Yun Yang Fire Safety Equipment Co.,Ltd.

YFR-3

R-Type Fire Alarm Control Panel

Operation Manual

2020·12·21 REV·1

71114-R03-E

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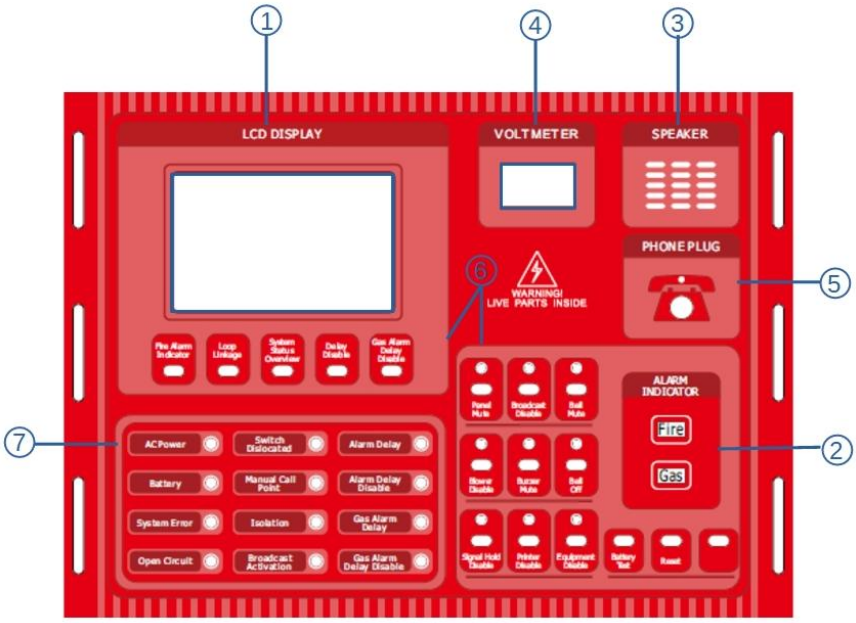
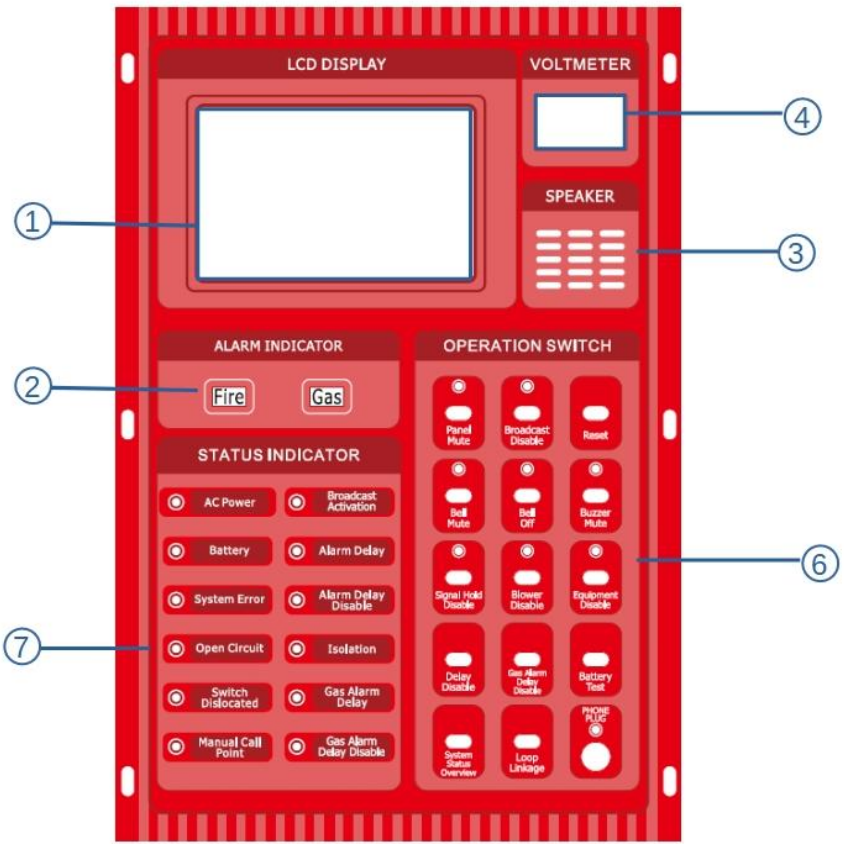
Control Panel Description：

STANDARD TYPE



MINI TYPE (1 LOOP)



A. Name and Function of Main Panel Sections

1. **Touch Operation Display:**Displays detailed information regarding the location of fire, natural gas leak, and other alarms. This operation screen can be used to process alarms.

2. **Alarm Indicator:**Displays the main alarm indicator lights for fire, natural gas leak.

3. **Audio Device :** Sounds the panel alarm and sound guidance.

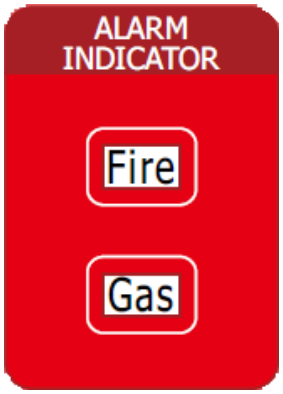
4. **Voltage Indicator:**Displays the working voltage of the main panel.

5. **Local Phone:**Contacts and enables conversation with the main panel after the receiver has been plugged into the on-site operation panel.

6. **Control Switch:**Toggles operations (ON/OFF) in different categories including Alarm Process, Device Relay, Function Control, and Add-On Function.

7. **Status Display:**Displays the main indicator lights for the current status of the panel.

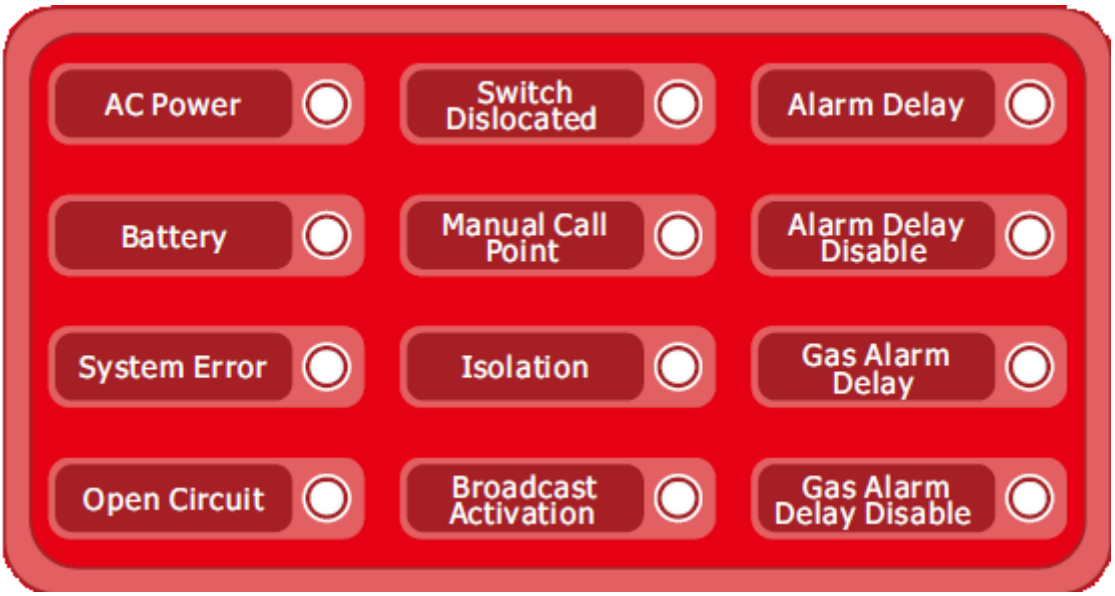
B. Name and Function of Alarm Indicators



