SEC3008

Product Manual

Model SEC3004/SEC3008

Analogue Addressable
Fire Alarm Control Panel
EN 54-2&4

SANJIANG

CREATE A SAFE WORLD ENJOY A SMART LIFE

CONTENTS

1 System Overview

(1) The main contents of this manual are product introduction, installation, wiring, basic operation and fault repair so that readers can quickly understand and use

(2) The manual is intended for installers, maintenance and first-time users. Installers and repairers must have experience installing and repairing electrical fire protection systems, in addition to the following skills:

- ✧ Basic knowledge and installation skills of electrical fire protection systems and components.
- ✧ Basic knowledge and operational skills in fire wiring and electrical fire protection electronic circuit wiring;

2 Symbolic agreement

(1)

Symbol	Explain
Danger	➢ Hazards represent a high-grade risk of death or serious injury if not avoided.
Warning	➢ Indicates hazards with intermediate-grade risk that may cause death or serious injury if not avoided.
Caution	➢ Indicates hazards with low-grade risk that may lead to minor or moderate harm if not avoided.
Notice	➢ For transmitting device or environmental safety warning information. If not avoided, it may cause the device ➢ Damage, data loss, reduced equipment performance, or other unpredictable results. ➢ The "Notice" does not involve personal injury.
TIPs	➢ Supplementary description of the key information in the main text. ➢ "TIPs" is not a safety warning information, and does not involve personal, equipment and environmental injury information.
Save	➢ Operating buttons on the touch screen.， such as： Back、 Save、 OK、 Clear； These buttons are originally black and blue when selected.，such as: Back
Home	➢ Global action buttons, located on the right side of the screen， such as： Logout、 Menu、 Reset、 Evacuate、 Sounder Silence

3 Operating Requirements

(1)
- ✧ Do not place and install the device in a disturbing environment such as strong magnetism;
- ✧ Do not place and install the equipment near high heat equipment or expose it to direct sunlight for a long time;
- ✧ Do not install the equipment in wet, leaky, or highly dusty applications;
- ✧ Do not disassemble the equipment at your discretion;
- ✧ Do not use the equipment in conditions that exceed the rated input and output;
- ✧ Do not transport, use, or store the device in conditions that exceed the temperature and humidity.

4 Power Requirement

(1)
- ✧ Do not use the unit beyond the rated power input;
- ✧ Do not replace the power module yourself;
- ✧ Do not replace the battery by yourself;
- ✧ Be sure to use the batteries in compliance with the requirements, otherwise, it may cause the danger of fire, spontaneous combustion or explosion of the batteries;
- ✧ Be sure to connect the power supply's protective PE earth wire intact to ensure low line impedance.

5 Technical Specifications

(1) Overview

The SEC3008 & SEC3004 control panels are touch-sensitive, addressable fire detection panels, with up to 8 circuits for the SEC3008 and up to 4 circuits for the SEC3004, each supporting up to 324 addressable points, and are designed to meet the requirements of the EN 54-2 & EN 54-4 standards for simple installation, ease of operation and easy maintenance.

(2) Technical Specifications

Power supply		
Mains supply	110/230V AC (-15%, +10%), 50Hz/ 60Hz	
Mains fuse	T4A250V	
Operating voltage	28V±0.5VDC	
Recommended mains cable	Standard/black mains cable, cable size 0.75mm^2	
Power rating	Imax.a=3.1A; Imax.b=5.55A; Imin=0.3A	
Max. charging current	1A	
Max. battery supply current	8A (when the Mains is disconnected)	
Battery capacity, type and recommended model	SEC3008: Up to 2×12V/24Ah(Deep Enclosure) Up to 2×12V/18Ah (Standard Enclosure) SEC3004: Up to 2×12V/12Ah VRLA. NP24-12I(Yuasa) for 24Ah, NP18-12(Yuasa) for 18Ah, NP12-12(Yuasa) for 12Ah	
Max. internal resistance of the battery	1Ω	
Battery fuse	15A	
Quiescent current	< 0.3A	
Outputs		
S.C. Out (+, -)	Output voltage	20 ~ 30VDC
	Max. output current	1A
	End-of-line resistor	10K Ohms
	Cable diameter	1mm^2 ~ 2.5mm^2
F.A. Out (+, -)	Output voltage	20 ~ 30VDC
	Max. output current	50mA
	End-of-line resistor	10K Ohms
	Cable diameter	1mm^2 ~ 2.5mm^2
Fault Out (NC, COM, NO)	Contact capacity	2A@24VDC
	Cable diameter	1mm^2 ~ 2.5mm^2
AUX 24V (+, -)	Output voltage	20 ~ 30VDC
	Max. output current	2A
	Cable diameter	1mm^2 ~ 2.5mm^2
Input		
Class change (+, -)	Input mode	Passive
	Cable resistance	⩽500Ω
	Cable diameter	1mm^2 ~ 2.5mm^2
Intelligent Loop		
Loop Out (+, -) Loop In (+, -)	Output voltage	18.5 ~ 30VDC, pulse
	Output current	0 ~ 0.5A
	Addressable devices	324
	Loop type	Class A and Class B
	Recommended type of cable	Unscreened twisted-pair, 1.5mm^2

	Transmission distance	≤2000m（Class A）
Network communication		
RS485	Transmission rate	9600 bps
	Transmission distance	≤1000m
	Cable diameter	1mm^2~2.5mm^2
CAN	Max. number of panels	32
	Transmission rate	Optional: 10K, 20K, 50K and 100Kbps
	Transmission distance	≤1000m
	Cable diameter	1mm^2~2.5mm^2
Construction		
Enclosure		Steel IP30
Physical dimensions		
Size(W×H×D)		SEC3008: 440×590×185mm(Standard) 440×590×230mm(Deep) SEC3004: 440×410×155mm
Approx. weight (without battery)		SEC3008(Standard) : 11kg SEC3008(Deep): 13kg SEC3004: 9kg
Operating conditions		
Temperature range: -5°C~ 40°C; Max relative humidity: 95% (40°C ± 2°C, no condensation)		

6 Hardware Overview

6.1 Inside the controller (SEC3008 as an example)

(1)

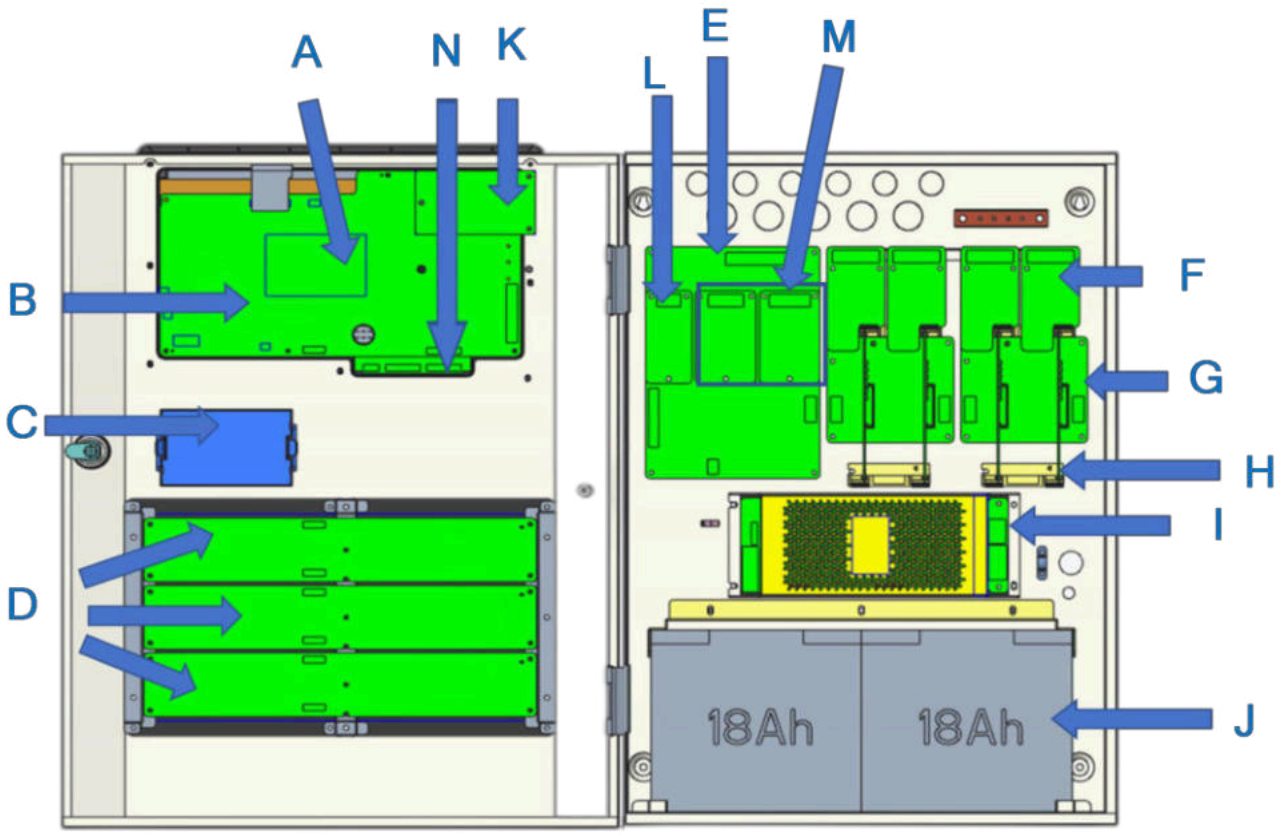


Figure 6-1 Internal Diagram of Controller (SEC3008)

KEY	Description	KEY	Description
A	Main Processor Board ZB-9300-A	H	Loop Boards
B	Main Board SEC3008_B	I	P.S.E
C	[Optional Part] Printer	J	Battery
D	Zone Fire Alarm Indicator Board SEC3008_LED	K	[Optional Part] Networking Module SEC3008_COMx
E	Terminal board SEC3008_DZ	L	[Optional part] Communication module SEC3008_Modbus
F	Lightning protection board SEC3008_FL	M	【Optional Part】 Output interface expansion module
G	Loop base plate SEC3008_HLJB	N	Keyboard SEC3008_KEY

(2) **The SEC3008/SEC3004 consists of two sections::**

- The left internal area contains the main control A board, SEC3008_B board, keypad and SEC3008_LED board, optional networking card, LCD and printer mounting area.
- The internal area on the right side contains the P.S.E (Power Supply Equipment), SEC3008_DZ terminal board, battery compartment, mounting holes, cable holes, and space for mounting additional circuit boards (if applicable).

(3) **P.S.E（PS-A2907E)**

The P.S.E is an integral unit that supplies power to the main unit as well as charges the backup batteries. The P.S.E monitors the status of the main and backup power in real-time. The P.S.E contains a 4A main fuse and a 15A backup fuse, as well as having main and backup switches.

(4) **Main Board（SEC3008_B)**

It provides connections for the Main Processor A Board, Zone Fire Alarm Indicator Board (SEC3008_LED Board), Lamp Key Board (SEC3008_KEY), Printer, IO Board (SEC3008_DZ Board), LCD, and optional Network Board;

(5) **Zone Fire Alarm Indicator Board (SEC3008_LED)**

Each light board enables 48 zones to indicate the fire alarm status. Up to three light boards can be installed on the SEC3008 controller and up to one light board can be installed on the SEC3004 controller.

(6) **IO Board (SEC3008_DZ)**

It usually contains terminals or interfaces for connecting the P.S.E, internal B-board, Loop Unit, and other peripheral devices.

(7) **Output Interface Expansion Module (optional)**

The Output Interface Expansion Module consists of a conventional Sound and Light Expansion Module (SEC3008_SND) and a Programmable Relay Output Module (SEC3008_Relay).SEC3008_SND and SEC3008_Relay can be installed without any slot distinction, and two identical modules can be installed simultaneously.

(8) **Networking Module (optional)**

The Networking Module is optional (three choices) and is used for external communication with other Panels or Repeaters.

1、SEC3008_COMS: A single channel CAN bus networking card that can interconnect up to 32 panels via the CANH and CANL terminal pairs on the SEC3008_COMS board.

2、SEC3008_COMD： Dual-channel CAN bus networking card can form a class A network to ensure safe and stable data transmission.

3、SEC3008_COME： Dual-channel Ethernet networking card, two Ethernet interfaces can be used independently.

(9) **Communication module (SEC3008_Modbus)**

The communication module has two RS485 communication interfaces, one for the Modbus communication function and the other for communication with a remote fire display panel or Mimic.

6.2 PS-A2907E Power Supply

(1)

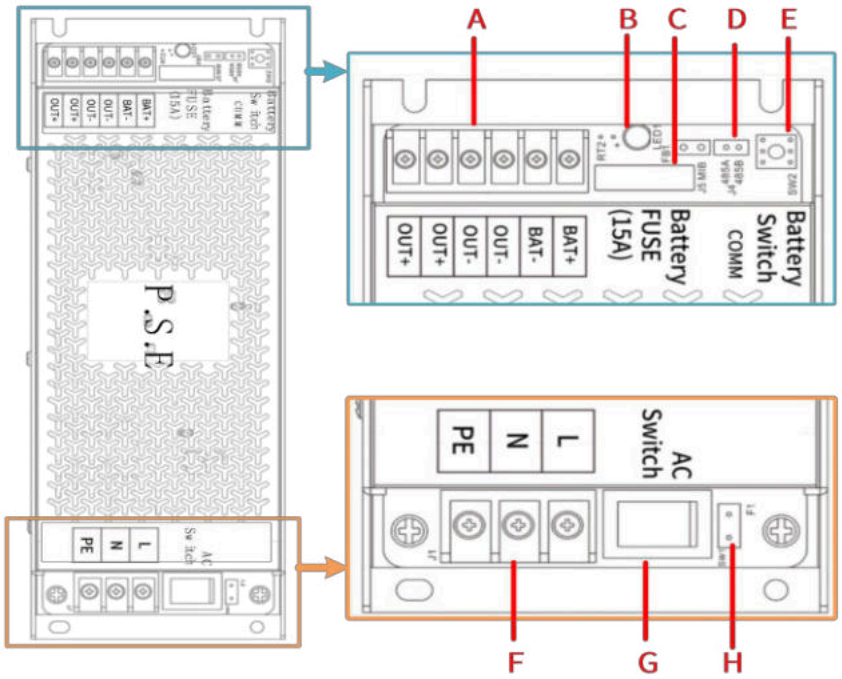


Figure 6-2 PS-A2907E Power Supply KEY Description

KEY	Description
A	Output terminal, supplying power to the controller system
B	LED lamp, this lamp lights up when the power supply is working, and goes out when the power supply is not working
C	Battery fuse, 15A
D	RS485 interface, connect to SEC3008_DZ board.
E	Power back-up switch, switch on and off the power back-up.
F	Input terminal, connect to mains
G	Mains switch, switching the backup power on and off
H	Mains input fuse, 4A

6.3 Main control unit（ZB-9300-A+SEC3008_B）

(1)

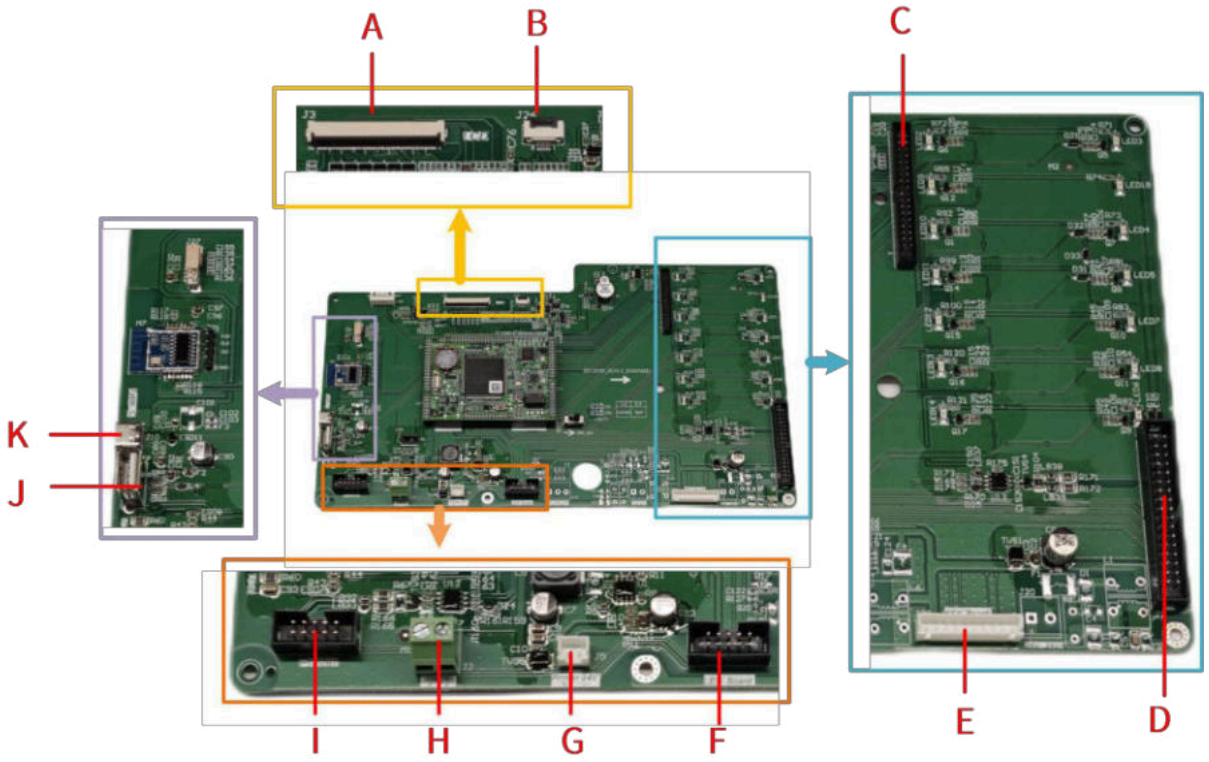


Figure 6-3 Main control board

KEY	Description	KEY	Description
A	LCD display interface	G	The printer power supply interface to power the printer
B	Touch panel interface	H	Internal RS485 interface
C	Networking board interface for one of three networking boards (SEC3008_COMD/COMS/COME)	I	The printer communication interface to connect to the printer
D	Terminal board interface, connect to SEC3008_DZ board	J	USC-Type-A can connect to a USB stick, mouse
E	The keyboard interface, connect to SEC3008_KEY board	K	USC-Type-C can connect to a PC
F	Zone indicator board interface, connect to SEC3008_LED board		

6.4 Lamp Key Board（SEC3008_KEY）

(1)

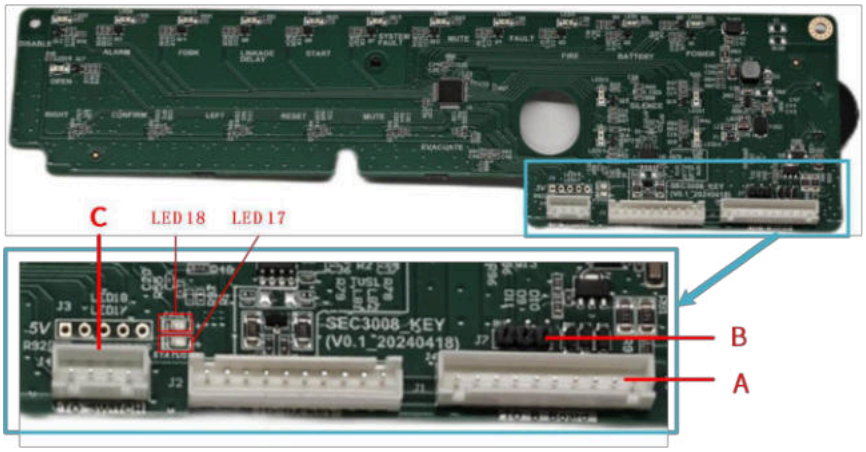


Figure6-4 Lamp Key Board

KEY	Description
A	B board interface, connected to the SEC3008_B board
B	Buzzer shutdown pin can shut down the buzzer on the SEC3008_KEY board by shorting the pin.
C	Key switch interface, connect to the key switch
LED17	LED17 Green status indicator, blinking during normal operation
LED18	LED18 Yellow fault indicator, illuminated when there is a communication fault.

6.5 Zone Indicator Board（SEC3008_LED）

(1)

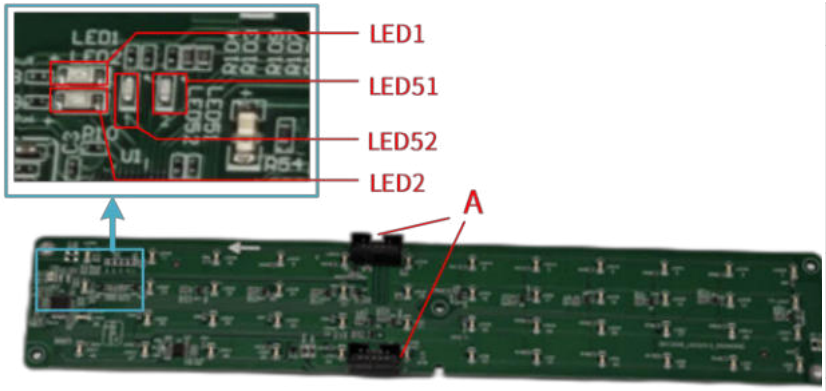


Figure 6-5 Zone Indicator Board

KEY	Description
A	Communication and power supply interface to connect the SEC3008_B board and the additional SEC3008_LED board.
LED1	Yellow fault LED, illuminated in case of communication failure.
LED2	The green status LED, is illuminated when the power supply is normal, blinking when data is being transferred.
LED51 LED52	Blue LED indicating the address number： Address: 1 — LED52: On — LED51: Off Address: 2 — LED52: Off — LED51: On Address: 3 — LED52: On — LED51: On

6.6 Terminal Board（SEC3008_DZ）

(1)

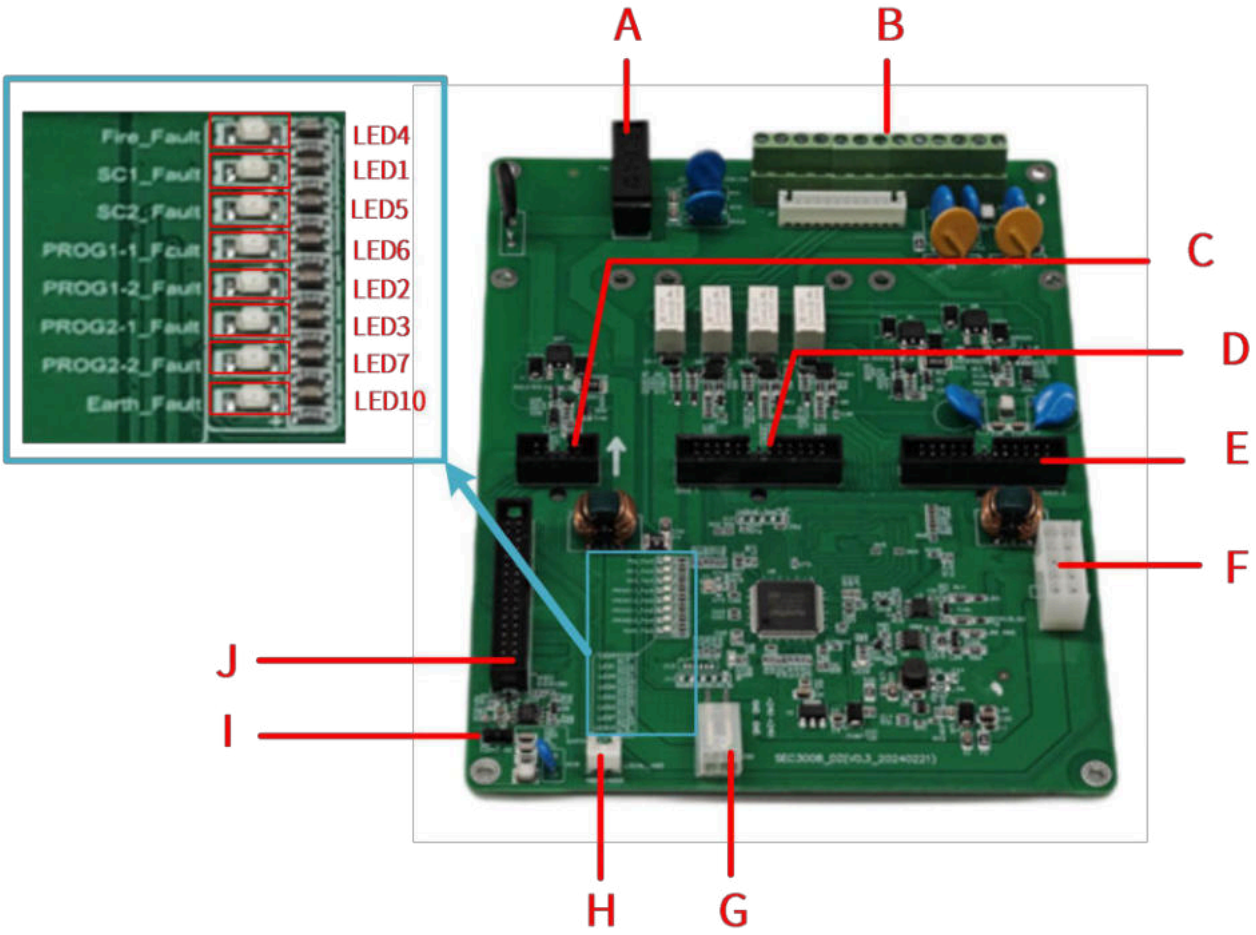


Figure 6-6 Terminal Board

KEY	Description	KEY	Description
A	AUX24V output fuse, 3A	J	Main control board connector, connected to SEC3008_B board
B	Monitored Input and Output Terminals	LED1	Conventional audible and visual on terminal board 1 Lit on active output faults
C	Expansion board slot for mounting the SEC3008_Modbus board	LED2	Lights up when there is a fault on the 2nd active output (SND2 & PROG OUT2) of the SEC3008_SND/Relay board mounted in the "D" slot.
D	Expansion board slot, SEC3008_SND/Relay board installed	LED3	Lights up when the 1st active output (SND1 & PROG OUT1) of the SEC3008_SND/Relay board installed in the "E" slot is faulty.
E	Expansion board slot installed SEC3008_SND/Relay board.	LED4	FIRE OUT port failure lit
F	Loopback board interface, connecting SEC3008_HLJB board.	LED5	S.C.OUT2 port failure lit
G	Power supply interface, connect to PS-A2907E power supply	LED6	Lights up when there is a fault on the first active output port (SND1 & PROG OUT1) of the SEC3008_SND/Relay board mounted in the "D" slot.
H	Internal RS485 interface, connect to PS-A2907E power supply	LED7	Lights up when there is a fault on the 2nd active output (SND2 & PROG OUT2) of the SEC3008_SND/Relay board mounted on the "E" slot.
I	Earth fault detection function enabled	LED10	Lights up when there is a ground fault.

	jumper, enabled by short circuit		

6.7 Loopback Board（SEC3008_HLJB）

(1)

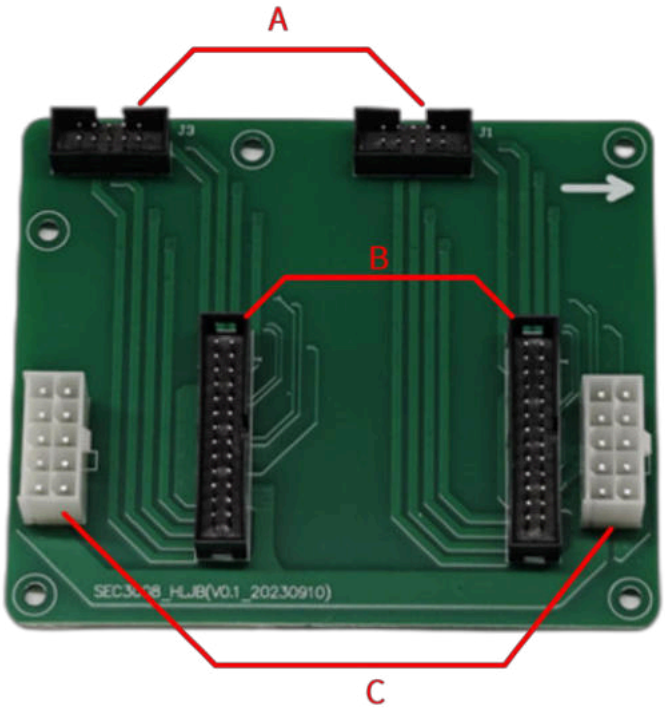


Figure 6-7 Loop Expansion Board

KEY	Description
A	A Lightning protection board interface connects to the lightning protection board.
B	The loop board interface connects to the loop board.
C	The power supply and communication interface, connect to the "F" connector of the SEC3008_DZ board or the "C" connector of another SEC3008_HLJB.

Loop Expansion Board provides an interface for installing loop boards, one expansion board can be used to install two loop boards, SEC3008 can be used to install two loop expansion boards and SEC3004 can be used to install one loop expansion board.

6.8 Lightning Protection Board （SEC3008_FL）

(1)

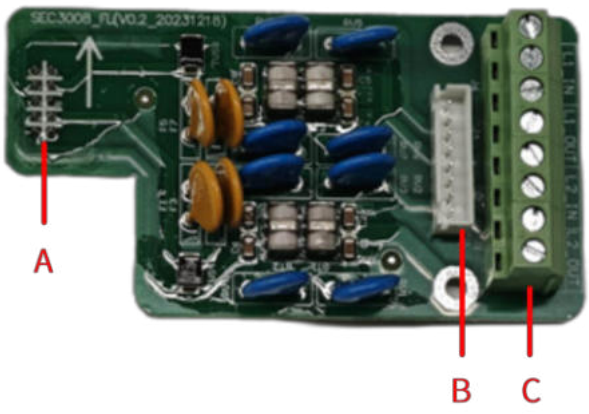


Figure 6-8 Lightning Protection Board

KEY	Description
A	Loop expansion board interface, connected to the "A" connector of the SEC3008_HLJB board.
B	Test interface for manufacturing use
C	Wiring terminals for connecting addressable detectors and modules.

6.9 9000 Protocol Loop Board（SEC3008_HL_9000）

(1)

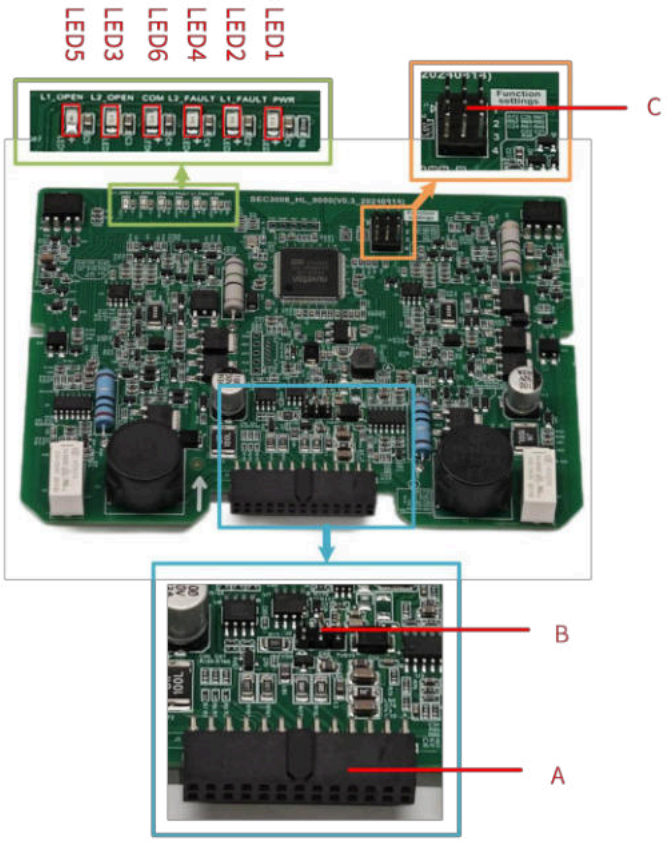


Figure 6-9 9000 Loop Board

KEY	Description
A	Loop Expansion Board interface, connects to the "B" connector of the SEC3008_HLJB board.
B	120 ohm characteristic resistor, can be enabled by shorting the pin, usually used when the circuit boards are far apart.
C	Reserved pin
LED1	Power indicator, lighted when the board is normally powered.
LED2	Lights up when there is a fault in the 1-loop circuit.
LED3	Lights up when the 2-circuit loop is open.
LED4	Lights up when there is a fault in 2 circuits.
LED5	LED5 is on when 1 loop is open.
LED6	Communication indicator, blinking when normal, always on when abnormal.

