series of TC addressable products, which are intelligent detectors, sounder strobe, LCD repeater panel, etc. It is the best option of fire protection engineering.

Refer to the corresponding installation manuals for detailed technical parameters and installation instructions of detectors, modules and other accessory devices.

This manual should be in charge of specially-assigned personnel carefully in order to be uses in the future.

Section 1 Brief Introduction

KET-CP-100 Intelligent Fire Alarm control panel complies with Standard EN54-2 and EN54-4, which can be used in the fire alarm system with the features of easy installation, convenient operation and maintaining. The details are as follows:

1.1 Features

- ✧ The CIE can have up to 48 zones, which can be distributed in one or more loops , with alarm and fault/disable indicators.
- ✧ 1-4 loops can be selected, with a maximum of 255 addressable points for a single loop, Max totaling 1020 addressable points including but not limited sounder strobe under EN54-3, addressable heat detector (KET-HD-140) under EN54-5, addressable photoelectric smoke detector (KET-SD-160) under EN54-7, manual call point (KET-MCP-180) under EN54-11,I/O module (KET-IOB-240) under EN54-18 and loop isolator (KET-ISM-200) under EN54-17.
- ✧ High-speed processor has been used in this control panel with faster data processing speed and larger data capacity.
- ✧ 7-inch color LCD screen with display resolution of 800 × 480. Information is more visual.
- ✧ Block terminals are all pluggable with clear marks, which is convenient for installation, commission and maintaining.
- ✧ Programming can be operated on the panel or by computer.
- ✧ The loop has strong anti-interference performance and the system is stable and reliable, convenient for field operating and commissioning.
- ✧ Super data capability, available for 2000 pieces of information of each fire alarm, faults and etc.
- ✧ Multi-operation levels have been applied on this control panel. Each level applies to variety operations which are protected by passwords, with the second level password of three digits and the third level password of six digits.
- ✧ The control panel is capable of detecting faults from points (smoke detectors)as EN54-2 Clause 8.3.

1.2 Flexible Modularized Structure and Available Multifunction Configuration

The panel is formed up by various multifunctional modules which adopts plug-pull structure making configuration flexible and convenient installation easy and system commission and later capacity expansion with ease.

1.3 Certification instructions

The KET-CP-100 Intelligent Fire Alarm control panel complies with the basic requirements of the standard EN54-2: 1997 +A1:2006 and EN54-4:1998. In addition to these basic requirements, the JB-TB-TC5109 meets the following standard optional requirements.

➢ The control panel meets the standard EN54-2 with the following options:

Options with the requirements	EN54-2
Output to fire alarm devices	7.8
Output to fire protection equipment	7.10.1
Output to fire protection equipment	7.10.2
Output to fire protection equipment	7.10.3
Fault signals from points	8.3
Disablement of addressable points	9.5

Section 2 Technical Features

2.1 Operating Voltage

- Voltage: AC230V
- Frequency: 50HZ
- Current: 1A
- Recommended wiring: Fire cable not less than 1.5mm^2

2.2 Battery

- Maximum charge current: 2A
- Maximum charging voltage: 27.6V (Note: 25℃)
- Type: Sealed lead-acid batteries 12V12AH*2
- Maximum charge capacity: 12V / 12AH
- Recommended Manufacturer and Battery Model: Kanglida,12V12AH. Power sonic, PS-12120.
- Maximum internal resistance: 470mΩ
- Fuse: 10A

2.3 Detection of Loop Parameters

- Loop output: Polarization signal cable from control panel connected to 255 addressable devices
- Loop input: Polarization signal cable returns control panel
- Output voltage: 18V ~ 26.5V pulse
- Output current: 0mA ~ 220mA
- Cycle Type: A cycle
- Recommended cable: Fireproof cable, connecting cable cross-sectional zone ≥ 1.0mm^2; cable length ≤ 1000m.All LPCB approved fireproof cables
- See Fig. 3-7 Terminal block diagram. The detailed wiring instructions for Fig. 3.3.2
- Loop resistance, number of isolators: loop resistance <50Ω, isolator <20 pcs

2.4 Output Circuit Parameters

- 2.4.1 Fire Alarm Output (HJ1 +, HJ-)
  Output voltage: 20VDC ~ 27VDC
  Output current: 0mA ~ 200mA
- 2.4.2 Fault Output (GZ11, GZ21)
  Contact capacity: 24VDC @ 1.0A
- 2.4.3 24V output (24V GND)
  Output voltage: 20VDC ~ 27VDC
  Output current:2A

Recommended cable: Twisted pair, connecting cable cross-sectional zone ⩾ 1.0mm^2; cable length ⩽ 1000m.All LPCB approved fireproof cables

- See Fig. 3-7 Terminal block diagram. The detailed wiring instructions for Fig. 3.3.2.

2.5 communication Parameters

- 2.5.1 CAN interface(CANL,CANH)

  Recommended cable: Twisted pair, connecting cable cross-sectional zone ⩾ 1.0mm^2; cable length ⩽ 1000m.All LPCB approved fireproof cables
- 2.5.2 RS485 interface(A1 B1,A2 B2)

  Recommended cable: Twisted pair, connecting cable cross-sectional zone ⩾ 1.0mm^2; cable length ⩽ 1000m.All LPCB approved fireproof cables

2.6 Current

- 2.5.1 Imax A=1.36A (quiescent at fully load)
  Output to sounders and IO module=0.32A Output data power=0.52A
- 2.5.2 Imax B=3.52A (alarm at fully load)
  Output to sounders and IO module=2A Output data power=0.8A Fire Output=0.2A
- 2.5.3 Imin=520mA (Quiescent without any load)

Section 3 Structure and Configuration Instructions

3.1 Typical Components and Interior Construction

KET-CP-100 control panel is wall-mounted, and the typical components include: main panel, zone/FPE display panel, power supply, etc. This control panel sets the function of fire alarm and linkage in one, which can not only alarm if there is any fire, but also start or stop the connected outside devices.

3.2 control panel Description

The sketch diagram of the control panel's panel display-operation zone and zone / FPE display panel.

1) Display-operation zone

The display-operation zone consists of LCD, LED indicators, keypad and printer. The descriptions of LEDs are as follows:

- **Fire:** Red. This indicator is on, indicating that the control panel detects that the field detectors or manual call point is in a fire alarm state. For details, see the LCD display. After the fire alarm is removed, press the "Reset" button to clear the fire alarm state, and the indicator will be removed at the same time.
- **Fault:** Yellow. It illuminates when control panel detects a fault of connected peripheral devices (detector, module, or manual call point etc.) or itself; refer to specific information on LCD screen. After fault is removed, the fault indicator goes out.
- **Active:** Red. This indicator is on when the FPE device is active. This indicator goes out when there is no FPE action.
- **Feedback**: Red. When this indicator is on, the control panel receives the FPE device action feedback signal. This indicator goes out when there is no feedback.
- **Power:** Green. It illuminates when control panel is powered by main power or battery or both.
- **Main power fault**: Yellow. It illuminates when no main power or PSE is damaged. After the main power returns normal, this LED goes out.
- **Battery fault:** Yellow. It illuminates when the battery has a fault. After the fault is removed, this LED

goes out.

- **Disable**: Yellow. It illuminates when a loop device is disabled.
- **Sounder strobe fault:** Yellow. It illuminates when there is any fault on the sounder strobe. After the fault is removed, this LED goes out.
- **Sounder strobe disable:** Yellow. It illuminates when sounder strobe is disabled.
- **Zone fault:** Yellow. It flash when a point of a zone is in fault. After the fault is removed, this LED goes out.
- **Zone disable:** Yellow. It illuminates when all the points of a zone is disabled.
- **FPE fault:** Yellow. It illuminates when there is any fault on FPE devices. After the fault is removed, this LED goes out.
- **FPE disable:** Yellow. It illuminates when FPE device is disabled.
- **Mute:** Yellow. It illuminates when press *Mute* key, the buzzer stops. When there is a new alarm, the LED goes out, and the control panel sounds again.
- **System fault:** Yellow. It illuminates when there is a system fault. After the fault is removed, this LED goes out.
- **Backup indicator**: reserve 5 spare indicators.

2) ZONE and FPE indication panel

1: Zone indicator panel: The panel displays 48 zone indicators. Each zone contains a fire alarm indicator and a disable/fault indicator.

- “Fire” indicator: red. When the zone detector or manual call point is in the fire alarm state, the indicator illuminates; when the fire is removed and control panel is reset, the indicator goes out.
- “Disable/Fault” indicator: yellow. When all the detectors and manual call points in the zone are disabled, this indicator illuminates. when any detector or manual call point in fault, the indicator flash. This indicator goes out when the detector or manual call point fault is removed.

2: FPE indicator panel: The panel displays 24 FPE status indicators, which display the FPE action indicator and FPE feedback indicator and a label.

- Label : Users can put the FPE device name on the label ;
- “Active” indicator: Red. When the FPE device is activated, this indicator illuminates;
- “Feedback” indicator: Red. When the FPE device feedback, this indicator illuminates;

3) Key-pad Description

- "Number and letter" key: for input numbers and letters.
- "Menu" key: Used to enter the main menu.
- "Enter" key: used to enter next page and save information.
- “Mute” key: When control panel is in fire or in fault, press this button to stop the control panel buzzer.
- "Cancel" key: used to cancel the current operation and return to the previous menu.
- "Reset" key: it is for control panel system reset, which requires AL2.
- "Self-test" key: it is for control panel system self-testing, which requires AL2.
- “Disable” key: This is the key used for disabling zone, loop devices, all sounder strobes and FPEs. This function requires AL2 .If control panel is in the linkage programming interface, press this button to input the “*” for the linkage programming.
- “Enable” key: This is the key used for enabling zone, loop devices, all sounder strobes and FPEs. This function requires AL2.
- "Query" key: used to query the information of alarms, faults, disablements and linkage.
- “F1/Up” key: it is to query device information and loop device disabled. When the control panel is in the fire alarm interface, you can press the page to view the information. When the control panel is in the setting language interface, press this button to set the control panel to the Chinese interface. When the control panel is in the device registration operation interface, press this button to manual register. When the control panel is in the printer setup operation

interface, press this button to set the printer status. When the control panel is in the FPE setting interface, press this button to continue setting the FPE. When the control panel is in the linkage programming interface, press this button to edit the next one.

- “F2/down” key: it is for the loop state. When the system is in the fire alarm interface, you can press the page to view the information. When the control panel is in the setup language interface, press this button to set the control panel language. When the control panel is in the device registration operation interface, press this button to manual cancel. When the control panel is in the printer setup operation interface, press this button to set the printer status. When the control panel is in the linkage programming interface, press this button to delete the program.
- “Silence” key: it is used to silence the sounder when it starts to sound. This feature requires AL2. When the control panel is in the linkage programming interface, press this button to enter "(".
- “Resound” button: It is used to initiate sounder strobe that has been silenced. This feature requires AL2. When the control panel is in the linkage programming interface, press this button to enter ")".
- "Operation Level" key: used to set the operating level of the system.
- The arrow keys: They are used to move up and down to view each message. When the fire alarm and fault are displayed on a screen, you can switch Windows by right key.

4) Printer description

The indicator (green) on the printer interface is to show the printer’s status. If the printer is ready for printing, the indicator is on. If the printer is lack of paper, the indicator flashes. Key: paper loading key (LF) and setting key (SET).

3.3 Interior Construction and Wiring

3.3.1 Construction

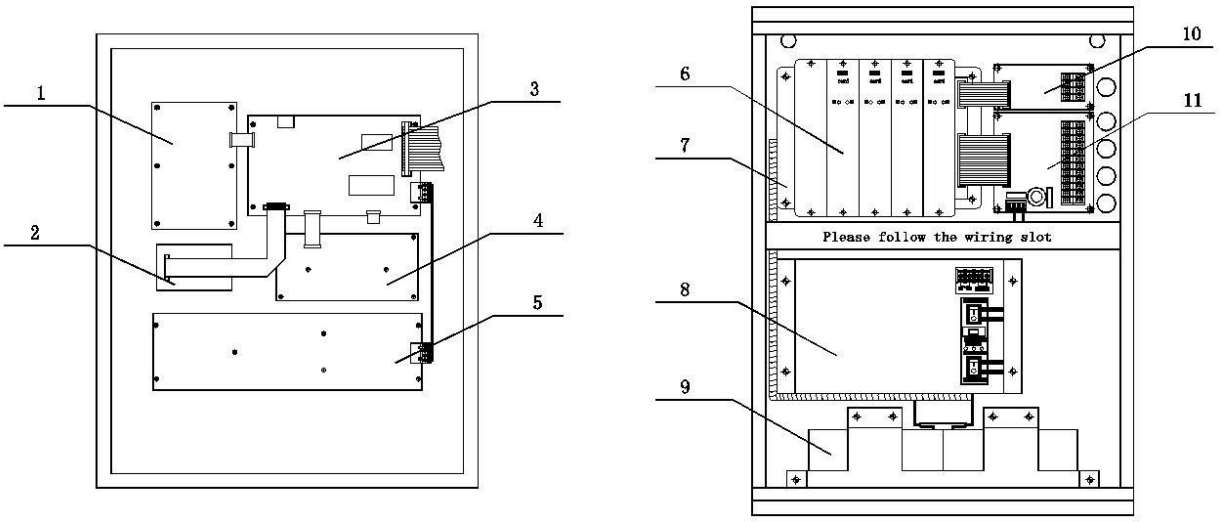

Fig. 3-6

1. Keyboard 2. Printer 3. Mainboard 4. Indicator board 5. zone and FPE indication board 6.Loop board 7. Loop base board 8.power supply board 9. Battery 10. Filter board 2 11. Filter board 1

3.3.2 Specification of field Terminal

L, N, PE: AC 230V terminal and AC ground terminal;

BS1, BP1, AS1, AP1: Loop Signal Bus Loop 1; P is positive. S is negative. The cable goes out from BS1 finally returns to AS1. The cable goes out from BP1 finally returns to AP1. A loop can connect 255 addressable devices;

BS2、BP2、AS2、AP2: Loop Signal Bus Loop 2; P is positive. S is negative. The cable goes out from BS2 finally returns to AS2. The cable goes out from BP2 finally returns to AP2. A loop can connect 255 addressable devices;

BS3、BP3、AS3、AP3: Loop Signal Bus Loop 3; P is positive. S is negative. The cable goes out from BS3 finally returns to AS3. The cable goes out from BP3 finally returns to AP3. A loop can connect 255 addressable devices;

BS4、BP4、AS4、AP4: Loop Signal Bus Loop 4; P is positive. S is negative. The cable goes out from BS4 finally returns to AS4. The cable goes out from BP4 finally returns to AP4. A loop can connect 255 addressable devices;

HJ+, HJ-: fire alarm output terminal. If any fire alarm occurs, the output is DC26V.

GZ11、GZ21: Fault output terminals (When control panel is in normal condition, the relay is closed. When control panel is in fault state, the relay is open. When control panel has no power supply, the

relay is opened.)

CANL,CANH: control panel's networking CAN bus, polarity-sensitive; Not to be used.

A1, B1: RS485 terminal, to connect CRT, polarity-sensitive; Not to be used.

A2, B2: RS485 terminal, as backup; Not to be used.

RGND: not to be used;

DC24V, GND: The output DC24V is used for FPEs or sounder strobes.

The wiring terminals are as shown in Figure 3-7.