1. **Fire Indicator:**
   The indicator light flashes in the event of

2. **Natural Gas Leak Indicator:**
   The indicator light flashes in the event of natural gas leak.

C. Name and Function of Status Indicators



1. **AC Power**：The indicator light is lit when AC power is used.

2. **Battery**：The indicator light is lit when the standby power is tested under AC power. The light remains lit when the standby power is used.

3. **System Error**：The indicator light flashes when an abnormal message is received.

4. **Open circuit:** The indicator light flashes when the addressable device loop (L, C) is off-line.

5. **Switch Dislocated**：The indicator light flashes when the control switch of the panel or the touch operation display is not positioned normally.

6. **Manual Call Point**：The indicator light is lit when the fire alarm signal button is pressed. Fire alarm is immediately activated on the loop.

7. **Isolation**：The indicator light flashes when an addressable device is temporarily isolated or temporarily shut-off.

8. **Broadcast Activation**：The indicator light flashes when the broadcasting starts and the alarm bell is temporarily stop.

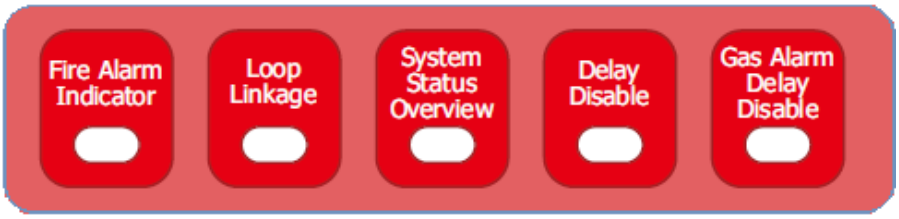
9. **Alarm Delay**：The indicator light flashes when a detector sends a fire signal and remains flashing until the control panel confirms a fire.

10. **Alarm Delay Disable**：The indicator light flashes to indicate that all loop accumulations are disabled.

11. **Gas Alarm Delay**：The indicator light flashes when a detector sends a natural gas leak signal and remain flashing until the control panel confirms a natural gas leak.

12. **Gas Alarm Delay Disable**：This indicator light flashes to indicate that all natural gas leak delays are disabled.

D. Name and Function of Function Control Switches



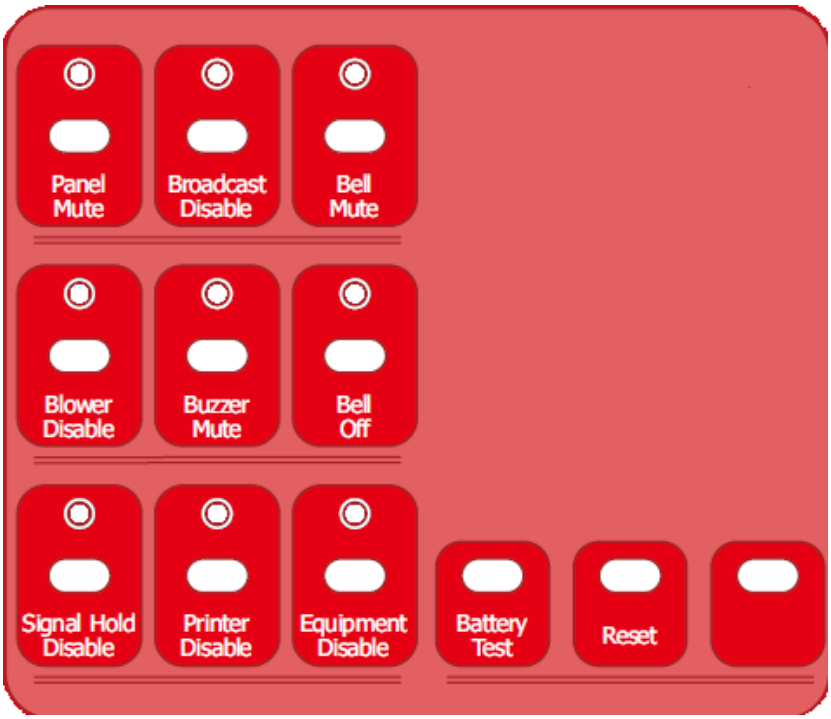
1. **Fire Alarm Indicator**: After press it, the touch screen will immediately turn to the instant alarm screen.

2. **Loop Linkage**: After press it, the touch screen will immediately turn to the linkage table screen.

3. **System Status Overview**: After press it, the touch screen will immediately turn to the status overview.

4. **Delay Disable**：After press it, it will disable accumulation on all addressable device loops and activates real-time alert.

5. **Gas Alarm Delay Disable**：After press it, it will disable the delay function on all gas loop.



6. **Panel Mute**: Flashes when pressed to turn off the main audio. Remains lit for an extended period of time when long pressed to turn off subsequent soundings.

7. **Broadcast Disable**：Flashes when pressed to turn off the broadcast relay function.

8. **Bell Mute**(Beep again later)：
(1) Flashes when pressed to stop the alarm bell temporarily.
(2) If there is no new alarm, the flash light will be turned-off and the area bells are returned to the normal condition.
(3) If there is new alarm, the flash light will be turned-off

immediately and the area bells are returned to the normal condition.

9. **Blower Disable**：Press to turn off the blower.

10. **Buzzer Mute**：Press to turn off the buzzer.

11. **Bell Off**：After press to inter the password, the alarm will be stopped permanently.

12. **Signal Hold Disable**：Flashes when pressed to deactivate alarm self-holding.

13. **Printer Disable**：Press to cancel simultaneous printing on the printer when an alarm is activated.

14. **Equipment Disable:** Press to call out relay switches in the "Touch Operation Display" and access the relay cancellation window.

15. **Battery Test**：Press to view the voltage of the backup battery.

16. **Reset**：Press to restore the main panel and all repeaters to the default setting.