6.10 EPC Protocol Loop Board （SEC3008_HL_EPC）

(1)

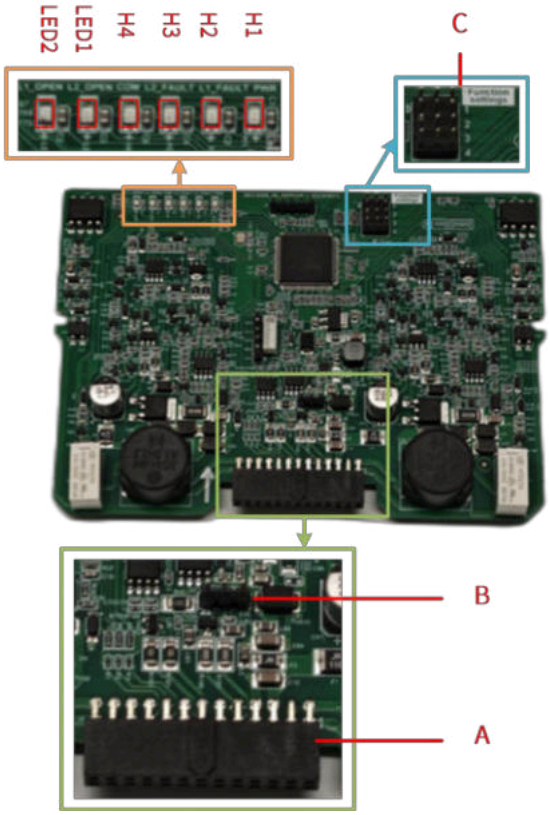


Figure 6-10 EPC Loop Board

KEY	Description
A	Loop expansion board interface, connect to the "B" connector of SEC3008_HLJB board.
B	120 ohm characteristic resistor, can be enabled by shorting the pin, usually used when the circuit boards are far apart.
C	Reserved pin
H1	Power Indicator lit when power supply on the board is normal.
H2	1 Lights up when there is a fault in circuit 1.
H3	2 Lights up when there is a fault in circuit 2.
H4	Communication indicator, blinking when normal, always on when abnormal.
LED1	The 2-circuit open loop is always on.
LED2	Lights up when the 1-circuit loop is open.

6.11 Communication module（SEC3008_Modbus）

(1)

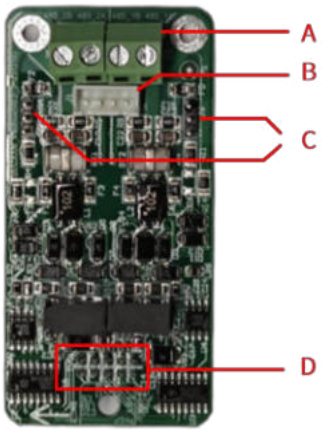
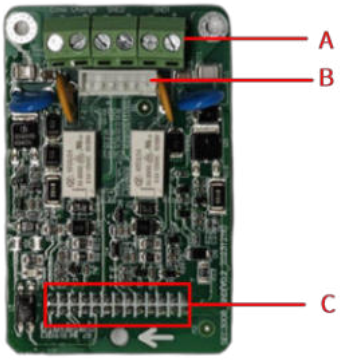


Figure 6-11 RS485 Expansion Box

KEY	Description
A	Wiring terminals for external connection of devices supporting Modbus protocol and expansion of the lightbox.
B	Test interface for manufacturing use.
C	120-ohm characteristic resistor pin, RS485 bus at the beginning and end of the device needs to be short-circuited to enable this resistor
D	Terminal board interface, connected to the "C" connector of the SEC3008_D board.

6.12 Conventional Sound and Light Expansion Module （SEC3008_SND）

(1)

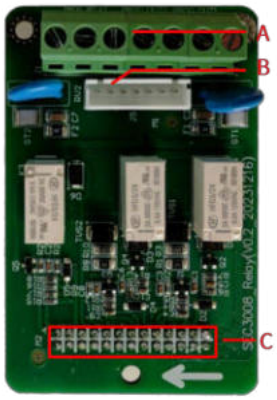


KEY	Description
A	The wiring terminal, SND port can be connected to the traditional sound and light, Class Change can be connected to a device that can output a switch signal.
B	Test interface for manufacturing
C	Terminal block connector, connected to the "D" or "E" connector of the SEC3008_D board.

Figure 6-12 Sound and Light Expansion Board

6.13 Programmable Relay Output Module（SEC3008_Relay）

(1)

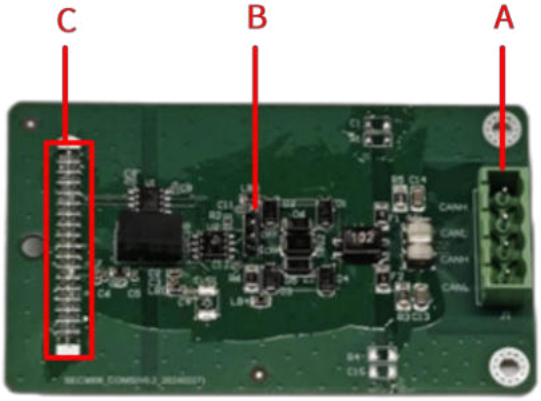


KEY	Description
A	Wiring terminals, the PROG OUT port provides 24V@50mA active output, and PROG RELAY is a dry node output.
B	Test interface for manufacturing use
C	Terminal block connector connects to "D" or "E" connector of SEC3008_D board.

Figure 6-13 Relay Expansion Board

6.14 CAN Network Module（SEC3008_COMS）

(1)



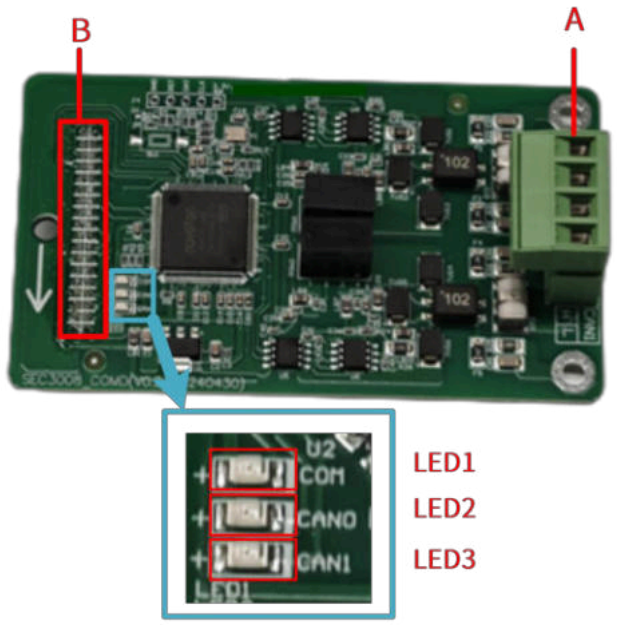
KEY	Description
A	4-pin terminal block for CAN bus device cascading
B	120-ohm characteristic resistor pin, CAN bus devices need to be shorted to enable this resistor.
C	The main control interface is connected to the "D" connector of the main control board.

Figure 6-14 CAN Network Board

Notice：This board can only provide one CAN bus interface. The two CANH & CANL signals on the terminals are identical, which is convenient for cascading.

6.15 CAN Ring Networking Module （SEC3008_COMD）

(1)



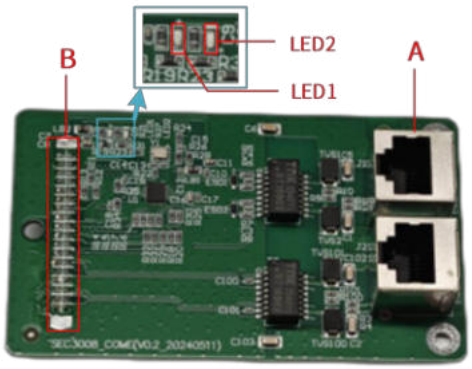
KEY	Description
A	The 4-pin terminal block provides two independent CAN bus interfaces.
B	The main control interface is connected to the "D" connector of the main control board.
LED1	blinks during normal communication
LED2	Lights up when there is a fault on the CAN0 interface.
LED3	Lights up when the CAN1 interface is faulty.

Notice : This board provides two independent CAN interfaces, which can be used to realise ring networking.

Figure 6-15 CAN Ring Networking Board

6.16 Ethernet Networking Module（SEC3008_COME）

(1)



KEY	Description
A	RJ45 interface
B	The main control interface connects to the "D" connector of the main control board.
LED1	red, lit when the link is active
LED2	blue, blink when there is data transmission.

Figure 6-16 Ethernet Networking Board KEY Description

7 Installation and Connection

(1) The SEC3004/SEC3008 has an integrated operator panel for operation and display, a metal enclosure, and several functional printed circuit boards for simple installation and clean wiring harnesses. Inside the panel there is enough space for the rated capacity of the backup battery, optional communication boards and extended function boards.

This chapter will take SEC3008 as an example to introduce its internal structure and wiring. The structure of SEC3004 is similar and will not be repeated here.

7.1 Structure Size (Unit: mm)

(1) SEC3008(Standard Enclosure)

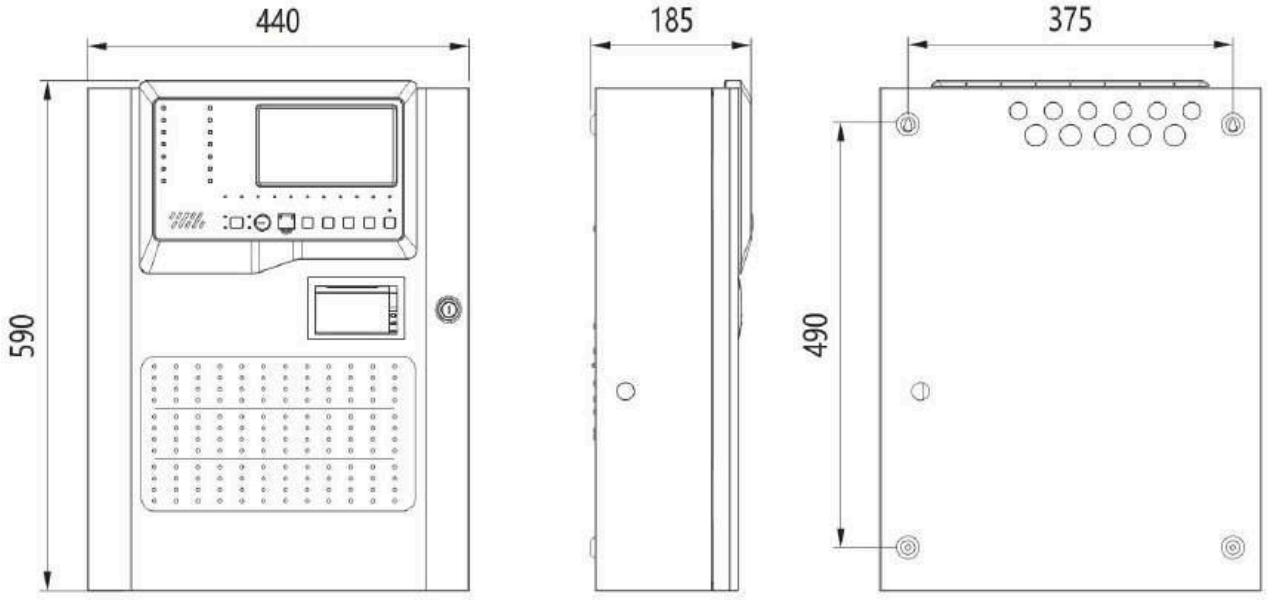


Figure 7-1 SEC3008 (Standard) dimensions

(2) SEC3008(Deep Enclosure)

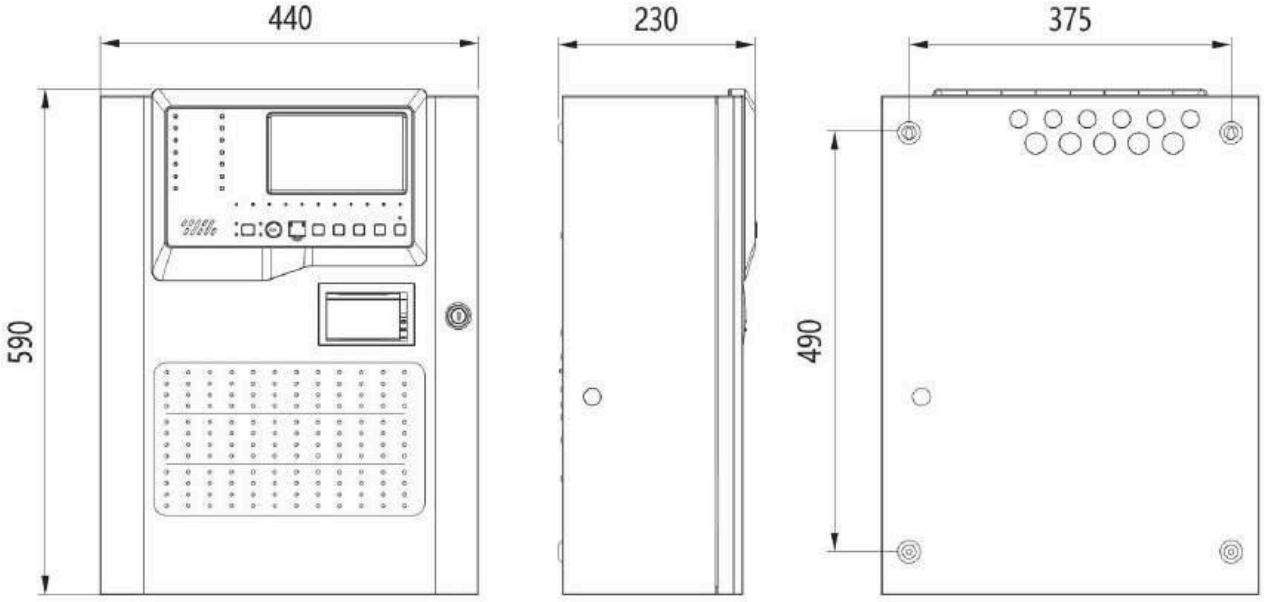


Figure 7-2 SEC3008(Deep) dimensions

(3) SEC3004

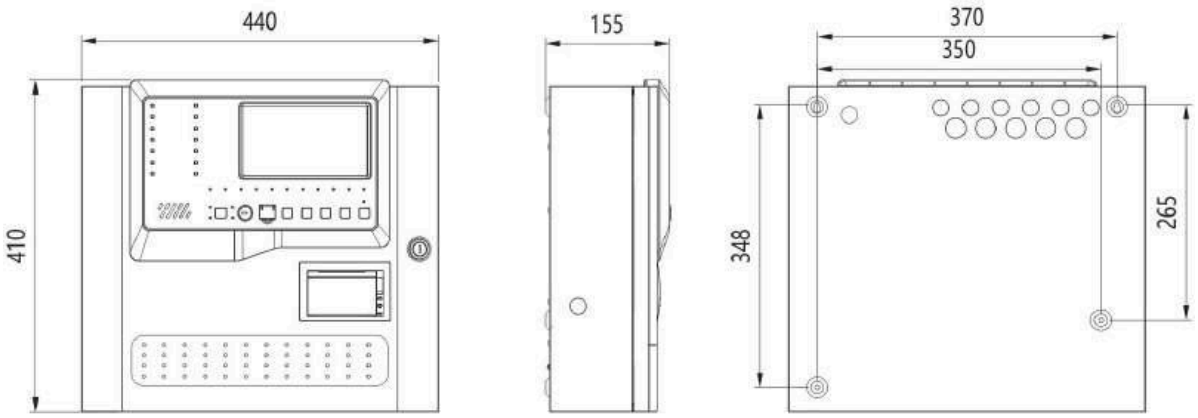


Figure 7-3 SEC3004 dimensions

7.2 Controller Installation

(1) Wall mounting

A. First, hang the controller on the wall through the mounting hole on the upper back of the chassis.

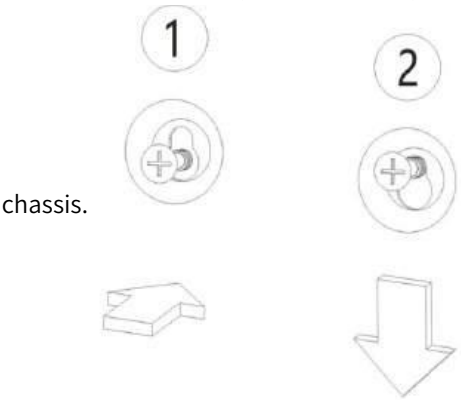


Figure 7-4 Wall-mounted schematic diagram 1

B. Fix the mounting holes under the chassis with screws and fix the controller on the wall.

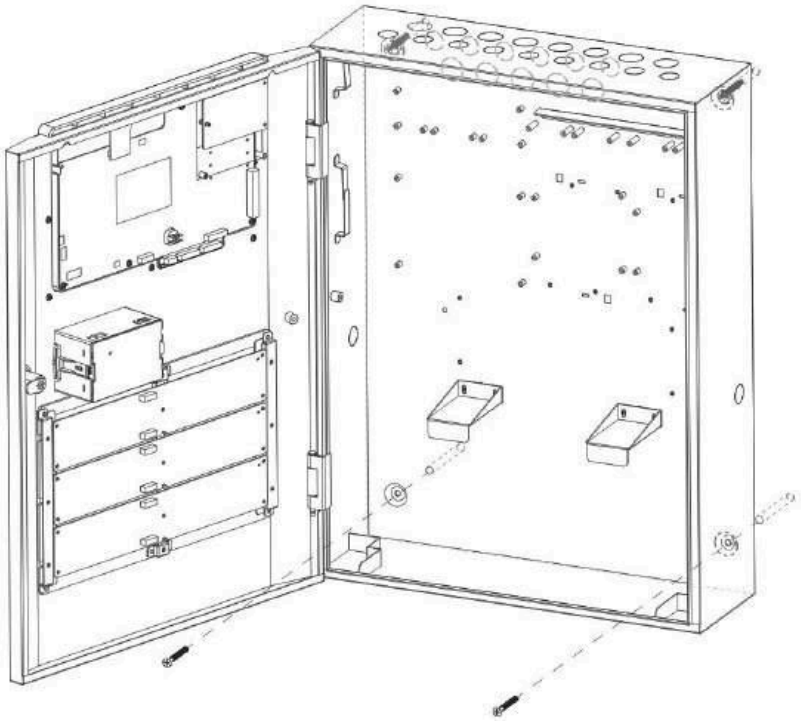


Figure 7-5 Wall-mounted diagram 2

(2) Embedded installation

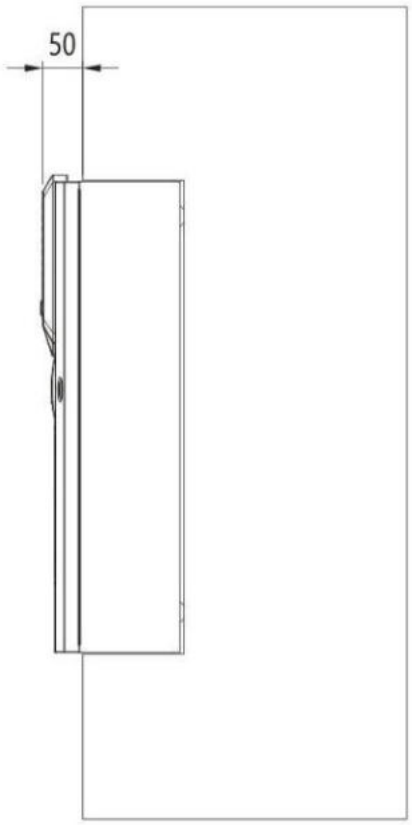


Figure 7-6 Schematic diagram of embedded installation

Caution The exposed part of the chassis must be at least 50mm to avoid affecting the opening and closing of the door.

7.3 Installation of internal components of the controller

(1) Zone indicator light board (SEC3008_LED)

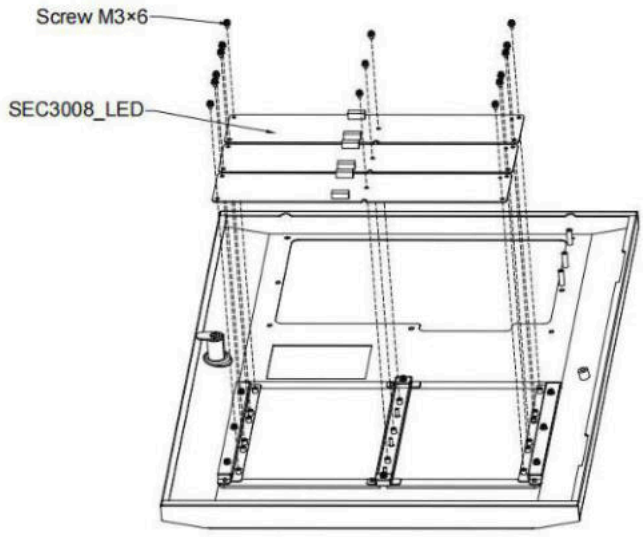


Figure 7-7 Schematic diagram of zone indicator panel installation

Usually, this part is installed by the manufacturer. If the customer needs to install it by himself, only five M3×6 screws are needed to install the SEC3008_LED board in the corresponding position firmly.

The figure shows that the SEC3008 controller can be installed with up to three LED boards. After installation, use the connecting wires to connect them in sequence for normal use.

(2) Networking module（SEC3008_COMS & SEC3008_COMD & SEC3008_COME）

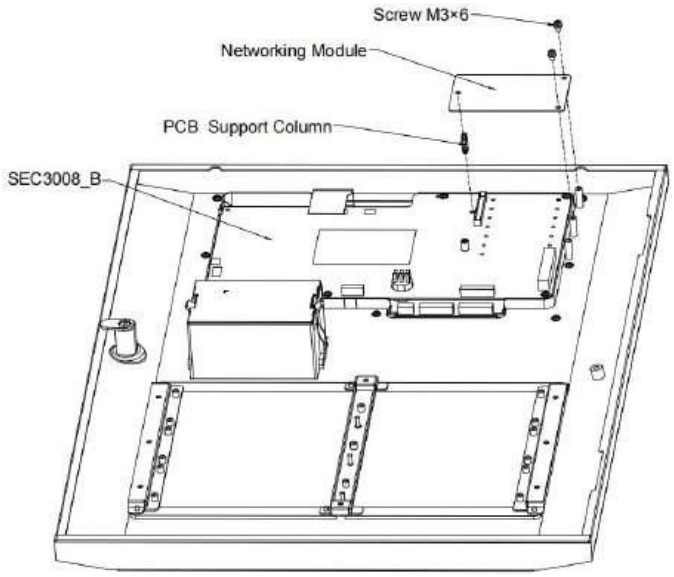


Figure 7-8 Schematic diagram of network board installation

The networking modules include SEC3008_COMS & SEC3008_COMD & SEC3008_COME. You can choose one to install according to your needs.

a. Install the PCB Support Column onto the SEC3008_B board.
b. Gently press the networking module onto the SEC3008_B board.
c. Confirm the PCB Support Column, fix the networking module, and then tighten the M3×6 screws.

c. Confirm the PCB Support Column, fix the networking module, and then tighten the M3×6 screws.

(3) Communication Module（SEC3008_Modbus）

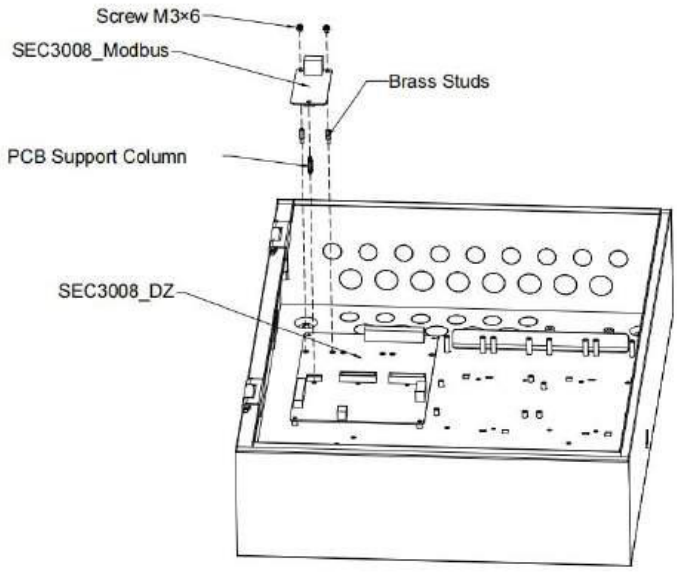


Figure 7-9 Schematic diagram of communication module installation

Installing the SEC3008_Modbus module requires 1 PCB Support Column, 2 Brass Studs, and 2 M3×6 screws. If you do not have them, please consult the supplier.

a. Install the PCB Support Column and two Brass Studs onto the SEC3008_DZ board 将 SEC3008_Modbus
b. Gently press the module onto the SEC3008_DZ board
c. Confirm the PCB Support Column, fix the SEC3008_Modbus module, and then tighten the M3×6 screws.

(4) Output expansion module（SEC3008_SND & SEC3008_Relay）

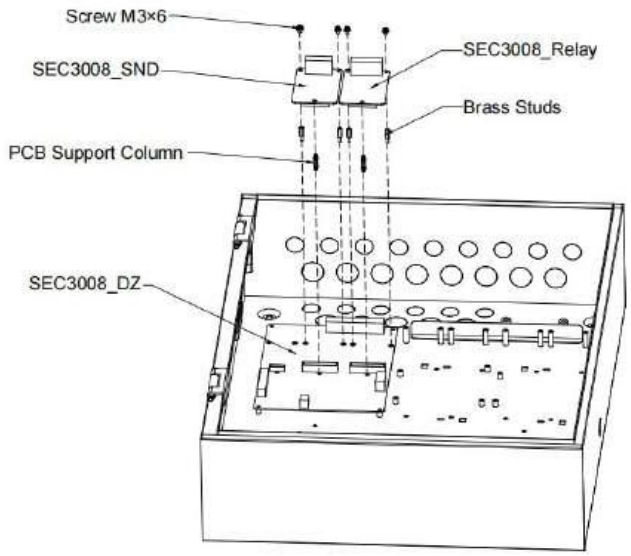


Figure 7-10 Schematic diagram of output expansion board installation

Output expansion modules include SEC3008_SND and SEC3008_Relay. SEC3008/SEC3008 can be installed with up to two output expansion modules, which can be matched according to needs, and the system automatically recognizes and plugs and plays.

Installing the output expansion module requires 1 PCB Support Column, 2 Brass Studs, and 2 M3×6 screws. If you do not have them, please consult the supplier.

a. a. Install the PCB Support Column and two Brass Studs onto the SEC3008_DZ board
b. b. Gently press the output expansion module onto the SEC3008_DZ board
c. Confirm the PCB Support Column, fix the output expansion module, and then tighten the M3×6 screws.

(5) Loop expansion board（SEC3008_HLJB）

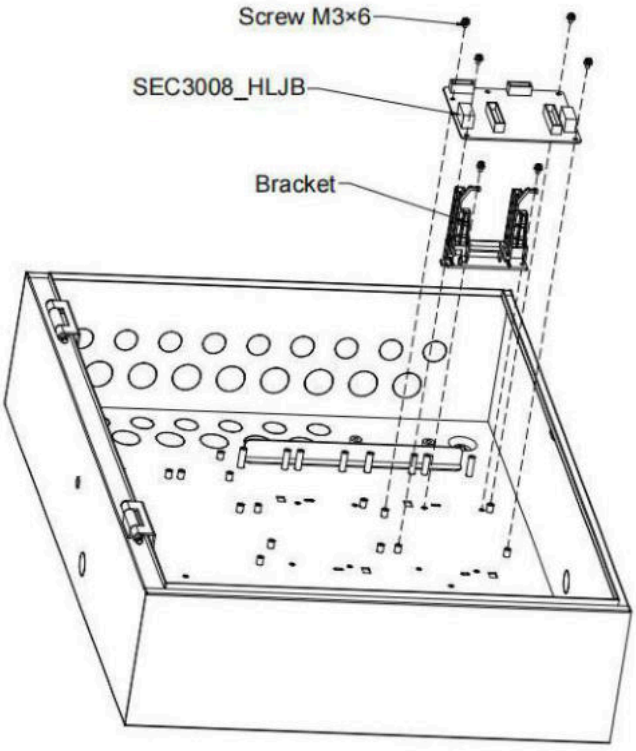


Figure 7-11 Schematic diagram of circuit expansion board installation

Before installing the loop expansion board, you need to install the bracket first
a. Install the bracket on the chassis
b. Install the loop expansion board on the chassis and tighten the screws

If you do not have the bracket and suitable screws, please contact the supplier.

(6) Circuit protection module（SEC3008_FL）

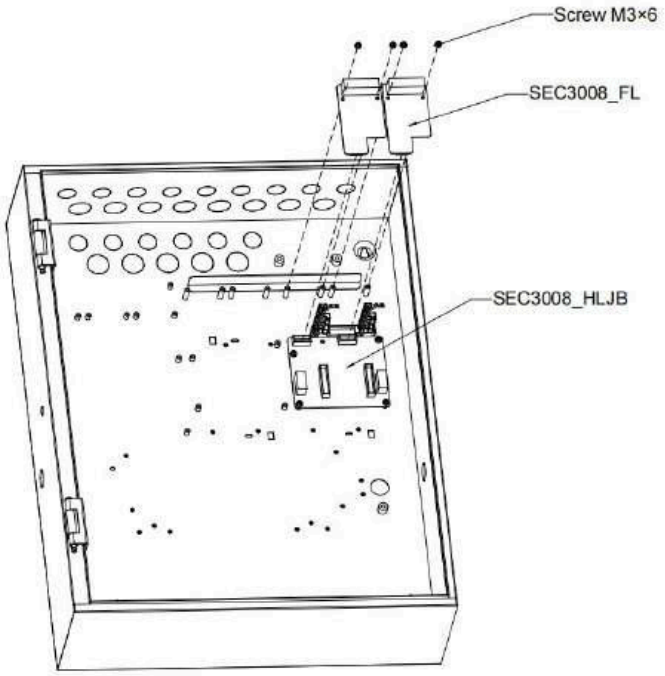


Figure 7-12 Schematic diagram of protection module installation

The SEC3008_FL module needs to be used with a loop board. One loop board corresponds to one protection module.
a. Press the SEC3008_FL onto the loop board and tighten the screws

If there are no suitable screws, please contact the supplier.

(7) Circuit board（SEC3008_HL_EPC & SEC3008_HL_9000）

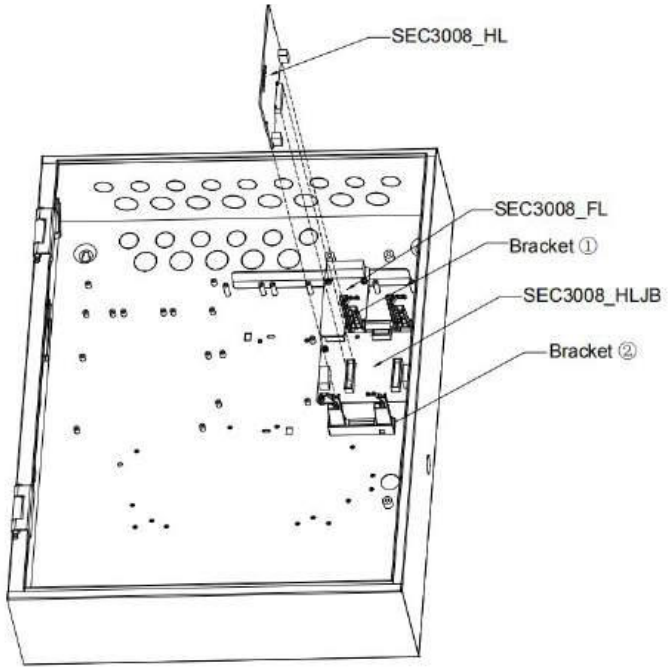


Figure 7-13 Loop board installation diagram

One circuit substrate can be used to install two circuit boards. SEC3008_HL_EPC and SEC3008_HL_9000 can be mixed and matched. The system automatically recognizes and can be used immediately after installation.

a. Before installation, you need to confirm whether the four components SEC3008_FL, SEC3008_HLJB, Bracket①, and Bracket② are complete. If there are any missing, they need to be supplemented.
b. Slowly push the circuit board into the card slot until the buckle on the bracket moves.

If the parts are missing, please contact the supplier.