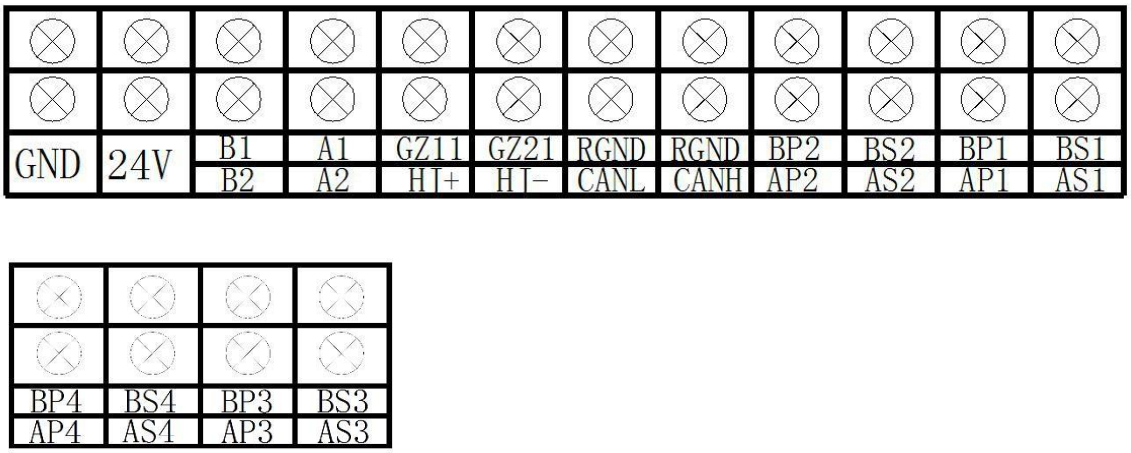

Fig. 3-7Terminal connection diagram

3.4 Component

3.4.1 Standard Component

- The standard components of KET-CP-100 Intelligent Fire Alarm control panel include main board, LCD board, LED board， keypad, loop board, loop base board, Power supply equipment (PSE), Zone and FPE indication board, filter board 1, filter board 2.
- Mainboard:

  The mainboard located at the back of control panel's front interface, which is connected with loop mainboard by cables and with keyboard, indicator board and LCD by oily cables. 485 (optional) and CAN communication board (optional) are pin-mounted on the motherboard. The motherboard containing the CPU is the core part of the entire system control, including an emergency CPU for emergency fire alarms in the event of a primary CPU failure. It can display the different states of the system, and query, set up, print by the keyboard including other related

operations.

- Loop base board:

  The loop board is installed inside the control panel cabinet. The power supply equipment and battery are connected to the loop base board via a cable. The loop base board is the signal connector of control panel, including the detection output connector, the loop connector, 485 loop connector and CAN loop connector, which set the devices on fields and control panel in one as a complete fire alarm system.

- Loop board

  The loop card is installed on the loop board in a pluggable way, which can be connected with 255 addressable devices.

- Zone and FPE indication board

  The Zone and FPE indication board is installed on the back of the front panel of the control panel and connected to the control panel board through a cable. The Zone and FPE indication board can display the fire alarm, fault, disabled status of a zone and FPE action and feedback.

- Indicator board

  The indicator board is installed on the back of the front interface of the control panel, which is connected to the mainboard through a cable for indication.

- Keyboard

  The keyboard is installed on the back of the front interface of the control panel, which is connected to the mainboard through a cable.

- Power supply equipment (PSE)

  The power supply unit contains a power supply board that supplies power to the loop base board, loop board, zone and FPE indicator board, printer, and so on. When the main power is lost, the backup battery can provide power to the entire system to prevent loss of information due to power loss.

- Filter board 2

  The filter board 1 is installed in the control panel cabinet, and is connected with the loop base board through the cable to increase the anti-interference ability of the loop bus, and provides an field bus interface of loop (3, 4).

- Filter board 1

The filter board 2 is installed in the control panel cabinet, and is connected with the loop base board through the cable to increase the anti-interference ability of the loop bus, and provides field loop (1, 2) bus, RS485 bus and CAN bus interface, field fire output, field fault output, and field output 24V.

3.4.2 Optional Component

- Printer

  The printer is installed on the back of the front interface of the control panel, consisted of a front cover, a chassis, a print-head, a roll axis, and printing paper. There is also a paper loading key (LF), setting key (SET) and an indicator.

- RS 485 board

  RS 485 board is pin-mounted on the main board of control panel, which is connected with CRT by RS 485 communication.

- CAN board

  CAN board is pin-mounted on the main board of control panel, which is netted with other control panel by CAN communication.

3.5 Loop Devices

3.5.1 Smoke detector and heat detector

KET-CP-100 Intelligent Fire Alarm control panel can be connected as KET-HD-140 and KET-SD-120. Each detector has its own address which is used for the control panel to detect fire alarms, faults and normal status.

3.5.2 Input/output Module (FPE)

KET-CP-100 Intelligent Fire Alarm control panel can be connected with input/output module which is used on the firefighting devices controlled by control panel, such as smoke valve, air valve or damping valve. The module can also receive the replay signal of the devices mentioned above. This module can only be connected with fire protection device and equipment, and cannot be connected with smoke detector

3.5.3 Loop Isolator

The loop isolator (KET-ISM-200)can isolate the short-circuit parts in the system to ensure other parts operate normally and help to locate the fault. After the maintaining, the loop isolator can reconnect the

isolated parts into the system again.

3.5.4 Sounder strobe

Sounder strobe is an audible and visual device installed in a zone that can be controlled by the control panel in fire condition and connected to the KET-CP-100 Fire Alarm control panel by a loop. When a fire occurs, the sounder strobe is activated and it produces a strong audible and visual alarm signal.

3.5.5 Manual Call Point

Manual call point (KET-MCP-180) can be connected with KET-CP-100 fire alarm control panel by a loop. When a fire occurs, press down the manual call point, then the alarm signal will be sent to control panel. At the meantime, the control panel will show the location of the alarming manual call point and alarm.

Section 4 Installation and Commission

4.1 Open-case Inspection

Before installation, check field devices first.

4.1.1 Check Engineering Requirement

Check whether the packing list conforms to the requirements of relative engineering project. After opening the case, check the goods in the case one by one according to the packing list, including the main items: installation and operation manual, control panel's keys and etc. If there is no inconformity among the item mentioned above, make the necessary appearance inspection of the control panel. If any inconformity is found, please connect with the after-sales department of our company.

4.1.2 Check Internal Components and Interconnection inside the control panel

Check all internal parts if having been connected well. If you find that the cable is off, anything does not meet the instructions or any mark is unclear, etc., please contact our after-sales department.

4.2 Cabinet Installation

4.2.1 The installation method is as shown in Figure 4-1.

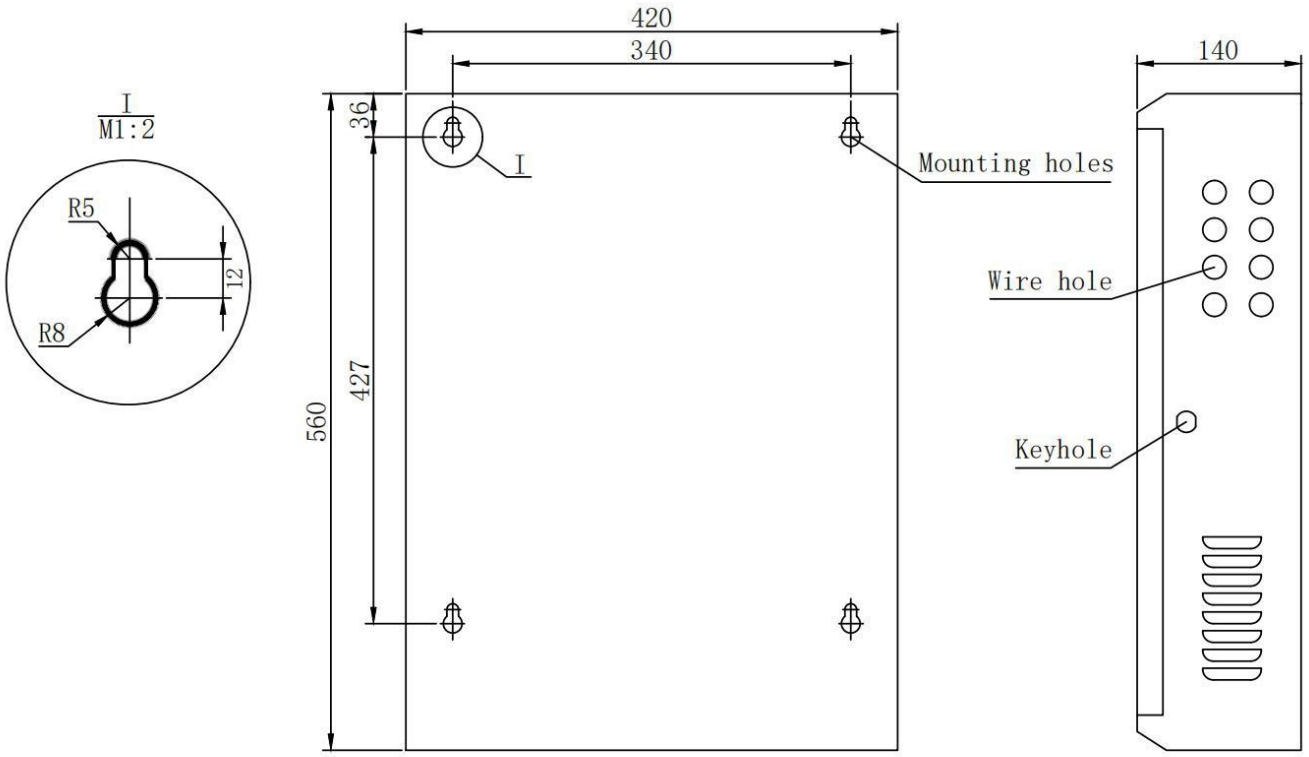

Fig.4-1

Control panel dimensions (length × width × height): 420mm × 140mm ×560mm. The control panel is mounted on the wall through 4 mounting holes, the dimensions of the mounting holes are shown in Figure 4-1. The right side of the control panel has 8 wiring holes, which are easy for wiring between the control panel and field devices .There are also 5 knock holes at the top, if the holes on the right side are not enough.

4.2.2 Mounting conditions

Operating temperature: 0 ℃~ +40 ℃

Relative humidity ≤95%, non-condensing

Wall-mounted

4.3 Boot Check

The control panel should be powered in field in the state of power-on. The checking contents include:

- ✧ Check LCD screen, digital tubes and LED indicators.
- ✧ Check if the control panel can self-test. Check if LED indicators and digital tubes illuminate. And check if the buzzer can give three loud alarm sounds.
- ✧ Check if the control panel has power fault, all keys are normal, and the printer is normal.

If find any abnormal conditions, please contact our after-sales department.

4.4 Peripheral Devices Inspection

4.4.1 Peripheral Connection Inspection

Check the circuit connected with the control panel. Measure the insulation resistance among loops, loops and ground and the load's status among loops. The insulation resistance should be more than 20MΩ and the load of loops should be more than 1kΩ.

4.4.2 Device Inspection

Check loop devices, for example, the number of devices, programming and working status, and get rid of potential faults.

4.5 Connection and Setup

After checking the control panel and peripheral devices, if all checks meet with requirements, please refer to Chapter 2 to connect peripheral devices to the control panel and set direct control panel and loop control panel.

4.6 Power Connection

4.6.1 Main Power Connection

- ✧ The connection terminals of JB-TB-TC5109 Intelligent Fire Alarm control panel need 230V/50Hz power to connect, as following Fig.4-2.
- ✧ The ground cables (green/yellow) of input power cables needs to connect with PE terminals. TE and PE are short circuit.
- ✧ The positive cable needs to connect to terminal L, and the negative wire needs to connect to terminal N.
- ✧ The fuse of the main power: 3A

Note: No power supply before the installation is completed.

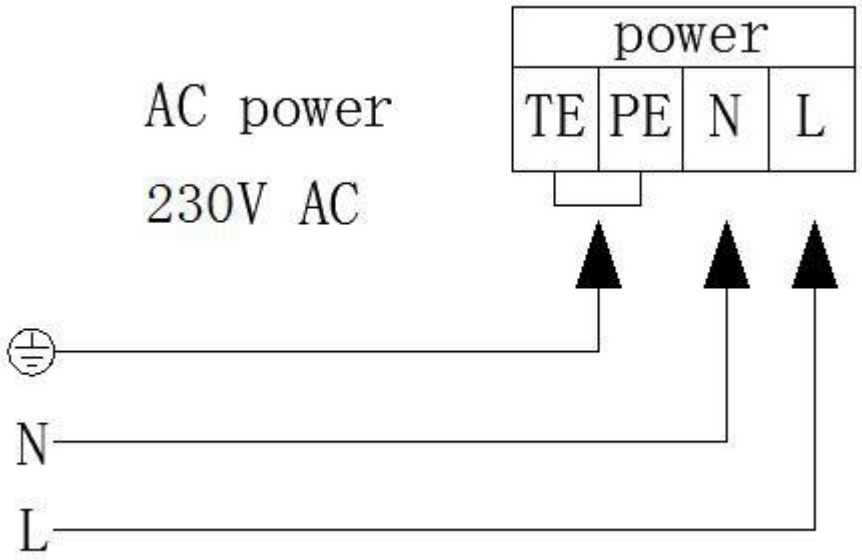

Fig. 4-2

4.6.2 Battery Connection

Please refer to the battery calculation part for the needed capacity of the battery. According to Fig. 4-3, connect batteries and link the battery terminals.

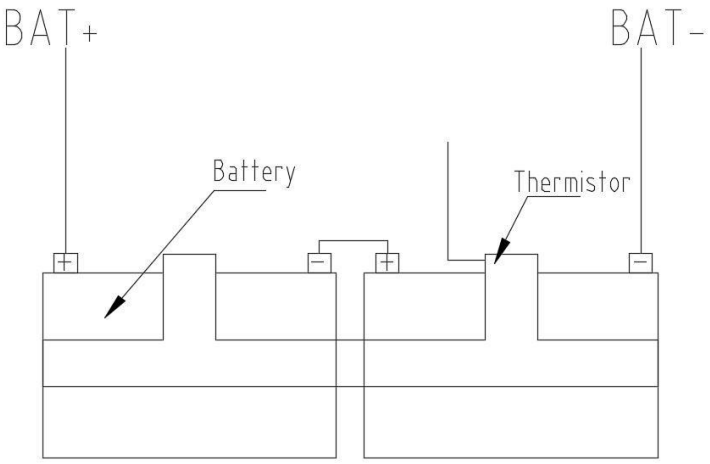

Fig. 4-3

Note:

1. please do not connect the battery before the connection is completed.
2. Thermistors must be installed between the battery clip and the battery.

4.7 Commission

4.7.1 Connect wires to the control panel, check circuit and insulation resistance. When the resistance between loop wires is about more than 5kΩ (loop is full-load) in a state of power off, measure whether the insulation resistance between loop and ground is more than 20M. (Before measuring, connect two loop wires in parallel, or it will destroy the loop devices.)

4.7.2 Install bases of detectors, modules, manual call point etc. and connect wires.

4.7.3 Encode the loop devices and install them on the bases.

4.7.4 Register loop devices and check. There should be no inaccurate information of the registration. If there is a large loss, firstly check output power and loop isolator in each floor. And then check individual device and register it again and then observe whether they are registered completely.