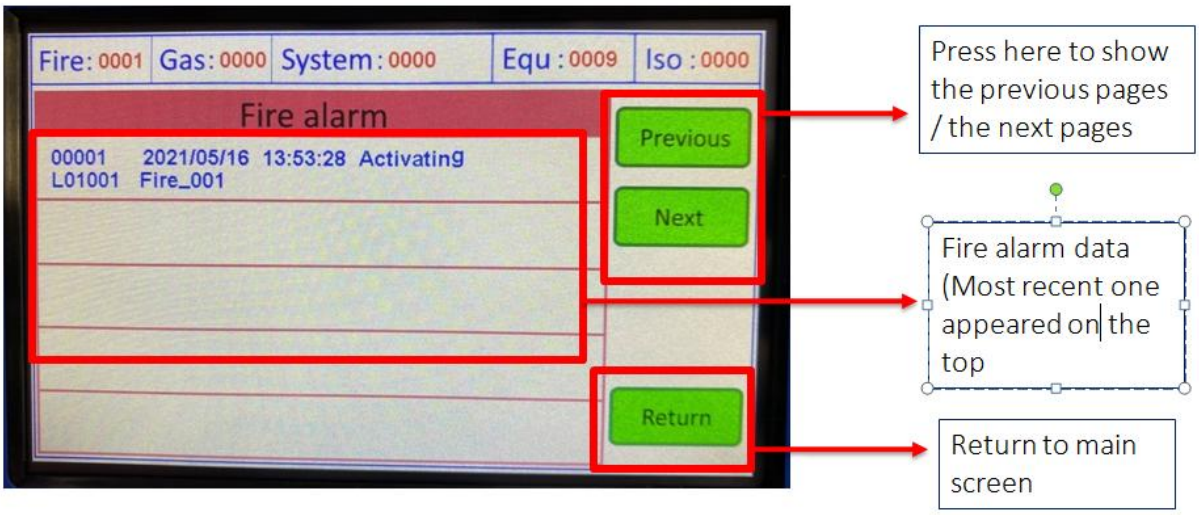
Screen Description:

1. Normal Standby Screen

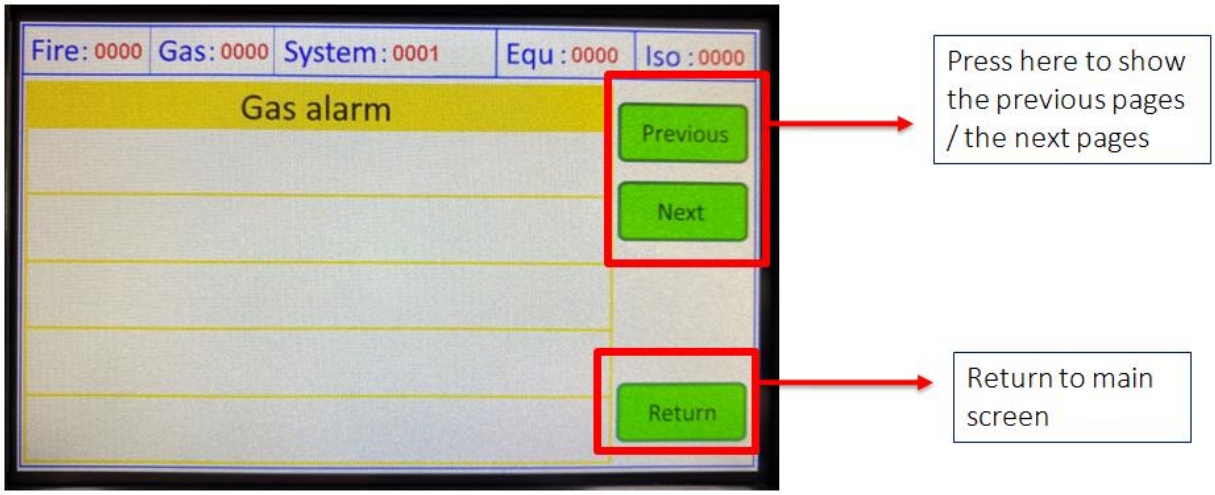
2. Function Menu Screen

A. Real Signal

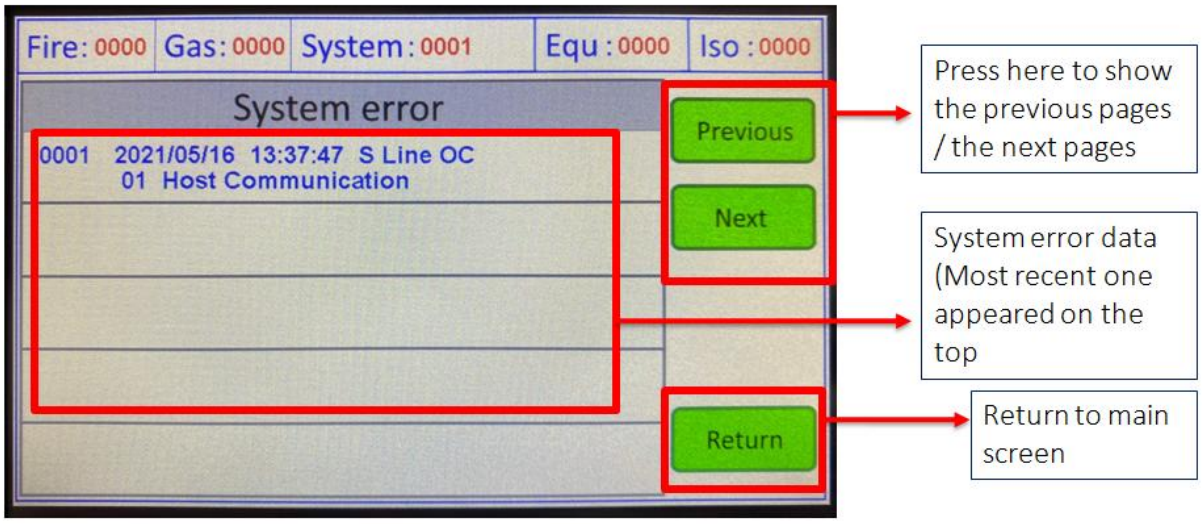
(1) Fire: Display the current fire alarm message.