7.4 Controller internal components connection

(1)

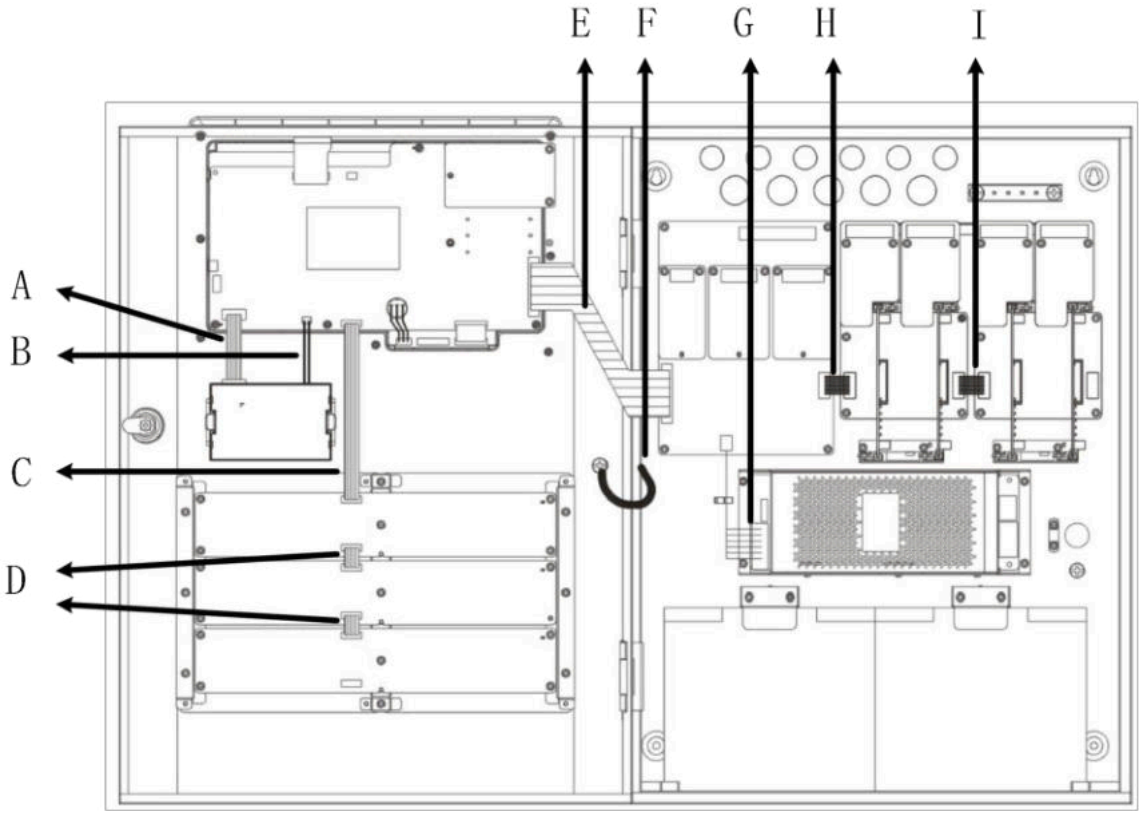
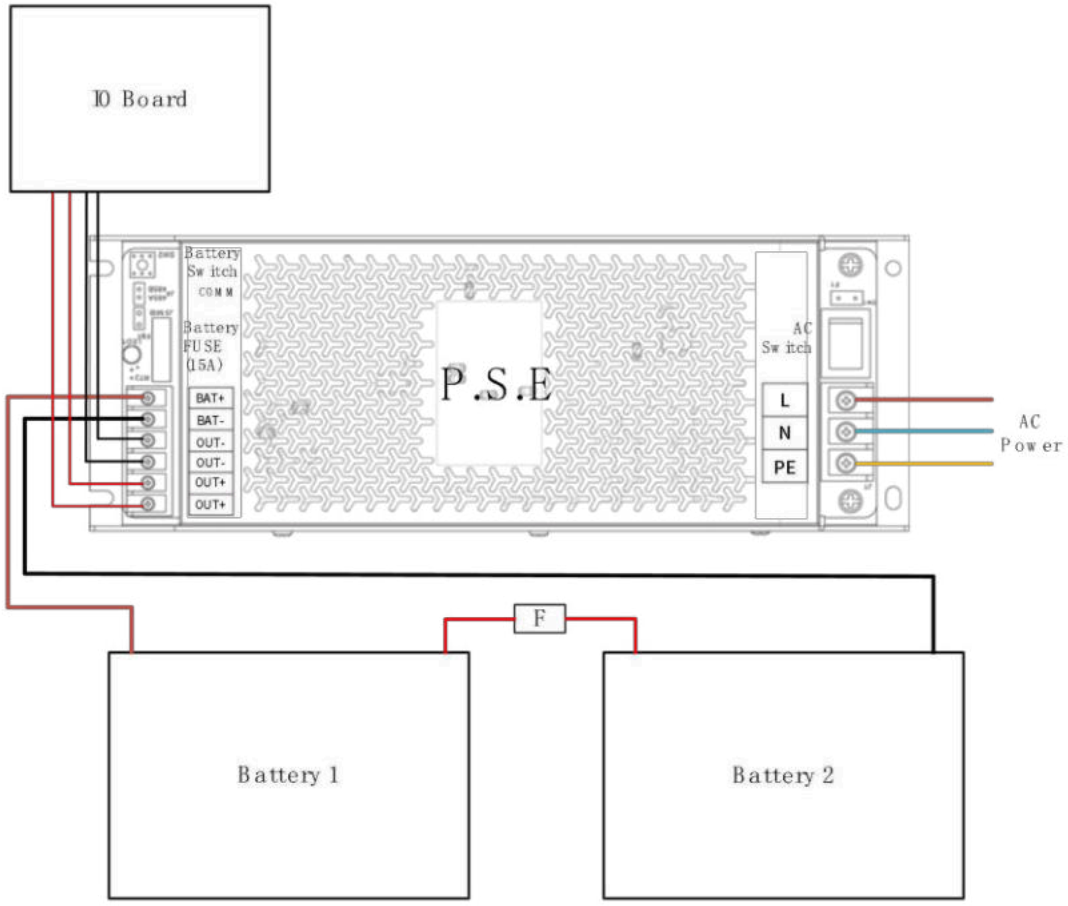


Figure 7-14 Schematic diagram of the connection of the controller's internal components

Number	Description	Number	Description
A	Printer communication line	F	Case connecting line
B	Printer Power Cable	G	System power line
C	SEC3008_LED board communication power cord	H	Loop substrate communication power cord
D	SEC3008_LED board cascade	I	Loop substrate cascade
E	SEC3008_B board communication power cord		

7.5 PS-A2907E Power Supply and Battery Wiring

(4) To connect the panel to the main power supply, use a three-core cable fitted with a high-quality cable gland and connect it to the corresponding



terminal.

Figure 7-1 Main Power and Battery Wiring

Caution: Do not connect the battery until the mains power is turned on.

- SEC3008 supports two types of batteries with corresponding chassis sizes, please refer to the "Technical Specifications" in Chapter 5 to select the appropriate battery before installing the battery.
- Before connecting the battery to the power supply, the battery should be connected in series with the supplied connection cable and installed inside the panel enclosure. Then connect the battery leads to the P.S.E. terminals.

7.6 Typical Loop Connection

(1) The diagram below shows a typical loop connection consisting of a detector, sound and light, input and output modules, and loop isolators. The ends of the loop are connected to the loop input and loop output terminal blocks on the IO board. The loop isolator limits the consequences of a loop short circuit. In this case, a single short circuit fault will only disable the equipment in the wiring section between the isolators and will not destroy the entire loop. It is recommended that isolators be installed at intervals of no more than 32 addressable devices.

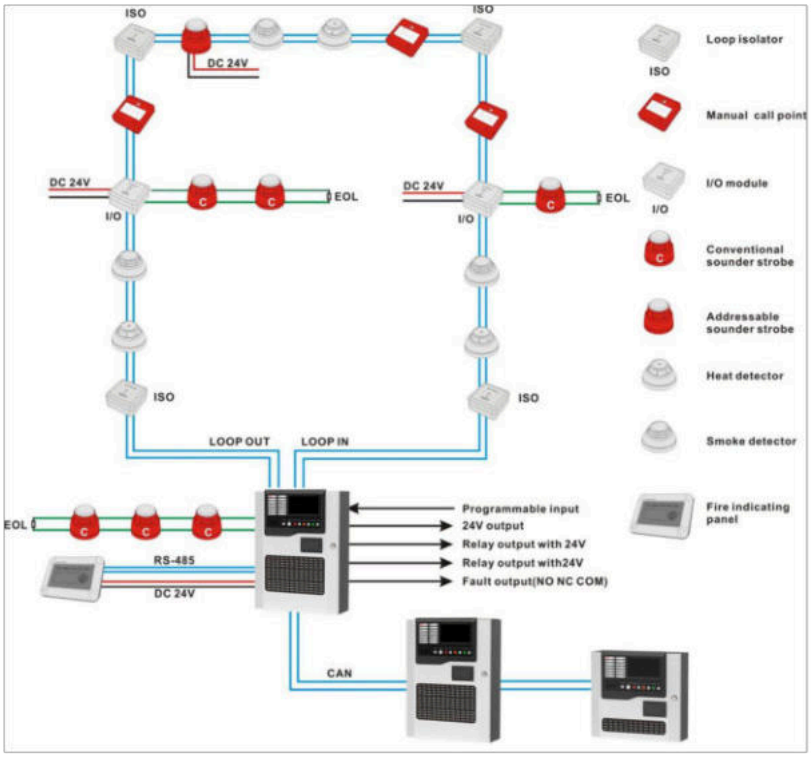


Figure 7-2 Typical Loop Connection

7.7 Terminal Block Port Wiring

(1) The terminal board provides a wealth of functional ports to meet the design requirements of various fire alarm systems.

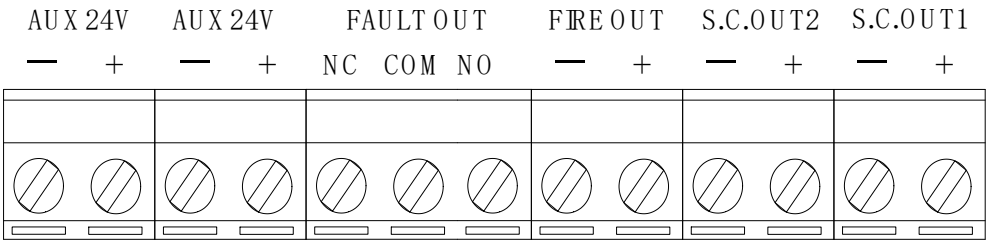


Figure 7-3 Schematic diagram of terminal board wiring terminals

(2) **FIRE Out**: The output will be activated when a fire occurs. A 10K end-of-line resistor (supplied) is connected at the end of the circuit to allow monitoring of the line. If the circuit is not in use, the 10K resistor will still need to be connected. A typical connection is shown in Figure 7-4. Figure 7-4 FIRE OUT Wiring Schematic

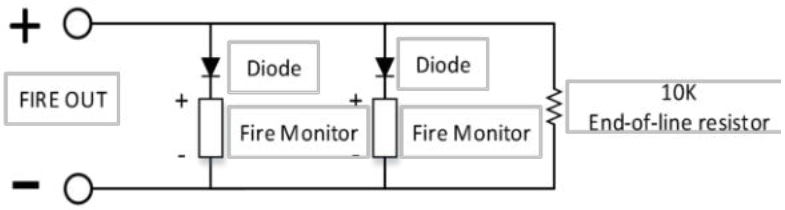


Figure 7-4 FIRE OUT Wiring Picture

(1) **Fault OUT**: Normally the NC and COM terminals are connected to the device receiving the fault signal. When the system is working normally, NC and COM terminals are open; when there is a fault in the system, NC and COM terminals are shorted.

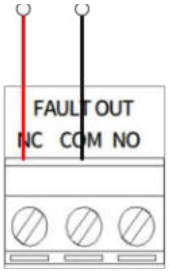


Figure 7-5 Fault OUT Wiring Picture

(2) **S.C.OUT**: Provides a conventional siren circuit. It activates the connected siren by default when a fire occurs. Pressing the "SILENCE/RESOUND" button on the controller terminates or re-activates the siren. It can be disabled so there is no output in the disabled state. It can also be monitored for open and short circuit faults in its wiring. Typical connections are shown at right.

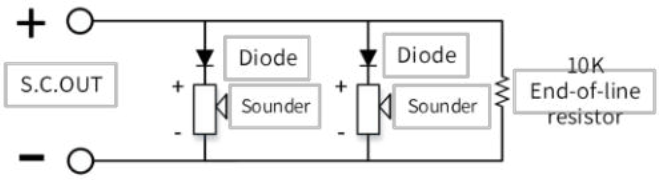


Figure 7-6 S.C.OUT Wiring Picture

(3) **AUX 24V**: It refers to the auxiliary 24V power output. It provides 24V output continuously and also maintains the output when the panel is reset.

7.8 Expansion Module Port Wiring

7.8.1 Communication Module(SEC3008_Modbus)

(1) The SEC3008_Modbus board has two mutually independent RS485 ports that can be connected to light boxes and other devices that support the Modbus protocol. When connecting multiple devices you need to access matching resistors on the first and last devices (120Ω matching resistor on this board is enabled by shorting the jumper cap)

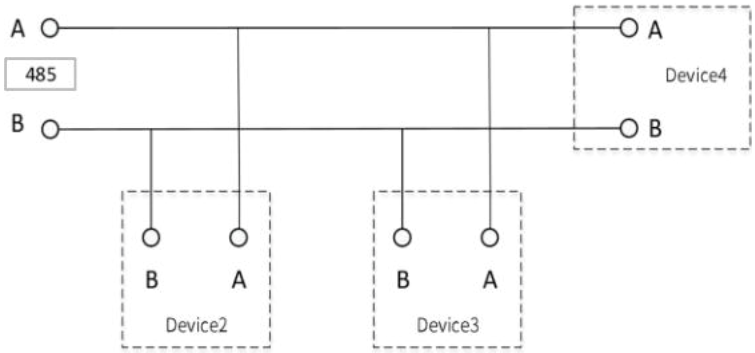


Figure 7-6 RS485 Expansion Board Wiring Picture

7.8.2 Conventional Sound and Light Expansion Module (SEC3008_SND)

(1) The SEC3008_SND board has two conventional sound and light output ports and one Class Change input port.

(2) **SND**: Provides two conventional siren circuits. It will activate the connected siren by default when a general fire occurs. Pressing the Mute/Resound button will terminate or re-activate the siren. It can be disabled so there is no output in the disabled state. It can also be monitored for open and short circuit faults in its wiring. Typical connections are shown in the figure to the right.

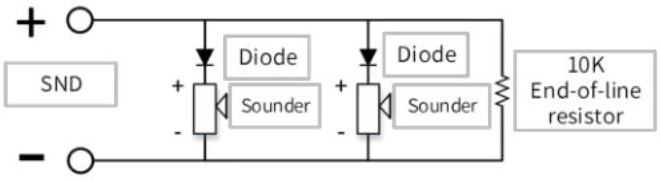


Figure 7-7 SND Terminal Wiring Picture

(3) **Class Change:** An input detection port, shorting the "+" and "-" terminals will activate the two SND output ports on the expansion board.

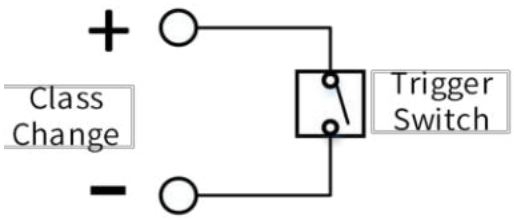


Figure 7-8 Wiring Diagram of SND Terminal

7.8.3 Programmable Relay Output Module (SEC3008_Relay)

(1) SEC3008_Relay has one programmable passive relay output circuit (PROG RELAY) and two programmable active relay output circuits (PROG OUT).

(2) **PROG RELAY** is a programmable passive relay output port. During normal system operation, NO and COM are open and NC and COM are shorted.

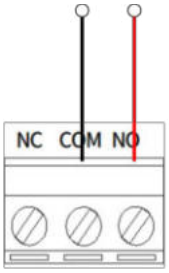


Figure 7-9 PROG RELAY Terminal Wiring Picture

(3) **PROG OUT** is a programmable active relay output port with line short-circuit break detection, a programmable output type, and provides an electrical signal of approximately 28V with an output current of up to 0.05A.

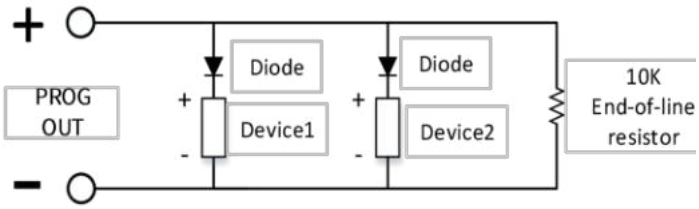


Figure 7-10 PROG OUT Terminal Wiring Picture

7.9 System Wiring Picture

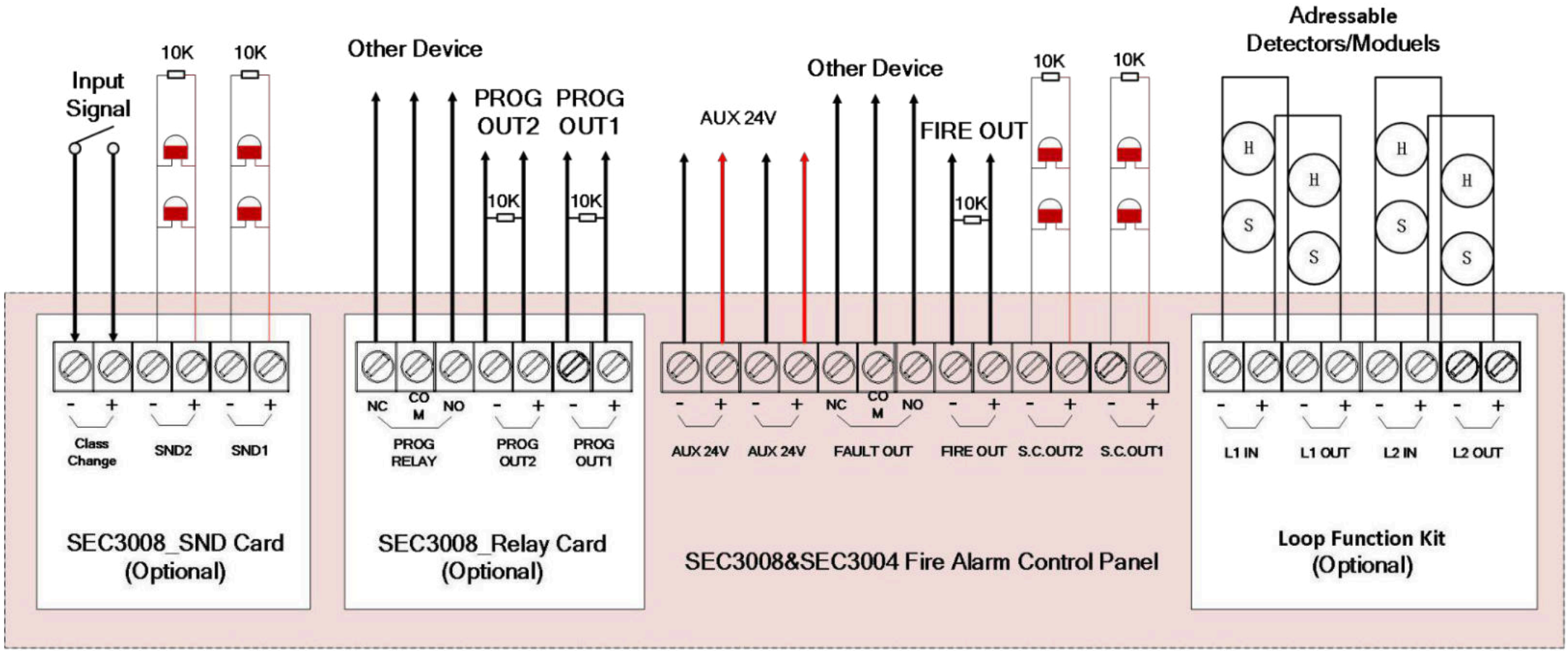


Figure 7-11Wiring Diagram

8 User Login Operation

(1) The system classifies users into three levels according to their operating privileges.

Level	Description
Level 1	Default system status, no password required. You can only view the main interface alarm information and silencing operation.
Level 2	The password length is fixed to 4. You can operate all global operation buttons, and you can only view and operate the specified interface. (Default password: 2222)
Level 3	Password length is fixed to 6, can operate all global operation buttons, and can view and operate all interfaces. (Default password: 333333)

8.1 Login Operation

(1) ■ User Login

Short press the screen button, Login , select the operation level 2 or 3 in the pop-up login window, then enter the password of the corresponding operation level at "Password", and finally click OK to login.

Figure 8-1 Login

■ Key Login

When reversing the AUTHORIZE key to point to the login, if the system starts at level 1 authority, then the system will log in with level 2 authority.

Figure 8-2 Key Login Panel Diagram

TIPs

❖ When both the key and the user are in the login state at the same time, the user login state is displayed in priority.

8.2 Logout

(1) **User Logout**

Under the login status, users can short-press the key on the sidebar of the screen Logout key， and click OK in the pop-up prompt box to log out.

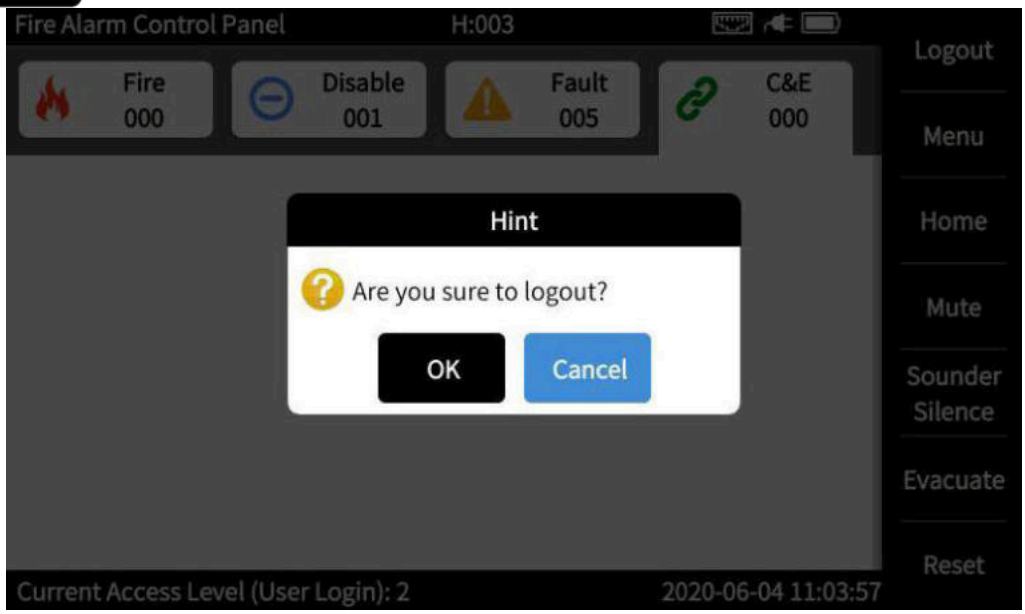


Figure 8-3 Logout

key to logout

Twist the AUTHORIZE key to point to the logout, if the user is in the exit login state, then the system will exit the login.

9 System Debugging And Using

9.1 System Debugging

(1) When the wiring is completed, after carefully checking that there is no error, you can start the debugging, debugging the main contents of the detector, module login and testing.

9.2 System Operation Instructions

(1) SEC3008 & SEC3004 panel layout is shown below:

Figure 9-1 Panel Diagram

(2) ■ The panel design contains the basic control functions of status indication and physical buttons, which are detailed as follows according to the labelling in the above figure:

■ Indicators

Type	Colour	Function
FIRE	Red	A fire alarm event exists in the system.
POWER	Green	This indicator lights up when the system is powered up.
FAULT	Yellow	A fault event exists in the system.
DISABLE	Yellow	There is a shield event in the system.
TEST	Yellow	A zone test has occurred.
POWER FAULT	Yellow	A mains or backup fault has occurred.
EVACUATE	Yellow	One-touch evacuation indicator, indicating that the one-touch evacuation function is on.
SYSTEM FAULT	Yellow	A system fault has occurred (EEPROM check and error, CPU failure, etc.).
SOUNDER SILENCE	Yellow	Acoustic and visual control silencing.
DELAY	Yellow	This indicator is illuminated when the system has set a delay condition;
		When the delayed start is triggered, this indicator flashes during the delayed start.
LOGIN	Yellow	The system is logged in at level 2 or higher.
S.C DISABLED/FAULT	Yellow	This indicator is always on when S.C.OUT is blocked.
		This lamp flashes when there is a fault in S.C.OUT.
Sounder DISABLED/FAULT	Yellow	This lamp lights up when the circuit sound and light (sound, light, sound and light, distant sound) are blocked.
		This lamp flashes when there is a loop sound and light fault.

(3) ■ Functional Key

Type	Function
SILENCE	Controls the switching off and re-sounding of sound and light equipment.
EVACUATE	Triggers the one-touch evacuation function.

RESET	System reset
MUTE	Eliminates the buzzer tone.
LEFT	Left arrow key.
CONFIRM	Short press to confirm key function.
	Long press 1s and release, switch focus, equivalent to the tab key of a USB keyboard.
RIGHT	Right direction key
AUTHORIZE	Left, log out.
	RIGHT, log in to 2 levels of authority.

TIPs

- Function buttons are mainly designed to prevent screen touch failure, and control buttons are mainly used to interact with the alarm interface.

10 Main interface

(1) When there is no event, the interface shows a static monitoring interface:

- top status bar: system description, host node number, networking mode, power status;
- middle: monitoring window;
- bottom status bar: current operation level, time and date;
- right sidebar: global operation buttons;
-

Figure 10-1 Main Interface Diagram

10.1 Global OPeration

(1)

Buttons	Limits Authority	Hidden Meaning
Login/Logout	1 / 2 / 3	Login/Logout
Menu	2 / 3	Jump to the menu screen
Home	1 / 2 / 3	Jumps to the home screen
Mute	1 / 2 / 3	Mute
Sounder Silence/Re-sound	2 / 3	Mute/re-sound the sound and light devices.
Evacuate	2 / 3	Activate all sound and light devices.
Reset	2 / 3	Resets the controller

(2) *Special Operating:*

Home : press and hold for 2s to enter or exit the debug mode. In debugging mode, the interface will not make an automatic jump to the main interface. (This function does not conform to the standard design and is only for actual debugging use.)

Figure 10-2 Nominal Monitoring Interface

10.2 Fire Alarm Window

(1) When a fire alarm occurs in a zone, the Fire alarm interface will display the alarm information. The alarm information of the same fire zone will be collapsed, select the specified fire zone and then touch and press the selected item to view all the alarm information under the fire zone

(2) ■ alarm zone information format:

Serial Number	Time of the last fire alarm	Zone Number	Number of zone fire alarm
001	14:57	Zone 1	001

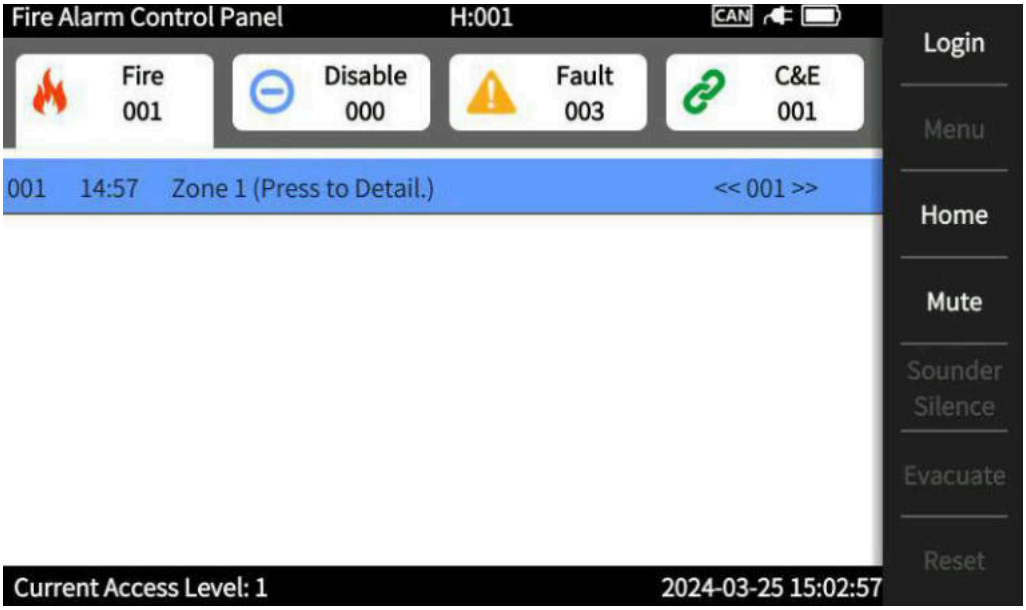


Figure 10-3 Fire Alarm Interface

(3) ■ zone fire alarm information:

Serial Number	Time	Alarm Information	Debugging code
001	14:57	Panel 01 Loop 01 Addr 01	00101001

The debugging code of the fire alarm information of the loop equipment consists of 8 decimal digits, which facilitates the identification of the specific location of the equipment through the debugging code in the case of the same location description information, and is mainly used for distinguishing the uniqueness of the same type of information, and is parsed from left to right, with the first 3 digits denoting the host number of the equipment, the middle 2 digits denoting the loop where the equipment is located, and the last 3 digits denoting the address of the equipment. For example, debug code 00101001 parsed information is:

Host Number	Loop Number	Address Number
001	01	001

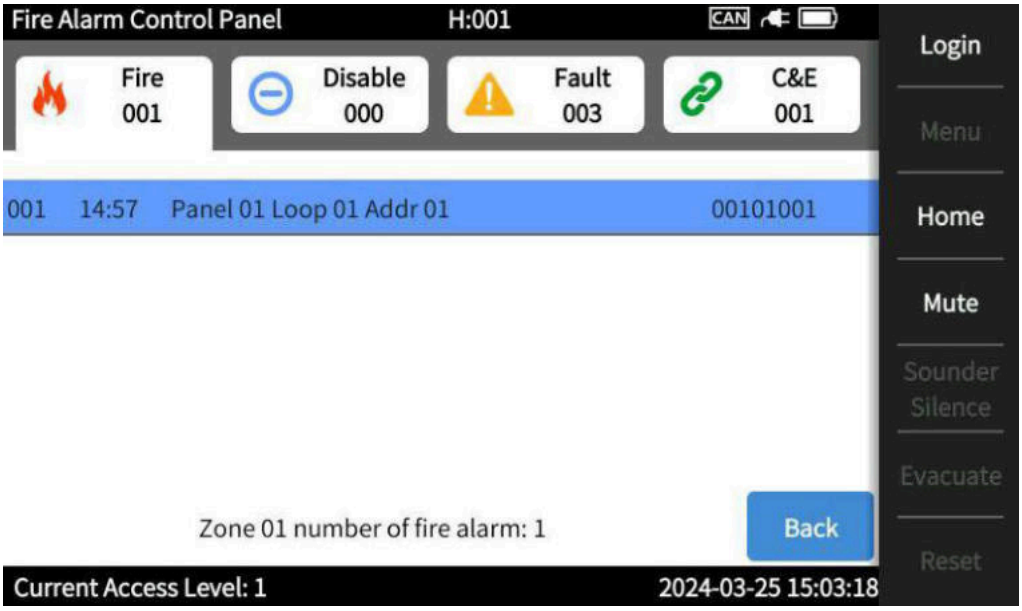


Figure 10-4 Zone Fire Alarm Interface

TIPs

- **The number on the Fire Alarms tab refers to the number of alarmed fire zones, not the number of all alarms.**
- **The maximum number of information that can be displayed on is 999, after exceeding 999, you can go to the historical fire alarms.**
- **After the 20s after no operation , the system will automatically jump to the main interface and display the alarm information according to the event priority (priority: fire > linkage > fault > shielding), and display the static monitoring window if there is no alarm event.**

10.3 Disable Interface

(1) When there is a disabling event in the system, the disabled interface will display the specific shielding event, which is broadly classified into input device disable, output device disable, area disable, acousto-optic disable, terminal disable.

Disable information format (Figure 10-5 Masking Interface as an example):

Serial Number	Disable the" indicator	Disabled device	Debugging code

	character	information	
001	[DISABLED]	Loop sounder	00300000

The debugging code for the shielding information of the loop device class consists of 8 decimal digits, parsed from left to right, with the first 3 digits indicating the host number of the device, the middle 2 digits indicating the loop in which the device is located, and the last 3 digits indicating the address of the device. For example, the debug code 00101002 parsed information is:

Host Number	Loop Number	Address Number
001	01	002

Non-loop equipment class shielding information debugging code and equipment class is slightly different, from left to right analysis, the first 3 bits indicate the host number of the device, the next 5 bits indicate the address of the device information, different shielding information address information format will not be consistent.