4.7.5 Write configuration program and linkage program.

4.7.6 Check detector's fire alarm function, note text and field situation.

4.7.7 Automatic linkage test. If automatic linkage is abnormal, check manually modules first. If circuit and module are normal, check the logical expression and peripheral devices.

4.7.8 Train the operator to use correct operating method. After the devices pass the acceptance inspection, plunge the project into usage.

Section 5 General User Instructions

5.1 Start-up, Shut-down and Self-test

After commissioning, the user can operate as the following procedures:

- Turn on main power and standby battery switches.

After the above operation, the system is powered to initialize (shown in Fig. 5-1). After initializing, the system enters in run. Press *Self-test* key, and the system will check its sound and indicator.

The processes of shut-down and start-up are contrary. Pay attention to turning off switch of standby battery, otherwise, the battery may be damaged.

Fig. 5-1

① system time ②operation level

5.2 Keypad Operation Preparation

5.2.1 Command and Character Functions of Keypad

Most of the keys have double functions. Upper mark indicates the character function and lower mark command function. The command function is only activated in monitoring state and most functional keys are limited by locking key. The character function is only active after entering the menu.

5.2.2 Data Input

At the start of data entry, a region on the screen highlights the location and range of the current data entry. Press the character key and the previously displayed characters in the highlighted and highlighted zones disappear. Start from that character and re-enter.

After editing a block, the next block is highlighted and returned to the start position at the end.

Press the "*ENTER*" key to store all input data no matter where the cursor is located.

Press the "*CANCEL*" button to exit the current edit state, which is not stored.

5.2.3 Browsing Messages

Press *Query* key, and press number key to enter the screen for viewing the corresponding information. On the screen of fire linkage information, press RIGHT ARROW KEY to change screens of fire alarm information and linkage information.

You can look through information one by one by pressing ▲ and ▼ or pressing "*F1*" (page up) or "*F2*" (page down). Press "*Cancel*" key to exit to the upper level operation menu or system running screen.

5.3 Operation Level

The control panel has three operation levels, including *"Level I"*, *"Level II"* and *"Level III"*. When the control panel is powered, the factory default is *"Level I"*. And at this time, you can press *Mute* key, *Query* key and *menu of Query setup* to operate the control panel, and it will display "*Operation level: I*" on the blow of the LCD screen. You can press *User setup* key, *Self-test* key, *Reset* key, *Start* key, *Stop* key, *Disable* key, *Enable* key, *Linkage mode* key, *Sounder strobe start/stop* key and *Spray control* key to operate the control panel by *Level II*. And you can operate the menus of *System setup, Network setup* and *Linkage setup* by *Level III*.

Press *Operation level* key and then press number key to choose operation level, and the screen will show *Input password*. So at this time, input the correct password and press *Enter* key, and then it will enter the corresponding operation level to gain corresponding operating authority. If there is no operation in 30s, it will be automatically back to *Level I*.

5.4 Device Registration and Registration Inspection

5.4.1 Device Registration

Press "*Menu*" button to enter the main menu, and then press *Number 5* to enter the screen of "*5. System setup*", and then enter the screen of "*1. Device registration*". Press *Enter* key and the control panel will automatically register devices. After registering, the system will reset automatically.

5.4.2 Check Loop Configuration

Press the "*Menu*" button to enter the main menu. Then press the number 1 to enter "1. System Information" (Figure 5-2). This screen displays the type and number of devices registered in the system. For example, the number of registered devices such as smoke detector, heat detector, sounder, input and output module and isolation module, and the information of the networking control panel with the host control panel. The details can be viewed by pressing the number keys "1" or "2".

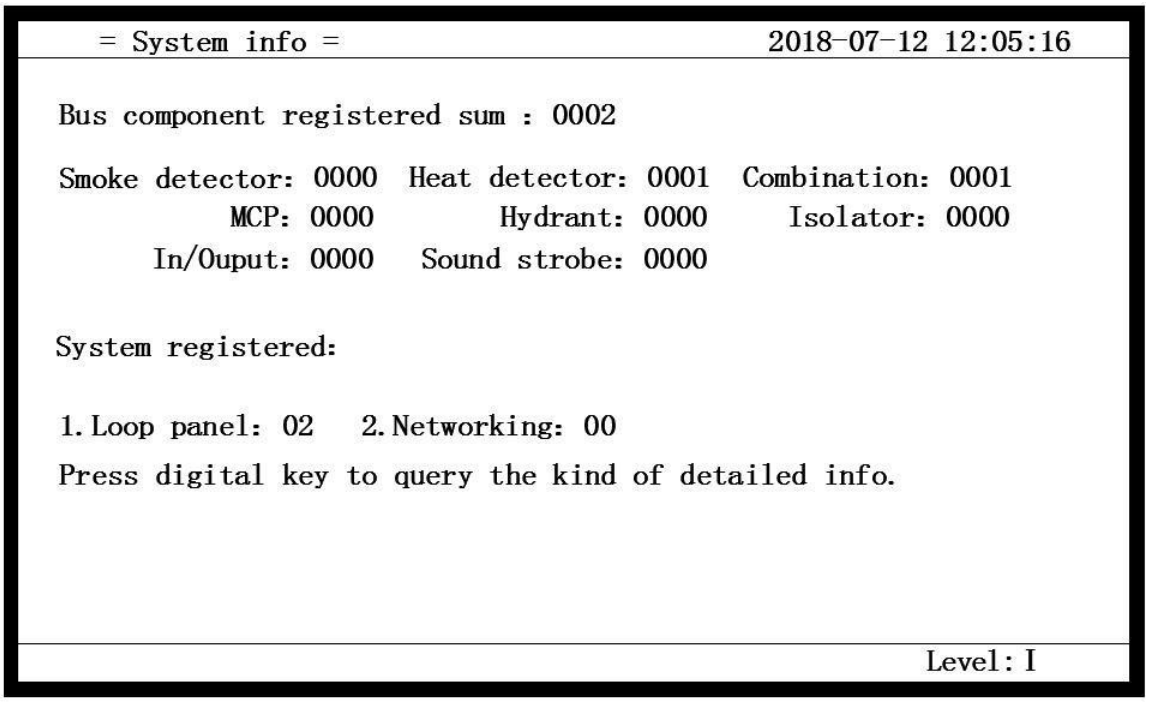

Fig. 5-2

✧ On this page, press the number key 1, the system displays the number of registrations, bus current and reference voltage of the 4 loops (Figure 5-2).

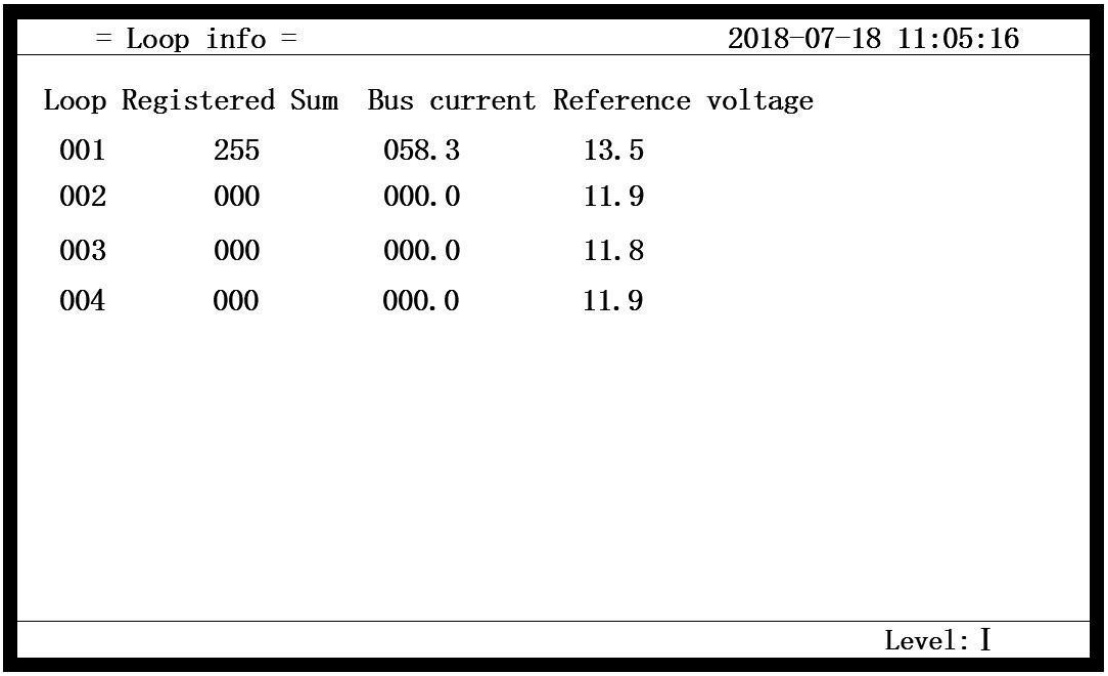

Fig. 5-3

✧ For details on each loop, press the corresponding number keys “1”, “2”, “3”, “4” to enter the corresponding loop information page (as shown in Figure 5-3).

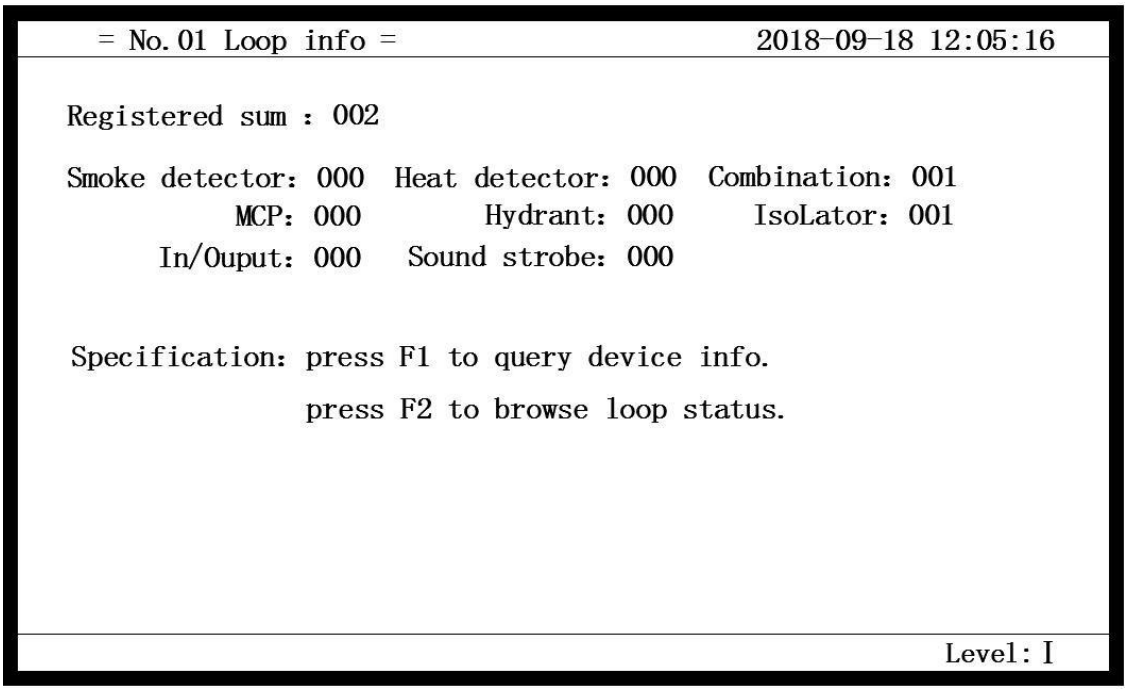

Fig. 5-4

On the page shown in Figure 5-4, press the "F1" key to query the loop device information. The loop device information page display includes: the device's own code, registration type, 2nd code, setting type, device attribute and Chinese character comment information (The details please go for Device Definition Chapter One). Press "▲" or "▼" to execute the previous and next query operations. The registration type is the front-end bus device type; the device attribute is a type defined for the input module, including: three types: fire alarm, feedback, and supervision.

On the page in Figure 5-4, press the "F2" key to browse the loop status and display the response current of the bus device on this loop. According to this status table, it can be judged whether the loop working status is normal.

5.4.3 Check the Information of Networking control panel

In the page shown in Figure 5-2, press the number key "2" to display the display networking information with the control panel, which is convenient for the user to view. This operation is a level I operation. As shown in Figure 5-5.

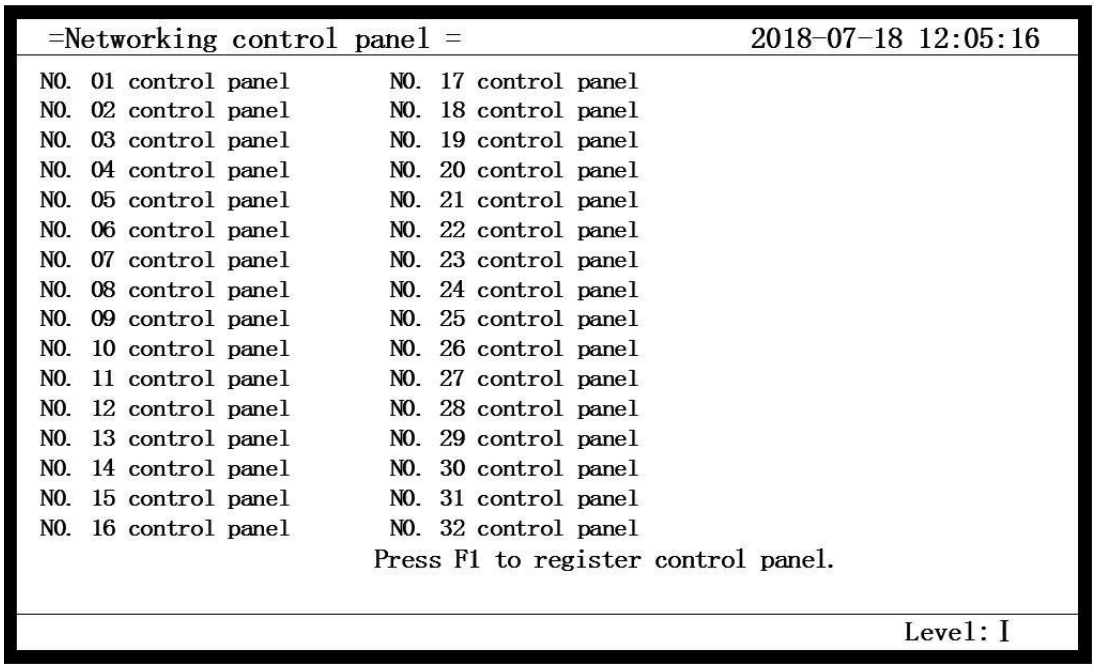

Fig. 5-5

5.5 Information Display and History Log

5.5.1 Fire alarm, Fault Information Display

When there is any information in the system, such as fire alarm, fault, disable and linkage, the system will display this information; if there is more than one type of information in the system, the system will display the information as the priority of Fire Alarm > Fault > Disable . Press “Query” button to view on each information page, press the number keys “1. Fire alarm”, “2. Fault”, “3.Disable”, “4.Linkage”, as shown in Figure 5-6 which is the fault information display page.