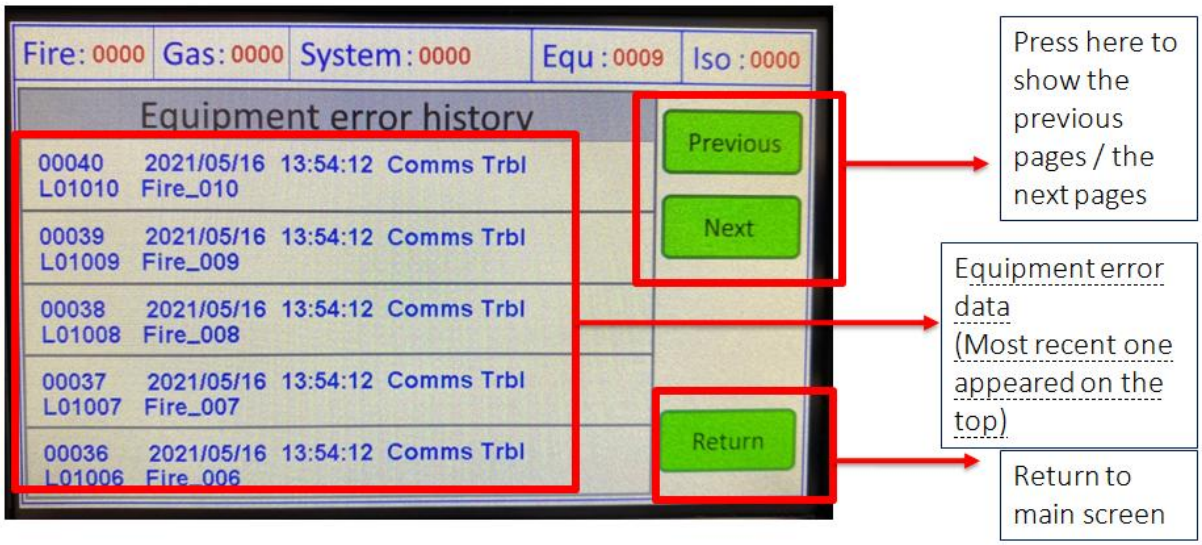
(2) Gas: Display the current gas alarm message.



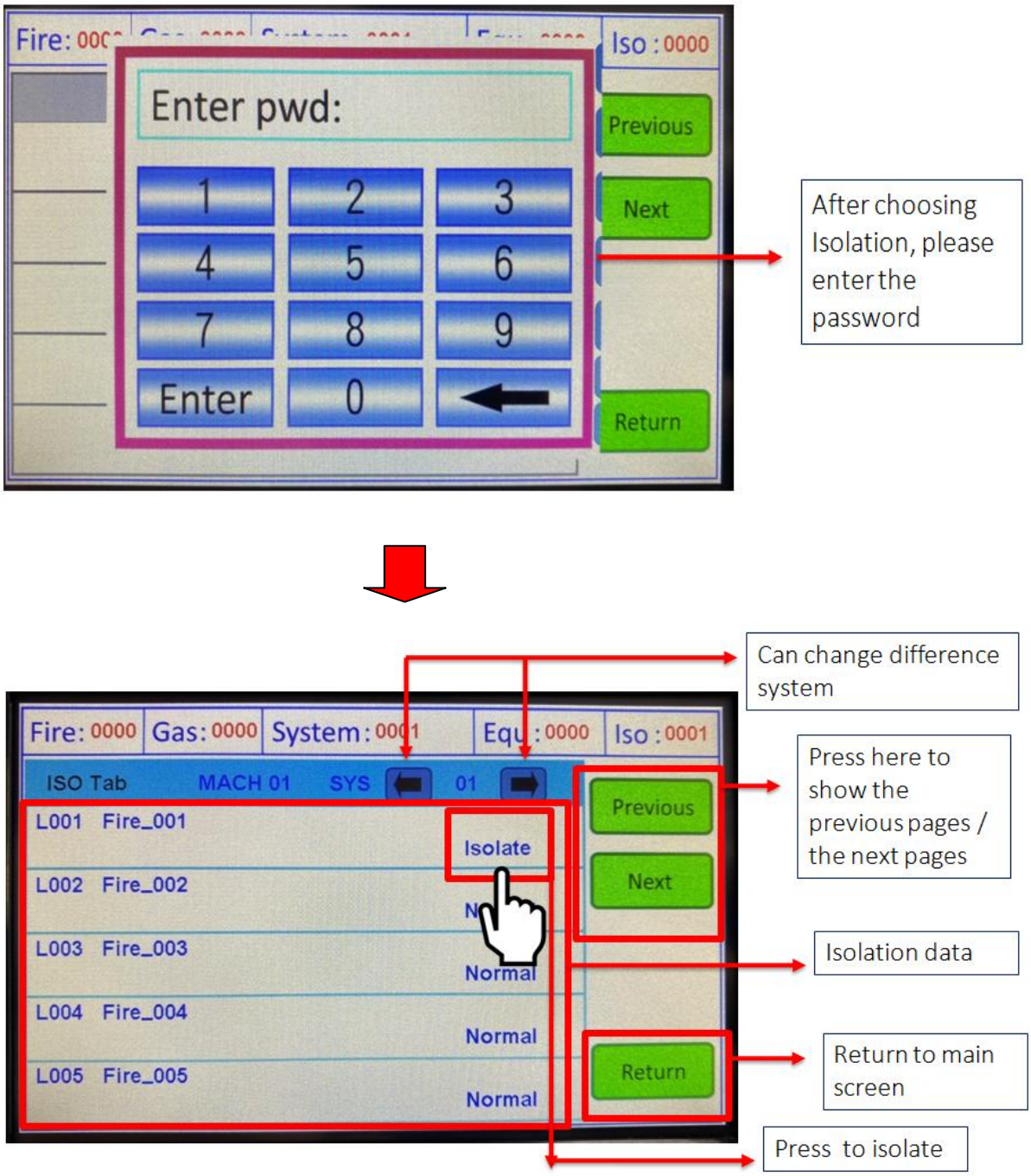
(3)System: Display the current system error message.