For example, the sounder circuit disablement debug code 00300000 parsed information for:

Host Number	Address Number
003	None

For example, the mask debug code 00304999 for loop sound and light is parsed as:

Host Number	Zone Number
003	04999

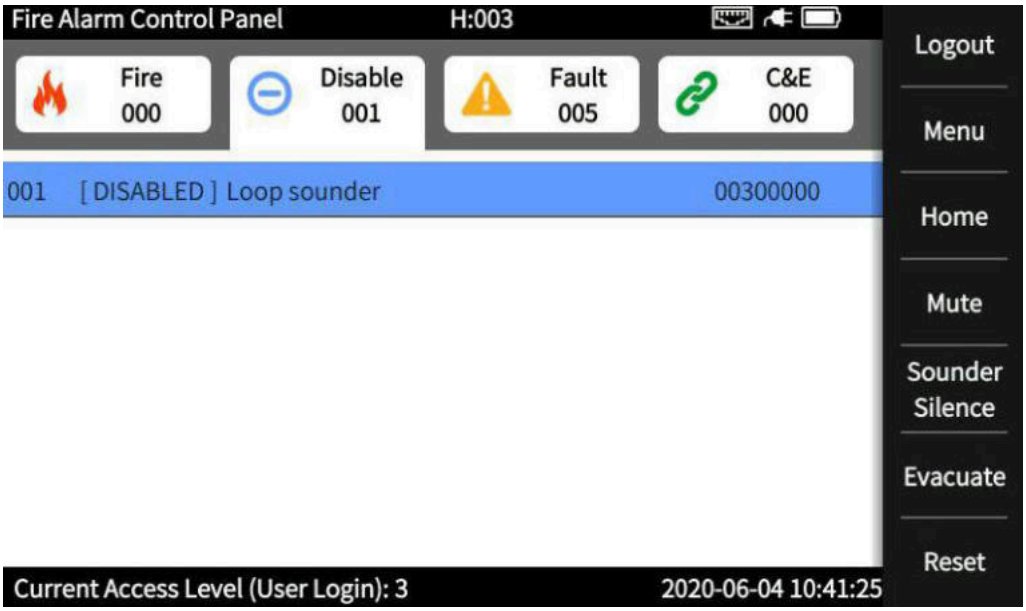


Figure 10-5 Disable Interface

TIPs

- ❖ **After all registered input devices in the area are shielded, they will be combined and displayed as area shielding.**
- ❖ **After the 20s after no operation , the system will automatically jump to the main interface and display the alarm information according to the event priority (priority: fire > linkage > fault > shielding), and display the static monitoring window if there is no alarm event.**

10.4 Fault Interface

(1) When there is a fault event in the system, the fault window will display the specific fault event, and the format of

the fault information is as follows (take Figure 10-6 Fault Interface as an example):

Serial Number	Time	Fault incidents	Code
003	14:49	Panel 01 Loop card 01 comm. fault	00101000

The debugging code of the fault information of loop equipment is composed of 8 decimal digits, which is convenient for identifying the specific location of the equipment through the debugging code when the location description information is the same, and it is mainly used to distinguish the uniqueness of the same type of information, and it is parsed from left to right, with the first 3 digits indicating the host number of the equipment, the middle 2 digits indicating the loop where the equipment is located, and the last 3 digits indicating the address of the equipment. For example, the debug code 00101002 parsed information is:

Host Number	Loop Number	Address Number
1	1	2

Non-loop equipment class fault information debugging code and equipment class are slightly different, from left to right analysis, the first 3 bits indicate the host number of the device, the last 5 bits indicate the address information of the device, different fault information address information format will not be consistent.

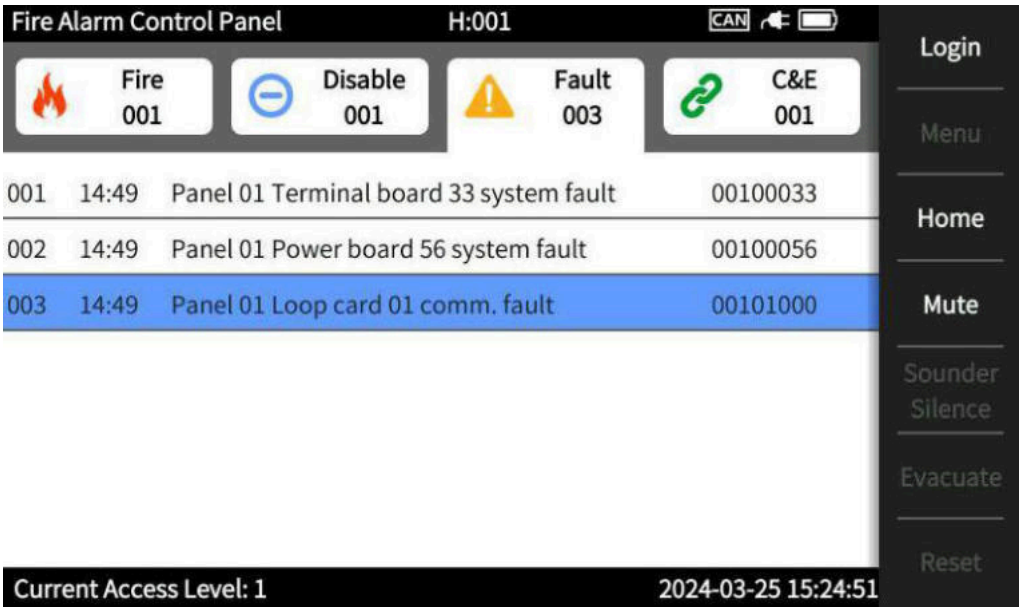


Figure 10-6 Fault Interface

TIPs

- **The maximum number of information that can be displayed is 999, after exceeding 999, it can be viewed in the history fault.**
- **After the 20s after no operation , the system will automatically jump to the main interface and display the alarm information according to the event priority (priority: fire>linkage>fault>shield), and display the static monitoring window if there is no alarm event.**

10.5 Linkage Window

(1) When there is a feedback or startup event in the system, the linkage window will display specific linkage information, and the format of the linkage information is as follows (take Figure 10-7 Linkage Interface as an example):

Serial Number	Start time - Feedback time	Linkage event	Debugging Code
001	14:57 -- : --	Zone1 SoundStro	00101006

The debugging code of the loop device class consists of 8 decimal digits, parsed from left to right, the first 3 digits

represent the host number of the device, the middle 2 digits represent the loop where the device is located, and the last 3 digits represent the address of the device. For example, the debug code 00101006 parsed information is:

Host Number	Loop number	Address Number
001	01	006

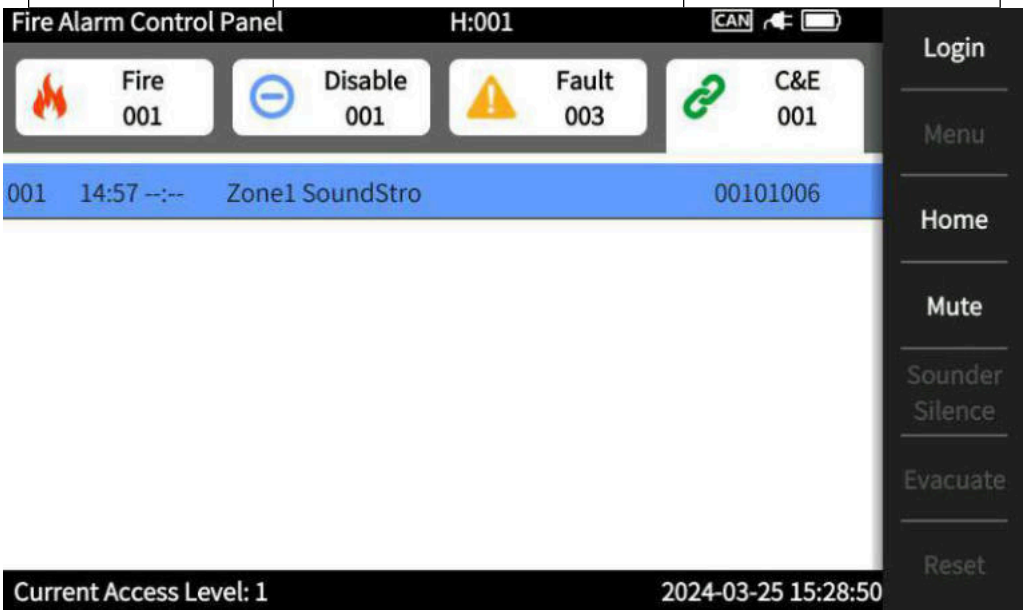


Figure 10-7 Linkage Window

TIPs

- The maximum number of messages that can be displayed is 999, and after exceeding 999, it can be viewed in the history linkage.
- After the 20s after no operation, the system will automatically jump to the main interface and display the alarm information according to the event priority (priority: fire>linkage>fault>shield), and display the static monitoring window if there is no alarm event.

11 System Configuration

11.1 Main Menu

(1) After login, press the key Menu in the sidebar to enter the main menu. Sub-menu items are System, Loop, C&E, Operation and Records respectively. Click the button Back at the bottom of the menu window or the key Home in the sidebar to return to the main interface.

Figure 11-1 Main Menu

11.2 System

(1)

Figure 11-2 System

11.2.1 Basic settings

(1) ■ Configure basic system information, including host description, system language, screen saver duration, and backlight brightness.

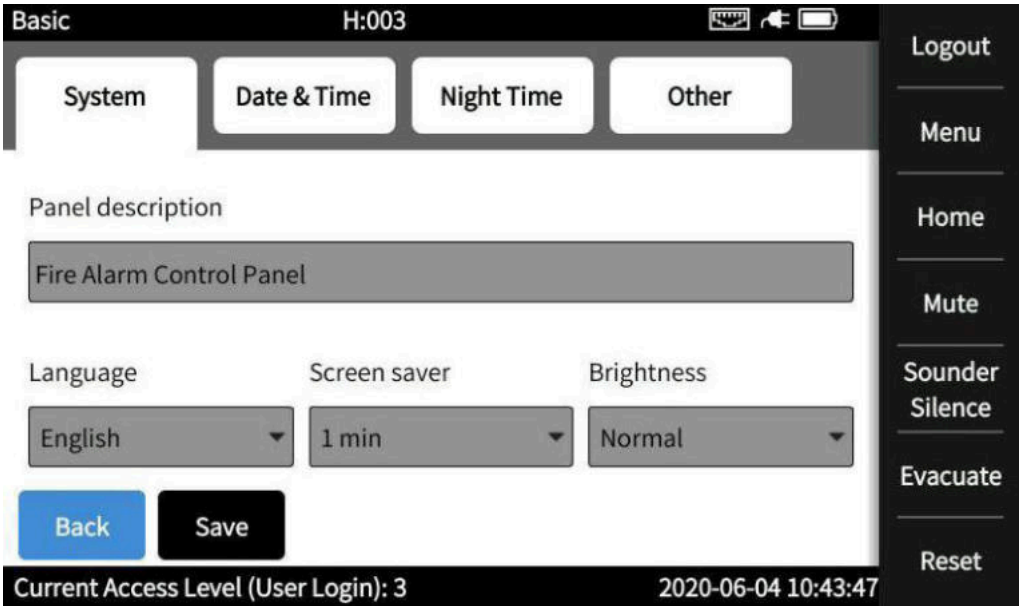


Figure 11-3 Basic settings

(2) ■ **Time and Date Settings**

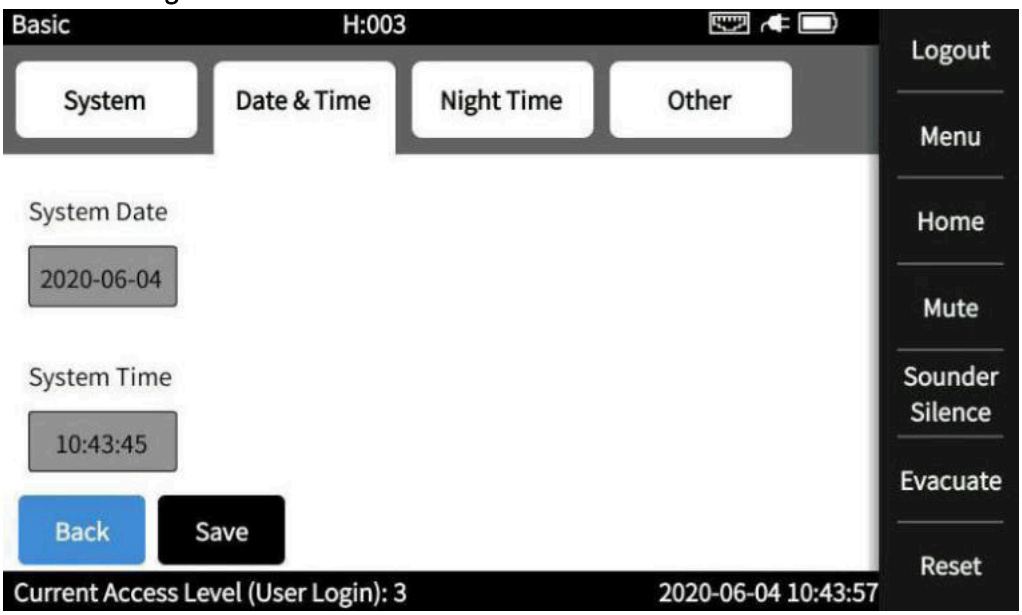


Figure 11-4 Basic settings

(3) ■ Night Mode Time Range: Set the night mode time range for the probe/module. (This parameter is valid only when Day Night Mode is set to √ in the Detector/Module submenu.)

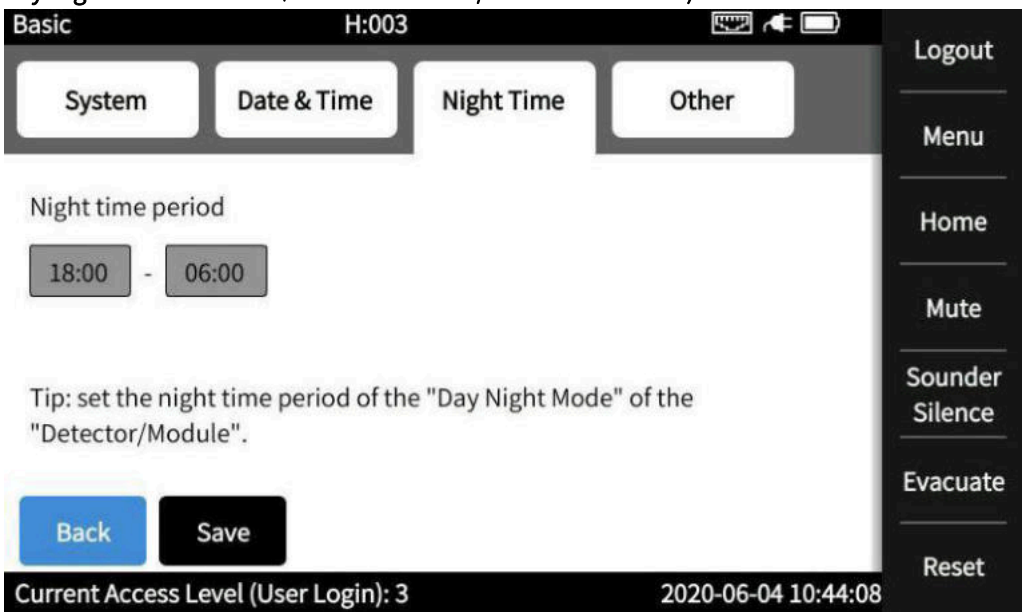


Figure 11-5 Night Time

(4) ■ Other Settings: Set the scroll direction and key tone if the alarm information is too long.

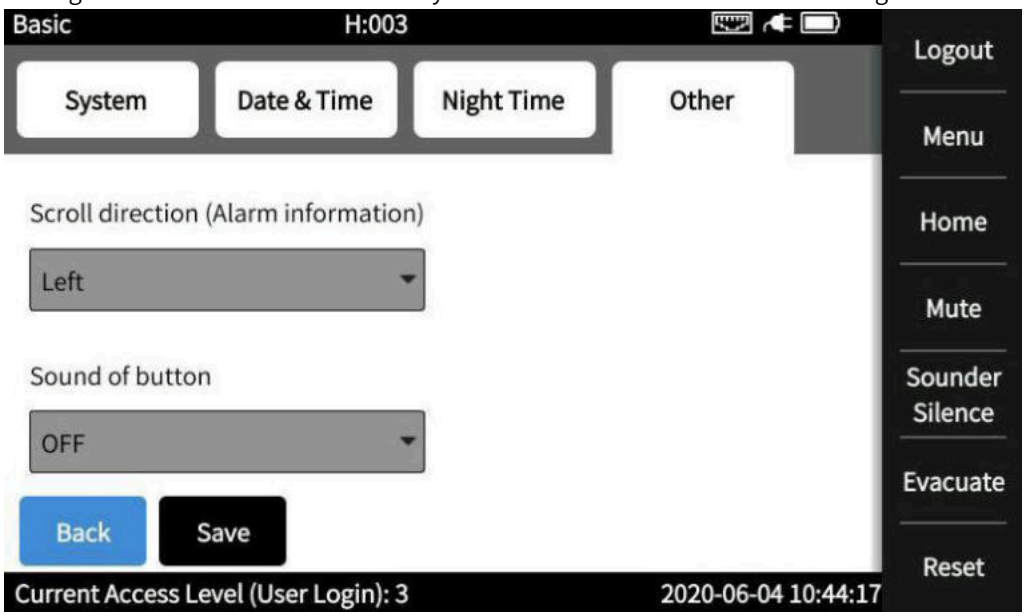


Figure 11-6 Other Setting

11.2.2 User settings

(1) Set the password and automatic logout time of different execution levels. With the permission of Level 3, you can modify the configurations of Level 2 and Level 3. With the permission of Level 2, you can modify only the configurations of Level 2.

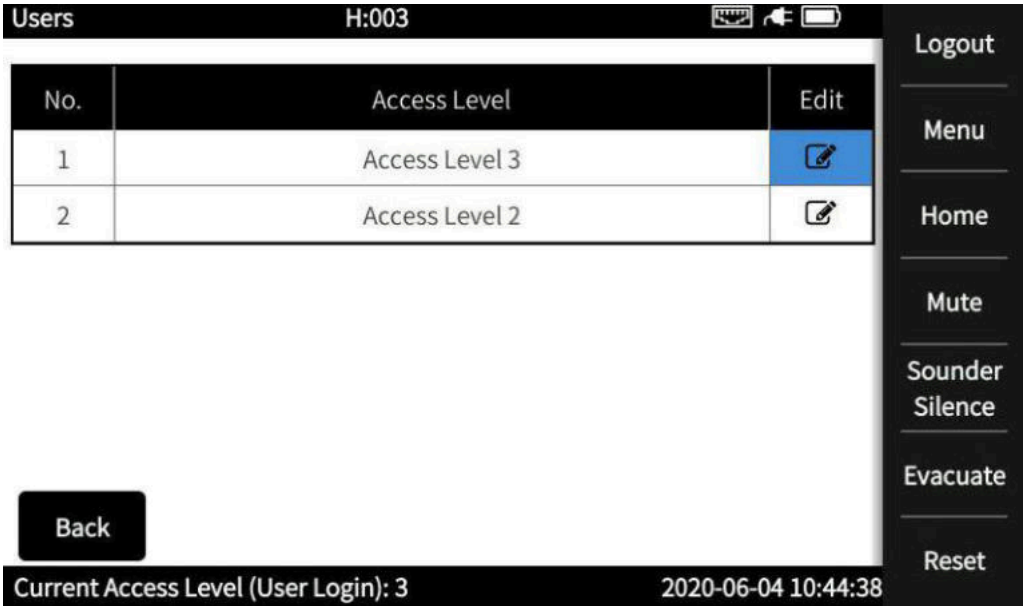


Figure 11-7 User settings

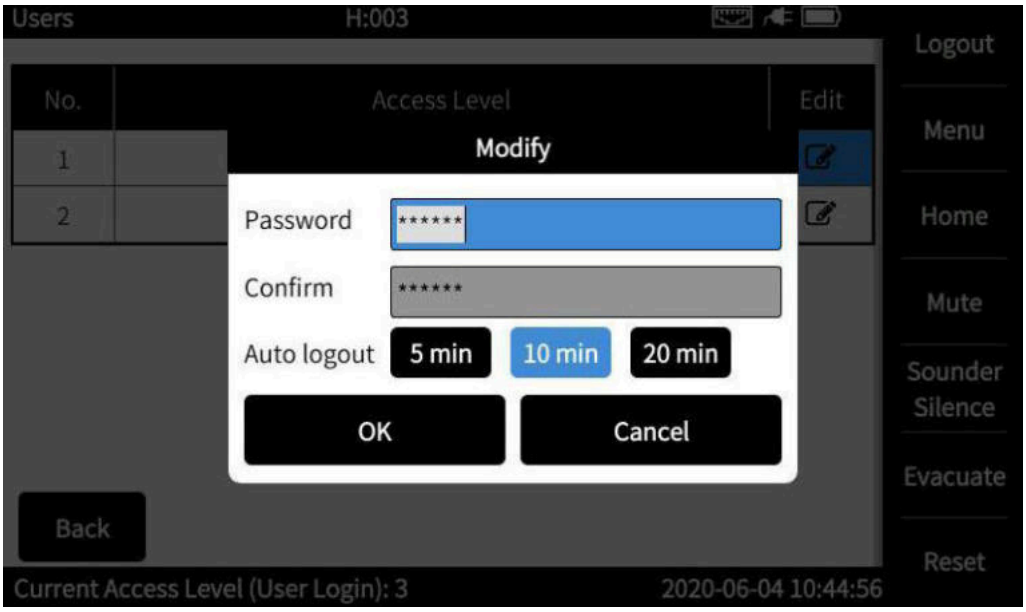


Figure 11-8 User modification

- **Password change: The password is a combination of digits 0 to 9. The password of Level 2 is a string of four characters and that of Level 3 is a string of six characters.**
- **Automatic logout duration: 5/10/20 minutes Optional. After no operation is performed, the system automatically logs out of the current execution level when the automatic logout event is reached.**

11.2.3 Zone Setup

(1) The fire protection zone setting interface can register the fire protection zone and customize the fire protection zone description. Fire zone registration or description changes support single or batch operations.

- The maximum length of the fire zone description is 20 bytes.
- A maximum of 5000 fire protection zones are supported and at least one fire protection zone is reserved.
- Click the location description cell of the region in the table to quickly copy and paste the location description.
- Click the left and right arrow in the lower right corner to turn the page. Enter the page number in the page number input box in the lower right corner to automatically jump to the specified page.

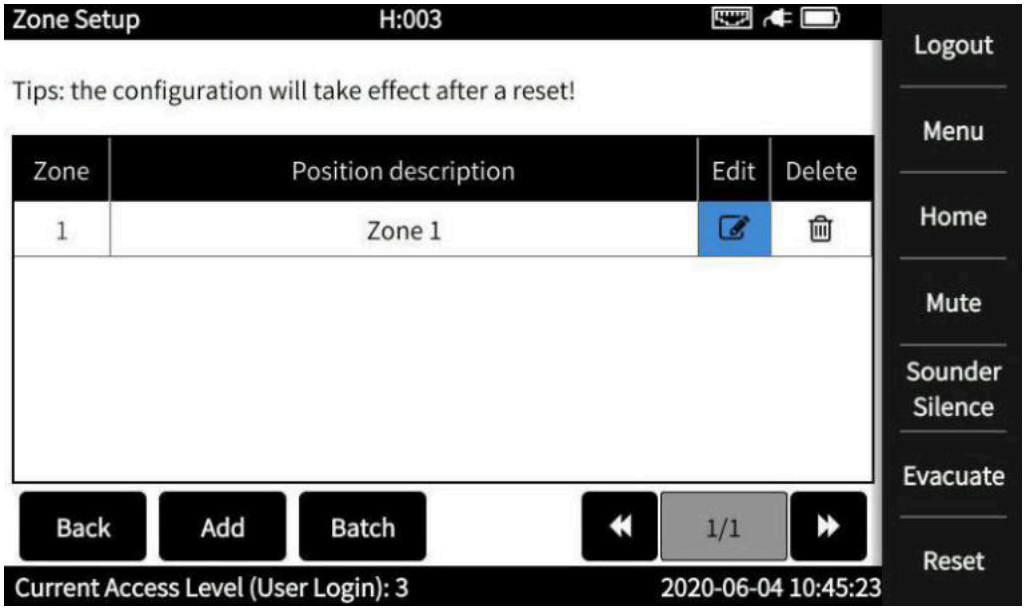


Figure 11-9 Fire Zone Setting

Figure 11-10 Fire Zone Batch Setting

Operation	Configures batch adding or deleting operations
Zone	Indicates the zone range
Position description	Area position description is concatenated with Prefix and Suffix

TIPs

- **After the area is configured, some reported alarms can only be updated after the area is reset.**
- **Level 2 permission can only be used to view configuration data.**

11.2.4 Panels settings

(1) The host registration configuration interface can register and manage the controller slave machine and Repeater. The configuration information is displayed in a list. This system supports the control host network, because the cross-machine linkage needs to transmit the fire alarm information to the centralized machine in the network at the same time, so it must be set up. Only after other hosts are registered on the machine, the alarm information will be transmitted to the host that is registered, and the received alarm information will be displayed.

- **Controller host network registration:** After the controller host is registered, the controller will send the local alarm information to the network host. The alarm information can be displayed in the network, including fire alarm, fault, feedback, and start.

Figure 11-11 Controller Host Registration

- **Repeater Registration**: The Repeater is a remote control and display device for the controller. After registering the Repeater, the controller allows the registered Repeater to perform sound suppression, sound and light control, one-click evacuation and reset operations, and can display alarm information such as fire alarm, fault, feedback and start.

Figure 11-12 Repeater Registration

TIPs

- For networking, the network time depends on the centralized machine (host 1) time. If you change the time of the centralized machine, the time of all hosts in the network will change accordingly.
- All hosts connected to the network must be set to the same transfer rate, must know which hosts are on the network, and cannot have the same host number. If the slave is a CRT, select the CRT bar.
- Controller host and Repeater host numbers 1-254. The controller host and Repeater host cannot be registered with the same host node number.
- Level 2 permission can only view configuration information!

11.2.5 Network settings

(1) Set the host node number, networking mode, and networking configuration. The host node ID ranges from 1 to 254. The networking modes CAN be CAN networking or Ethernet networking.

- **CAN Networking:** Transfer rate and mode Settings

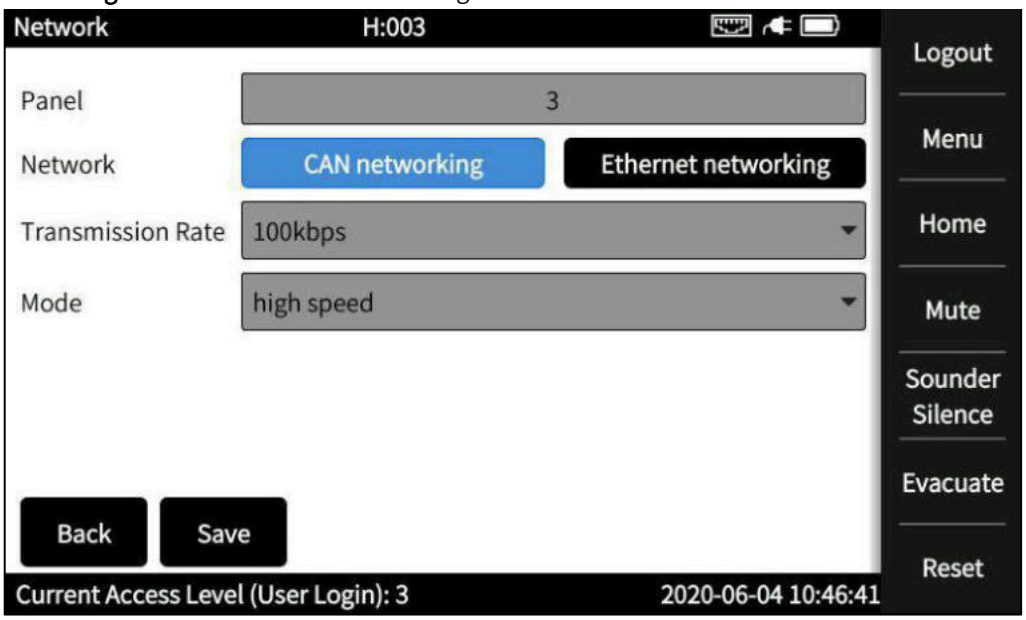


Figure 11-13 CAN Networking Settings

- **Ethernet networking:** Set the IP address, gateway address, and mask of the host.

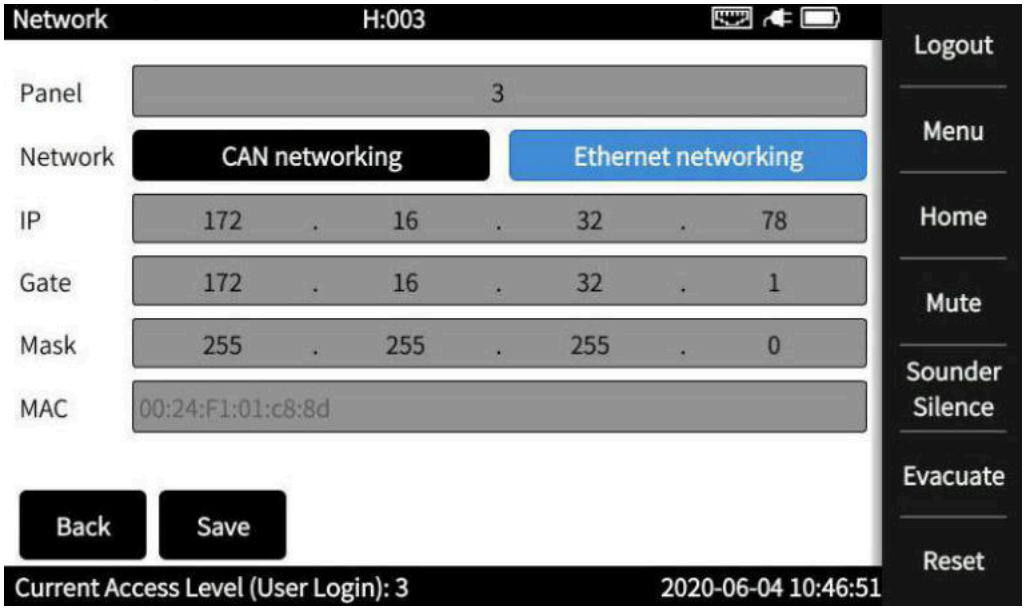


Figure 11-14 Ethernet Networking Settings

TIPs

- Level 2 permission can only view configuration information!
- All hosts in a networked system must be set to the same transfer rate!
- When hosts working at different rates connect to the network, all hosts (including other hosts with the same transfer rate) cannot communicate properly. Therefore, in a multi-computer networking system, when the transmission rate of the host is reset one by one, the networking bus will not work normally during the setting process, and when all the hosts are set to the new transmission rate, the system will return to normal.

11.2.6 Zone LED settings

(1) Configure the registration information of the fire alarm light board in the fire zone.

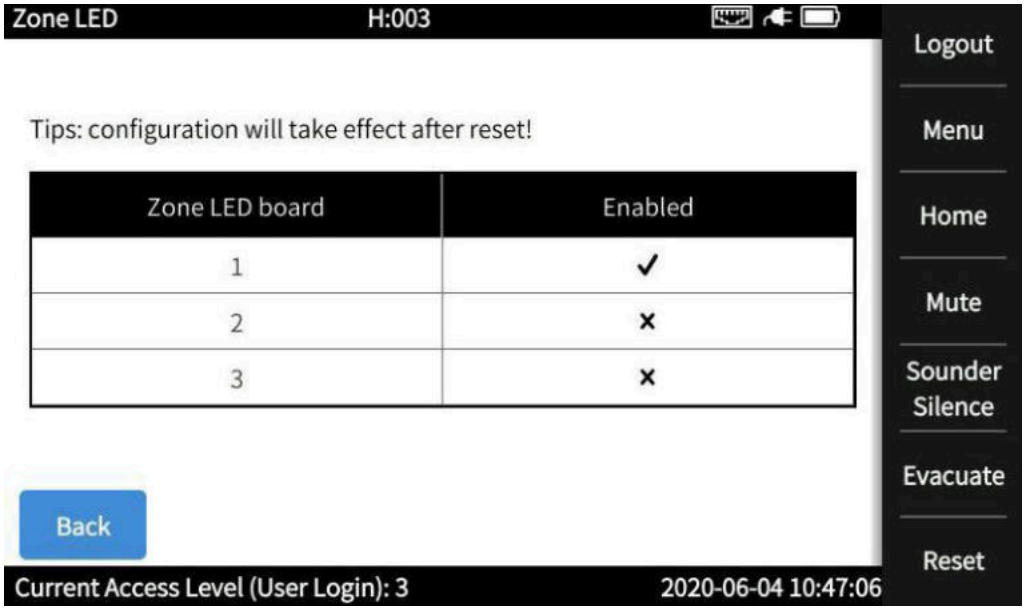


Figure 11-15 Zone LED Board Registration

TIPs

❖ Level 2 permission can only view configuration information!

11.2.7 Other settings

(1) ■ Printer configuration: Configure the printer registration information, printing mode, and printing information. The alarm information that can be printed includes fire alarm, fault, linkage (start and feedback).