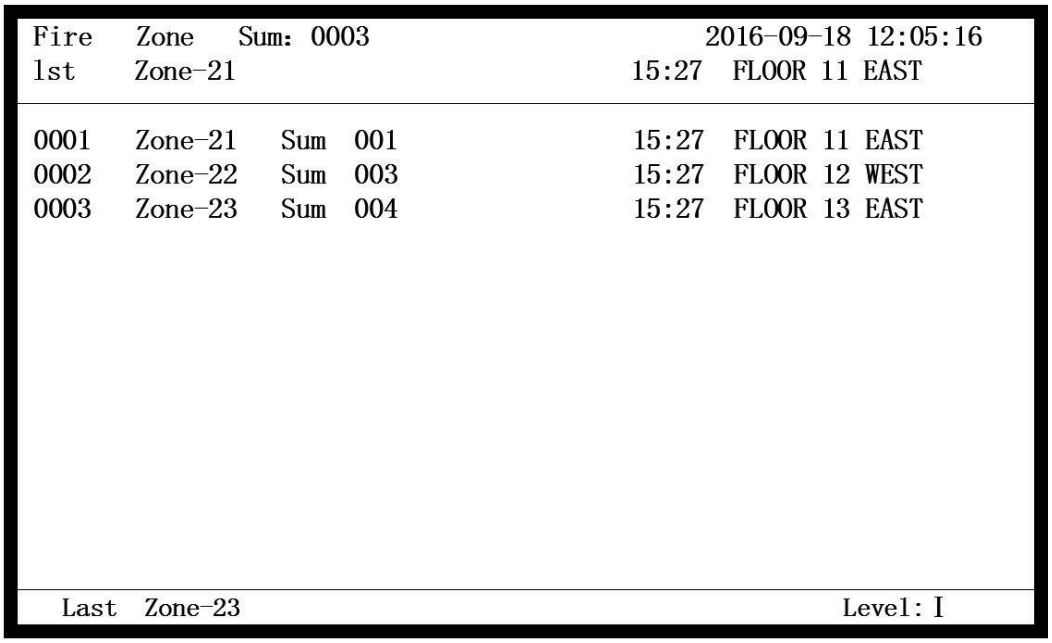

Fig. 5-6

✧ The first fire alarm information is “The First Fire Alarm”, which is always displayed on the front of the

window. The last fire alarm information is displayed at the bottom of the fire alarm window. Press "▲" or "▼" key to query each fire alarm information. Please click Enter to enter a zone for detailed fire location information, press F1 (upward) and F2 (downward) to query by page.

- ✧ The yellow bar displays fault information. The fault information categories are: zone fault, loop fault, power fault， FPE fault system fault and sounder fault. The fault bar displays the last fault message at the bottom. Press "▲" or "▼" key to query each fault information, or press F1 (upward) and F2 (downward) to query by page.
- ✧ You can switch between the fire alarm status and the fault inquiry status by pressing the "▸" key.

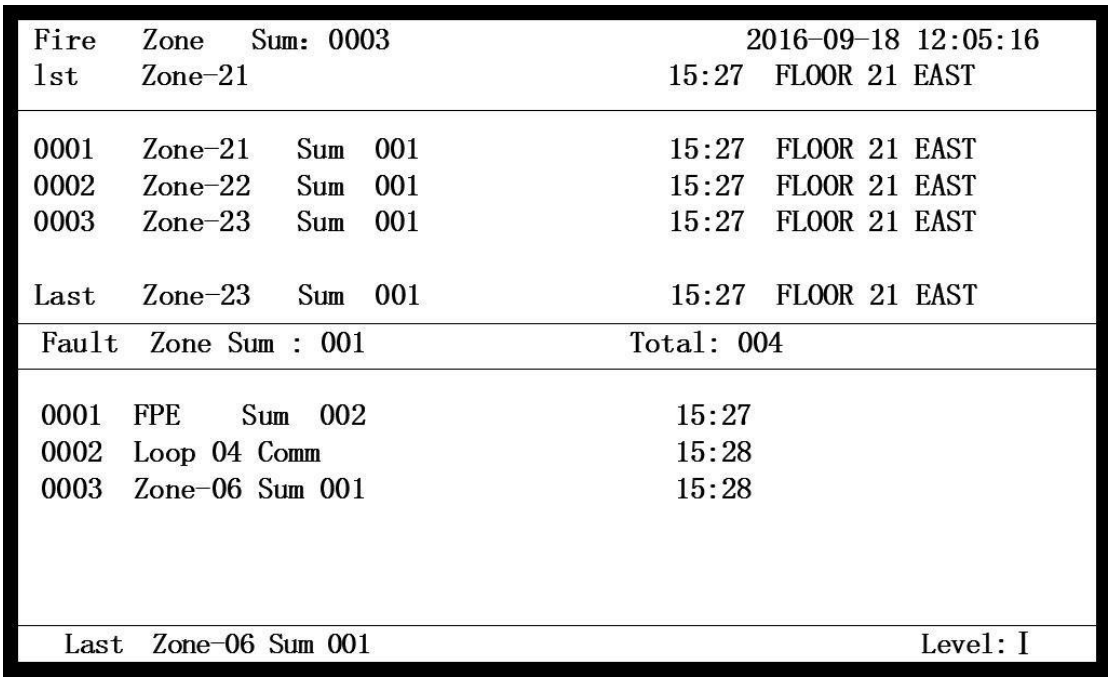

Figure 5-7

The illustrations of example shown in Figure 5-7:

1. Fire Zone Sum: 0003:3 zones were hit by fire.

2.1st Zone-21: ZONE 21 is the first fire zone

3.0001 Zone-21 Sum 001: This fire alarm indicates that there is a fire in Zone 21, the fire alarm point in the zone is No. 1, the fire time (hours, minutes) occurs, and then press the "enter" button to display the alarm device in the zone (It displays: the 2nd code, loop, address, comment information). If it displays the page is full, press F1 (up) or F2 (down) to query the former or latter page. The last message is displayed at the bottom of each page.

4. Last Zone-23 Sum 001: This bar shows that the last fire in the fire alarm column is a fire in Zone 23.

5. Fault Zone-06 Sum: 001 Total: This bar shows that there is a fault in Zone 6, and the number of points in the zone is 1.

6.0001 FPE Sum 002: This fault indicates that the FPE device has failed, the number of FPE faults is 2, and the fault time (hours, minutes). Then press the “enter” button to display the faulty FPE (the 2nd code, loop, address, comment information). If it displays the page is full, press F1 (up) or F2 (down) to query the former or latter page. The last message is displayed at the bottom of each page.

7. Last Zone-06 Sum: 001: This clause shows that the last fault message in the fault column is faulty in Zone 6.

5.5.2 Disable Information Display

Press the “Query” button to press the number key “3. Disable” on each information page to enter the disabled information query. The disabled information can be displayed: disable zone, disable point, disabled sounder, disabled FPE, etc. To view each disabled information, press “▲” or “▼” to query by bar, or press F1 (up) and F2 (down) to query by page. As shown in Figure 5-7 below:

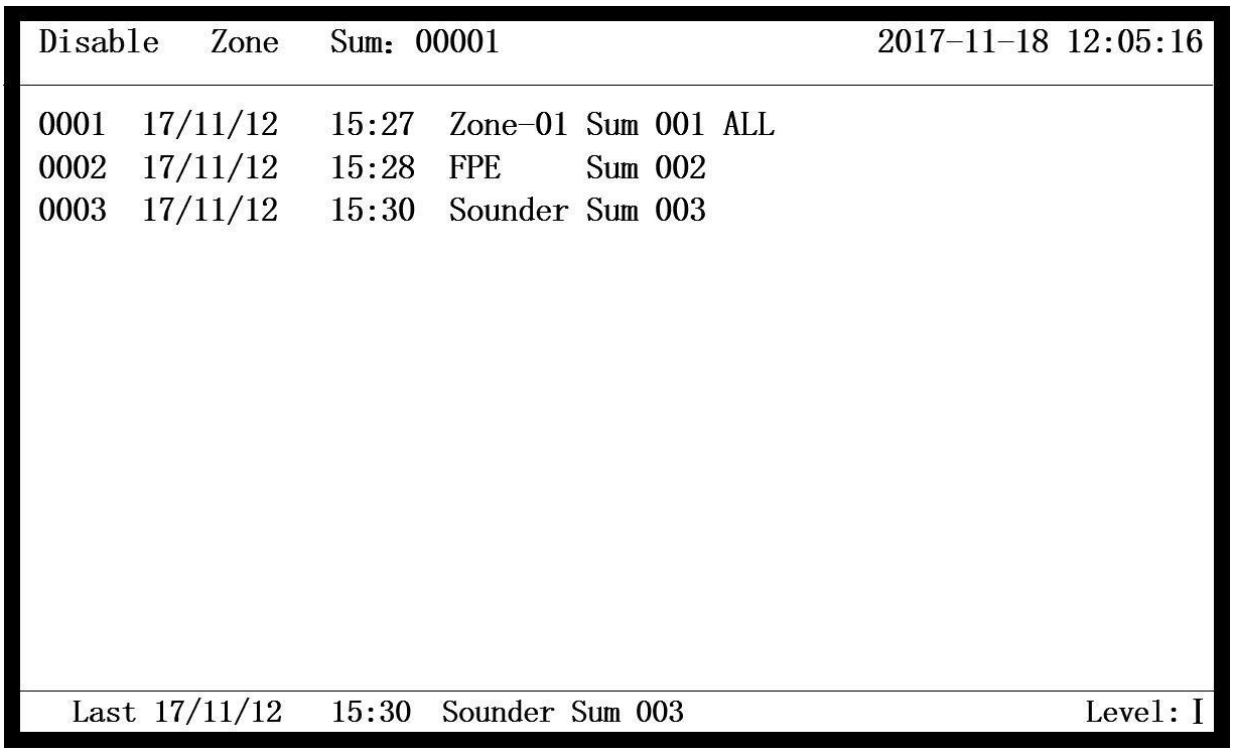

Fig. 5-7

The Illustrations of the example shown in Figure 5-7:

1. Disable Zone Sum: 00001: This bar shows the total number of zone disabled is 1.
2. 0001 17/11/12 15:27 Zone-01 Sum 001 ALL: This bar shows the disabled information in zone 1, the total number of disabled zone, the time of the disable (year, month, day, hour, minute) and then press "enter" key, which can display the disabled information of zone device (display: 2nd code, loop, address). When the

display page is full, you can press F1 (up), F2 (down) to query the information page by page. The last message is displayed on the bottom of each page.

3. 0001 17/11/12 15:27 FPE Sum 002: This bar shows that the total number of FPE devices blocked is 2, disabled time (year, month, day, hour, minute). Then press the “enter” button to display the disabled information of FPE device (display: 2nd code, loop, address). When the display page is full, you can press F1 (up) and F2 (down) to query the information page by page. The last message is displayed at the bottom of the page.

4. 0001 17/11/12 15:27 Sounder Sum 003: This bar shows that the total number of disabled sounders is 3, disabled time (year, month, day, hour, minute). Then press the “enter” button to display the disabled information of the sounder (display: 2nd code, loop, address). When the display page is full, you can press F1 (upward) and F2 (downward) to query by page. The last message is displayed at the bottom of each page.

5. Last 17/11/12 15:27 Sounder Sum 003: This item shows that the last message in the disabled information bar is blocked by sounder.

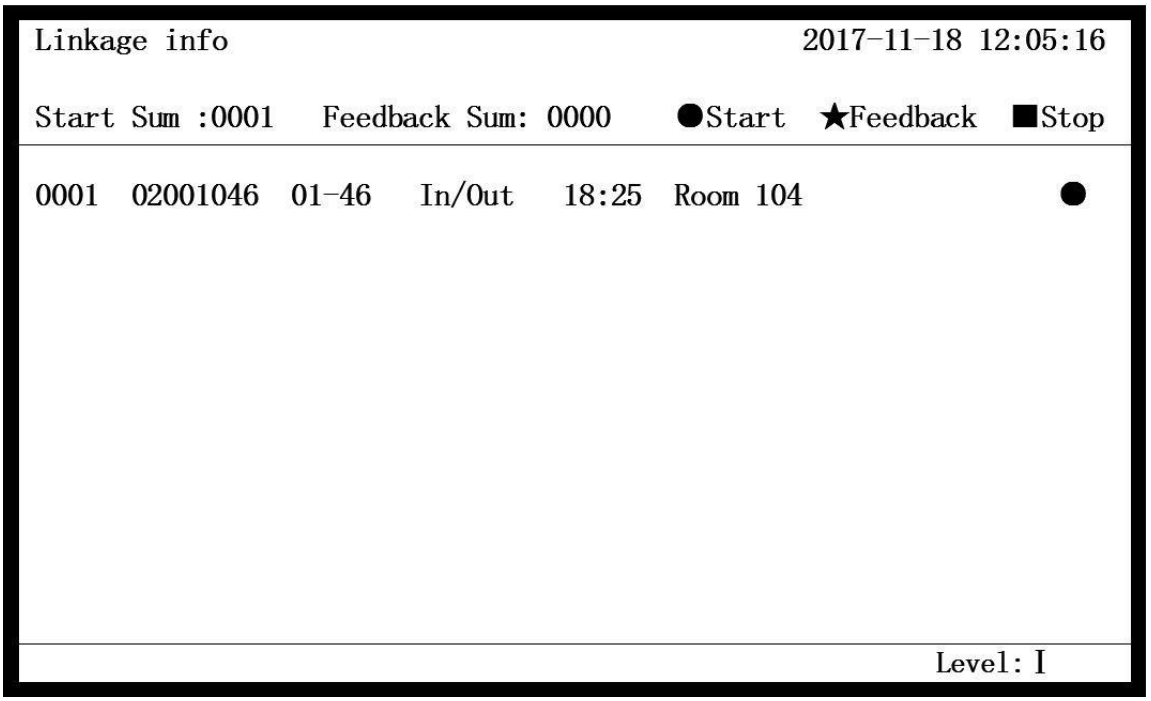

Fig. 5-8

The illustrations of the example shown in Figure 5-9:

1. Start Sum: 0001: This bar shows the total number of linked device startups 1.

2. Feedback Sum: 0000: This bar shows the total number of feedbacks from the linkage device is 0.

3. 0001 02001046 01-46 In/Out 18:25 Room 104 ● : This bar shows the device type: single-input single-out, Loop: 01, Address: 46, the 2nd code: 02001046, Note: Room 104, Status: Start.

5.5.4 View fire alarm history information

On the page shown in Figure 5-9, press the “1” button to select the fire alarm history and enter the fire alarm history information page, as shown in Figure 5-10.