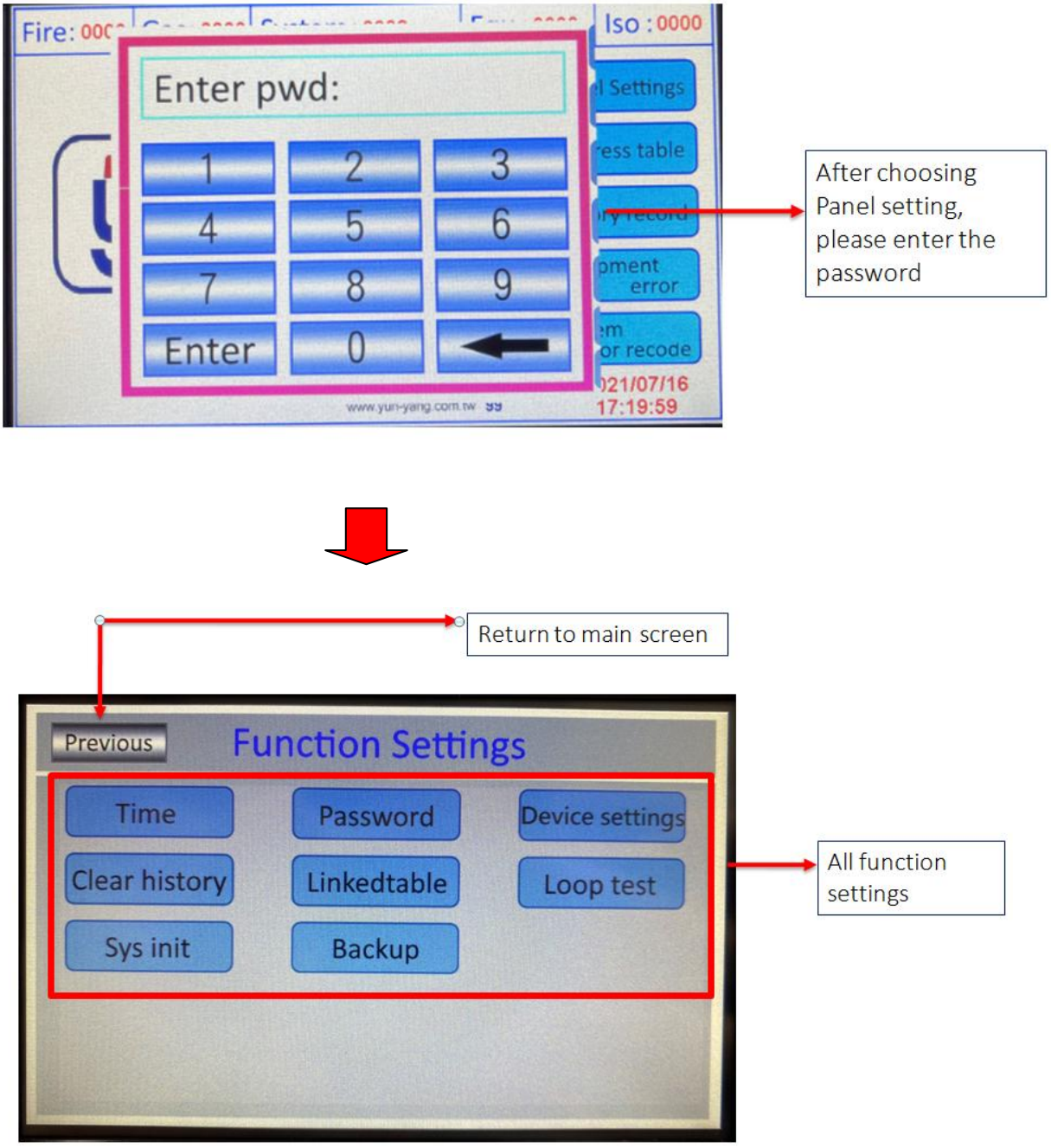
(4)Equipment: Display the current equipment error message



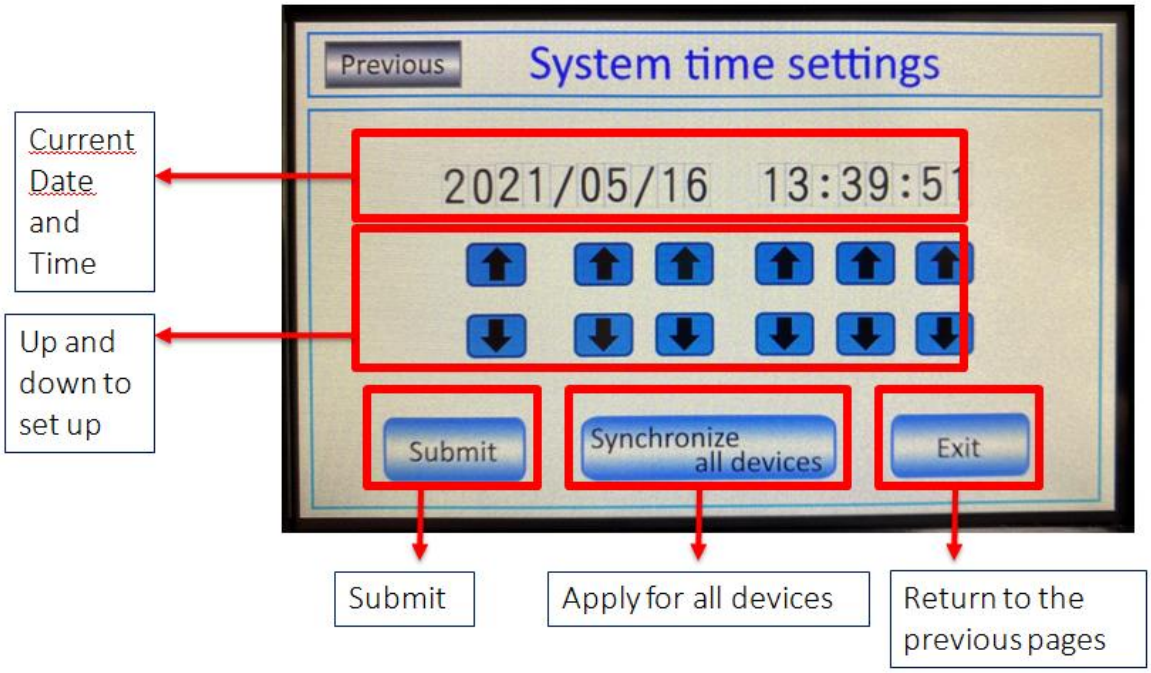
(5) Isolation: Display the current isolation message and loop isolation settings, need to enter a password before operating.



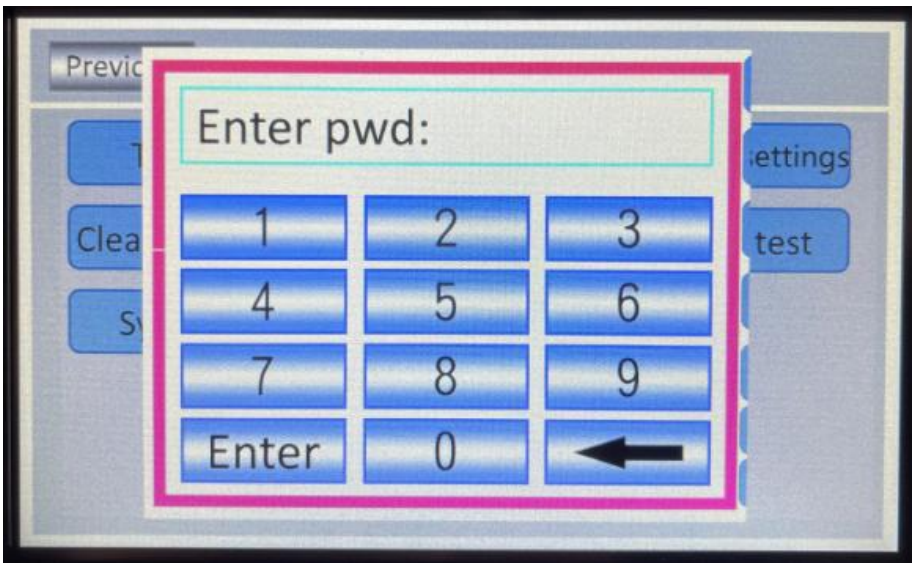
B. **Panel Settings:** In this window there are options to setup the panel and others. Please input the correct password.