■

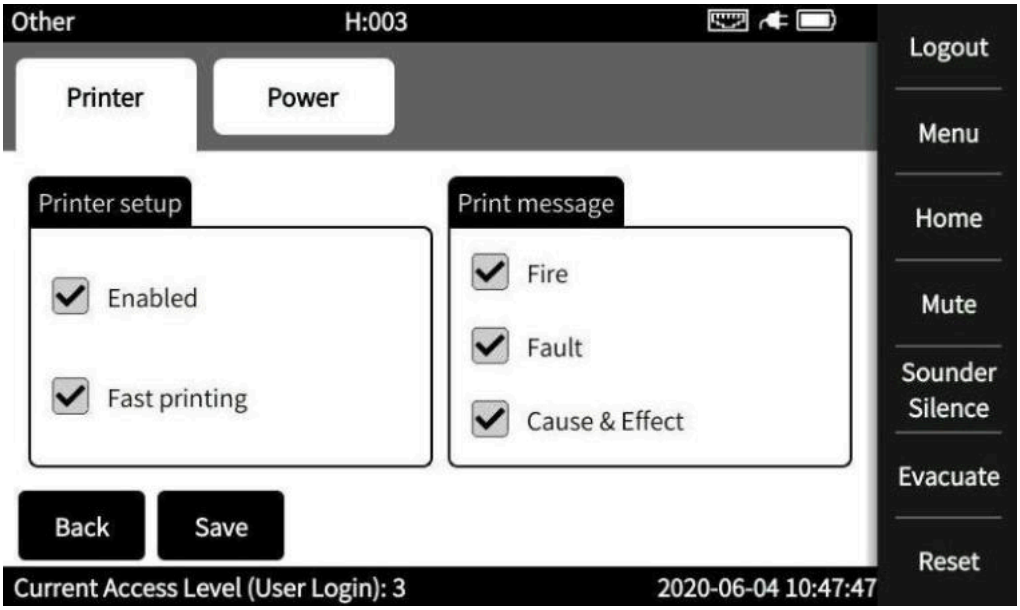


Figure 11-16 Printer Settings

■ Power registration: You can configure whether to monitor battery power status information.

Figure 11-17 Power supply registration

TIPs

❖ Level 2 permission can only view configuration information!

11.3 Loop

(1)

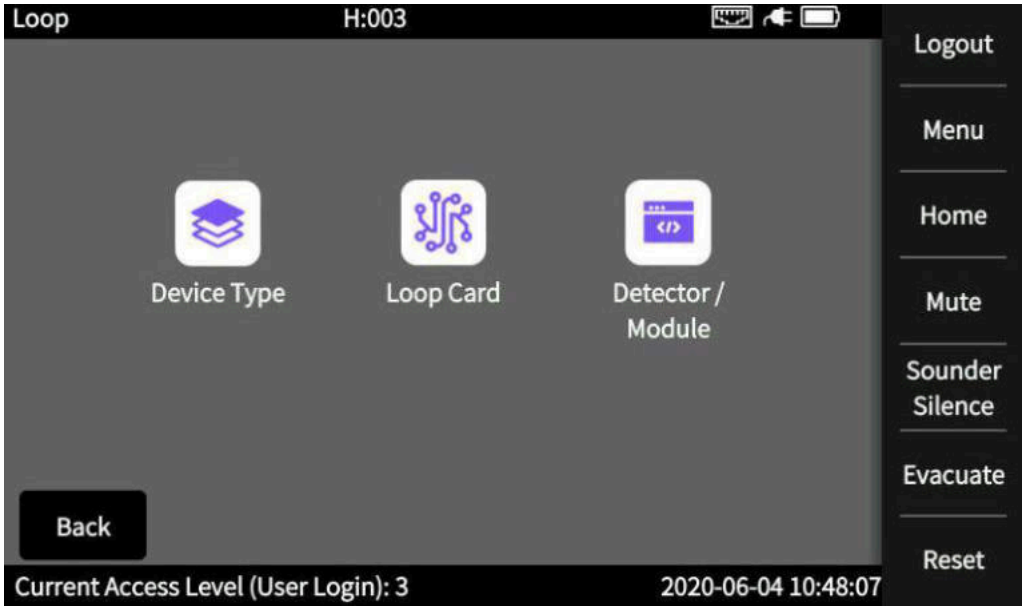


Figure 11-18 Loop Settings

11.3.1 Device Type

(1) The type management interface can customize 6 types of fire alarms and 16 types of feedback devices, and view all types of fire alarms and feedback devices supported by the system. The device type description contains a maximum of 10 bytes.

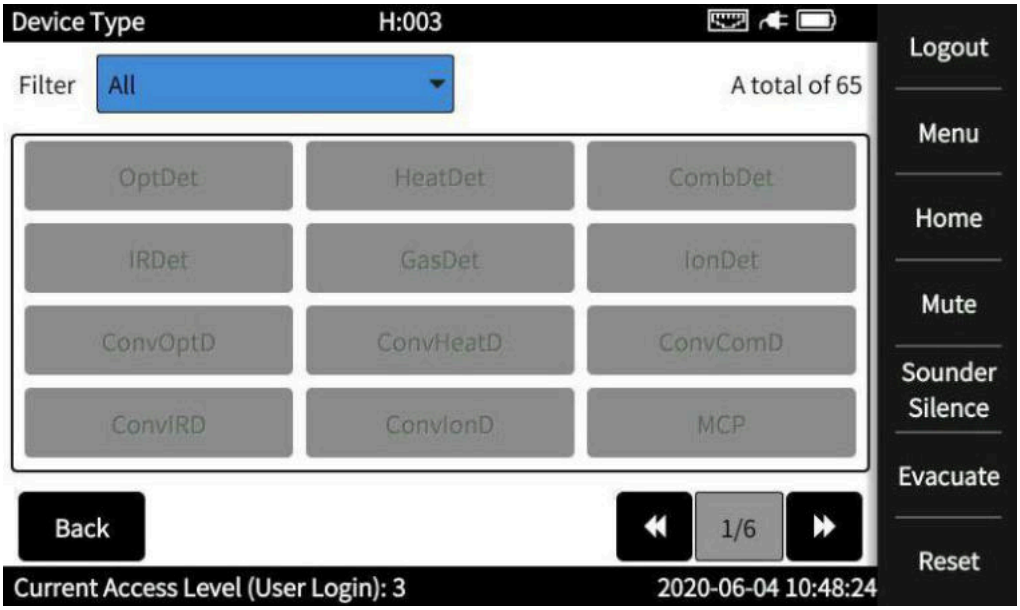


Figure 11-19 Decive Type

TIPs

❖ **Level 2 permission can only view configuration information!**

11.3.2 Loop Card

(1) ▣ The loop expansion card configuration interface can register the loop expansion card, and the maximum number of allowed registration is 4. You can click Auto reg on the upper left corner to automatically register the loop expansion card, and click Save to save data after registration or configuration.

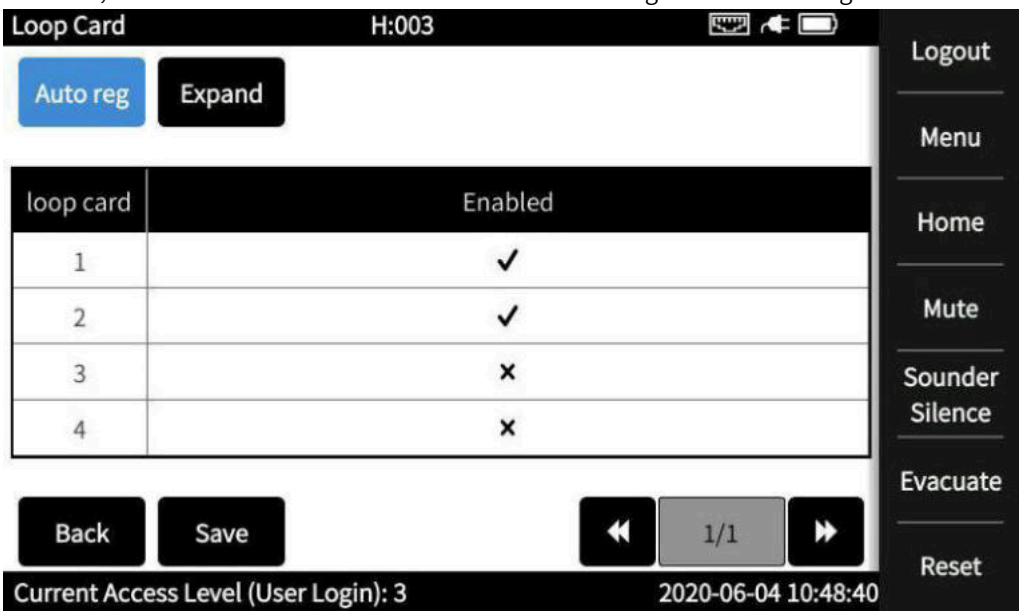


Figure 11-20 Loop Card Registration

Click Expand to configure the working mode of the loop expansion card. The loop working mode can be set to loop (CLASS A) or tree loop (CLASS B). After the setting, you need to reset the information to take effect.

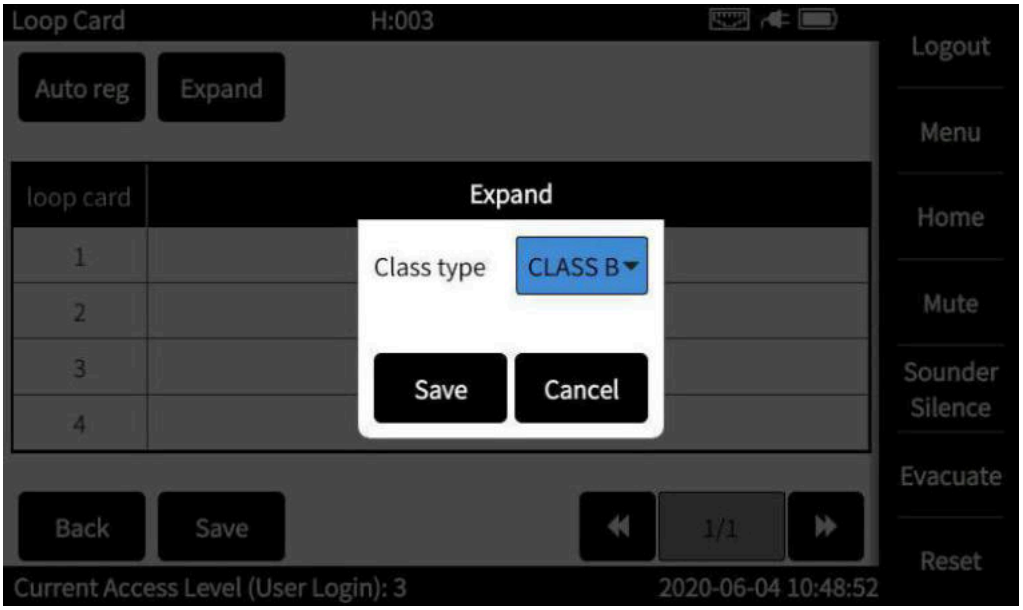


Figure 11-21 Class type Option

TIPs

❖ **Level 2 permission can only view configuration information!**

11.3.3 Detector/Module

(1) After entering the loop device configuration interface, select the loop number in the upper left corner of the interface, and the device configuration information of the loop will be automatically loaded after selection.

- A maximum of 324 devices can be configured for each loop. You can view the information by flipping pages in the lower right corner.
- Configurable and viewable loop device information includes registration, production type, device type, fire zone, output mode, operating mode, location description (up to 128 bytes), and day/night mode.
- You can directly modify the data in a table cell by clicking on it.

Caution

❖ **No more than 324 devices can be registered in a single smart loop!**

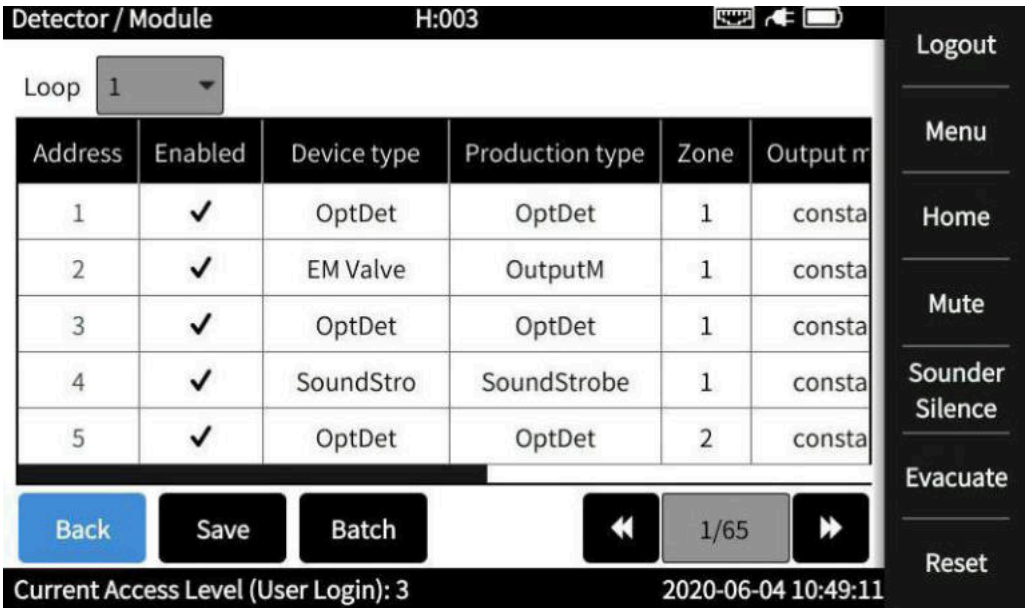


Figure 11-22 Detector/Module Information

Click the Batch button to batch the configuration information.

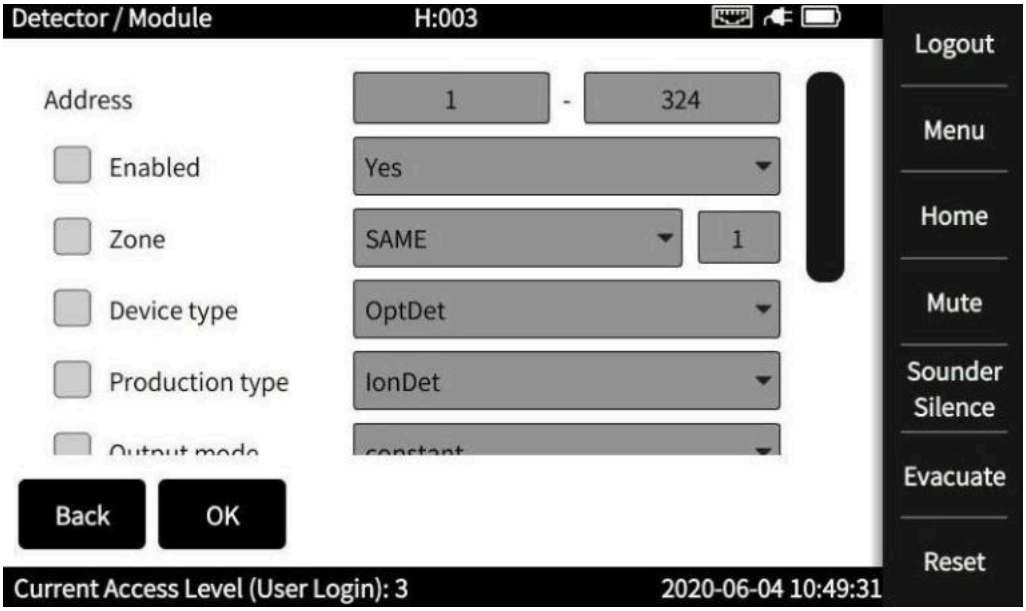


Figure 11-23 Batch Setup

TIPs

❖ **Level 2 permission can only view configuration information!**

Notice

❖ **After the configuration is saved, the configuration may take a period of time. Do not reset the configuration during this period.**

11.4 Cause & Effect

(1) Linkage programming includes default linkage and custom linkage programming.

Figure 11-24 Cause & Effect

11.4.1 Default C&E

(1) The default output is designed for the simplicity of C&E Settings, and the logic of the default linkage is: when a registered fire zone fire occurs, the relevant fire zone loop acousto-optic modules (acousto-optic, acousto-optic, acousto-optic) will be activated. For example, when a fire breaks out in fire zone 1, all sound and light equipment in

fire Zone 1 will be activated

- Selecting "C&E Enable" will turn on or off the default C&E feature.
- After the "Resound" function is enabled, when a fire alarm is reported in a certain fire protection zone, the activated loop acoustooptic modules in other registered fire protection zones will be restarted immediately.
- The delay start time ranges from 0 to 600s.

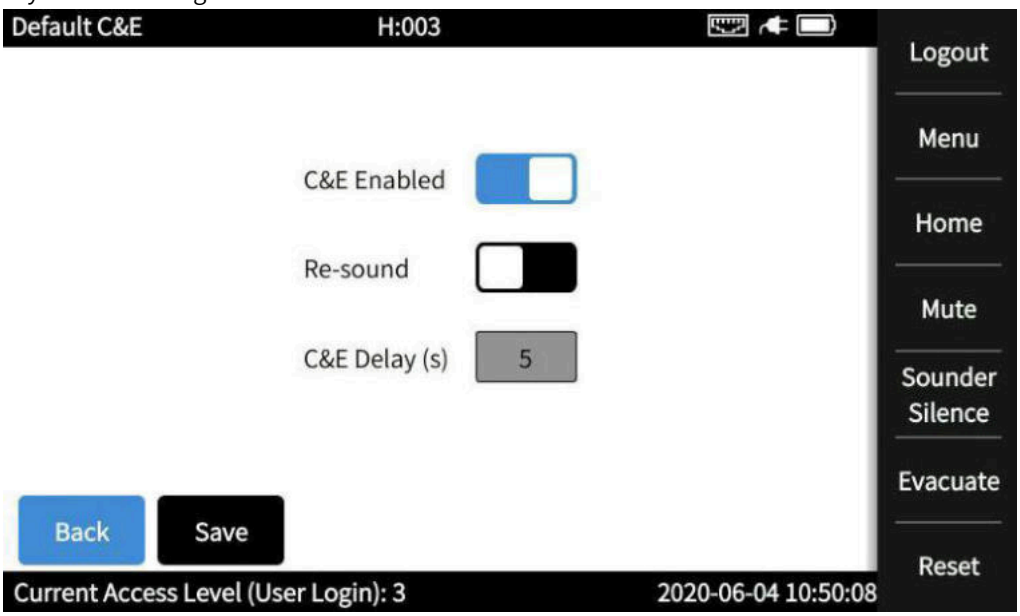


Figure 11-25 Default Linkage Settings

TIPs

- ❖ **Level 2 permission can only view configuration information!**
- ❖ **The delay function applies only to acousto-optic modules in the loop. The output of S.C.Out on the terminal board has nothing to do with this setting.**
- ❖ **This action does not take effect if the fire is not registered in the fire protection zone.**
- ❖

Notice

If the linkage is triggered but the module is in the delayed output state, you can operate the MCP device to make the module in the delayed output state act immediately.

11.4.2 Custom C&E

(1) Custom linkage programming includes: system linkage, regional linkage and composite linkage. In the upper left corner, Filter displays the specified linkage programming type. Click the button Add to add linkage scheme.

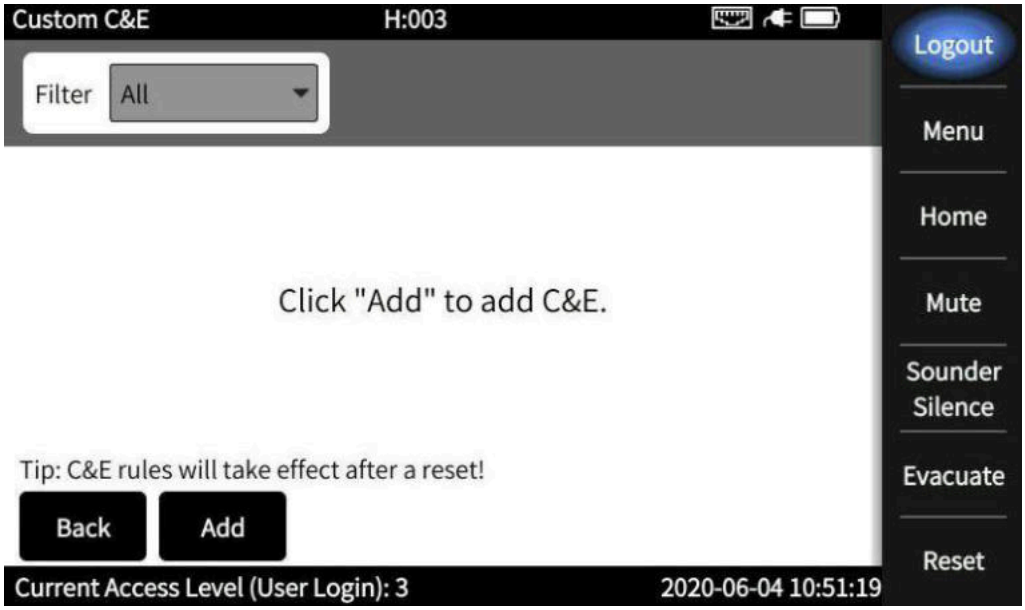


Figure 11-26 Custom C&E

After the linkage scheme is set, the preview of linkage programming information is displayed. The left side shows the linkage trigger condition, and the right side shows the linkage output mode and device. Click Enable to enable or disable the linkage, click Edit to modify the linkage, and click Delete to delete the linkage.

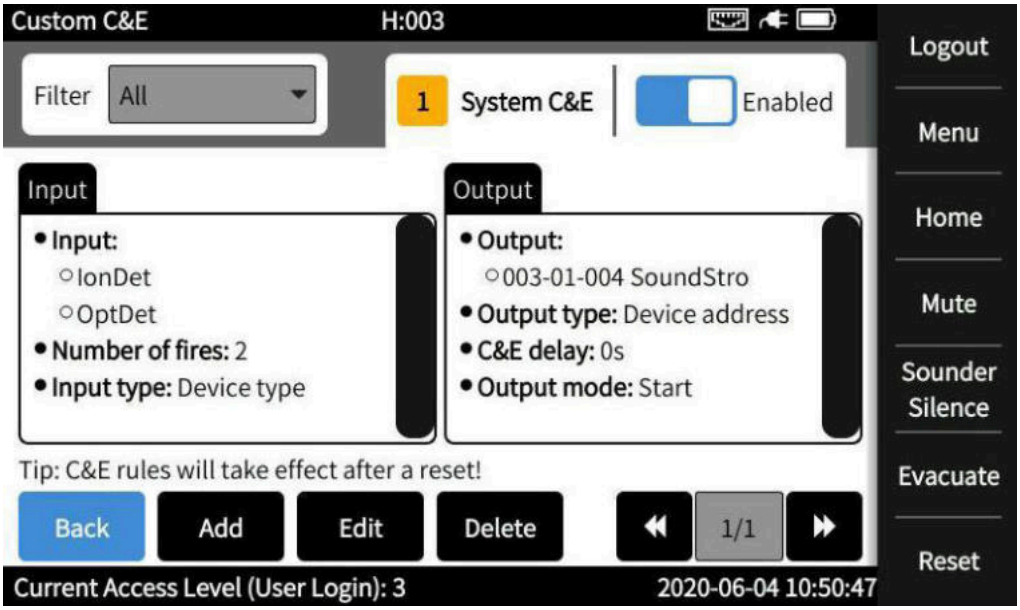


Figure 11-27 Custom C&E Detailed Preview

TIPs

- Level 2 permission can only view configuration information!
- If the output linkage mode is set to output by device address, the address of the output linkage device is resolved as follows: host ID, loop ID, address ID, and device type. Example: 003-01-004 SoundStro describes an acousto-optic device with host number 3- Loop number 1- address number 4.

Notice

If the linkage is triggered but the module is in the delayed output state, you can operate the MCP device to make the module in the delayed output state act immediately.

11.4.2.1 System C&E

(1) Click Add to create linkage, and then select "System" as the linkage type. After confirming, enter the details for setting. After configuring all parameters, click Save to save linkage programming. Click the button Save & Next to save the current linkage program and continue to create a new linkage solution of the same type. Linkage programming consists of four parts: input/output parameters and input/output conditions.

■ **Linkage programming input parameter Settings**

Set the number of alarms triggered by linkage to 1-99, or set the number of alarms triggered to AND.

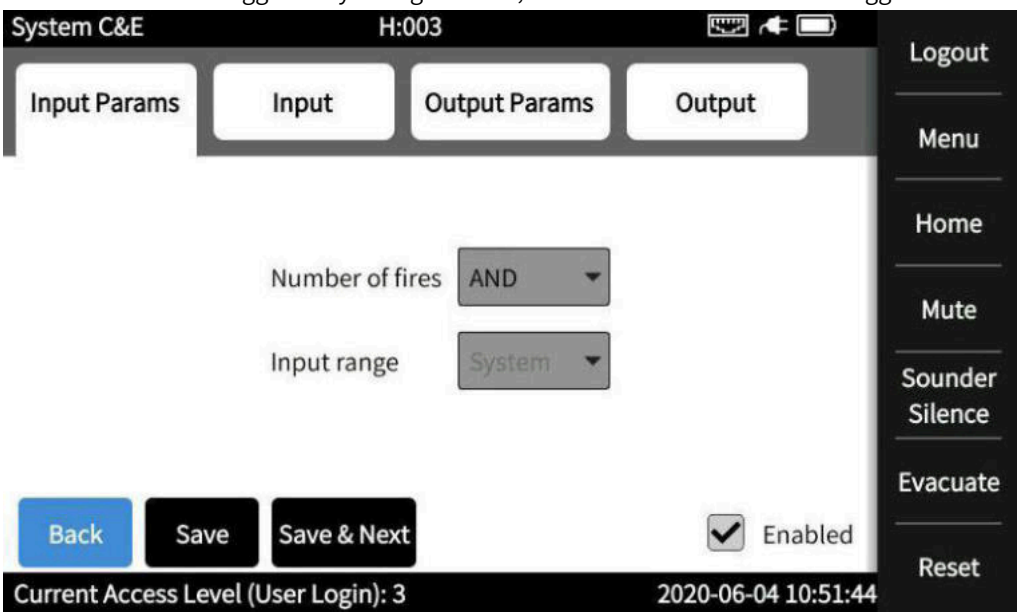


Figure 11-28 Linkage Programming Input Parameter Setting

TIPs

❖ **"AND" relation of fire alarm number: two of the input devices can trigger linkage.**

■ **Linkage programming trigger condition Settings**

Select the linkage input device in the table and click Delete to quickly delete the linkage input device.

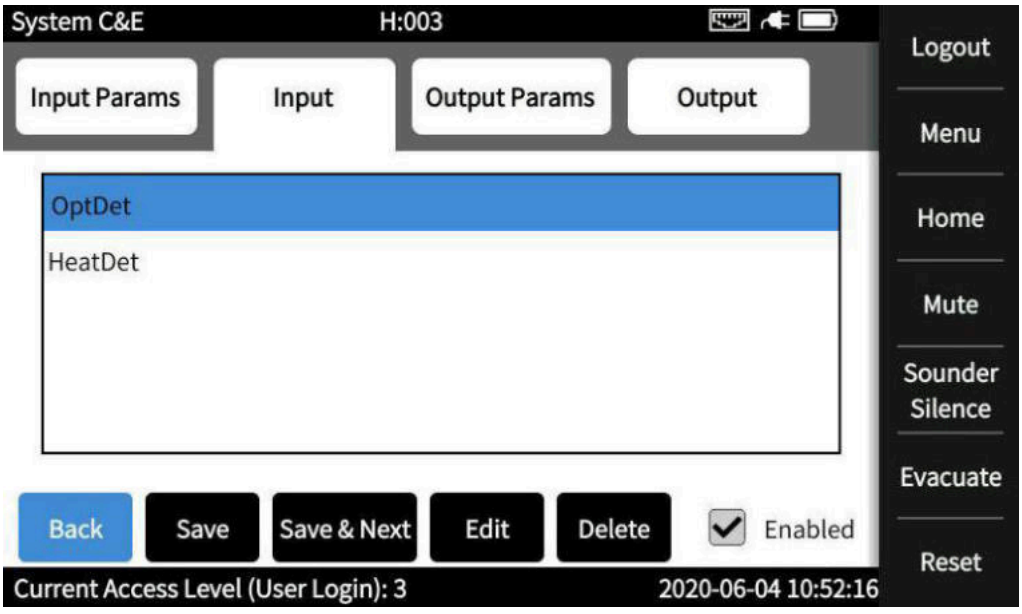


Figure 11-29 Linkage Programming Trigger Condition Setting

Click Edit to configure linkage trigger device. A common trigger input device type is displayed on the left.

You can also select a custom trigger input device type on the right and click Save to save.

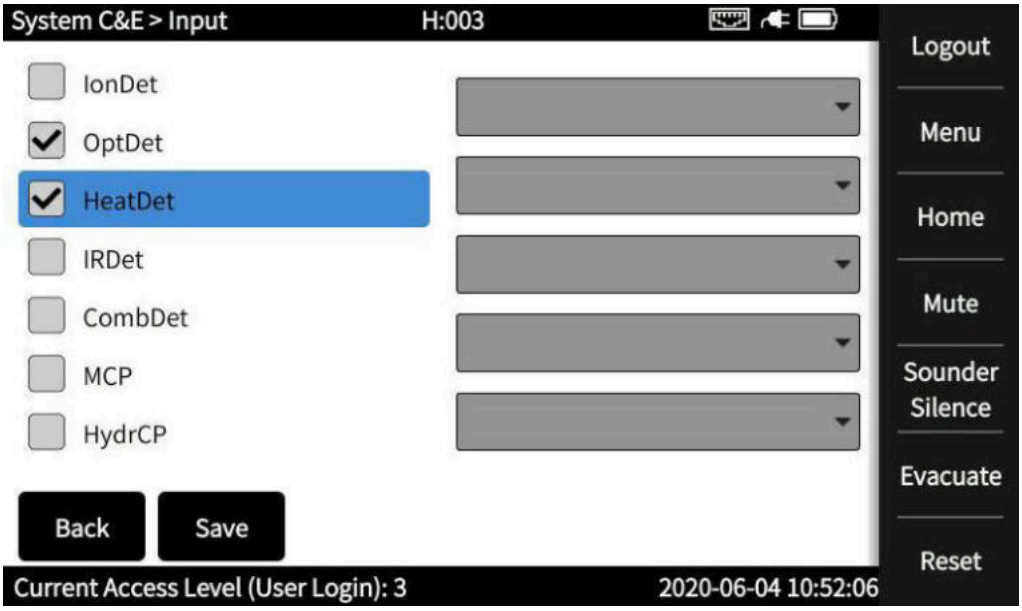


Figure 11-30 Linkage Programming Trigger Condition Setting

- **linkage programming output parameter Settings**

Output Mode	The output module starts or stops
Linkage output delay time	The value ranges from 0 to 600 seconds. When the linkage input condition is triggered, the output module performs an action after the specified delay time is reached

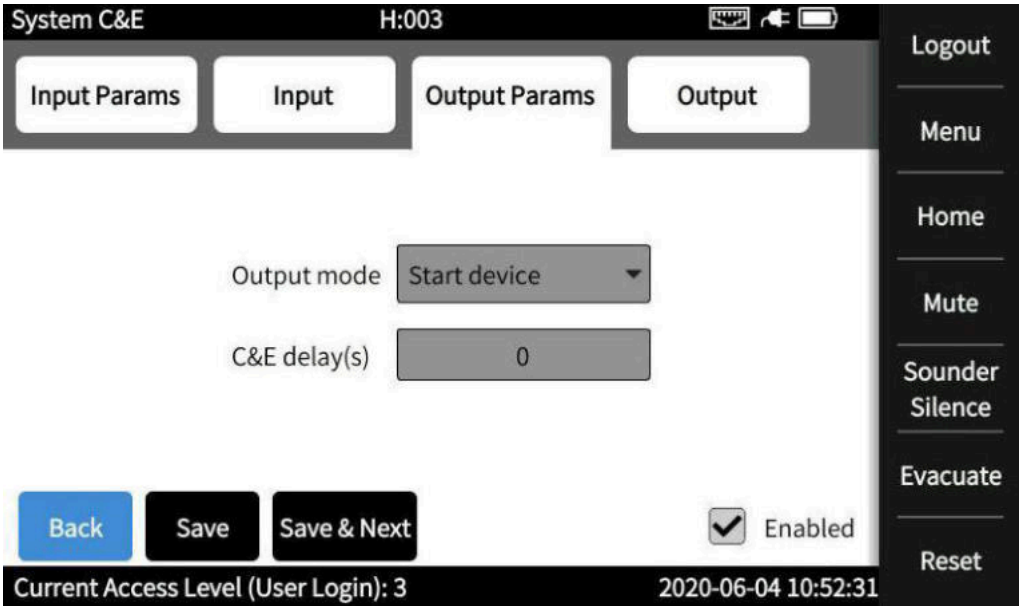


Figure 11-31 Linkage Programming Output Parameter Setting

- **linkage programming output device Settings**

Select the linkage output device of the table and click Delete to quickly delete the linkage output device.