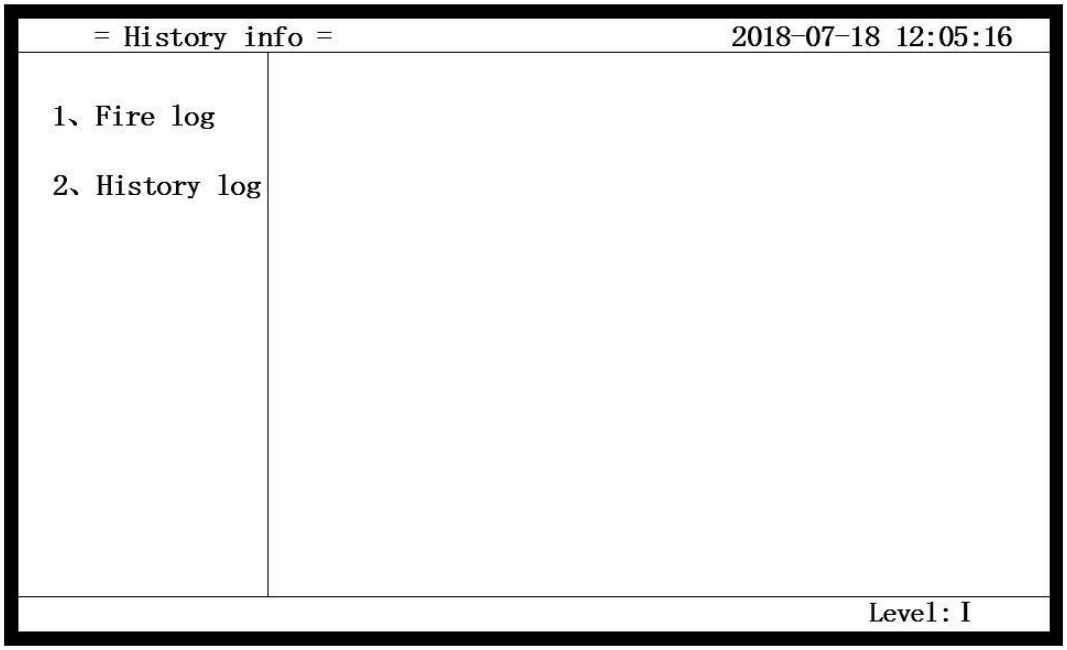

Fig. 5-9

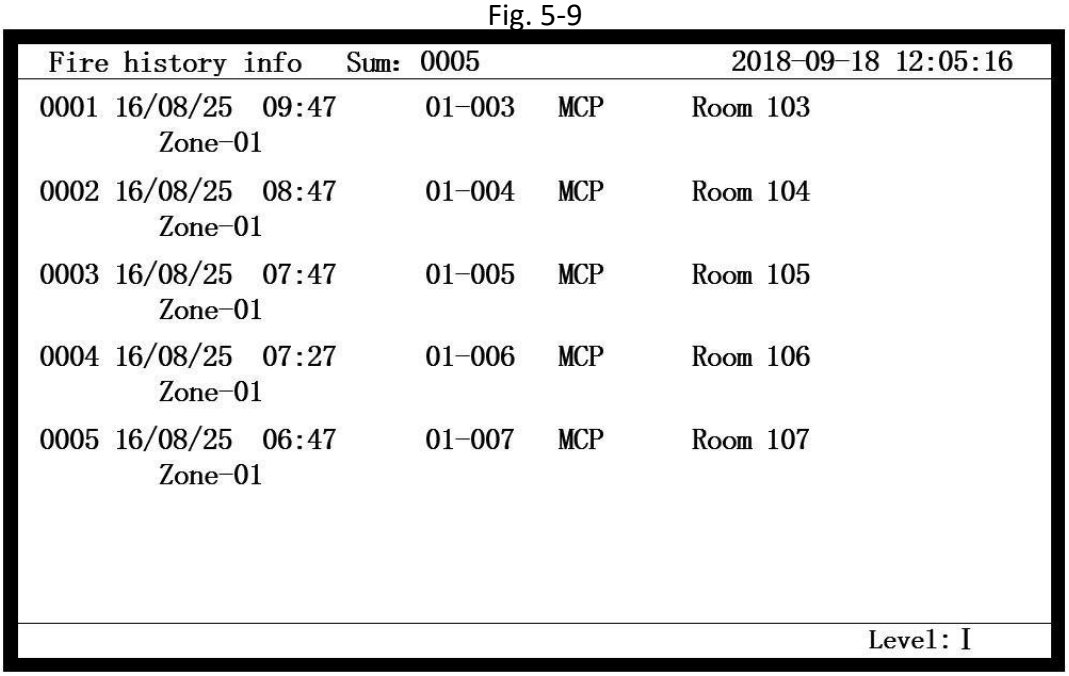

Fig. 5-10

The system will display the fire alarm history information, and each piece of information includes the time, loop, address, zone number, type, and Chinese character comment information of the recorded information. Press “▲” or “▼” to view each fire history information.

5.5.5 View history

On the page in Figure 5-9, press the number “2” to select the history and enter the history information page. The system will display the year/month/day/time of each message: system startup, system shutdown, system reset, FPE startup, FPE Feedback, sound and indicator start, equipment failure, etc. Press “▲”, “▼” to view each piece of history information.

5.5.6 View zone information

Press the “Menu” button to enter the main menu, and then press the number button “2” to enter the setting query information interface. As shown in Figure 5-11.

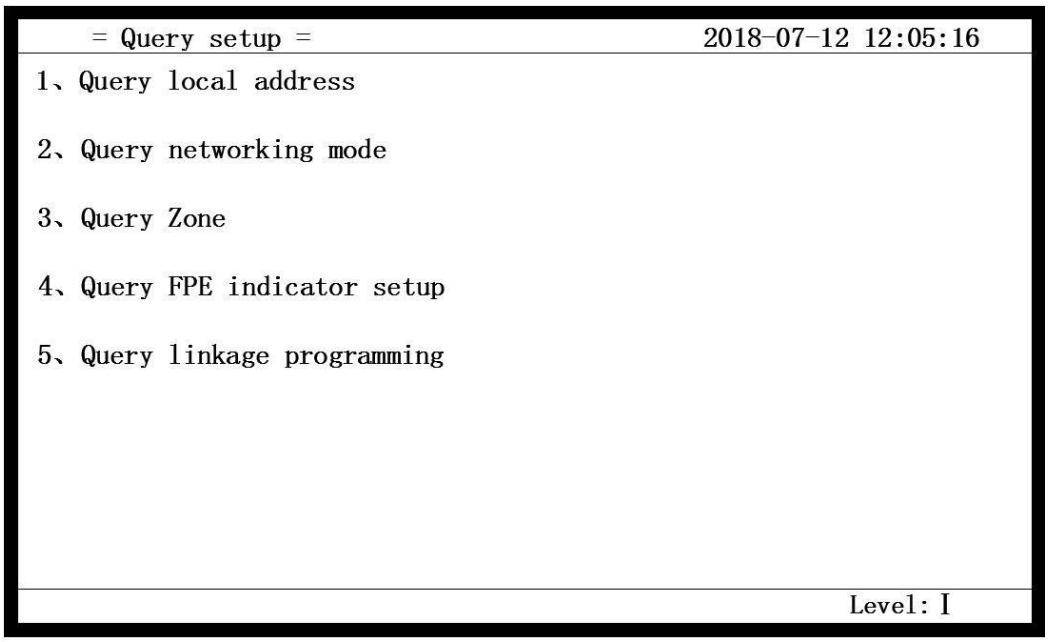

Fig. 5-11

On the page shown in Figure 5-11, press the number "2" to select the zone information query and enter the zone information display interface. You can press "◄" or "►" to view the device information of each zone. It can display the loop, address, type, 2nd code, comments and other information of each device in each zone. Press "▲" or "▼" to execute the previous and next query device information operations. As shown in Figure 5-12 below.

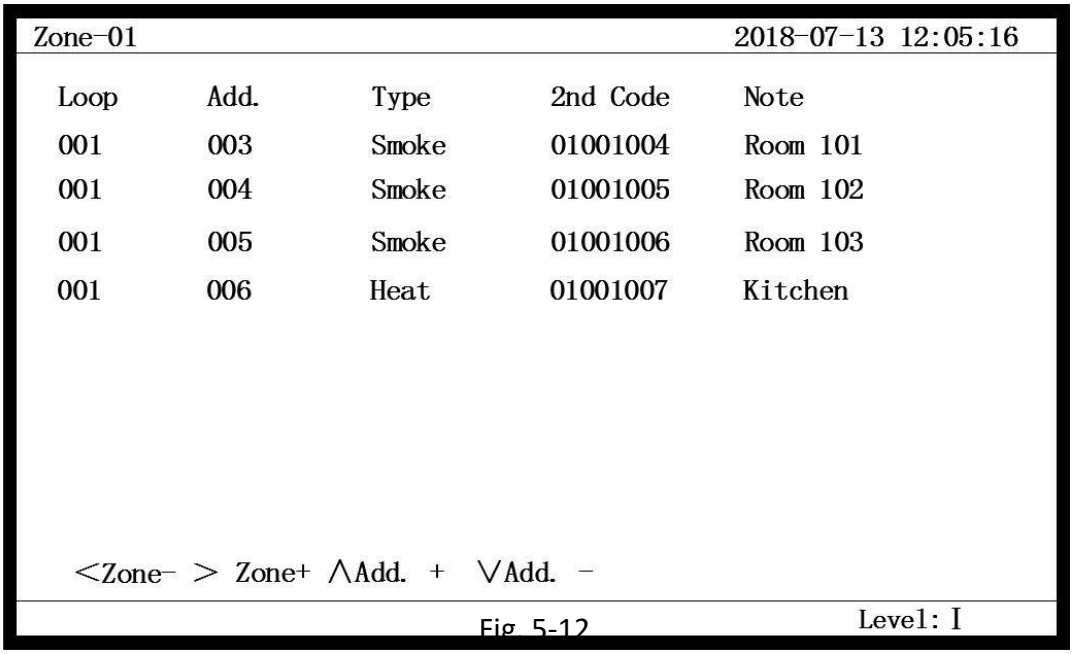

Fig. 5-12

5.5.7 FPE indicator query

On the page shown in Figure 5-11, press the number "4" to select the FPE information query and enter the FPE information display interface to display the loop and address of each FPE device. Press "▲" or "▼" to execute the previous and next query FPE device information operations. As shown in Figure 5-13 below

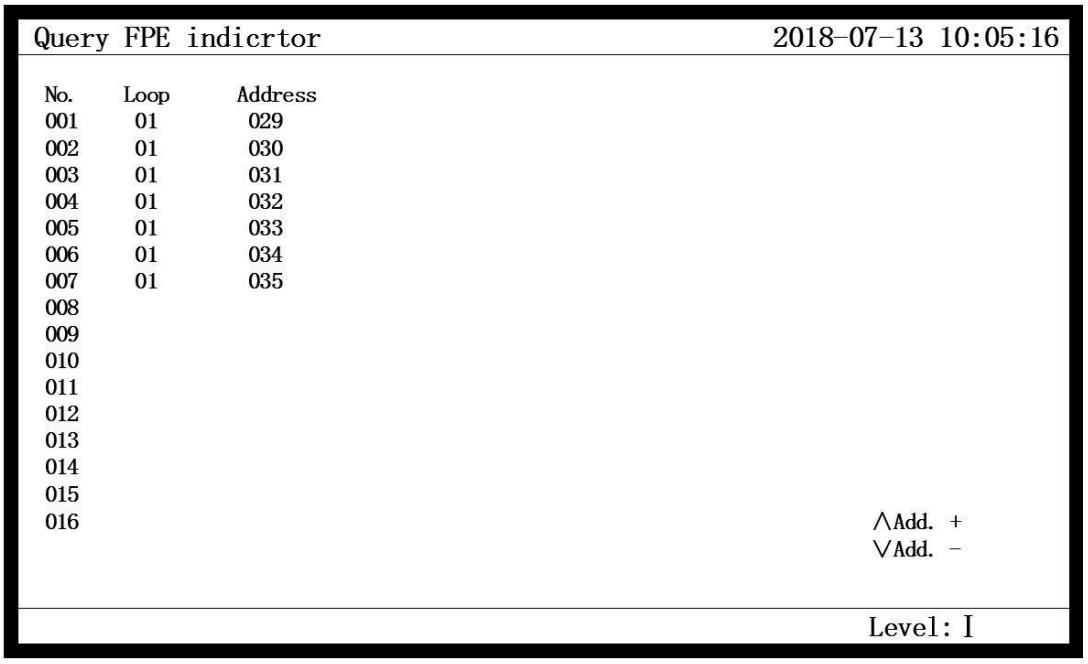

Fig. 5-13

5.6 Mute

When a fire or fault alarm occurs, the control panel's buzzer will sound a corresponding alarm. Press the “mute” button, the buzzer will stop alarming, and the control panel LED panel will display the mute indicator. If a new alarm occurs, the alarm sounds automatically again.

5.7 Fire alarm and fault handling

5.7.1 General treatment of faults

Faults can generally be divided into three categories:

One type is system failure, such as the control panel board. Such a fault cannot be silenced, and after the fault is removed, the fault state is released by manual power on/off;

The second type of fault is a CPU fault other than the main CPU fault. Such fault can be silenced, and after the fault is removed, the fault state is released by manual power on/off;

The third category is field device failures, such as detector failures, module failures, and so on. When the fault occurs, you can press the “mute” button to stop the fault alarm. After the fault is recovered, the control panel can automatically recover.

If the main power is off, use backup power supply, it should be noted that the power supply time should not exceed eight hours. If it exceeds eight hours, the control panel's power switch (including the backup switch) should be cut off to prevent the battery from being damaged.

If the system fails, it should be repaired in time. If it needs to be shut down, it should be recorded in detail.

If the equipment is faulty, repair it in time. If the fault cannot be eliminated in time due to special reasons, use the equipment disabled function provided by the system to temporarily disable the equipment from the system. After the fault is removed, use the enable function to restore the equipment.

5.7.2 Fire alarm indication

When there is a fire alarm signal, the control panel LED display panel fire alarm indicator is on, the control panel buzzer sounds a fire alarm, and the corresponding indicator of the zone indication panel is illuminated, and the control panel system displays the fire alarm information.

5.7.3 General treatment of fire alarms

When a fire occurs, first locate the location of the fire based on the information displayed on the control panel and enter if a fire has occurred. If it is a false alarm, find out the cause and dispose of it as appropriate; if it is entered that the fire has occurred, immediately organize the rescue work into the following steps: The first step: enter the fire. Step 2: Evacuate the site personnel. Step 3: Call the fire department. Step 4: Start the corresponding fire extinguishing device.

5.8 Disable and enable equipment

When an field device (detector, module, sounder) fails, it can be isolated, the control panel's master disable indicator, sounder's disable indicator, FPE disable indicator, master zone disable indicator and the disable indicators of zone (1-48) is indicated up. After all the equipment is restored by the enable function after being repaired or replaced, the control panel's master disable indicator, sounder's disable indicator, FPE disable indicator, master zone disable indicator and the disable indicators of zone are extinguished.

5.8.1 Device disable

The device disable can be divided into point disable and zone disable. It can also block all sounders and FPE equipment. Press the "Disable" button and enter the Level II password correctly, as shown in Figure 5-15.