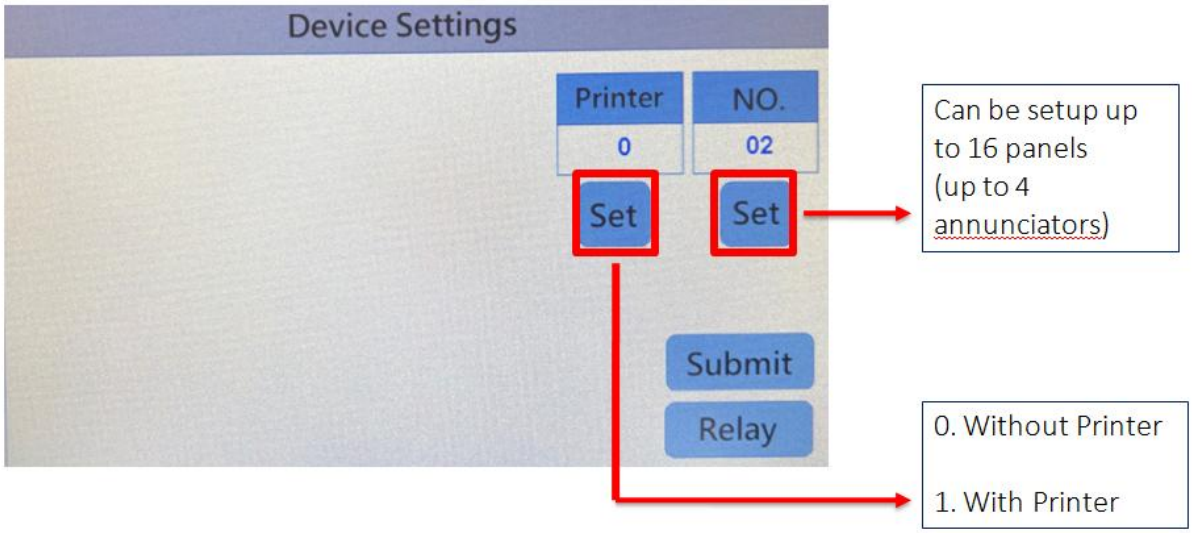
(1) Time: Can be used to set the time of this panel and all connected devices.



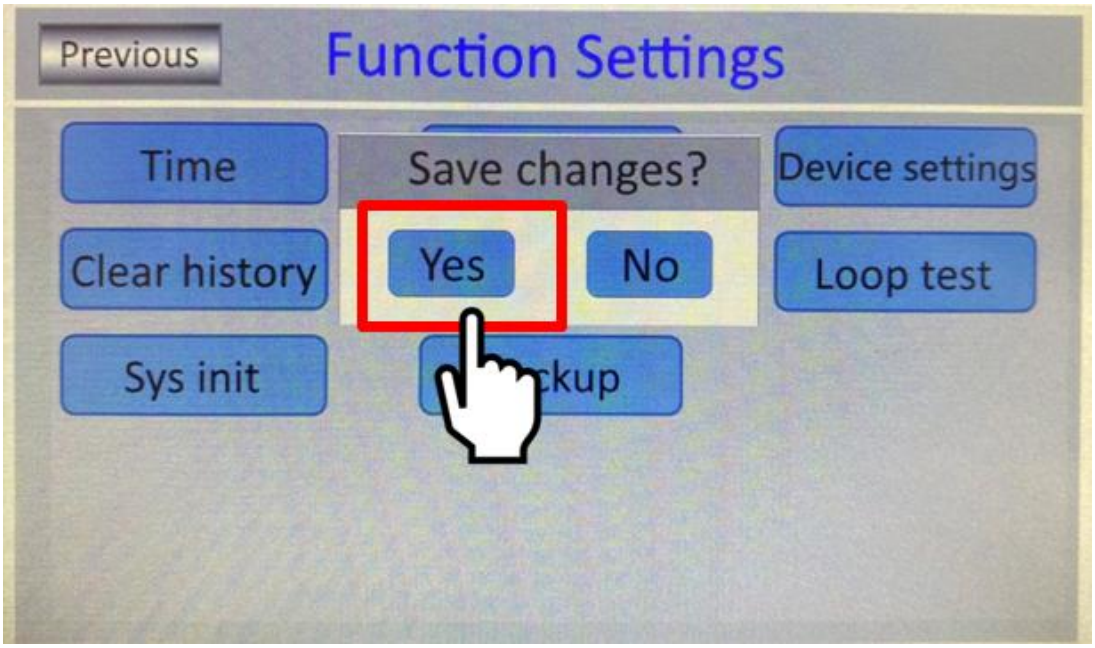
(2) Password: The password can be changed here.



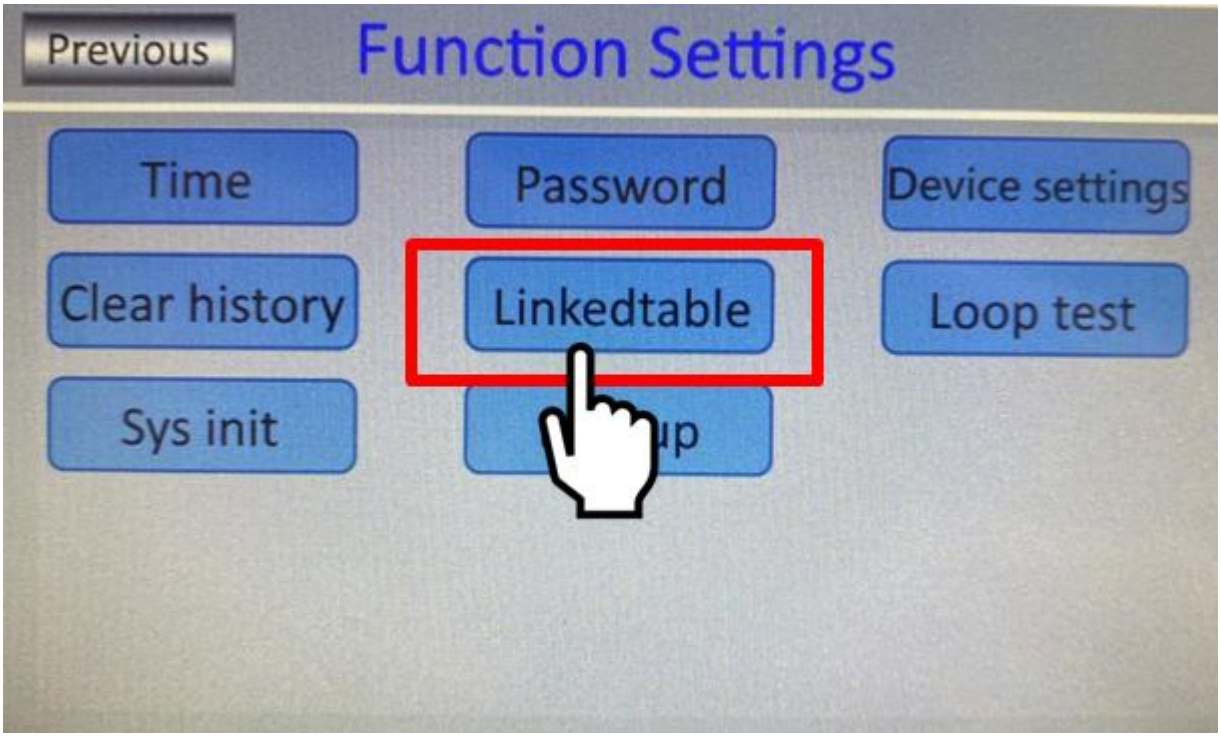
(3) Device Settings : Set-up the number of Addressable Fire Alarm Control Panel and Annunciator.