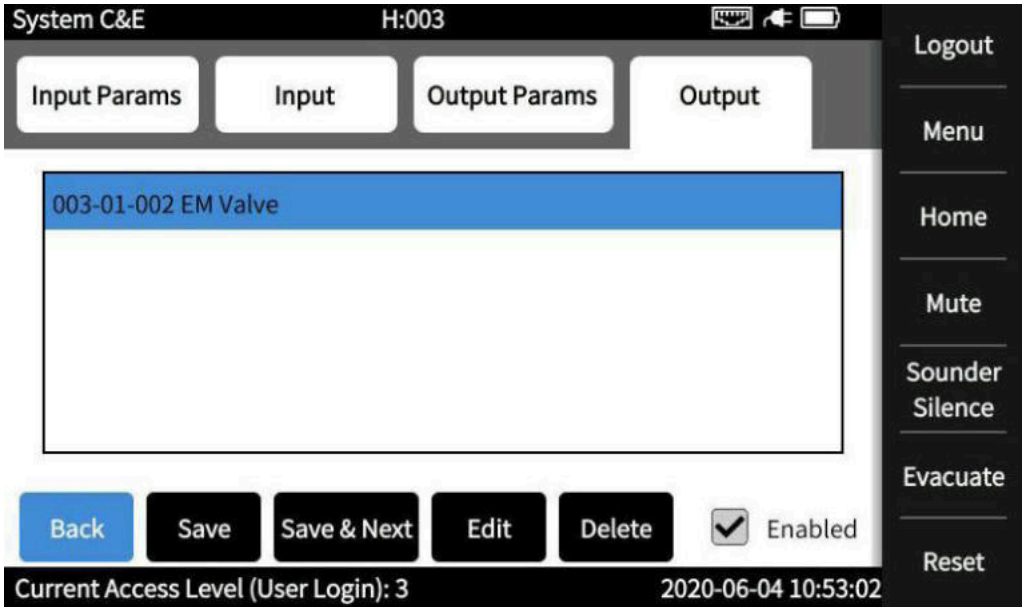


Figure 11-32 Linkage Programming Output Parameter Setting

click Edit to configure linkage output device.

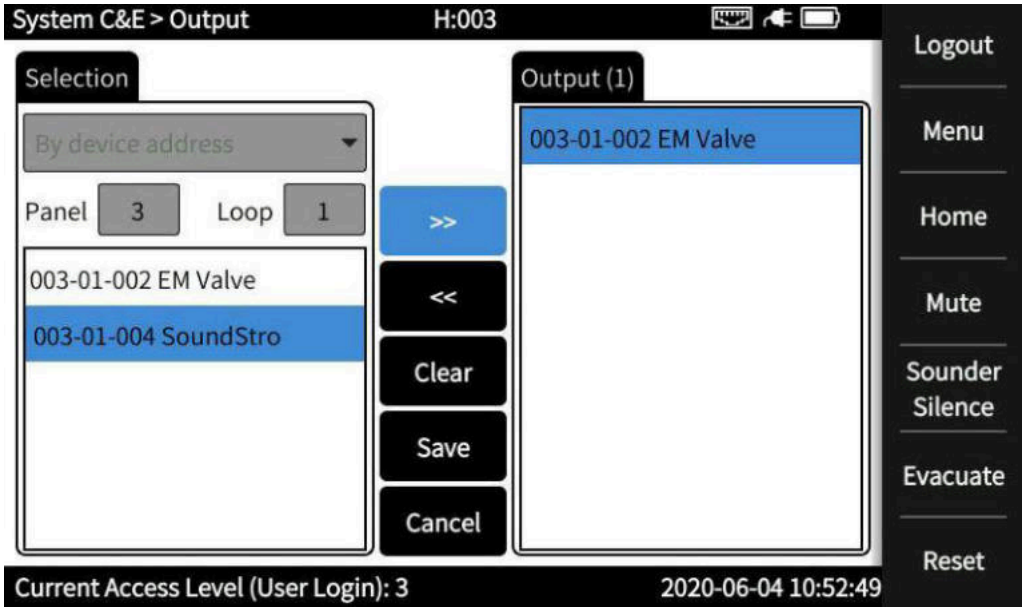


Figure 11-33 Selecting Output Devices

Selecting output devices

The left side is a list of optional output devices, and the right side is a list of configured output devices.

a. Select the optional device on the left and click the button >> to add the device to the output list on the right.

b.Select the output device on the right and click the button << to remove the configured output device.

Click the button Clear to remove all configured output devices.

c. After selection,click Save to save.

Output device selection	Meaning

By device address	Output according to the device address, you can select the specific addressable loop device as the output device;
By device type	Output according to the device type, traversing the device type of the loop device of the machine, the matching device will be output;
By relay	Outputs terminals based on the terminal type of the terminal board. An online terminal board terminal can be used as the output device.

TIPs

❖ **If you want to re-select the linkage output device solution, you need to clear all configured output devices first!**

11.4.2.2 Zone C&E

(1)

Click Add to create linkage, and then select "Zone" as the linkage type. After confirming, go to the details for setting.

After configuring all parameters, click Save to save linkage programming. Click the button Save & Next to save the current linkage program and continue to create a new linkage solution of the same type. Linkage programming consists of four parts: input/output parameters and input/output conditions.

■ **Linkage programming input parameter Settings**

a. Set the number of alarms triggered by linkage to 1-99, or set the number of alarms triggered to AND.

b. Configure the area where the linkage trigger device resides. The linkage is triggered only when a fire alarm occurs on a device in the set area.

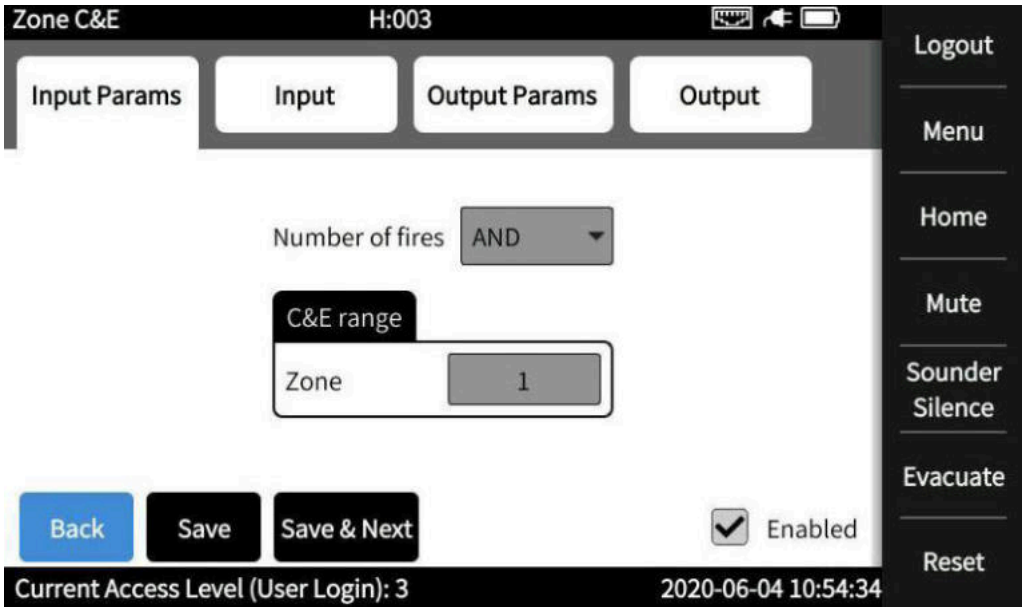


Figure 11-34 Linkage Programming Input Parameter Setting

TIPs

❖ **"AND" relation of the number of fire alarms: The linkage can be triggered by two matching input devices.**

■ **Linkage programming trigger condition Settings**

- Select the linkage input device in the table and click to Delete quickly delete the linkage input device.

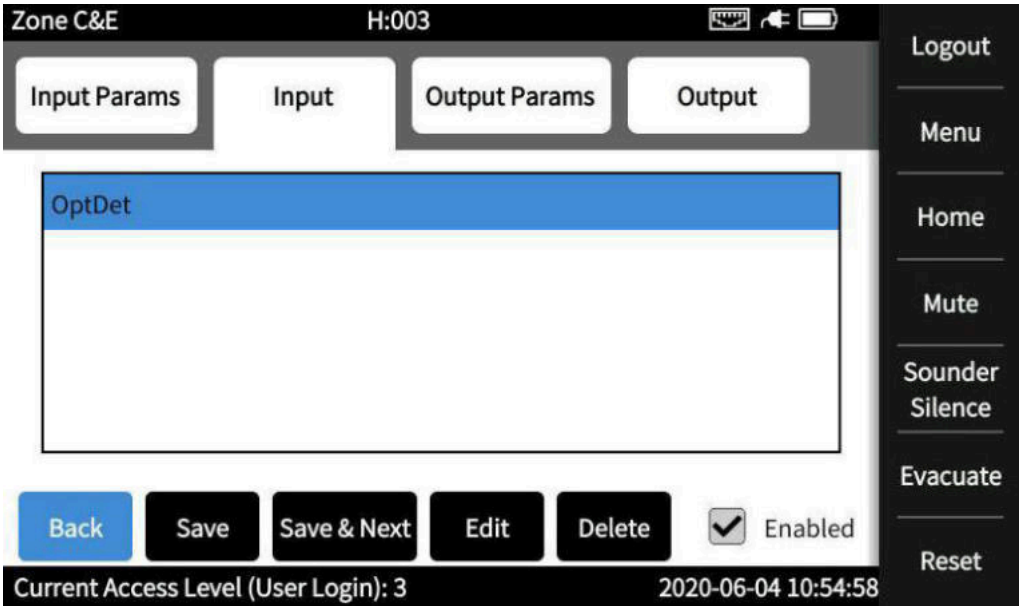


Figure 11-35 Linkage Programming Trigger Condition Setting

Click Edit to configure linkage trigger device. A common trigger input device type is displayed on the left. You can also select a custom trigger input device type on the right and click Save to save.

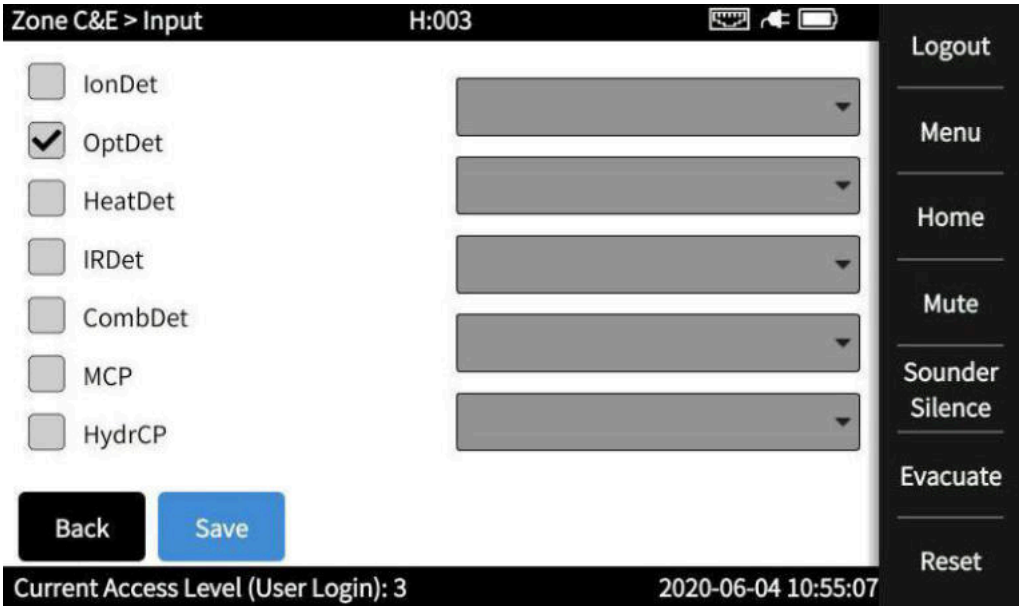


Figure 11-36 Selection of Trigger Input Device

- linkage programming output parameter Settings

Output Mode	The output module starts or stops
Linkage output delay time	The value ranges from 0 to 600 seconds. When the linkage input condition is triggered, the output module performs an action after the specified delay time is reached

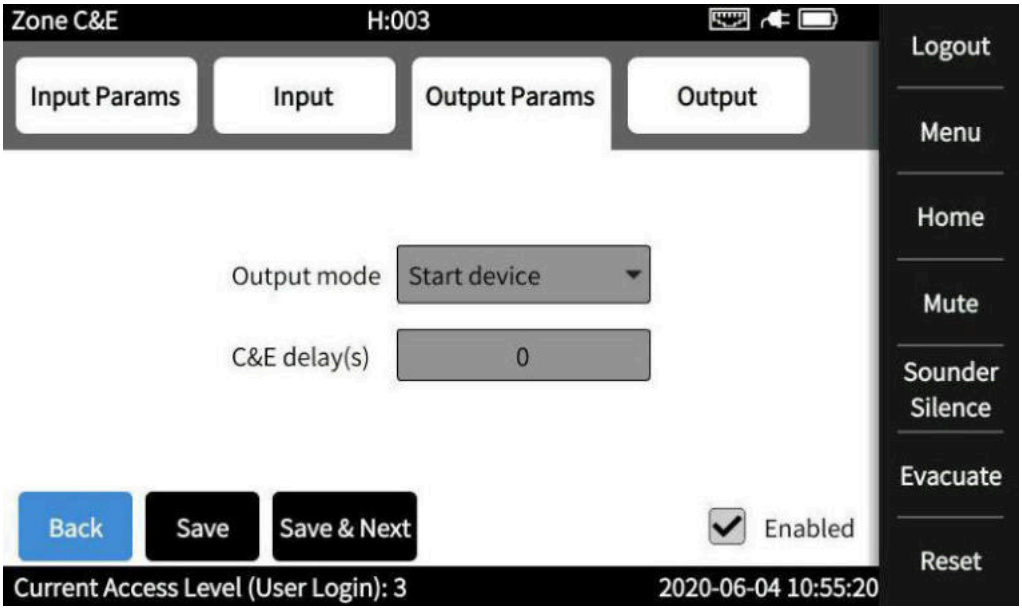


Figure 11-37 Linkage Programming Output Parameter Setting

■ **linkage programming output device Settings**

Select the linkage output device of the table and click Delete to quickly delete the linkage output device.

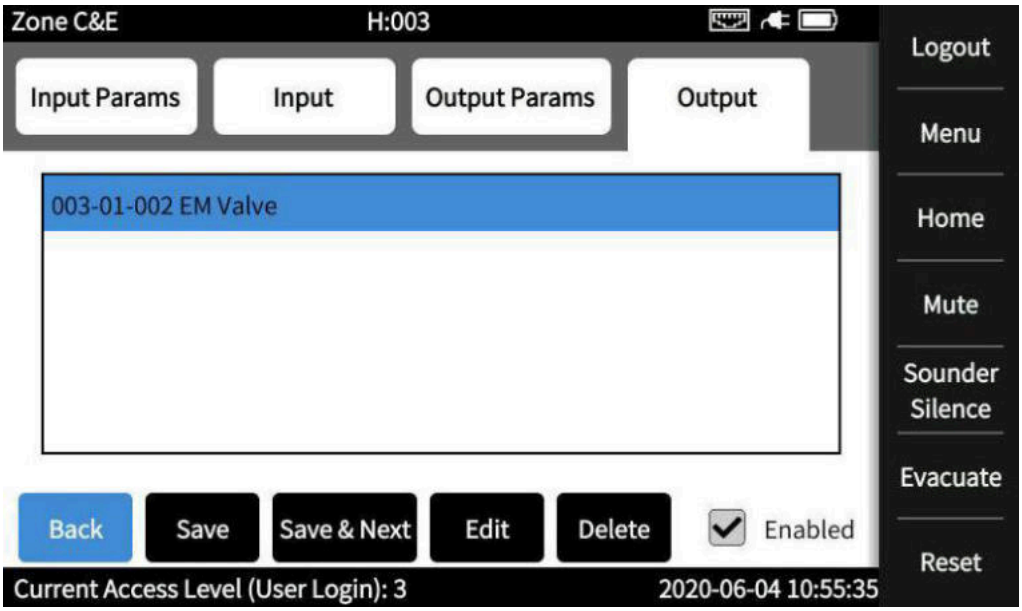


Figure 11-38 Linkage Programming Output Parameter Setting

Click Edit to **configure linkage output device.**

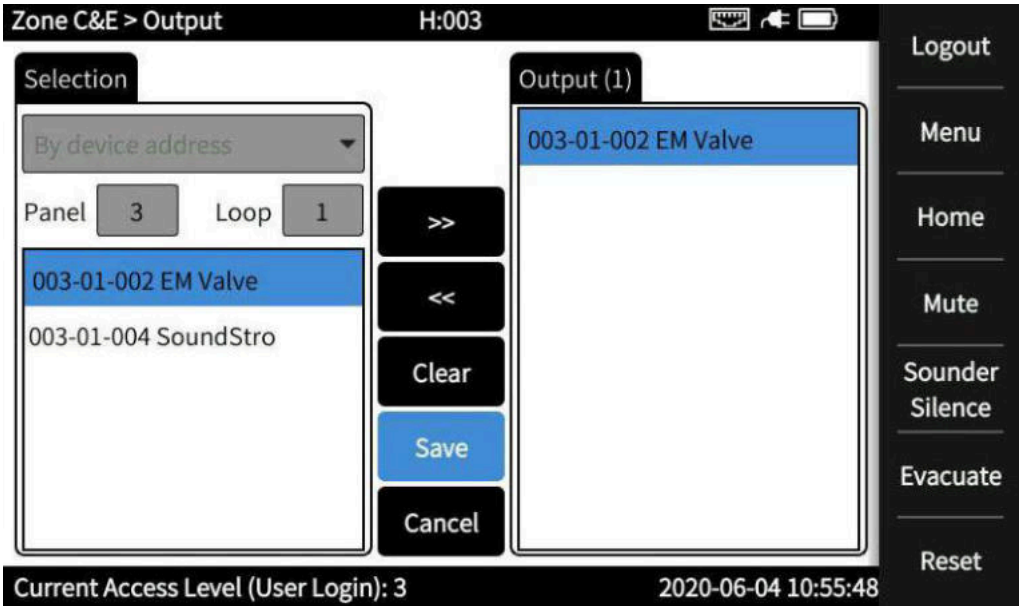


Figure 11-39 Configuring Linkage Output Devices

The left side is a list of optional output devices, and the right side is a list of configured output devices.

a. Select the optional device on the left and click **>>** Button to add the device to the right output list;

b. Select the output device on the right and click Clear Button to remove the configured output device. Click the button **<<** to remove all configured output devices.

c. Click Save to save after selection.

Output device selection	meaning
By device address	Output according to the device address, you can select a specific addressable loop device as the output device.
By device type	Output according to the device type, traversing the device type of the loop device of the machine, the matching device will be output;
By relay	Outputs terminals based on the terminal type of the terminal board. An online terminal board terminal can be used as the output device.

TIPs

- **If you want to select the linkage output device solution again, you need to clear all configured output devices first!**

11.4.2.3 Combined C&E

(1) Click Add to create linkage, and then select "Combined" for linkage type. After confirming, enter the details for setting. After configuring all parameters, click Save to save linkage programming. Click the button Save & Next to save the current linkage program and continue to create a new linkage solution of the same type. Linkage programming consists of four parts: input/output parameters and input/output conditions.

- **Linkage programming input parameter Settings**

Configure the number of alarms triggered by linkage: The number of alarms triggered can only be set to AND.

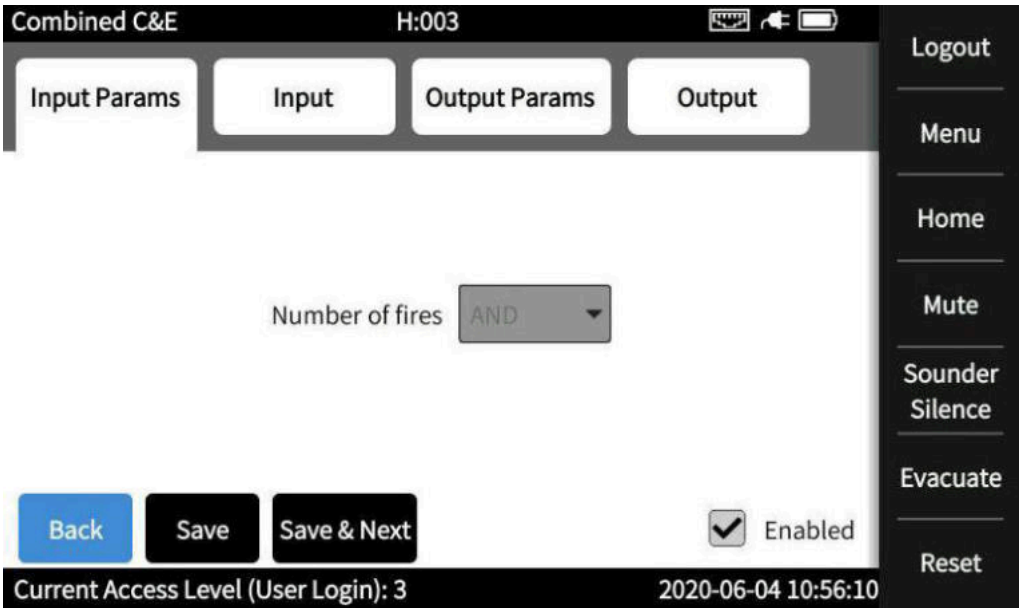


Figure 11-40 Setting linkage programming input parameters

TIPs

- "AND" relation of the number of fire alarms: The linkage can be triggered by two matching input devices.

■ Linkage programming trigger condition Settings

Select the linkage input device in the table and click Delete to quick delete Linkage input Device.

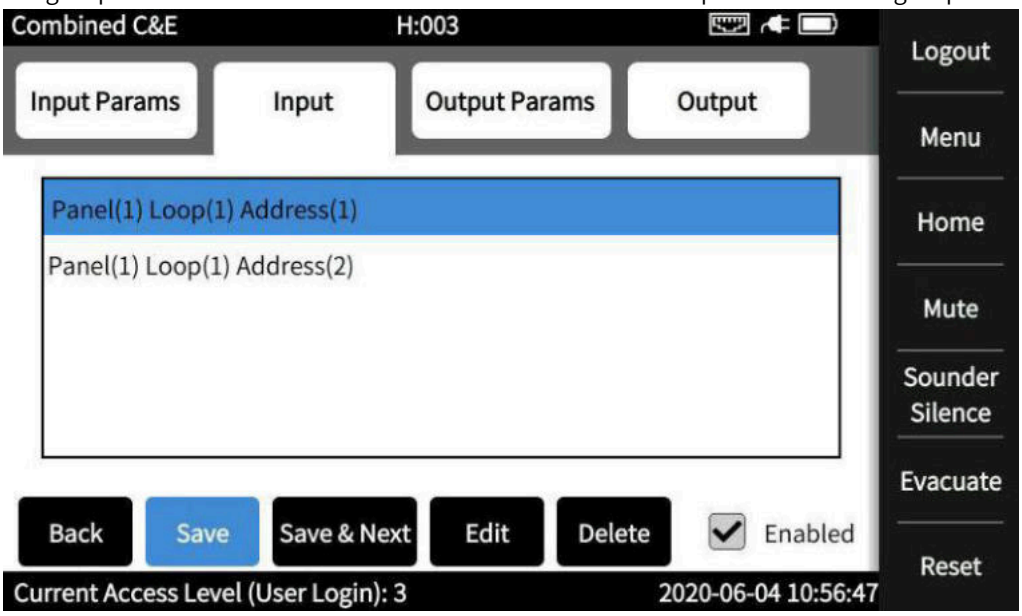


Figure 11-41 Setting linkage programming trigger conditions

Click Edit to configure linkage trigger Device, then click Add to add linkage in the new window to enter the address information of the device, click Delete to delete the selected device information, and click the button Save to save the configuration.

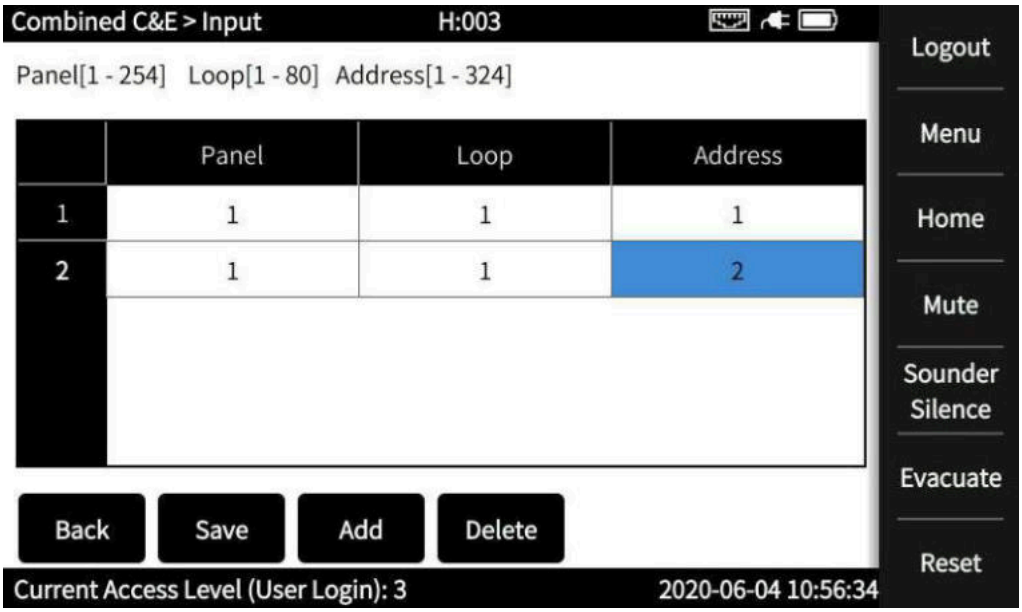


Figure 11-42 Linkage Enter the device address

TIPs

- **The host number ranges from 1-254, the loop number ranges from 1-80, and the address range is 1-255.**

■ **linkage programming output parameter Settings**

Output Mode	The output module starts or stops
Linkage output delay time	The value ranges from 0 to 600 seconds. When the linkage input condition is triggered, the output module performs an action after the specified delay time is reached

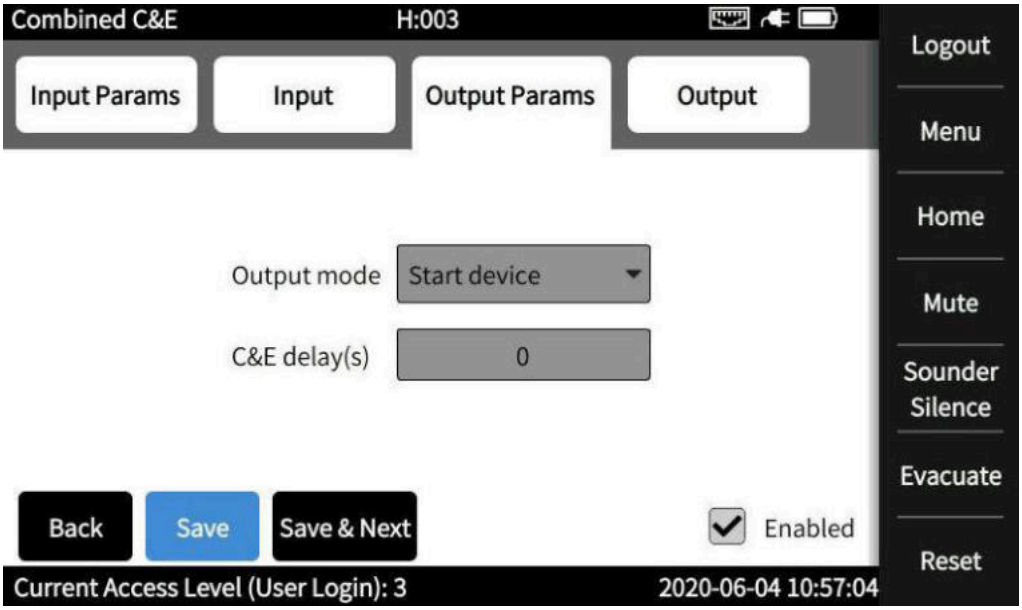


Figure 11-43 Setting linkage programming output parameters

■ **linkage programming output device Settings**

Select the linkage output device of the table and click Delete to quickly delete the linkage output device.

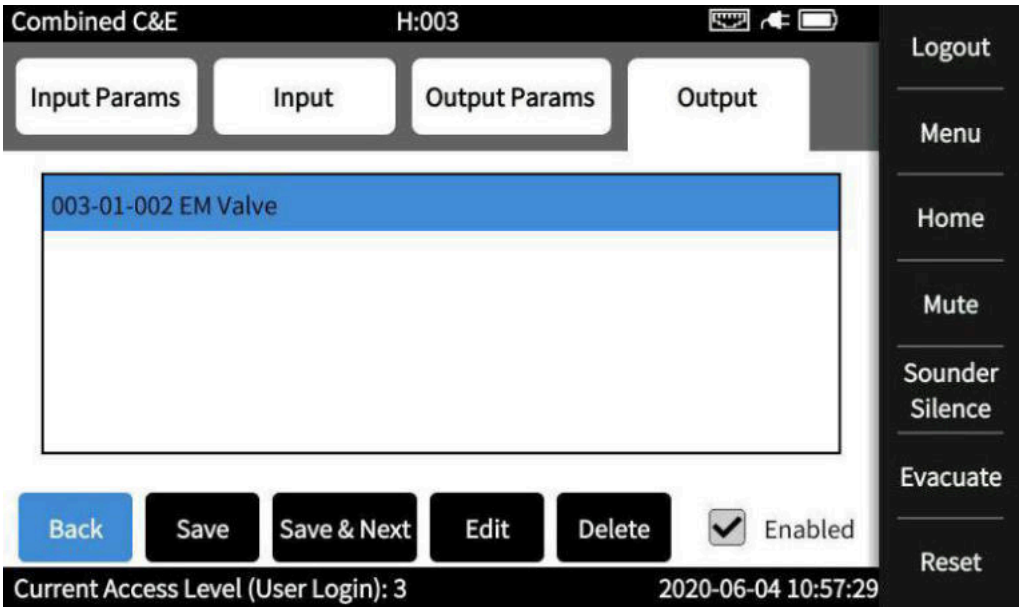


Figure 11-44 Linkage programming output device Settings

Click Edit to **Configure linkage output device.**

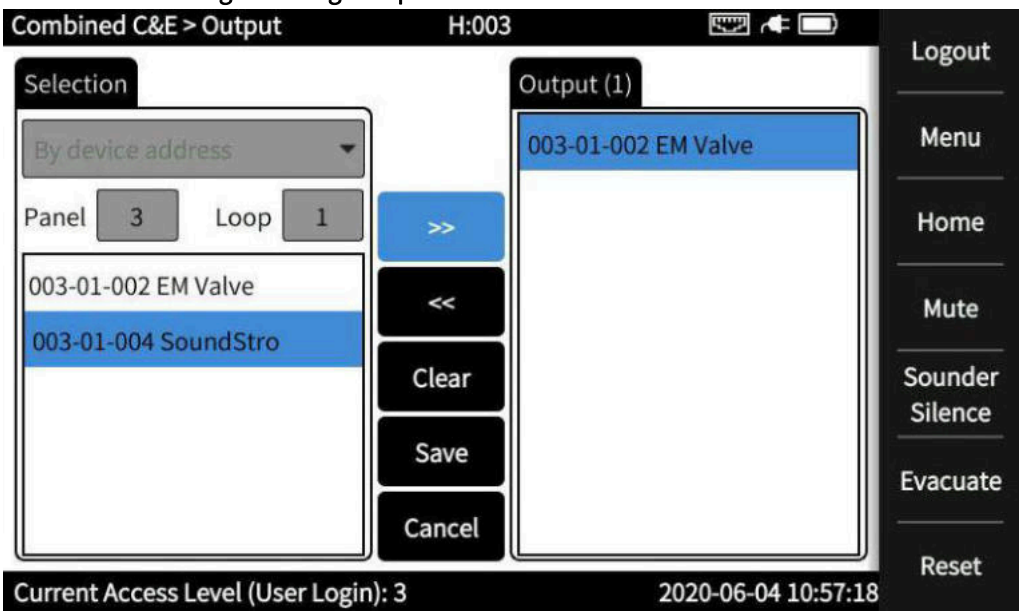


Figure 11-45 Adding a linkage output device

The left side is a list of optional output devices, and the right side is a list of configured output devices.

a. Select the optional device on the left and click the button >> to add the device to the output list on the right.

b. Select the output device on the right and click the button << to remove the configured output device.

Click the button Clear to remove all configured output devices.

c. Click Save to save after selection.

Output device selection	meaning
By device address	Output according to the device address, you can select a specific addressable loop device as the output device.
By device type	Output according to the device type, traversing the device type of the loop device of the machine, the matching device will be output;
By relay	Outputs outputs based on the terminal type of the terminal board. The PROG terminal of the extension terminal board can be used as the output device.

TIPs

- If you want to select the linkage output device solution again, you need to clear all configured output devices first!
- If the output device is set to the terminal board terminal type, the terminal type cannot be found, check whether the extension terminal board is online and whether the terminal type of the extension terminal board is PROG.