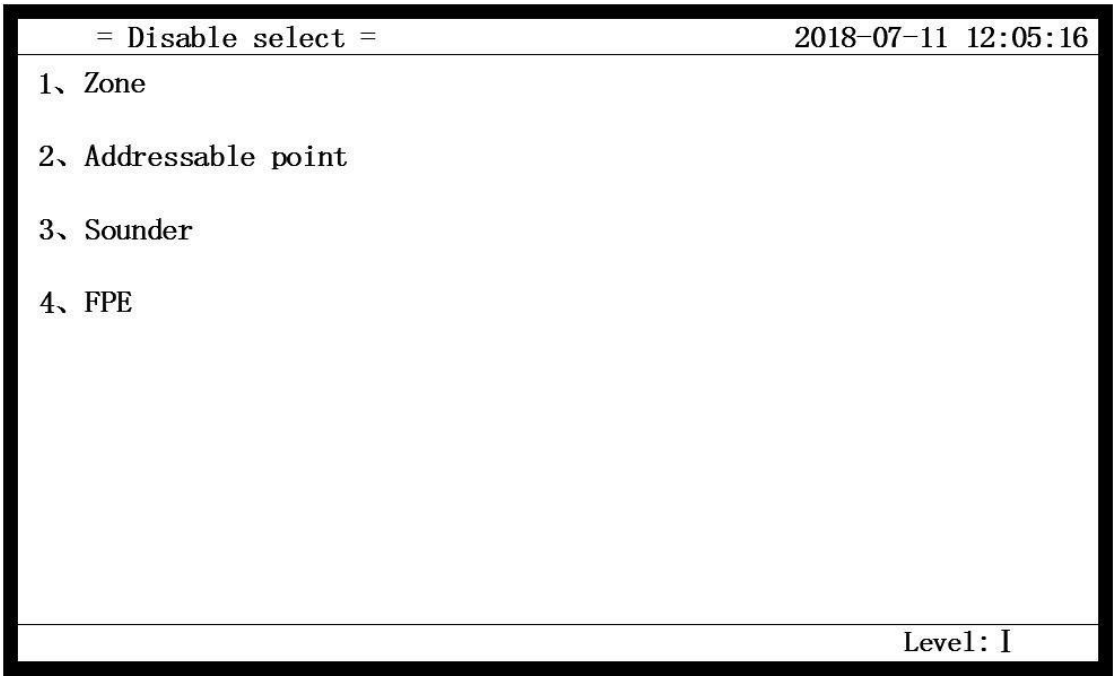

Fig. 5-15

5.8.1.1 For example: to isolate all devices in Zone 01, press the number key "1" on the interface of Figure 5-15 to enter the zone isolation operation interface, and follow the steps below:

- ✧ Enter the zone code to be isolated;
- ✧ Press "enter" button, the isolation information of the screen shows that the device in Zone 01 is isolated, the panel in the control panel zone shows that the disable lamp in Zone 01 is lit, and the LED panel shows that the disabled lamp in the main zone is lit.

5.8.1.2 For example: to isolate the loop device of No. 001 of the 1 circuit, press the number key “1” on the interface of Figure 5-15 to enter the point isolation operation interface, and follow the steps below:

- ✧ Enter the circuit to isolate the device: 01, address: 001;
- ✧ Press “Enter” to add the device to the screen's isolation information.
- ✧ Sounder and FPE can also be isolated by input loop and address number through this option.

5.8.1.3 For example: Disable all sound and indicator alarms, press the number key “3” on the interface of Figure 4-11 to enter the sound and indicator isolation operation interface, and follow the steps below:

- ✧ Press “Enter”, the isolation information of the screen shows that all sound and indicator are isolated, and the LED panel of the control panel shows that the sounder’s disable indicator is on.

5.8.1.4 For example: to block all FPEs, press the number key “4” on the interface of Figure 4-11 to enter the FPE isolation operation interface, and follow the steps below:

- ✧ Press “Enter”, the isolation information of the screen shows that all FPEs are isolated, and the control panel LED panel shows that the FPE disable indicators are on.

5.8.2 Enable

Enable can be divided into two methods of point enable and zone enable, which can also enable all sounders and disabled FPE device. Press the “Enable” button and enter the Level II password correctly, as shown in Figure 5-16.

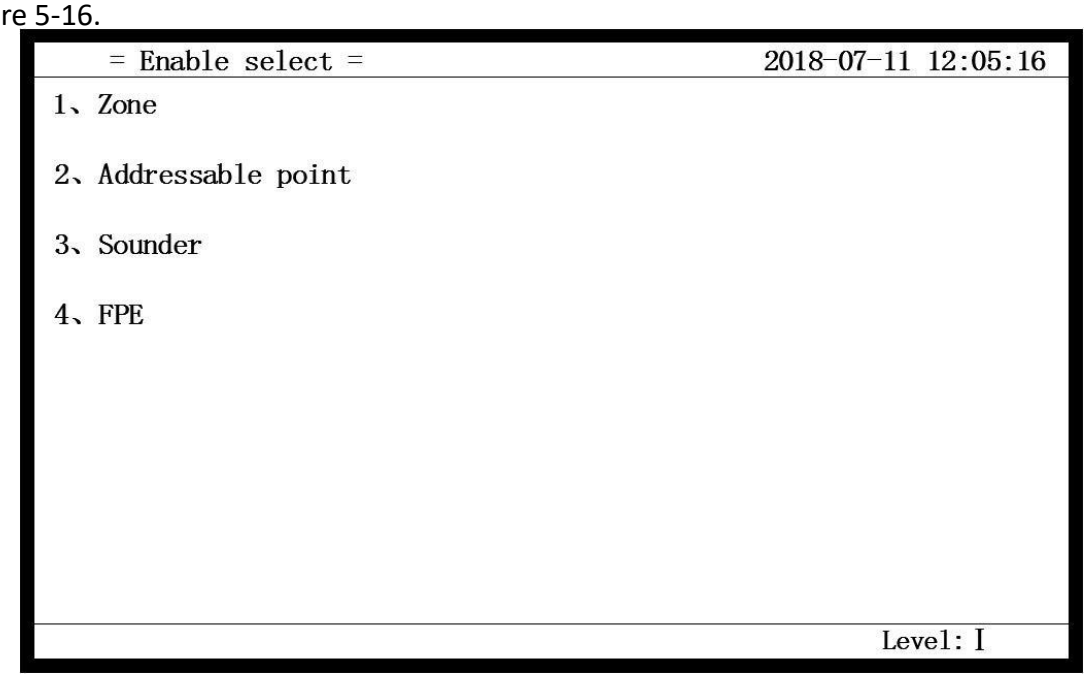

Fig. 5-16

5.8.2.1 For example: Enable all devices in the 01 zone, press the number key “1” on the interface of Figure 5-16 to enter the zone enable operation interface, and follow the steps below:

Enter the zone code for enable: 01;

Press “enter” button, the device corresponding to Zone 01 is enabled, the panel of the control panel zone shows that the 01 zone indicator is off, and the LED panel shows that the zone’s disabled indicator is off.

5.8.2.2 For example, the enabled device is a loop device with No. 001 of the first loop. Press the number key “2” on the interface of Figure 5-16 to enter the address point enable operation interface. The following steps should be taken:

Enter the circuit of the enable device: 01, address: 001;

Press “Enter” to unblock the device at the corresponding address point. The disable indicator is off.

The sounders and FPE can also be isolated by the input loop and address number by the option.

5.8.2.3 For example: Enable all sounders. Press the number key “3” on the interface of Figure 5-16 to enter the sounder disabled operation interface. Follow the steps below:

✧ Press “Enter”. Then all sounders are enabled and the sounder’s disabled indicator is off.

5.8.2.4 For example: To release all FPE disable, press the number key “4” on the interface of Figure 5-16 to enter the FPE enable operation interface, and follow the steps below:

✧ Press “Enter”, then all FPEs are enabled and the FPE disabled indicators are off.

5.9 Off-line Programming

Press the "Menu" button to enter "7. Linkage Program" → "2. Off-line Programming", the system enters the off-line programming operation interface, the system displays "1. Download 2nd codes and notes", "2. Download programming ", "3. Upload 2nd codes and notes ", "4. Upload programming ". The numeric key and the third-level password can be input to download the linkage programming and the 2nd code annotation to the control panel through the USB port, or the linkage programming and the 2nd code annotation can be uploaded to the USB flash drive through the USB port.

The off-line programming file must be placed in the root directory of the USB flash drive.

Please download and install the programming software provided by the Tiancheng and refer to the relevant instructions at www.tcfiretech.com

5.10 Message Display Rules

If there are multiple messages in the system, they are displayed in the following order: Fire Alarm > Fault > Disable.

✧ The system first displays the fire alarm information. When there is a new fault in the fire alarm state, the LCD will display the screen separately. The upper window is the fire alarm information, and the lower window is the fault information.

✧ In any display, if there is no operation within 30 seconds, the system will display a higher priority message.

5.11 Reset Function

Press 'reset' and input password to operate erase to control panel after alarm or fault eliminated. Reset can realize listed functions:

✧ Erase current alarm, fault and action display,

✧ Reset all bus-mode loop devices and all indicators of under-control devices,

✧ Erase all mute conditions.

Chapter Six System Administrator Manual

6.1 Time Setup

Press “menu” key, enter into “4. User setup” → “1. Time Setup”. The screen will display a figure as Fig.6-1. After edit and modification, there will be a new system time after conform.

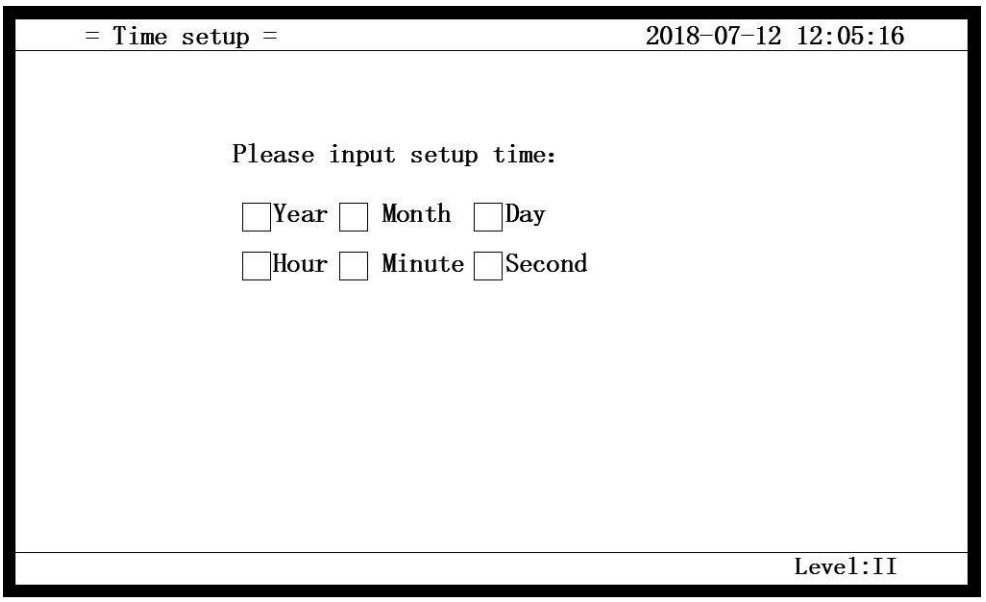

Fig.6-1

6.2 Print Setup

Press the “Menu” button to enter “4. User Setup” → “2. Print Setup”, the LCD will display the print setting menu (as shown in Figure 6-2): Press “F1” or “F2” to change the printer status, press the "enter" button to save the changes.

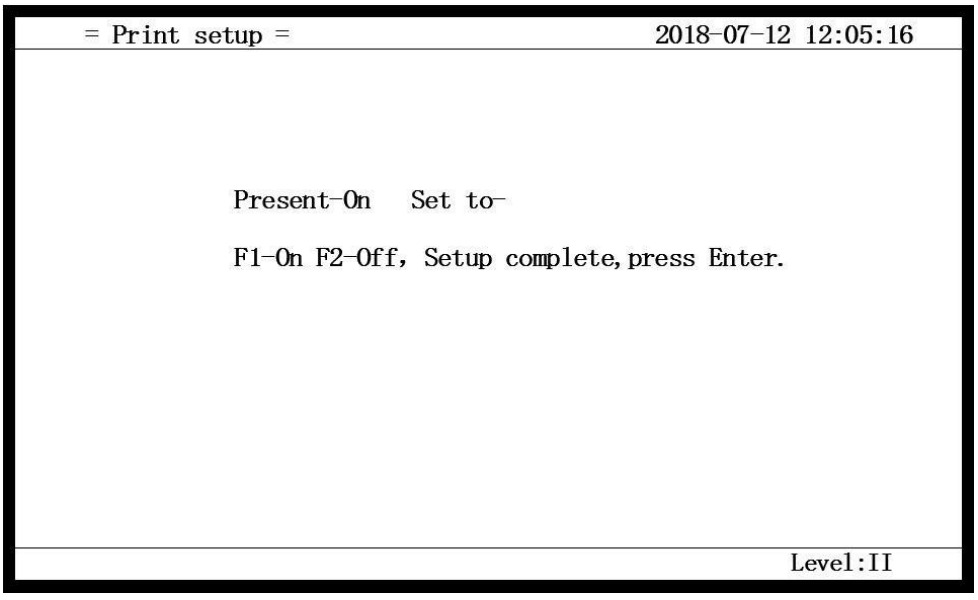

Fig.6-2

- ❖ No information can be printed under 'printer OFF' condition.
- ❖ New occurred information can be printed under 'printer ON' condition.

6.3 Language Setup

Press the “Menu” button to enter “4. User Settings” → “3. Language Setup”, the LCD displays the language print setting menu (as shown in Figure 6-3): Press the “F1” button to set the language to Chinese or press the “F2” key setting language is English. Then press “Enter” to save the changes.

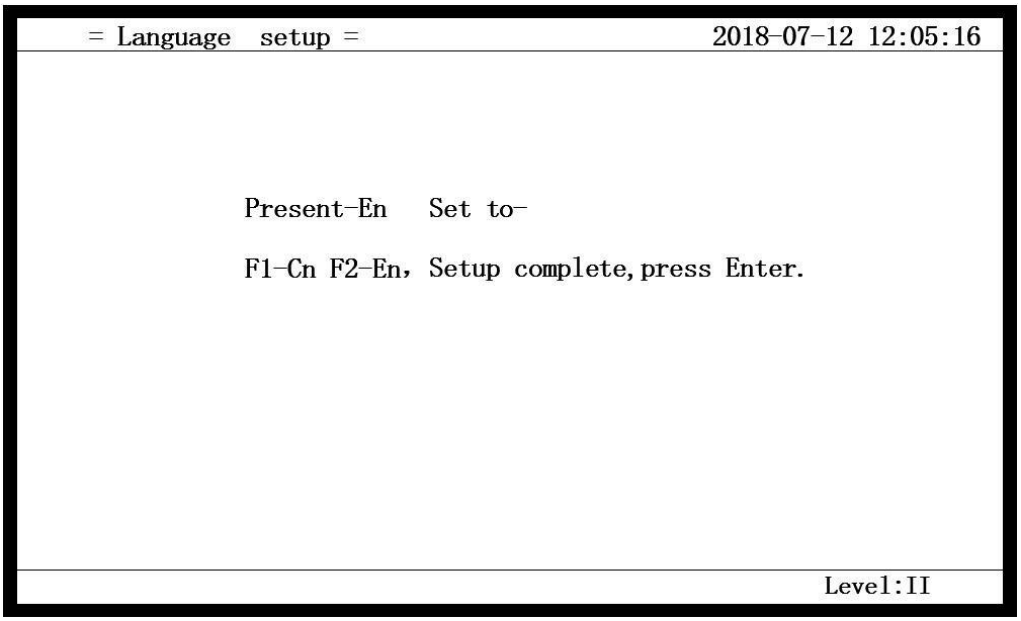

Fig. 6-3

6.4 Device Definition

Enter into ‘system setup’ then ‘2.Bus component setup’ shown as Fig.6-4.