(4) **Clear history:** All history records can be deleted.

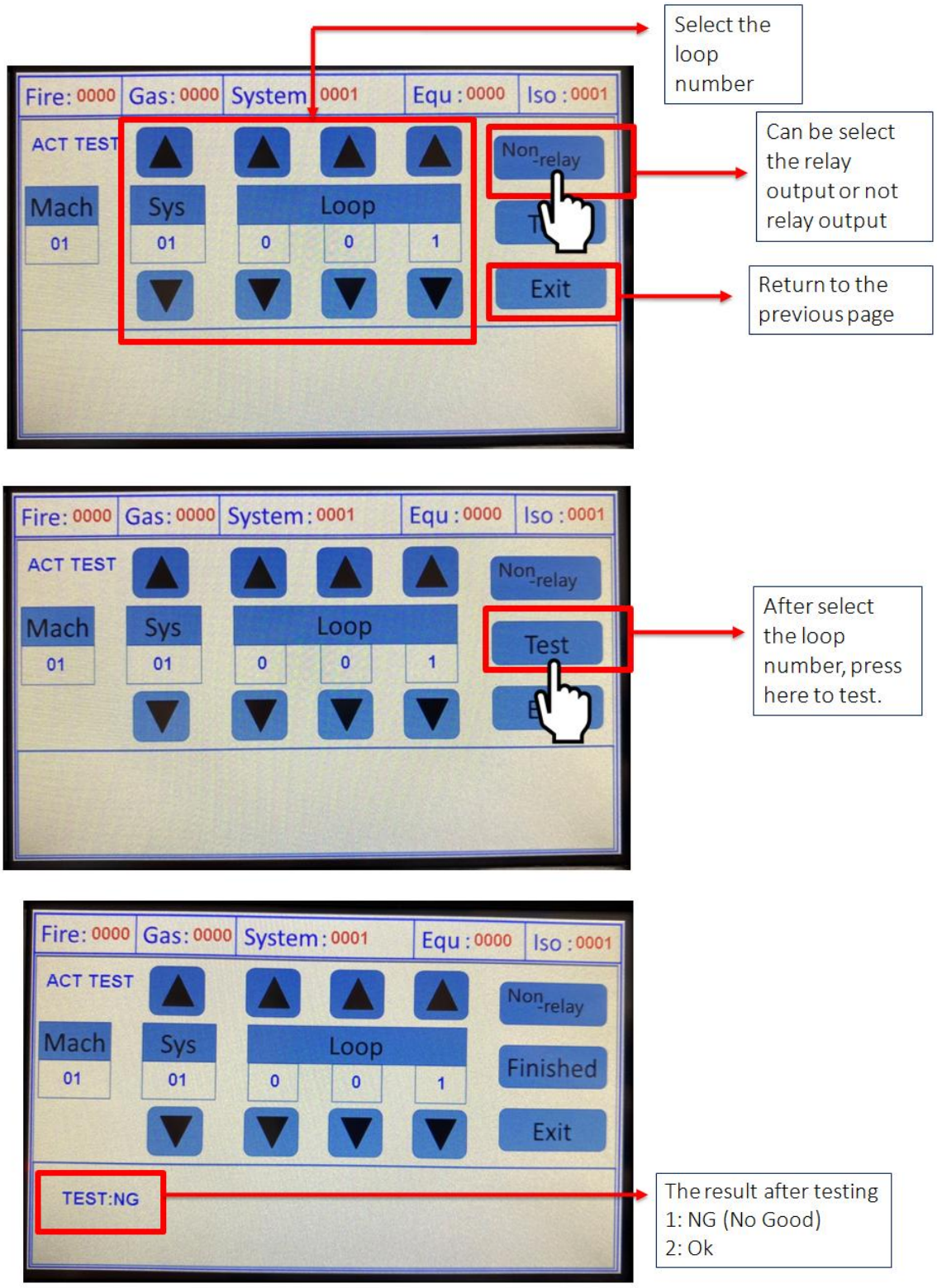


(5) **Linkedtable**: Insert the SD card with the linked table data first.

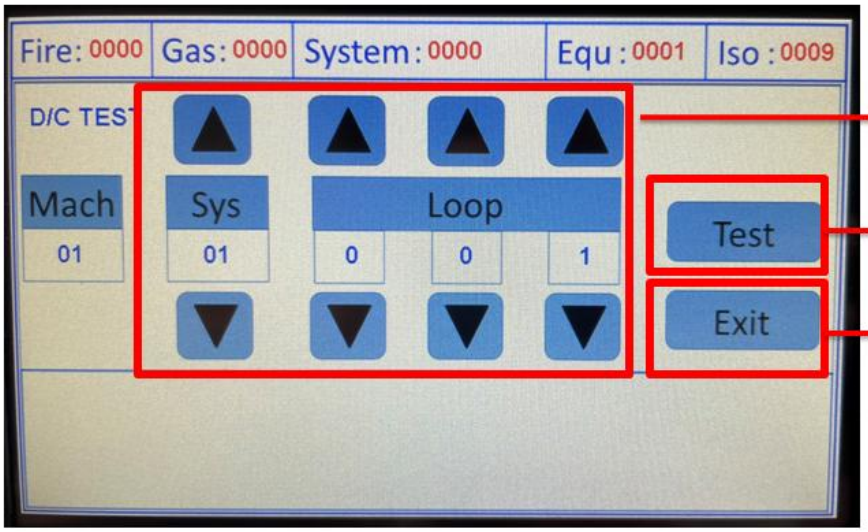


(6) Loop test: The working test and disconnection test.