11.5 Operation

(1)

Figure 11-46 Operation menu

11.5.1 Device Operation

(1)

TIPs

- Only allows device operations with level 3 permissions!
- It is used only for debugging loop equipment.

■ Simulated fire alarms and simulated feedback

After entering the loop number and address number of the loop device, click the button Test to

simulate the fire alarm or feedback information of the device.

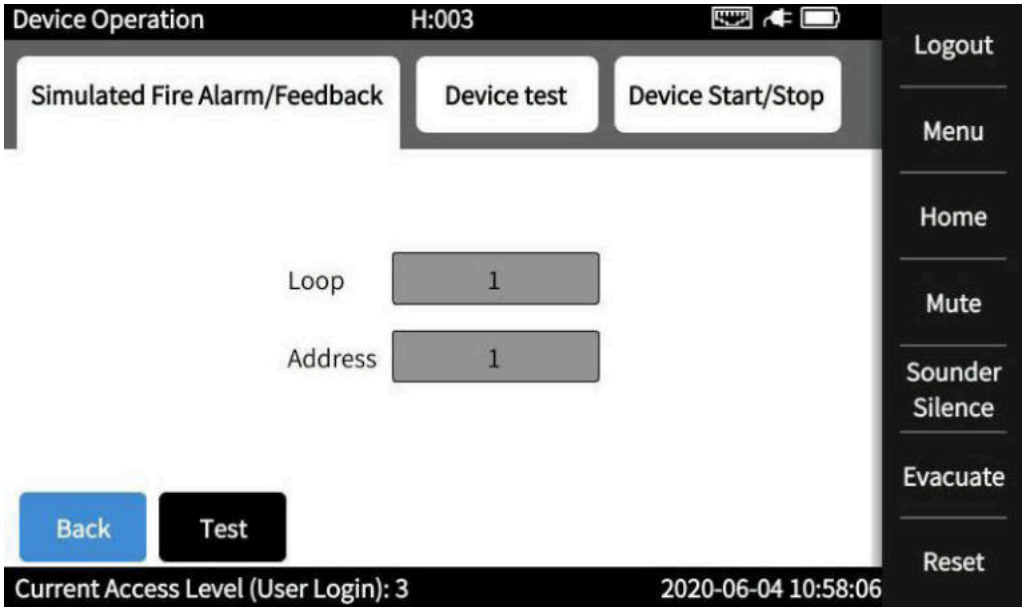


Figure 11-47 Fire alarm/feedback simulation

Notice

- ❖ **Simulated events are not field device responses and are often used for debugging purposes, such as testing linkage trigger conditions.**

■ **Loop equipment commissioning**

View the analog status of any addressable point in real time. After entering the loop number and address number of the loop device, click the button Test to check the address device.

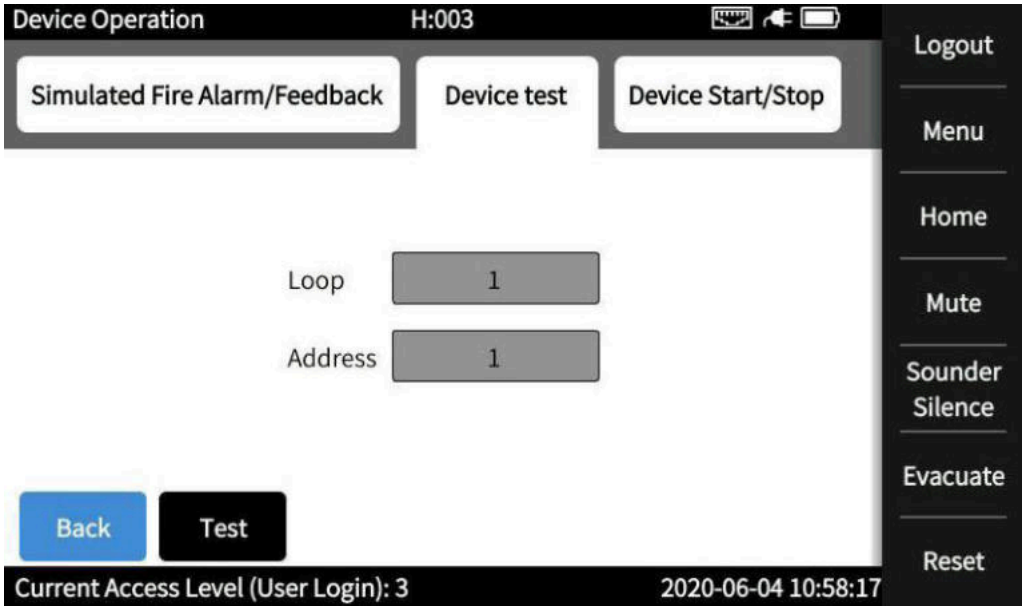


Figure 11-48 Testing loop devices

After clicking Test ,some indicator data and status information of the device will be displayed in the new window.

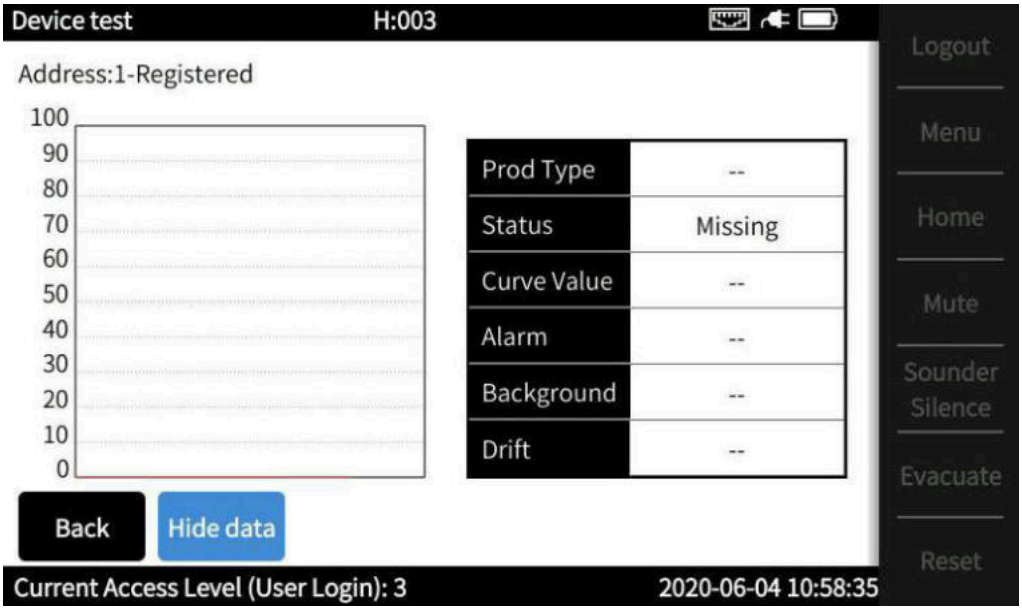


Figure 11-49 Testing the device status

Notice

- ❖ The loop device is not allowed to operate the global operation button during the test!
- ❖ It is used to analyze and locate faults. This screen does not automatically exit until a new event is reported. Therefore, you are not advised to use this screen for a long period of time.

■ Loop device start/stop

The startup modes of loop devices are classified into: action by device address and action by device type. Click the button Start to start the field device, and click the button Stop to stop the field device.

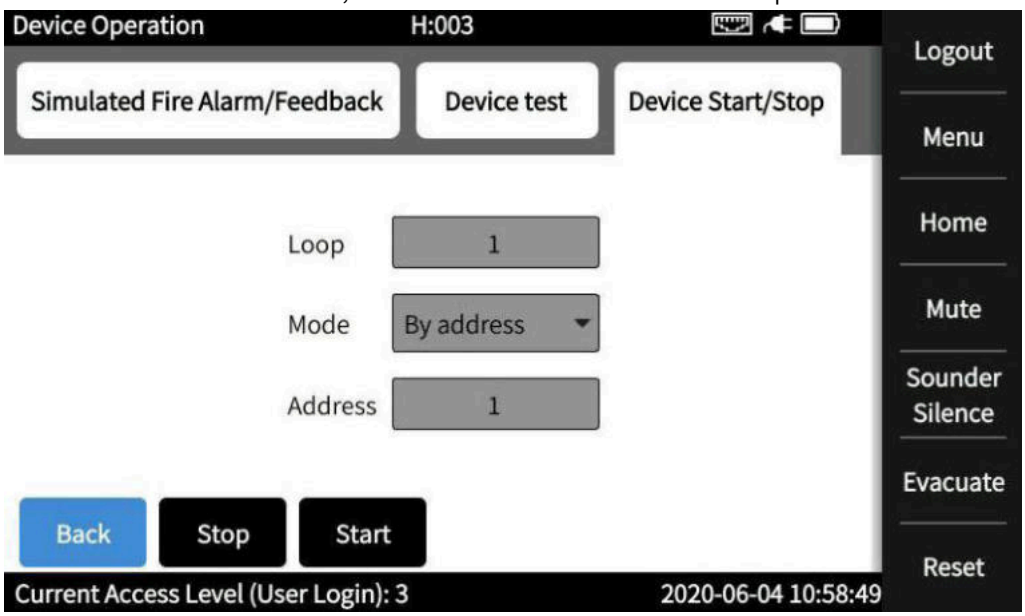


Figure 11-50 Starting/stopping a loop device

11.5.2 Zone Test

(1) 将 Set one or more fire protection zones of the system to the test state. When a fire zone is in test mode, any detector/hand signal activated on that fire zone will only trigger the loop acoustooptic module of that fire zone for a certain period of time (about 5 seconds) and will not trigger the linkage.

■ The total number of regions currently under test is displayed at the top of the Ø window;

- Click the cell under "Test" in the table on the right to test the fire zone or exit the fire zone test;
- Filter all zone information, zone under test, zone not under test or specified zone information through the filter, click the button Check to query and update the table information.

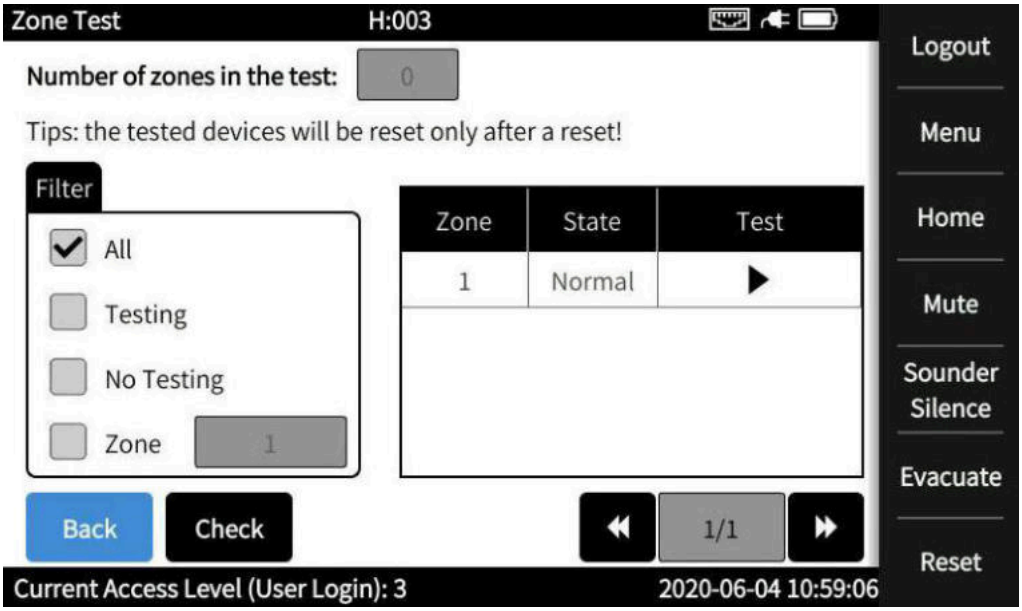


Figure 11-51 Zone Test

TIPs

- ❖ After modifying the zone test status, the device status affected by the zone test may need to be reset after a reset!
- ❖ Shielded or unregistered fire zones cannot be zone tested!

11.5.3 Disable

(1) Shielding Settings shield the fire protection area, loop equipment, loop sound and light and terminals.

TIPs

- ❖ After the mask is set, the status of the device affected by the mask is reset after the controller is reset!

- area shielding
- You can mask an area individually or in batches. After entering the area number, click to Disable mask and then click Re-enable to cancel the mask.

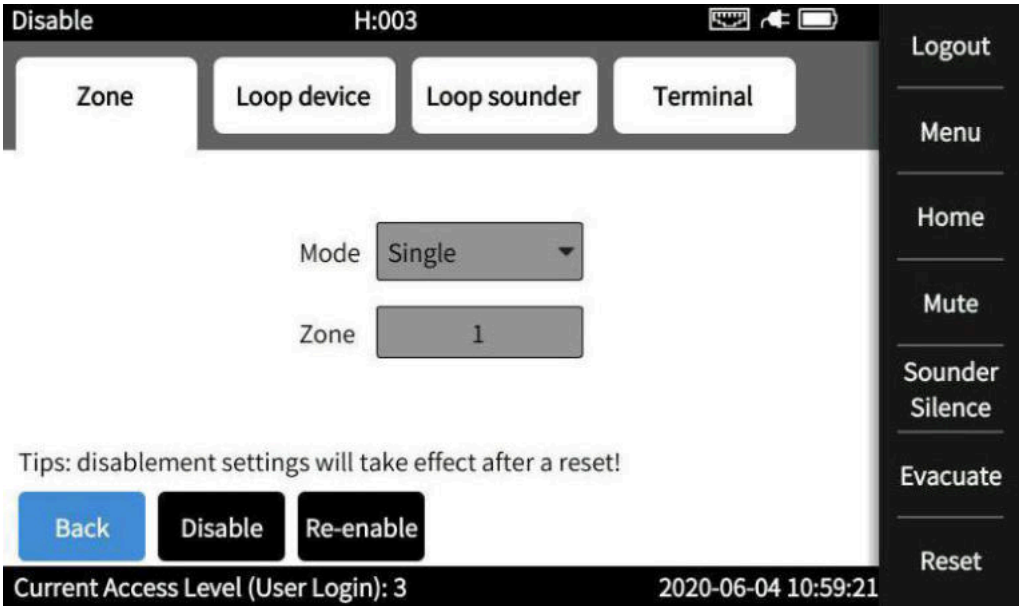


Figure 11-52 Area masking

■ **Loop device shielding**

You can mask the local loop device individually or in batches. After entering the loop number and address number of the loop device, click Disable to mask and click Re-enable to cancel the mask.

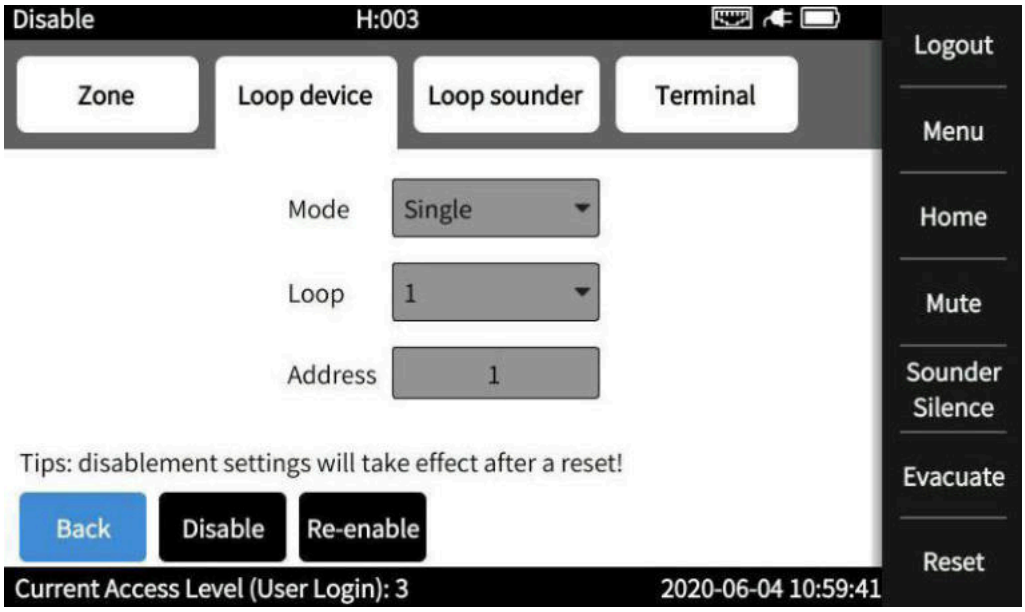


Figure 11-53 Shielding loop devices

TIPs

- Level 2 permission, if the number of input devices in an area is greater than one, the input devices in the entire area cannot be masked at one time through circuit device batch masking. If you want to mask the input devices in the entire area, you can group the mask range and mask the input devices multiple times. The same applies to disabling the mask.
- Level 2 permissions do not allow multiple output modules to be masked or unmasked in batches, only in a single step.
- Acousto-optical devices cannot be shielded through loop device shielding.

■ **loop acousto-optic shielding**

Shielding or unshielding loop acousto-optic devices.

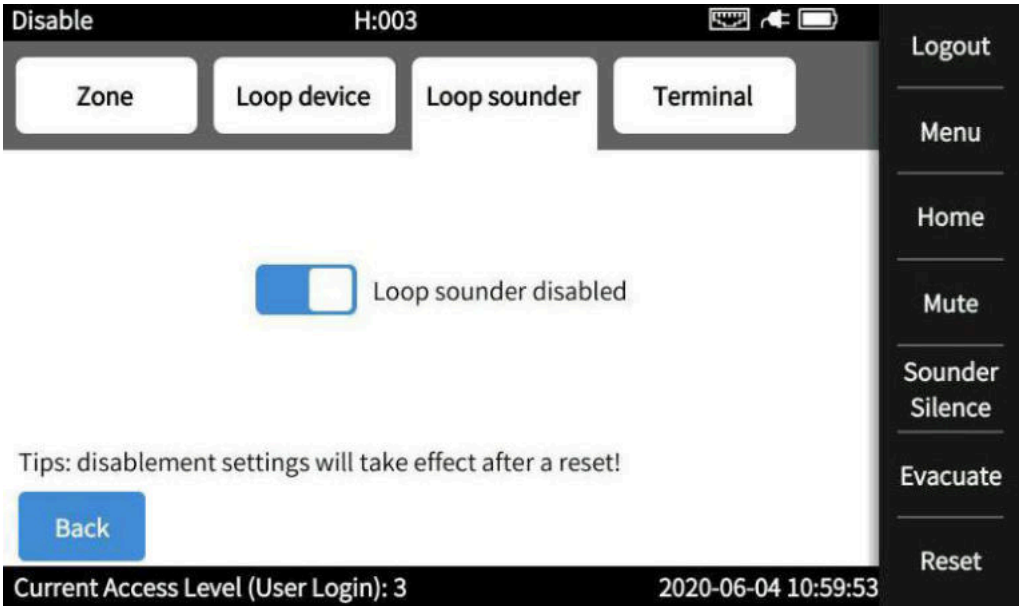


Figure 11-54 Loop acoustro-optical shielding

TIPs

- Sound and light equipment includes: Sounder (Sounder), optical equipment (Strobe), sound and light equipment (SoundStro).

■ terminal shielding

Shielding terminal board or extending terminal board terminals. After the terminal board type is selected on the left, the terminals that can be masked on the terminal board and the terminal shielding status are loaded on the right. Click the table cell to mask or unmask the corresponding terminal.

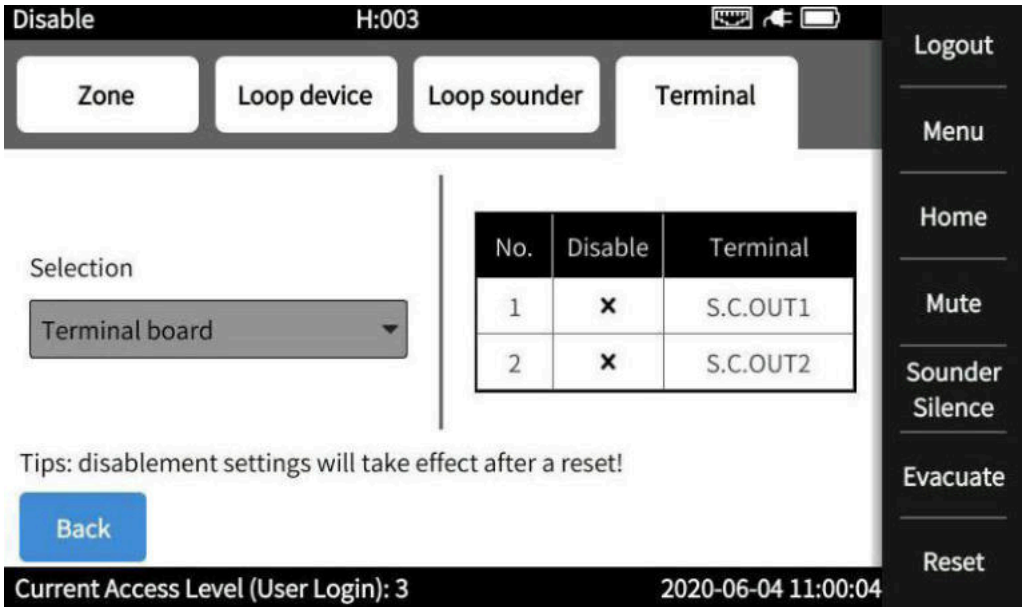


Figure 11-55 Terminal shielding

TIPs

- The configuration is loaded only when the extension terminal board is online and the type of the extension terminal board is an acousto-optic extension board.

11.5.4 Loop Learn

(1) Automatically detect the detector and module in the loop, select the loop expansion card to be detected, and then click the button OK to start the automatic detection, click the button Cancel to cancel the detection.

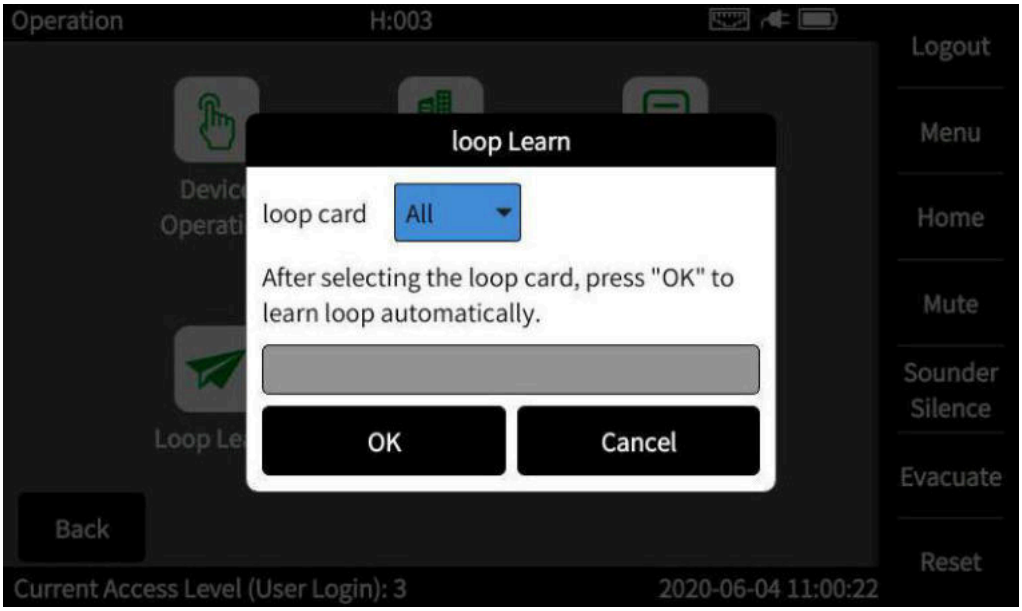


Figure 11-56 回路自动登录

After the automatic detection is completed, the number of each loop Detector and Module before and after detection will be displayed. Click the button Save to pre-configure the device and register it in the "Detector/Module" configuration.

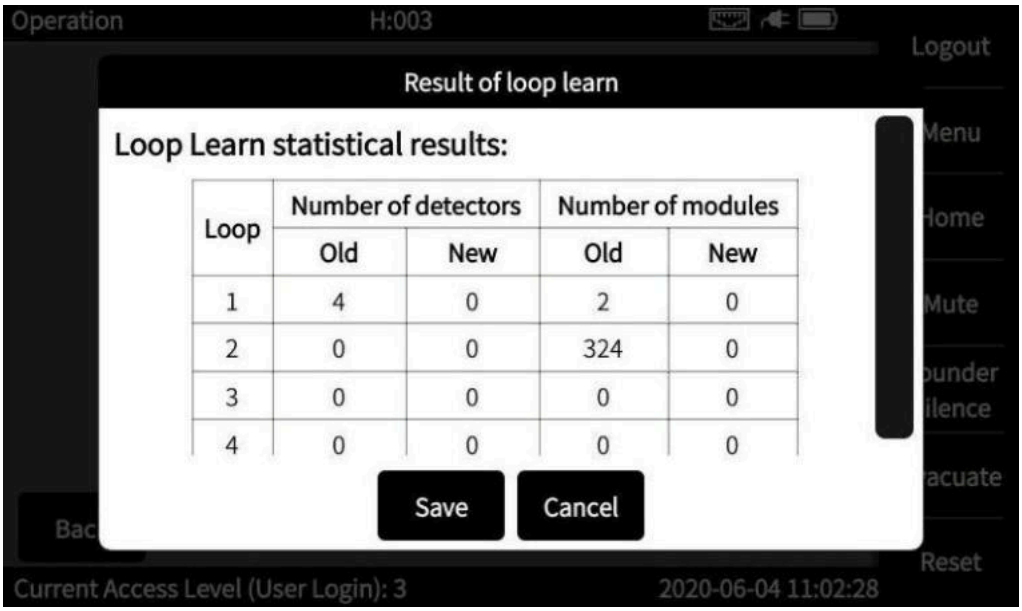


Figure 11-57 Automatic login result

TIPs

❖ **Only allows operations with level 3 permissions!**

Notice

❖ The parameters in the Detector/Module configuration will be changed after you click the button

Save to save, so be careful before saving.

11.5.5 Panel Test

(1) The self-test function of the machine. During the self-test, the controller will automatically test whether the sound, light and screen display of the host buzzer are normal. After the screen color test is completed, the controller will enter the screen touch test, which requires human touch and click the screen three times for simple interactive test. Screen touch interaction test Normal: After a finger click on the screen, the screen color will change.

Caution

- **This machine self-check process will not handle any alarm events, please do the self-check operation at the appropriate time!**

11.5.6 Check

(1) Check and statistical information of all devices in the system, including basic system information, peripheral equipment information, loop equipment information, loop communication quality and network communication quality.

TIPs

- **Only allows operations with level 3 permissions!!**

■ **Basic system information**

Host node number, networking type, number of area light boards, number of loop expansion cards, number of key boards, number of printers.

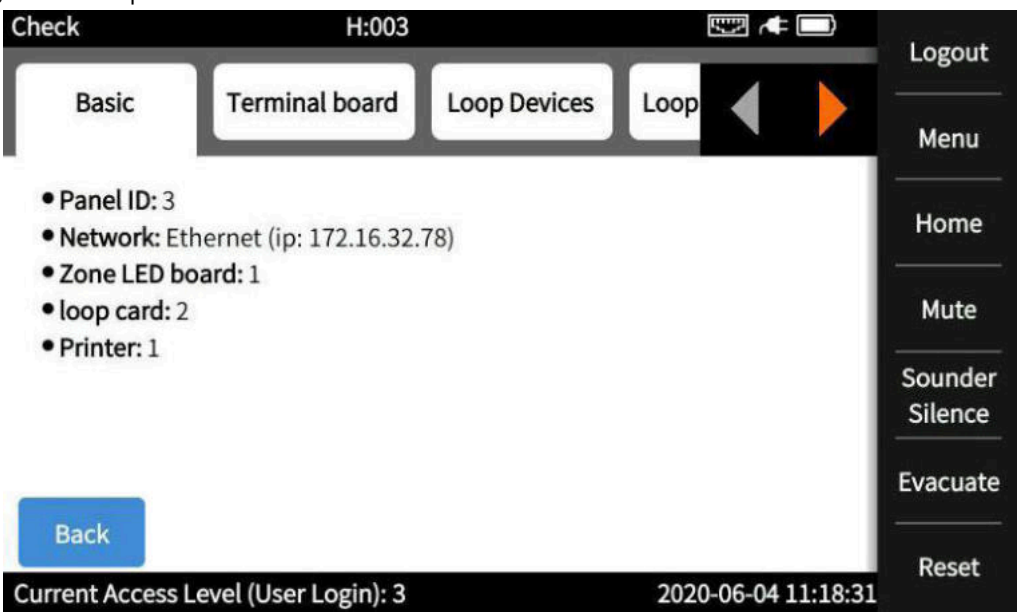


Figure 11-58 Basic system information

■ **Indicates that the extension terminal board is online**

Displays the online status of the extension terminal board and the type of the terminal.

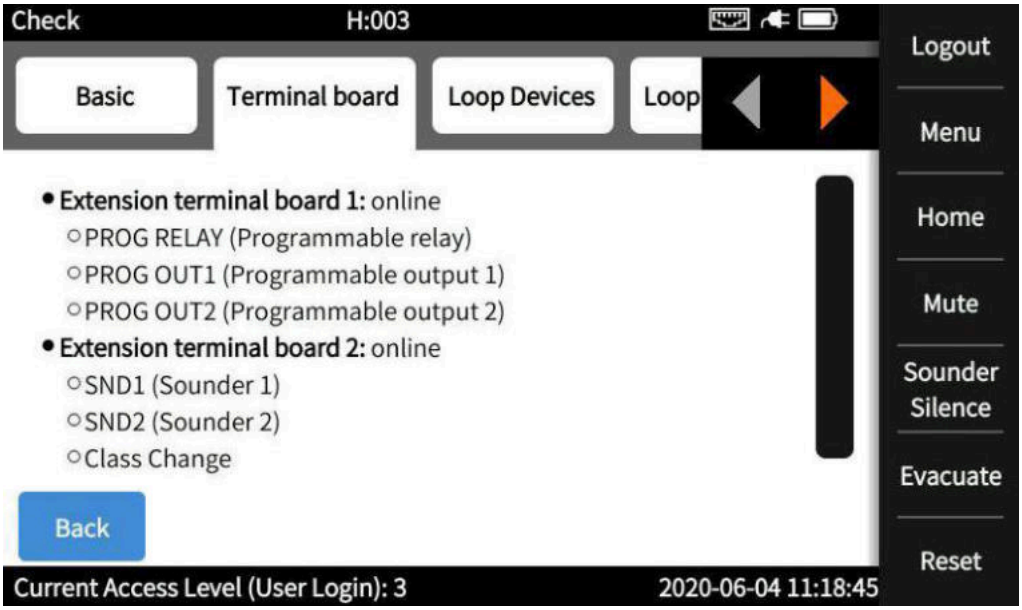


Figure 11-59 Expanding terminal board information

■ **Loop device status statistics**

Total number of registered devices, normal devices, faulty devices, and shielded devices (excluding acousto-optical devices).

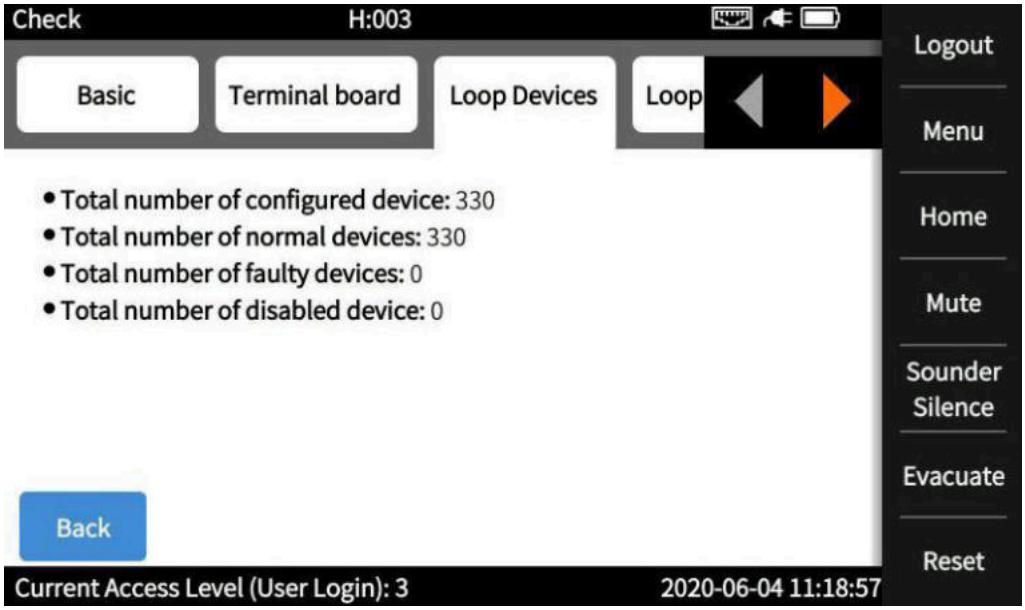


Figure 11-60 Loop device status statistics

■ **Loop device status details**

Collect statistics on the total number of registered, configured, normal, faulty, and shielded devices of different device types. Click buttons  and buttons  to turn the page.