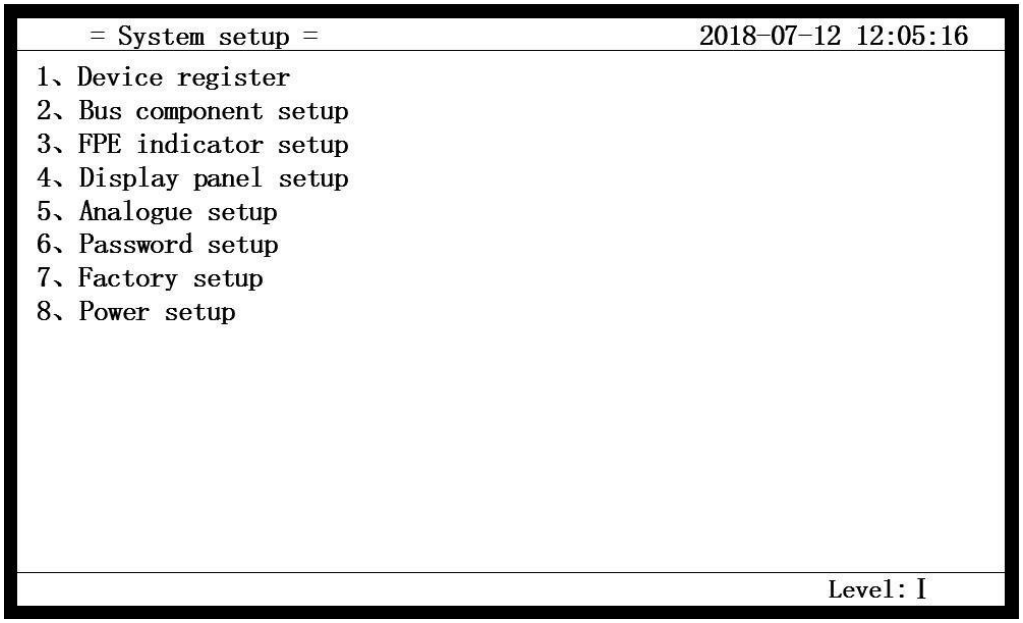

Fig. 6-4

6.4.1 Content and Procedures of Defined by Field Devices

Peripheral devices in field connected with the control panel include fire detectors, linkage module, LCD repeater panel, etc. which needs to be encoded both original address and field address.

The device definition is to set the field code of a certain original encoding device, which is the third item in the system setting menu. The defined device can be either registered on the control panel or not registered on the control panel.

The “Original address” is consisted of device's loop No. and its address No. The Loop No. is consecutively setting of 1 and 32. Press “enter” after coding completed.

The “2nd code of user” is a code consisted of eight digits from 0 to 9. This is a manual defined No. for specified field address for the device which is easy for user to identify device address and relevant information. Specifications for 2nd code of user:

The zone number of the device is corresponding to the first and second digits, in the range of 0-48. The so-called zone number refers to a fire zone.

The third, fourth and fifth digits range 0-999. Corresponding circuit number, for example, 1 loop, can be set to 001.

The sixth, seventh, and eighth recommendations correspond to the address number of the bus system device.

“Device type” needs to input three numbers referring to device type from device type sheet.

“Device properties” can be used for setting up peripheral device as 'alarm', 'feedback' and 'supervisory' represented by 0, 1 and 2 respectively mainly for defining input module attribute.

"Note information" indicates the location of the device or other related information. This item can be composed of up to 20 English letters.

Description:

1) In the device definition, only Arabic digits can be entered and the remaining characters are considered illegal.

2) English letters can be capitalized, spaces are a letter

6.4.2 FPE Indicator Setup

Press the “Menu” button to enter “5. System Setup” as shown in Figure 6-4 → “3.FPE Indicator Setup” Enter the third level password to enter the display panel fire alarm setting interface, as shown in Figure 6-5.

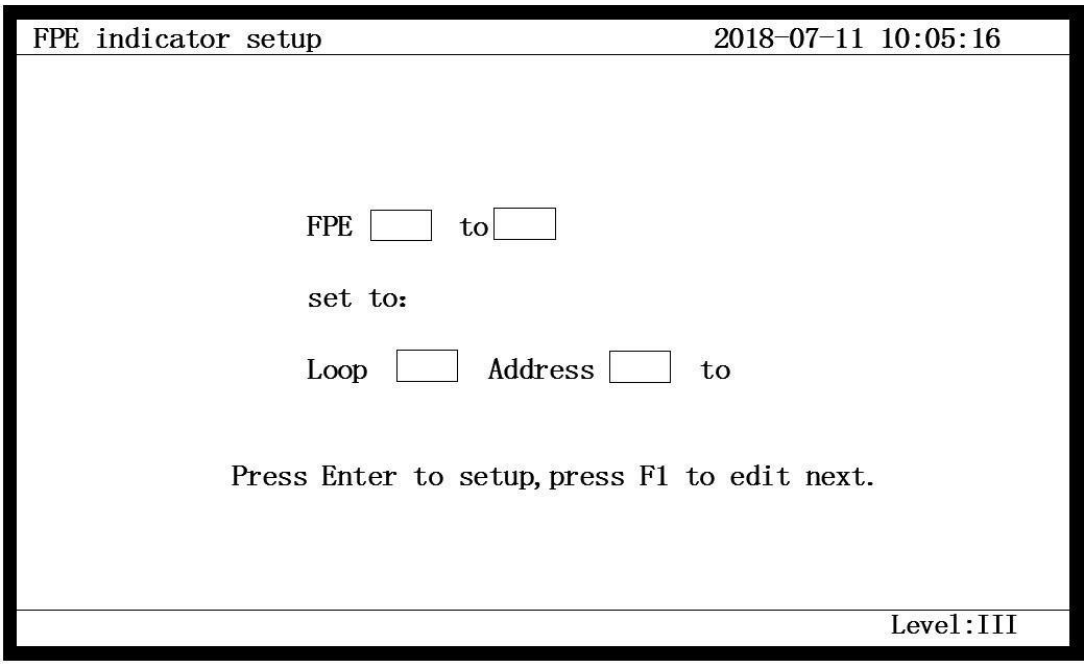

Fig.6-5

Input the FPE device No. of FPE indicated zone and the registered address (24 points can be set) of the corresponding FPE loop bus. When the loop bus FPE device is activated or fed back, the corresponding FPE indicator zone indicator indicators. After the setting, press “Enter” to enter, then press “F1” to continue. After the setting is completed, press the “Cancel” button to exit the setting.

For example, the FPE device FPE device 1-10 corresponds to the point 1 loop address 1-10 module. The setting method is as follows:

FPE No. 01 to No. 10 corresponds to the machine. Circuit 01 address 001 to 010. Note: No. 010 is not required to be filled in, and the control panel will automatically fill in the calculations.

6.5 Display Panel Setup

Press the “Menu” button, enter “5. System Setup” → “4. Display Panel Setup”, enter the three-level password to enter the fire alarm setup interface of display panel. In order to set range of the fire display panel, the corresponding fire display panel needs to connect on the relative loop bus, then transmit the information to the fire display panel, including: loop No., address number and 2nd code.

6.6 Simulate Fire Alarm Setup

Press "Menu" button, enter "5. System Settings" → "5. Display Panel Setup" Enter the three-level password to enter the simulated fire alarm setting interface, input the device circuit number and address number, press F1 to indicator the device fire alarm indicator, press F2 to extinguish equipment’s fire indicators, which can be used for equipment location entrance.

6.7 Battery Internal Resistance Setup

The main interface of the system setting is shown in Figure 6-4. Press the number key “8”, the system

enters the power setup editing interface. Press “F1” to set the internal resistance of the battery, press “F2” to query the internal resistance of the battery as shown in Figure 6 -6 below.

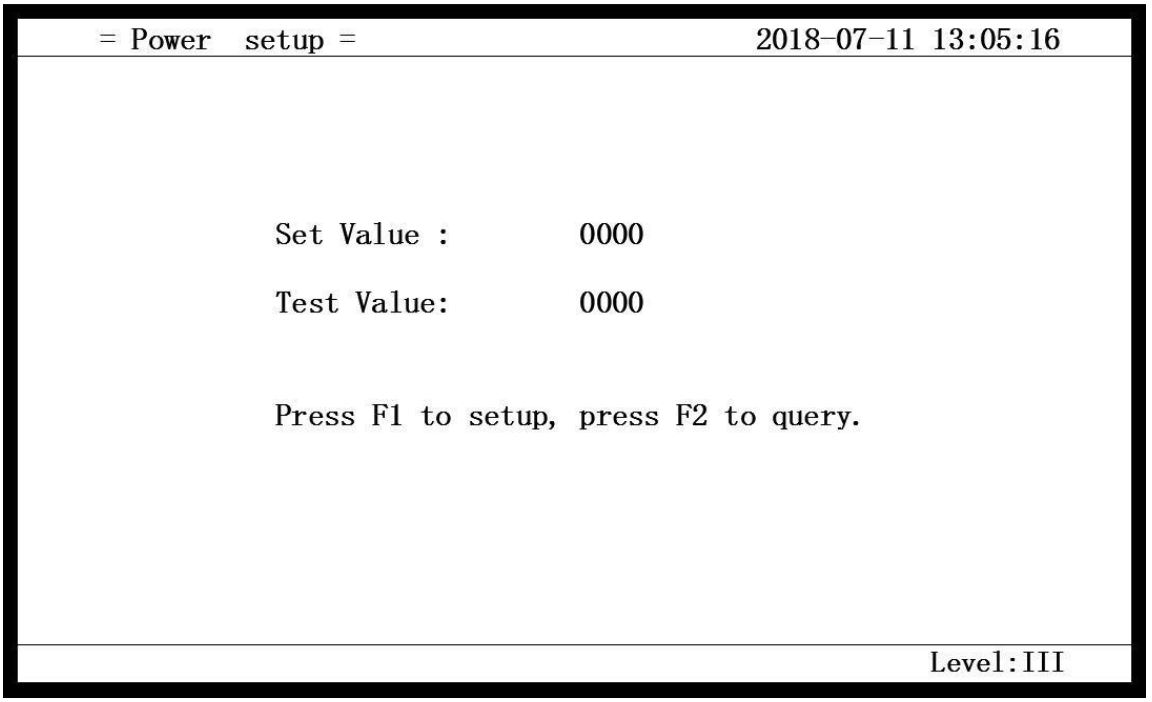

Fig. 6-6

✧ Battery internal resistance test value: measure battery internal resistance value in real time. When it gets damage, the value will change and system will report battery internal resistance fault.

Note: the battery internal resistance value has been set before delivered from the manufacturer, so it needs no modification. The user can set the value again when the battery is changed from the field panel.

6.8 Networking Setup

6.8.1 Local address setup

Press “Menu” button to enter “6. Networking Setup” → “2. Local Address” and input the three-level password to enter the local address setup interface as shown in Figure 6-7.

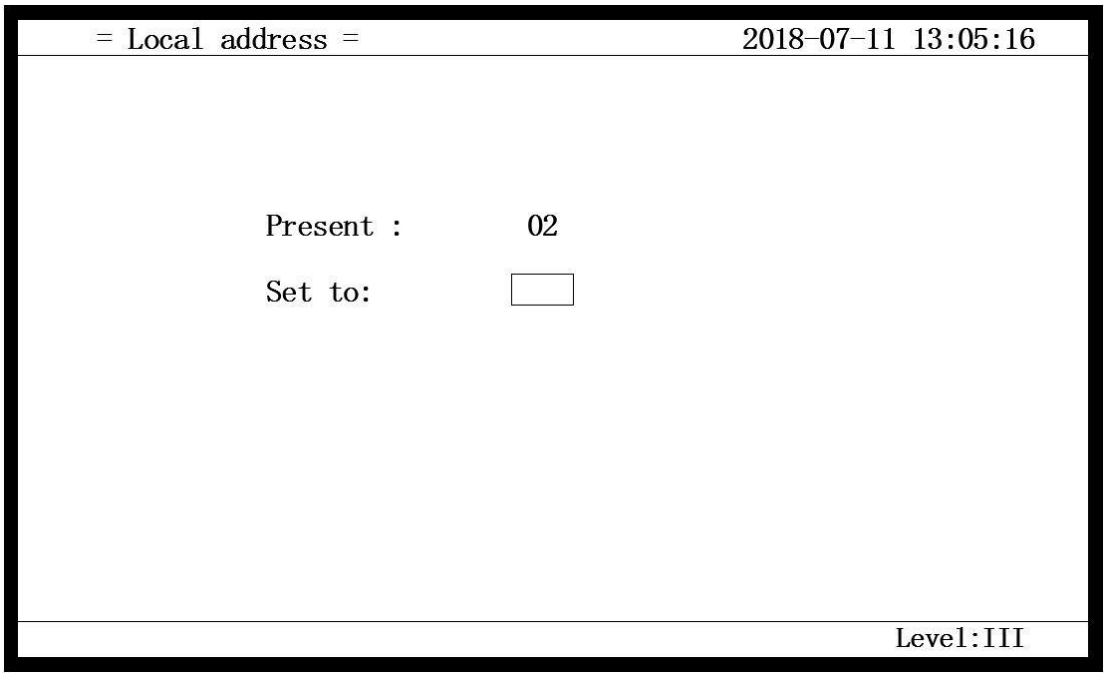

Fig. 6-7

✧ Display the current local address;

✧ After changing the local address, press “Enter” to save the currently set local address, and press “Cancel” to exit the setting.

6.8.2 Networking Mode

Press “Menu” button, enter “6. Network Setup” → “1. Network Mode” and input the three-level password to enter the local address setting interface as shown in Figure 6-8.

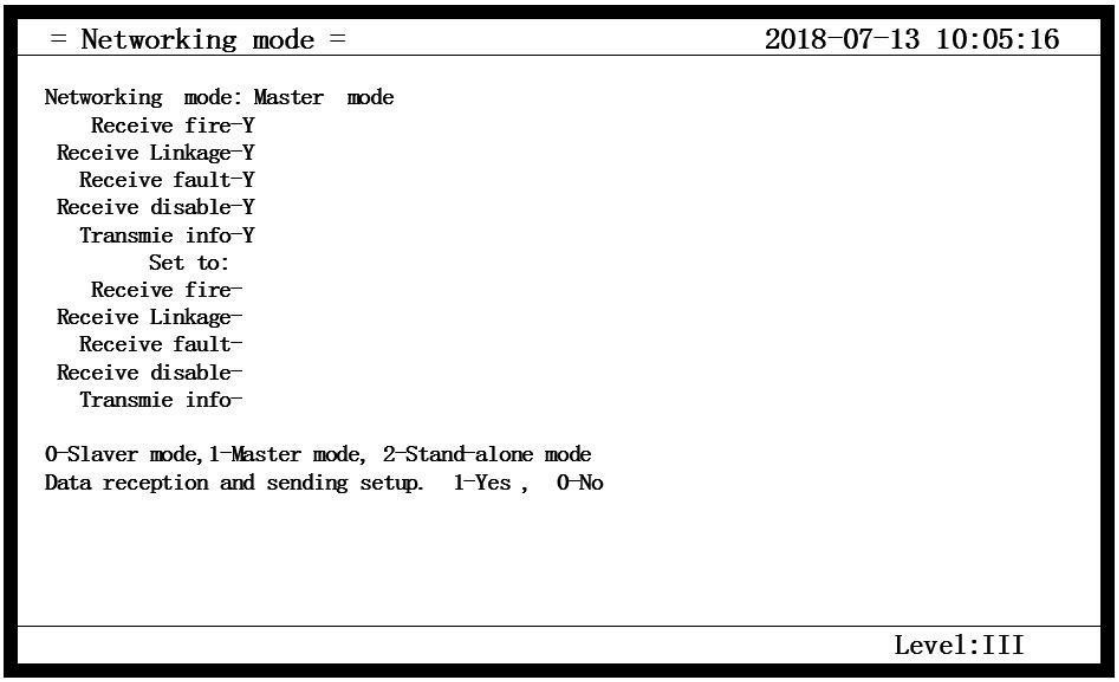

Fig. 6-8

✧ The control panel displays the current networking mode, and can reset the control panel networking mode: 0. Slave mode, 1. Host mode, independent mode, you can enter the number keys “0”, “1”, “2” to change the mode.

- ✧ The control panel currently displays whether to accept fire alarm, fault, disable, linkage and send information. Enter the number keys “0” and “1”. Choose yes or no to send or not the information of fire, fault, disable and linkage.
- ✧ After setting, press “Enter” to save, press “Cancel” to exit this setting.

6.9 Password and Restore Factory Setup

6.9.1 Password Settings

Press "Menu" button, enter "5. Networking Setup" → "6. Password and Restore Factory Setup" and input the three-level password to enter the password setup interface as follows:

- ✧ In the password setting interface, press the number “1” key to enter the 2nd password interface and input three digits.
- ✧ In the password setup interface, press the number “2” key to enter the three-level password interface and input six digits.
- ✧ After setting the password, press “Enter” to save, press “Cancel” to exit the setting.
- ✧ According to the security of the system, the password privilege password and the third-level password, the advanced password can replace the low-level password. To enter the operation level, enter the system password. After completing a certain operation, the password is invalid after exiting the corresponding menu. To do this again, you need to re-enter this password.

6.9.2 Restore the factory setup

Press the “Menu” button, enter “5. Networking Setup” → “7. Restore the factory setup” and input the three-level password to enter the factory reset interface as shown in Figure 6-9.

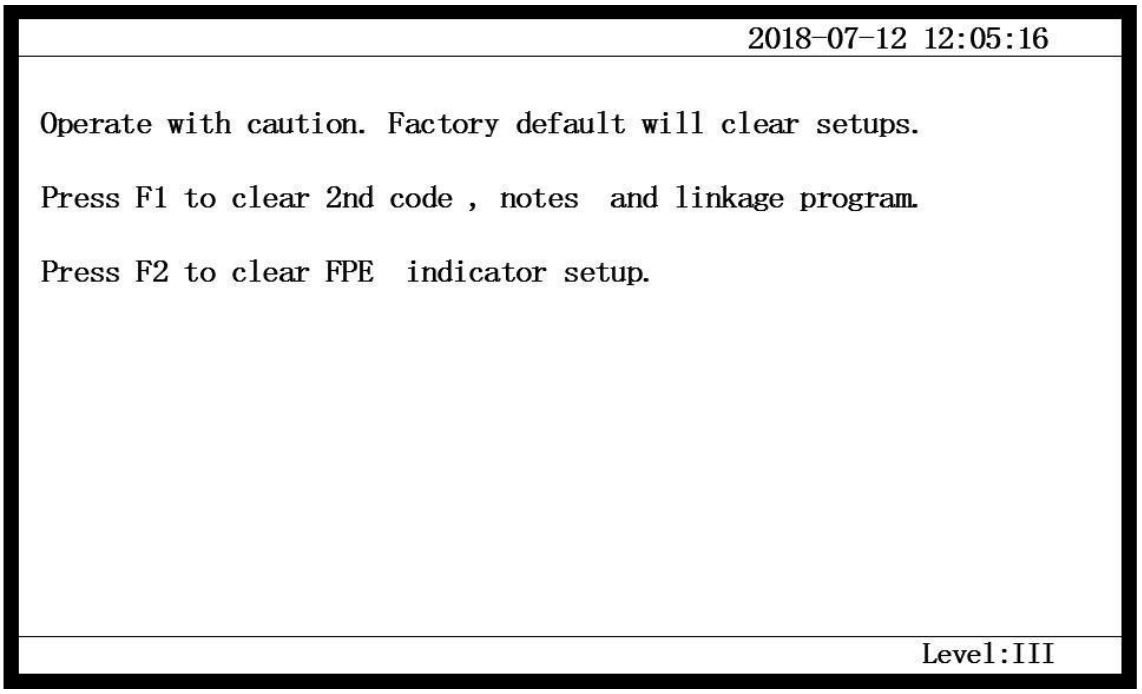

Fig. 6-9

- ✧ Press “F1” to clear all the field programming data, including: linkage programming, 2nd code setting, registration information.
- ✧ Press “F2” to clear all data in the FPE indication zone.
- ✧ Note: After the information is removed, it cannot be recovered, so you need to enter and then operate. Press “Cancel” to exit the setup.

6.10 Programming of Auto Linkage Formula

Field device refers to devices connected to loop control panel through non-polarized two bus system. The panel offers max 32 loops with 255 points each loop and each device occupies one address. These devices include fire detectors (e.g. rate of rise and fixed temperature heat detector, photoelectric smoke detector, etc.), input modules (e.g. fire hydrant module, flow detector input interface module, etc.), input/output modules (e.g. fire resisting damper, fire hydrant pump control module, etc.), customized burglar alarms, etc. Direct control panel and loop controlled gas fire-extinguishing control panel manufactured by TC can be connected to the loop to realize integral monitoring.

6.10.1 Linkage Formula Format

Linkage formula is used to define linkage logic expression between alarm device and controlled device in the system. When status of detecting device or controlling module condition changed, the control panel can operate automatically the start and stop of the device through logic formula. Linkage formula is consisted of two parts between the equal mark, former part is consisted of linkage devices made up of user code and device type, latter part is consisted of user code, device type and relational operator.

eg.1: Y(01010001 011)=(01010*** 004)_2

Means: when No. 01010001 manual call point gives out an alarm, the No. 01010001 sounder strobe will activate immediately.

Note:

1) When “=” represents automatic “part permitted” or “all permitted” in the system and linkage requirement is met, device will be activated. When “=X” represents automatic “part permitted” or “all permitted” in the system and requirement is met, device will stop.

2) When “==” represents automatic “all permitted” in the system and linkage requirement is met, device will be activated. When “==X” represents automatic “all permitted” in the system and requirement is met, device will stop.

3) Devices at both sides of the linkage formula need to be made up of user code and device type which type cannot be omitted.

4) Relation mark includes “and” and “or”. “+” represents “or” and “X” represents “and”.

5) Wildcard allowed to use '*' can represent any number from 0 to 9 in a linkage formula. The wildcard can be part of the formula requirement or part of the linkage part to simplify the linkage formula rationally. When it exists in the requirement, it implies an “or” relation between a series of devices, e.g. 0*001315 represents:
01001315+02001315+03001315+04001315+05001315+06001315+07001315+08001315+09001315+00001315, while it represents a group of devices in linkage part.

6) There can be only one equal mark or fully equal mark representing cause and effect in a linkage formula.

6.10.2 Linkage Formula Programming

Press “7” at main menu page to enter into linkage program page(AL3). The screen will show up linkage formula editing menu (shown as Fig.6-10).

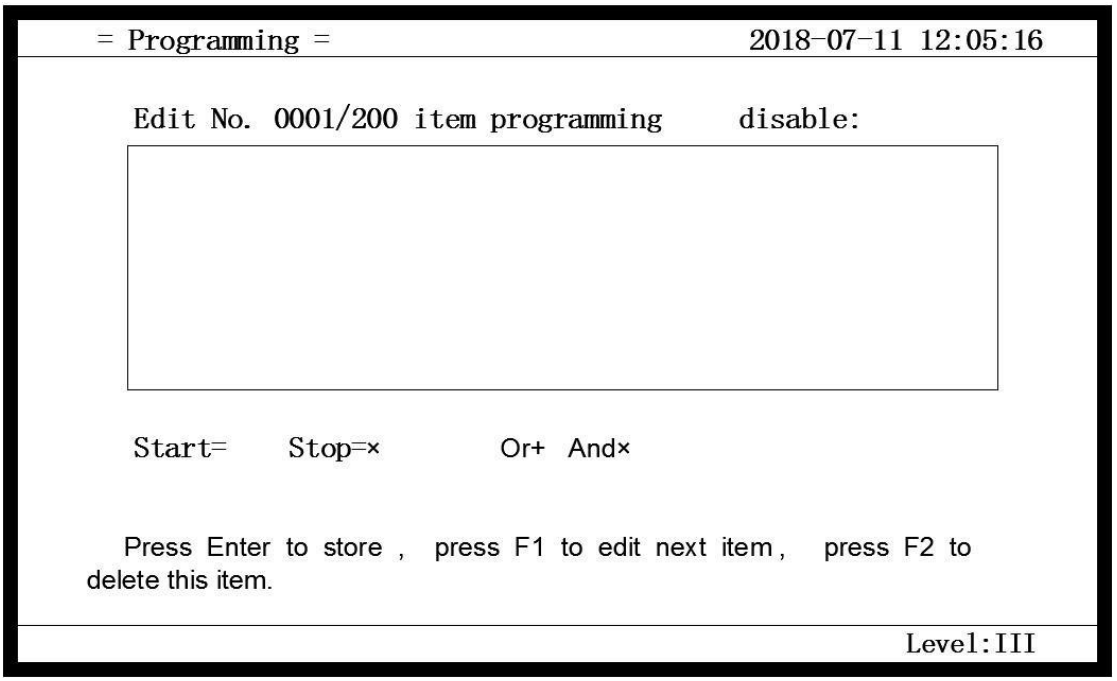

Fig. 6-10

"Browse": press "▲" or "▼" to scroll linkage program.

Note:

Linkage formula syntax check is programmed in the system. Once syntax exists in the linkage formula, the system will report 'input fault' when pressing 'enter' and not store it until edit again.

Space shall be adopted between user 2nd code and device type.

6.11 About

The user presses the "Menu" button to enter the system main menu interface, enter "8. About" → enter the interface, query the manufacturer, execute the standard software version and hardware code, system capacity and other related information.

Chapter Seven Fault, Abnormal Information Resolution and Regular Test

7.1Common Troubleshooting

No	Fault	Possible Causes	Resolutions
1	No display or abnormal display after turned on	a. Power abnormal b. Disconnection with display cable	a. Check 24V power b. Check connecting cable
2	'power fault' after turned on	a. No AC power b. AV fuse blowout	a. Check and connect AC cable b. Replace AC fuse (see label for parameters)
3	'battery fault' after turned on	a. Fuse blow out b. Circuit disconnected c. Battery voltage insufficient or damage	a. Replace fuse (see label for parameters) b. Open battery cabinet and check connector c. Replace battery after fault not eliminated if powered by AC for more than 8h
4	Loop board comm. fault	a. Loop board not plugged	a. Check and plug
5	Peripheral LCD repeater cannot be registered	Disconnection or bad connection of comm. wire	Check power wire and comm. wire of LCD repeater
6	Do not print	a. Printer nor turned on b. Printer cable bad connected c. Printer failure	a. Reset the printer b. Check and connect c. Replace printer
7	Manual button no feedback	a. Manual status disable b. Manual fire start panel cable bad connection	a. Reset start mode b. Check and connect
8	Device fault	a. Device connection cut-off b. Device failure	a. Check the connection b. Replace device
9	Loop control fault	Loop control short circuit	Check the loop
10	Time fault, storage fault, loop fault, etc.	a. Environment interference b. Relevant part burn-in	a. Check if grounded well b. Contact our tech dep.
11	Loop bus open circuit fault, short circuit fault	a. The loop bus cable has an open circuit b. The loop bus cable has a short circuit	a. Check the cable to reconnect the loop bus

7.2 Regular Test and Replacement

Take regular test on devices: print paper is perishable articles, which needs to be replaced when insufficient.

Chapter Eight Notice

This panel is precise electronic products and needs to be administrated by specialized staff and keep away from touching.

Only trained service personnel can undertake the installation, programming and maintenance of the equipment.

This fire alarm control panel complies with the requirements of EN54-2 and EN54-4.

Our company is responsible for maintenance. Please contact our tech service dep. in time if any problems found. Customers are not authorized to apart or maintenance the equipment, otherwise the consequence is at customer's own cost.

Appendix One Technical Parameters

- **control panel Capacity:**
  Maximum 4 loops and 1020 addressable points per CIE.
  Maximum 48 zones per CIE
- **Environment Temperature: 0℃~+40℃**
- **Relative Humidity≤95, non-condensing**
- **Power Supply:**
  Main Power: AC230V (1A), voltage range: +10%~-15%
  Standby Power: DC24V, battery: 12V/12AH sealed lead acid battery*2

Appendix Two Fault indication

- **Main power fault:**

If the main power is down, the panel will report main power fault, and
Light FAULT LED Light MAIN POWER FAULT LED
The LCD displays "Main power"
The panel generates fault sound
Fault relay open

- **Battery fault:**

If the battery is down, the panel will report battery fault, and
Light FAULT LED Light BATTERY FAULT LED
The LCD displays "Battery"
The panel generates fault sound
Fault relay open

- **System fault:**

If the control CPU in fault, the panel will report system fault, and
Light FAULT LED Light SYSTEM FAULT LED

There is no display on LCD
The panel generates fault sound
The keypad can not be used
After the fault is moved ,the control panel has to be reset by rebooting
The control panel can monitor fire alarm
Fault relay open

- **Field device fault:**

If there is trouble with one of the field devices, the panel will report fault with it, and
Light FAULT LED
The LCD displays fault message and device location
The corresponding LED on the zone indication panel flashes
The panel generates fault sound
Fault relay open

WEEE Information

2012/19/EU (WEEE directive):
Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points.

Appendix Three Limited Warranty

KETTON warranties that the product will be free of charge for repairing or replacing from defects in design ,materials and workmanship during the warranty period. This warranty shall not apply to any product that is found to have been improperly installed or used in any way not in accordance with the instructions supplied with the product. Anybody, including the agents, distributors or employees, is not in the position to amend the contents of this warranty. Please contact your local distributor for products not covered by this warranty.

Appendix Four Maintenance Schedule

Maintenance Schedule

The user should regularly test and service the system.

Daily Check

1. Check that the panel indicates normal operation. If not record any fault indicated in the history log and report to the responsible person.
2. Check that any fault recorded form the previous day has received attention.

Monthly Check

1. Operate at least one manual call point or detector [different device each month] to ensure the system operates properly.
2. Check the alarm warning devices have operated and then reset the panel.
3. Any defect should be reported and recorded in the log book.
4. Action should be taken to correct the defect.

Quarterly Check

1. Check entries in the log book and take any necessary action.
2. Inspect the batteries and their connections.
3. Operate at least one manual call point of the control panel operates by simulating fault conditions.
4. Check all the alarm warning devices have operated and then reset the panel.
5. Check that all function of the control panel operates by simulating fault conditions.
6. Visually check that structure alternation against any corrosion due to environmental effect.
7. Any defect should be reported and recorded in the log book. Action should be taken to correct the defect.

Annually Check

1. Carry out an inspection as detail for this quarterly inspection.
2. Every detector should be tested in the site.
3. All cable fitting and equipment should be checked to ensure that they are secure and undamaged.

⋆ Note: it is advised that during alarm test on manual call point and detectors, module related linkage program of each detector and manual call point shall be disabled to prevent losses from module actions.

Appendix Five Packing list

Expansion blot ϕ8 *4	Installation gasket *4	Waterproof connector *8
Instruction manual for installation *1	Key *2	Button battery(CR1220) *2