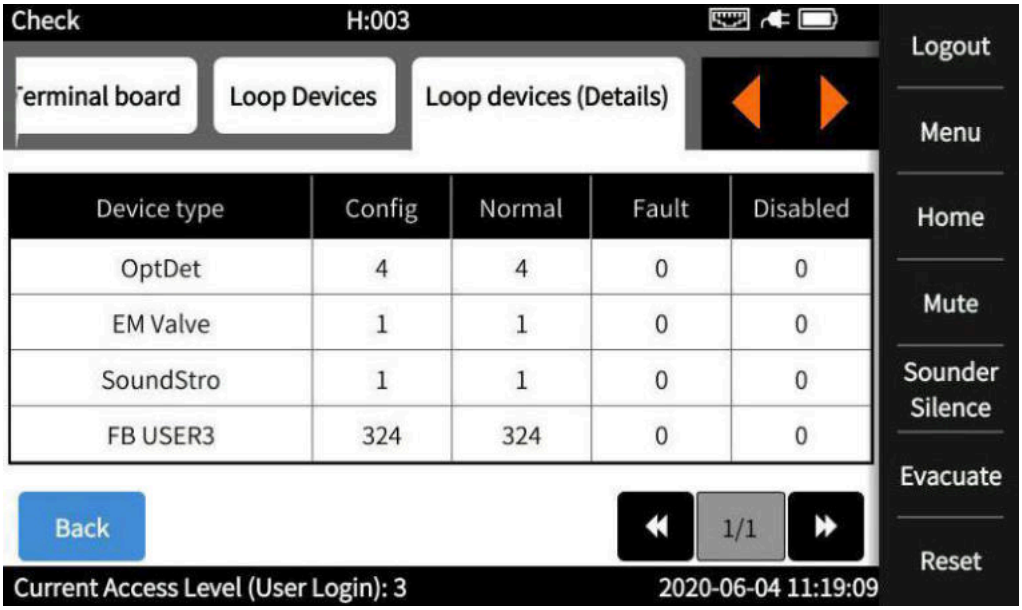


Figure 11-61 Details about the loop device status

- **Check the loop communication quality**

Enter the loop number you want to query, and then click the button Check to query the communication quality of the loop.

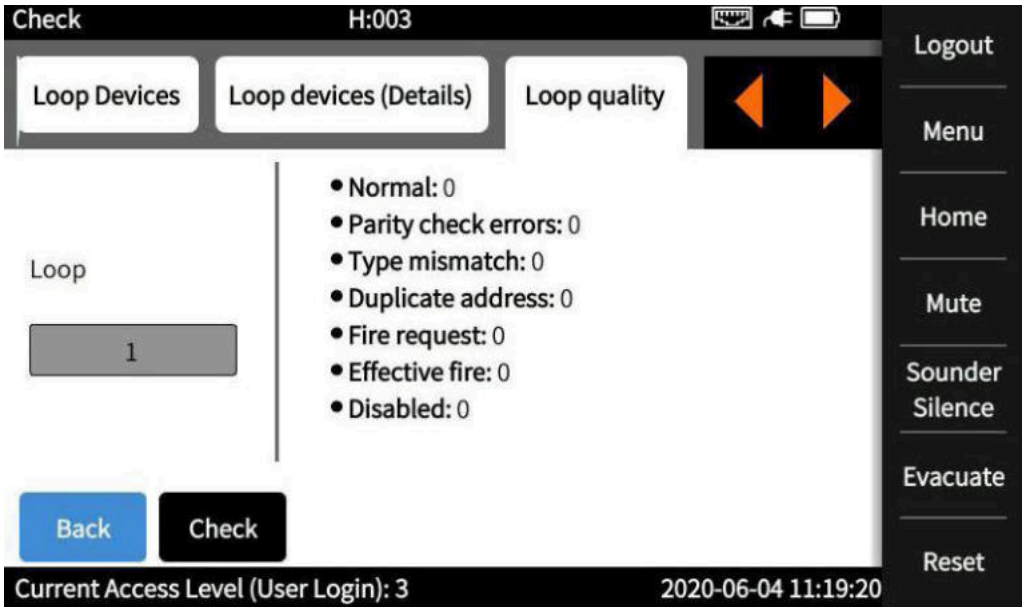


Figure 11-62 Checking loop communication quality

- **CAN network communication quality**

Statistics CAN network communication quality information.

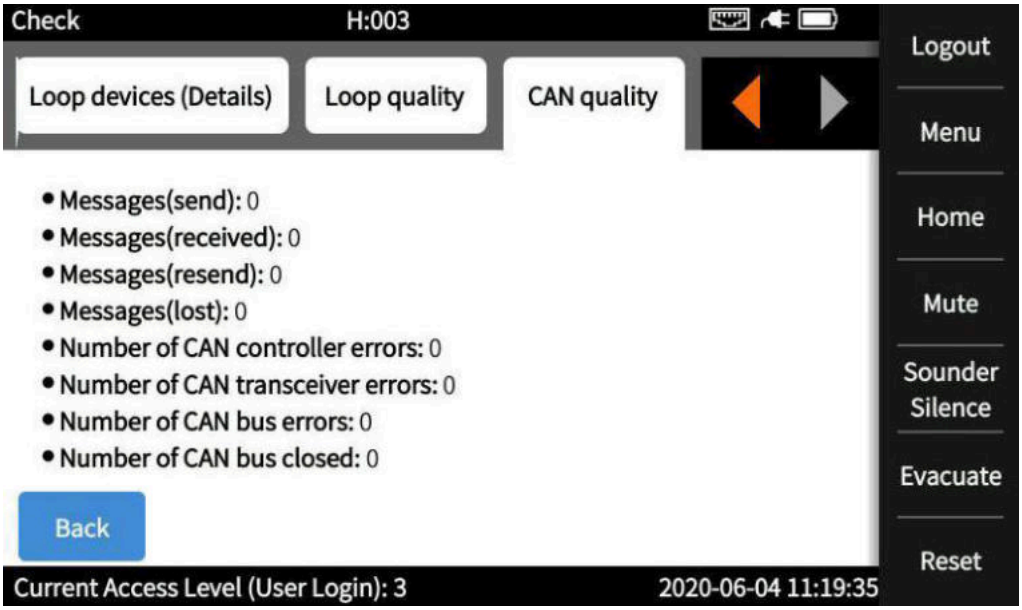


Figure 11-63 CAN network communication quality check

11.6 Records

(1) All kinds of historical information records of the system can be queried, including fire alarm, linkage, fault and operation-related messages. Each subentry can access a maximum of 10,000 history records. When the total number of historical information exceeds 10000, the system automatically updates the historical information.

Figure 11-64 History Record menu

11.6.1 Fire Records

(1)
- displays all fire alarm history records by default, which can be viewed by turning the page in the lower right corner;
- Click Clear to delete all fire history records (deleted messages at level 2 are still visible at level 3);
- Click Print to print the fire history of the specified serial number;

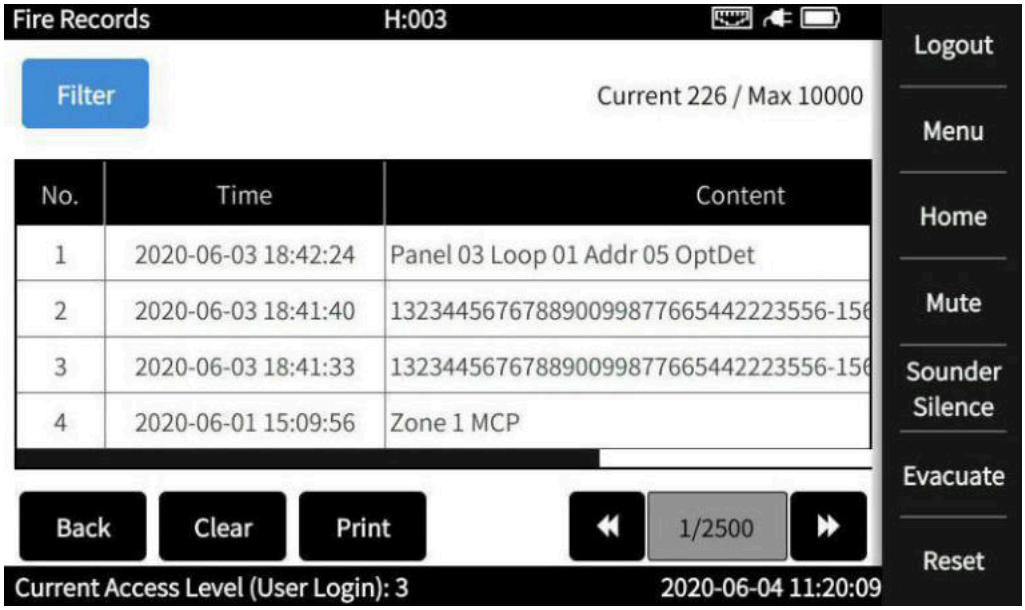


Figure 11-65 Fire alarm duration record information

Click Filter to filter and filter the information.

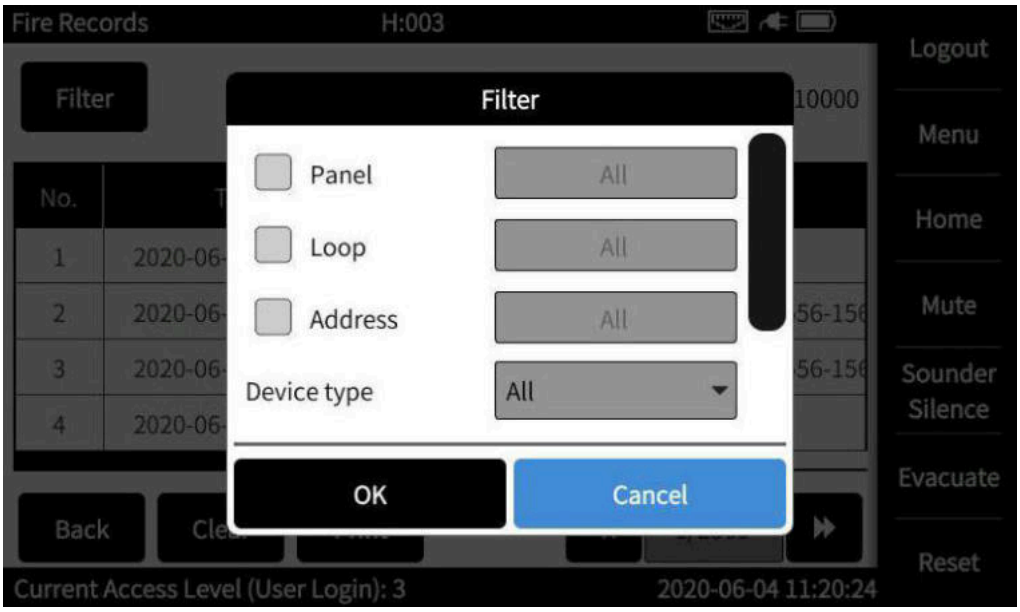


Figure 11-66 Information filtering and filtering

Notice

- ❖ You are not advised to clear records unless necessary. Because historical records are important data for system maintenance, the historical records adopt the cyclic recording method, and the latest 10,000 records are always saved, so that the storage capacity is not exceeded and the record cannot be recorded.

11.6.2 Fault Records

(1)
- ■ displays all fault history records by default. You can turn the page in the lower right corner to view them;
- ■ Click Clear to delete all fault history (deleted messages at level 2 are still visible at level 3);
- ■ Click Print to print the fault history in the specified serial number.

■ Click Filter to filter and filter the information.

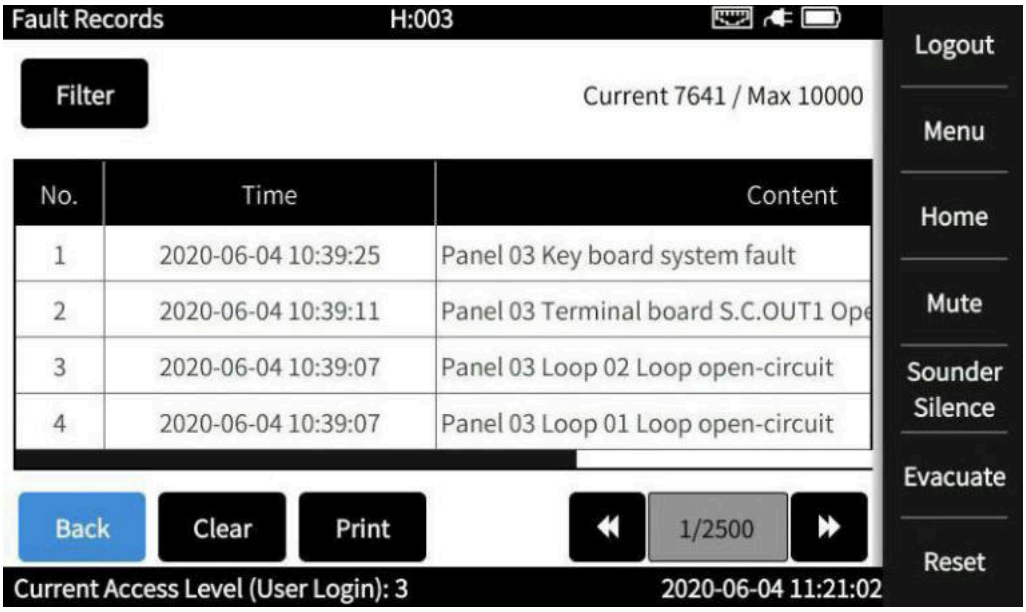


Figure 11-67 Fault history information

Notice

❖ You are not advised to clear records unless necessary. Because historical records are important data for system maintenance, the historical records adopt the cyclic recording method, and the latest 10,000 records are always saved, so that the storage capacity is not exceeded and the record cannot be recorded.

11.6.3 C&E Records

(1) ■ displays all linkage historical records by default. You can click the page in the lower right corner to view them.

■ Click Clear to delete all linkage history (deleted messages at level 2 are still visible at level 3);

■ Click Print to print the linkage history in a specified serial number.

■ Click Filter to filter and filter the information.

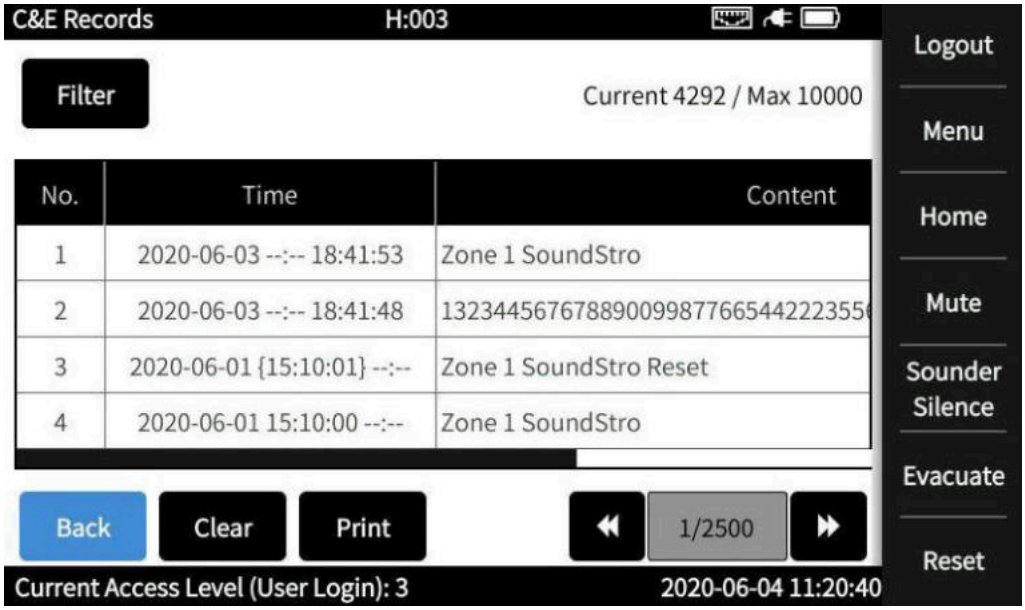


Figure 11-68 Union history information

Notice

- ❖ **You are not advised to clear records unless necessary. Because historical records are important data for system maintenance, the historical records adopt the cyclic recording method, and the latest 10,000 records are always saved, so that the storage capacity is not exceeded and the record cannot be recorded.**

11.6.4 Operation Records

(1) ■ displays all operation historical records by default. You can click the page in the lower right corner to view them.

■ Click Clear to delete all action history (deleted messages at level 2 are still visible at level 3);

■ Click Print to print the operation history in a specified serial number.

■ Click Filter to filter and filter the information.

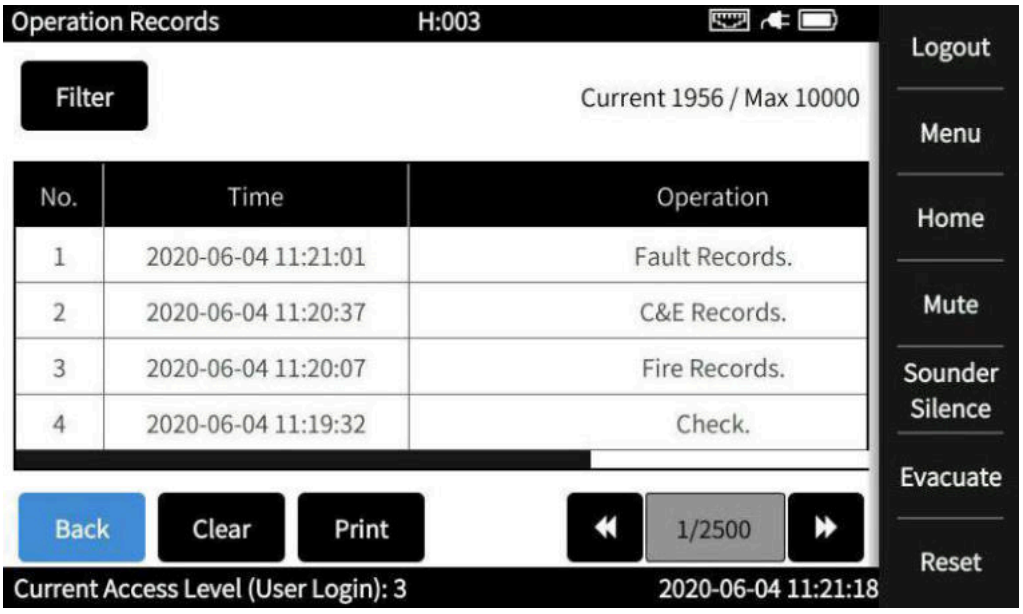


Figure 11-69 Operation history information

Notice

- You are not advised to clear records unless necessary. Because historical records are important data for system maintenance, the historical records adopt the cyclic recording method, and the latest 10,000 records are always saved, so that the storage capacity is not exceeded and the record cannot be recorded.

11.7 Maintain

(1)

Figure 11-70 Maintain menu

11.7.1 Coniguration

(1) After entering the interface, the controller will automatically detect the online status of the USB flash drive and the configuration file on the USB flash drive.

TIPs

- Only allows operations with level 3 permissions!

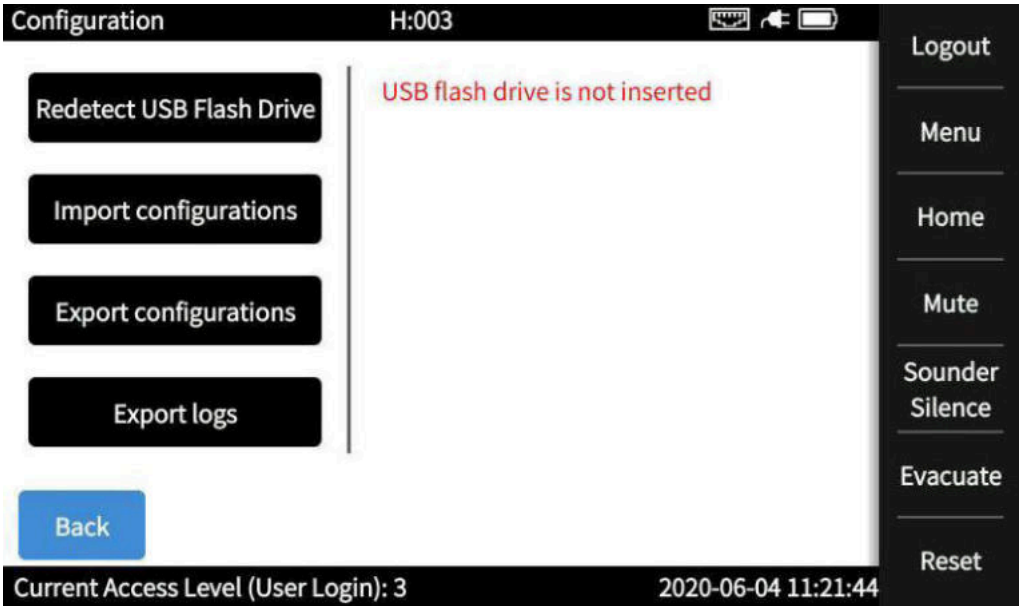


Figure 11-71 Configuration screen

■ **Redetects the USB flash drive**

If the USB flash drive is inserted correctly but "USB flash drive is not inserted" is displayed, click the Redetect USB Flash Drive button to detect the USB flash drive again.

■ **Loads the configuration file**

Click the Import Configurations button to import the configuration file. The system has four configuration files, namely, building.db, host-db, linkage. db, and loop. DB. To distinguish the configuration files of different host nodes, the host node number prefix is added to the file. For example, the configuration file of host 2 is as follows: db, 2_host-db, 2_linkage.db, and 2_loop.db are identified by the controller only when the current host node number of the controller matches the node number that prefixes the configuration file.

TIPs

- **Save the configuration file to the root directory of the USB flash drive.**
- **If fewer than four configuration files are imported, only the existing configuration files are imported.**
- **The configuration file automatically restarts after being imported. Please check whether you need to back up the configuration file before importing it.**

Notice

- **Before importing configurations, be aware that you cannot import configuration files of different products into this controller. This may cause unexpected errors on the controller!**

■ **Export the configuration file**

Click the Export Configurations button to export the system configuration file. The system has four configuration files, namely, building.db, host-db, Links.db, and loop.db. To distinguish the configuration files of different host nodes, the file is prefixed with the host node number. For example, the configuration file of host number 2 is 2_building.db, 2_hoste. db, 2_linkage.

■ **Exports historical records**

Click Export logs to export the historical records. The system has four configuration files: fault_log.txt, fire_log.txt, linkage_log.txt, and operation_log.txt. To distinguish the configuration files of different host nodes, the configuration files are prefixed with host node numbers. For example, the configuration files of host 2 are 2_fault_log.txt, 2_fire_log.txt, 2_linkage_log.txt, and 2_operation_log.txt.

11.7.2 Upgrade

(1) The Upgrade interface lists the modules that can be upgraded online, the current product version, the unique ID of the product, and the online status. The cells under the last column of "upgrade" in the operation table can upgrade the corresponding modules separately. Click the Batch button to batch upgrade some modules that support batch upgrade, and click the Update loop card info button to update the information of all loop expansion cards.

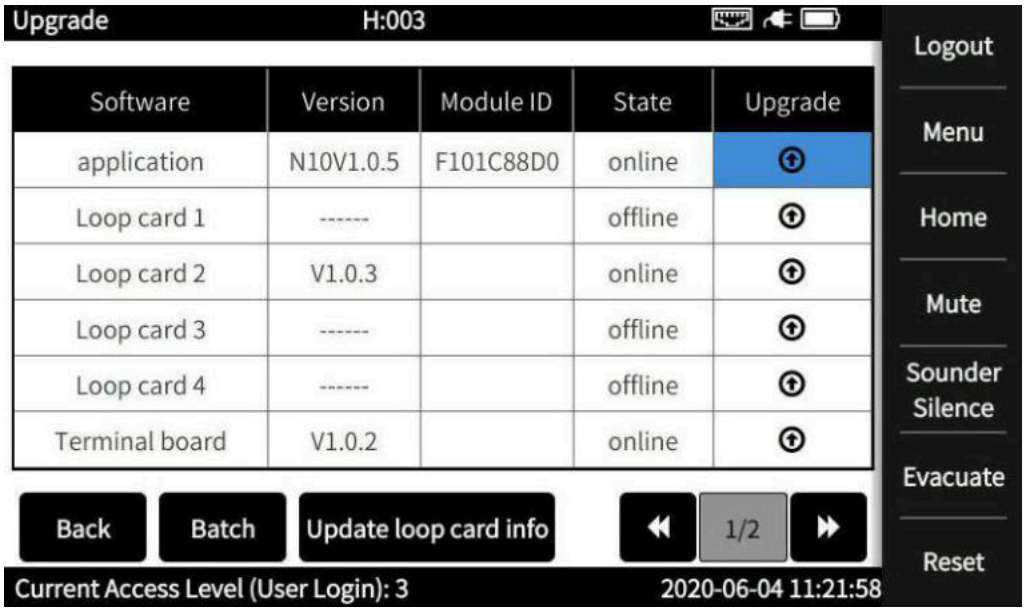


Figure 11-72 Online upgrade

TIPs

❖ **Only allows operations with level 3 permissions!**

11.7.3 Factory Reset

(1) On this screen, you can clear all system Settings and historical records, and restore the factory Settings.

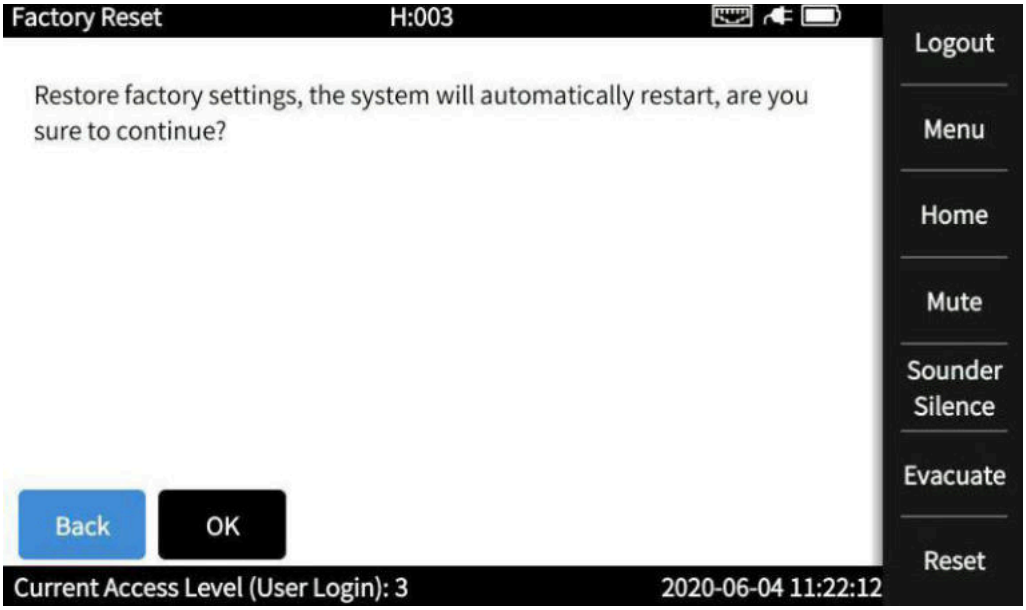


Figure 11-73 Restoring factory Settings

Notice

❖ **After performing this operation, all data will be restored to factory settings and historical records will be cleared. Therefore, be careful when you perform this operation. Before performing factory Settings, you are advised to export the configuration file for backup.**

11.7.4 About

(1) Display the local company information on the interface. This system can be upgraded on-site. The company will continue to improve the system and add new functions and is responsible for the real-time version upgrade of the project with our company's maintenance contract.

Figure 11-74 About this device

12 Calculate the battery capacity

(1) The standby time of the control and indicating equipment after the failure of the main power supply depends on the static load of the panel, the alarm load of the panel and the capacity of the battery.

To determine the battery capacity required by your system, use the following formula:

Battery capacity (Ah) = 1.25x (T1 x (IFq + ILq) +T2 x (IFmax + ILmax + IRout) +[(T1+T2) x IP])

(2) The multiplier of 1.25 is to take into account the power loss during the battery life.

IFq = 0.3A, which is the static current that controls and indicates the device when the main power is lost;

ILq is the static current of the loop load, which is determined by the number of loads. Smoke detectors, heat detectors or manual call point of the static current is usually 0.0002 A 200 mu (or), and module/detectors stroboscopic static current of 0.0025 A 2.5 mA (or);

IFmax = 0.32A, which is the alarm current that controls and indicates the device;

ILmax= 0.5A, which is the maximum loop load current. The alarm current of smoke detectors, heat detectors or manual call points is usually 0.001A (or 1mA), while the alarm stroboscope alarm current is 0.08A (or 80mA);

IRout=2.05A is the alarm output current of the relay on the panel, AUX24V: 2A, FIRE OUT: 50mA;

IP = 0.1A, refers to the current consumption of the optional printer;

T1 is the number of standby hours required (usually 12);

T2 is the number of alarm hours required (usually half an hour).

(3) Take a 255-point single-loop system with a printer as an example: 231 addressable detectors, 12 input/output modules, 12 conventional alarm strobe, 9 loop isolators, relay full load output.

Therefore, the 8-loop system:

ILq = 0.0002×231×8+ 0.0025×24×8= 0.8496A

ILmax = 0.5×8= 4A,

IRout = 1×2+0.05 = 2.05A,

capacity = 1.25 x (12 * (0.3 + 0.8496 + 0.5 * (0.32 + 2.05 + 4) + [(12 + 0.5) x 0.01])

=1.25×(13.7952+3.185 +0.125)

= 1.25 x 17.1052

= 21.3815 Ah

13 Maintenance and Troubleshooting

13.1 Maintenance

(1) The system shall be regularly maintained in accordance with local design, maintenance and installation regulations.
The key to the panel should be kept by a specially designated maintenance personnel.
Check periodically whether the backup battery is properly connected. You are advised to replace the recommended battery every five years.

13.2 Troubleshooting

All suspected faults should only be resolved by a suitably qualified technical engineer.

(1) Problem: The backup power cannot be switched over
Possible reason and solution: The fuse between the battery and the middle cable is not installed or has failed

(2) Problem: Power is supplied to the controller, but the LCD display does not display, and the controller does not work.
Possible reason and solution: Check whether the fuse on the P.S.E is blown; Check that the power indicator on the front panel is on, otherwise there is a problem with the P.S.E., and the manufacturer should be notified.

(3) Problem: Both power and battery faults are reported.
Possible reason and solution: Check whether the power cable between the I/O board and the P.S.E is correctly connected. The reason may be that the power supply is in a faulty state and the battery is at a low voltage.

(4) Problem: : The S.C. Out, FIRE Out, SND, or PROG OUT port is faulty
Possible reason and solution: Check that the 10K terminal resistor is installed correctly and eliminate real faults on the line.

(5) Problem: When a zoned fire occurs, the zoned fire alarm light does not give any indication.
Possible reason and solution: SEC3008_LED board is disconnected or damaged. Check whether the address indicator and communication indicator on the SEC3008_LED board are normal.

(6) Problem: : The controller reports a printer communication failure
Possible reason and solution: : Check whether the cable between the printer and the SEC3008_B board is connected. Press the SEL button on the printer to turn off the printer power.

Appendix

Appendix 1 Device type comparison table

Device Type	Abbreviation	Device Type	Abbreviation
Access control	AccessCtrl	Inhalation smoke detector	InhalSmoke
Air Conditioner	Air-con	Ionization Detector	IonDet
Fire Emergence Evacuation Broadcast	BCST	Infrared Beam Detector	IRDet
Blower	Blower	Manual Call Point	MCP
Blow Valve	BlowValve	Optical Detector	OptDet
Combination detector (smoke and heat detector)	CombDet	Pressure Switch	PresSwitch
Conventional Combination Detector	ConvComD	Power Supply Box	PSB
Conventional Heat Detector	ConvHeatD	Smoke Exhaust Damper	SmkDamper
Conventional Ionization Detector	ConvIonD	Smoke Exhaust Fan	SmkFan
Conventional Infrared Beam Detector	ConvIRD	Sounder	Sounder
Conventional Optical Detector	ConvOptD	Sounder Visual Indicator/Sounder Strobe	SoundStro
Cut off the power	Cut power	Sprink Pump	SprinkPump
Door Holder	DoorHolder	Visual Alarm/Strobe	Strobe
Door Sensor/Magnetic Contact Switch	DoorSensor	Water Pump	WaterPump
Electromagnetic Valve	EM Valve	Wet valve	Wet valve
Fire Emergency Lightning	EmLight	Generator	Generator
Fire Evacuation Indicator	EvacIndi	Heat Cable	HeatCable
Fire Indicating Panel	FIP	Heat Detector	HeatDet
Fire Damper	FireDamper	Fire Hydrant Call Point	HydrCP
Fire Door	FireDoor	Flow Indicator/Detector	FlowIndi
Fire Pump	FirePump	Combustible Gas Detector	GasDet

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