Working test:



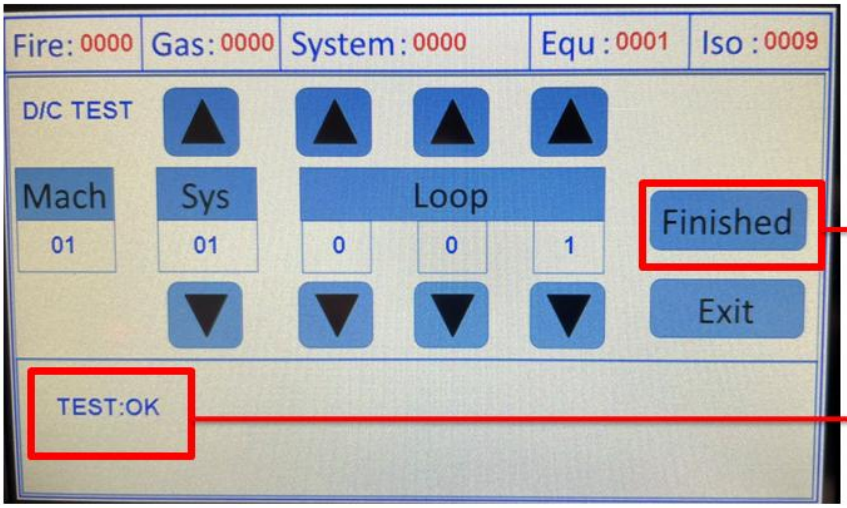
Disconnection test:



Select the loop number

After select the loop number, press here to test

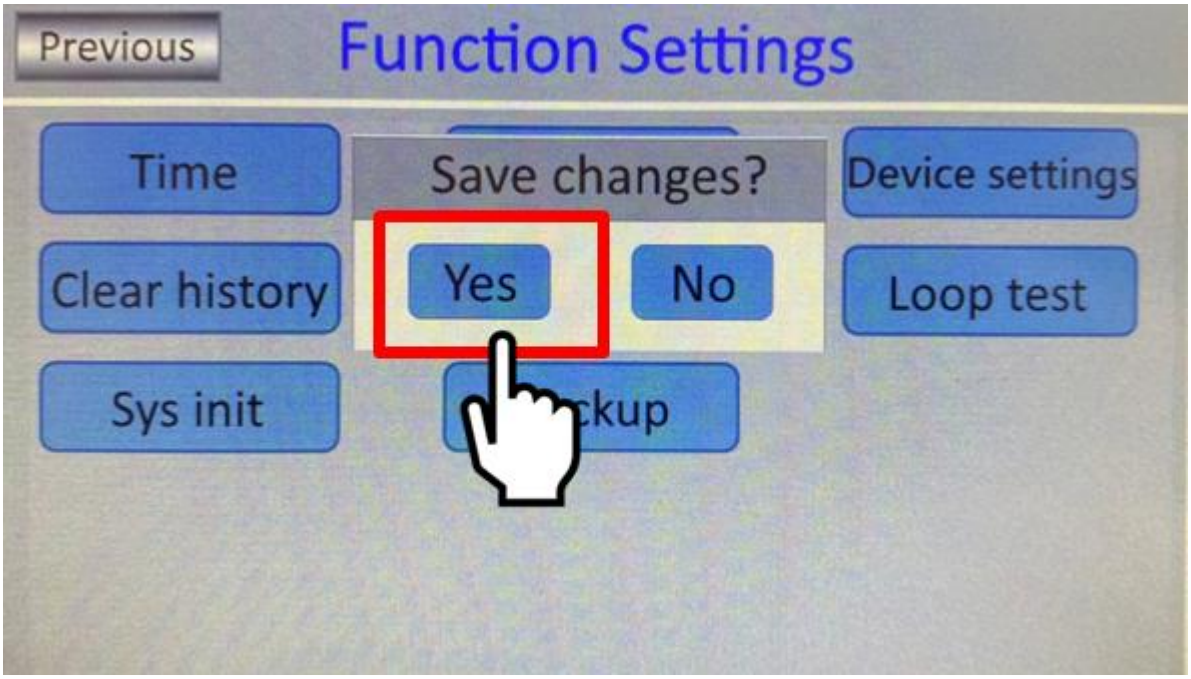
Return to the previous page



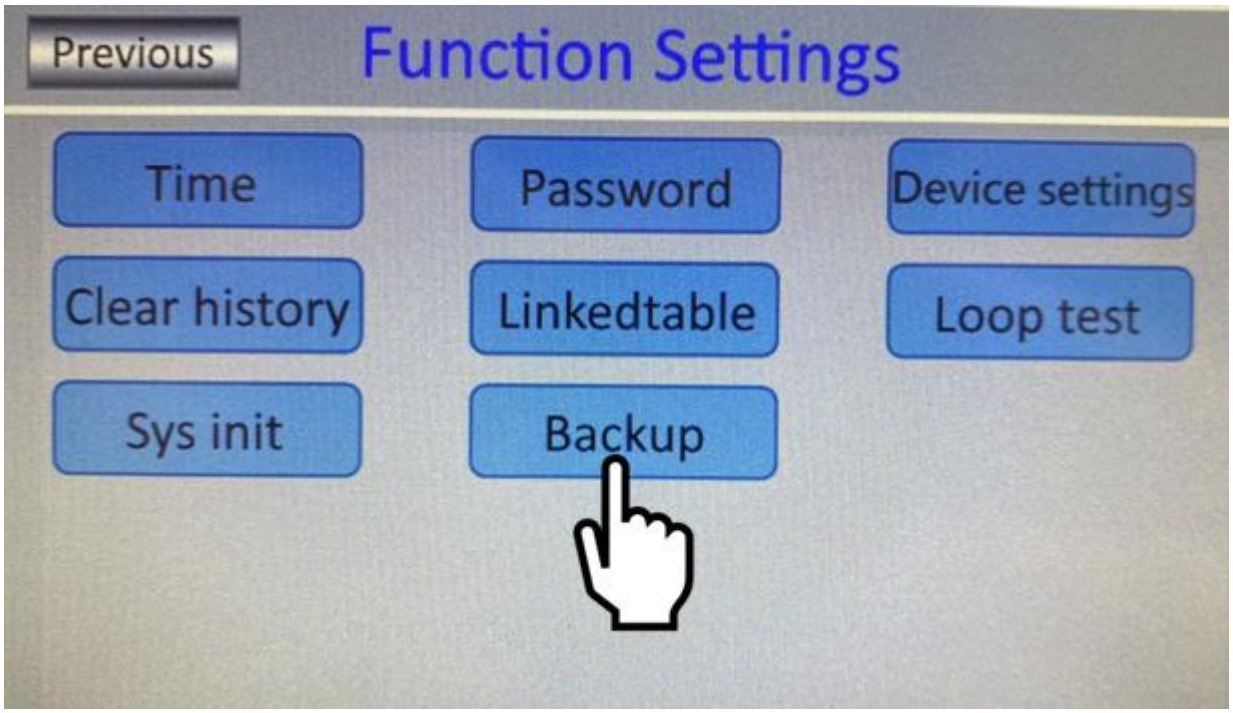
After testing, should be pressed here

The result after testing
1: NG (No Good)
2: Ok

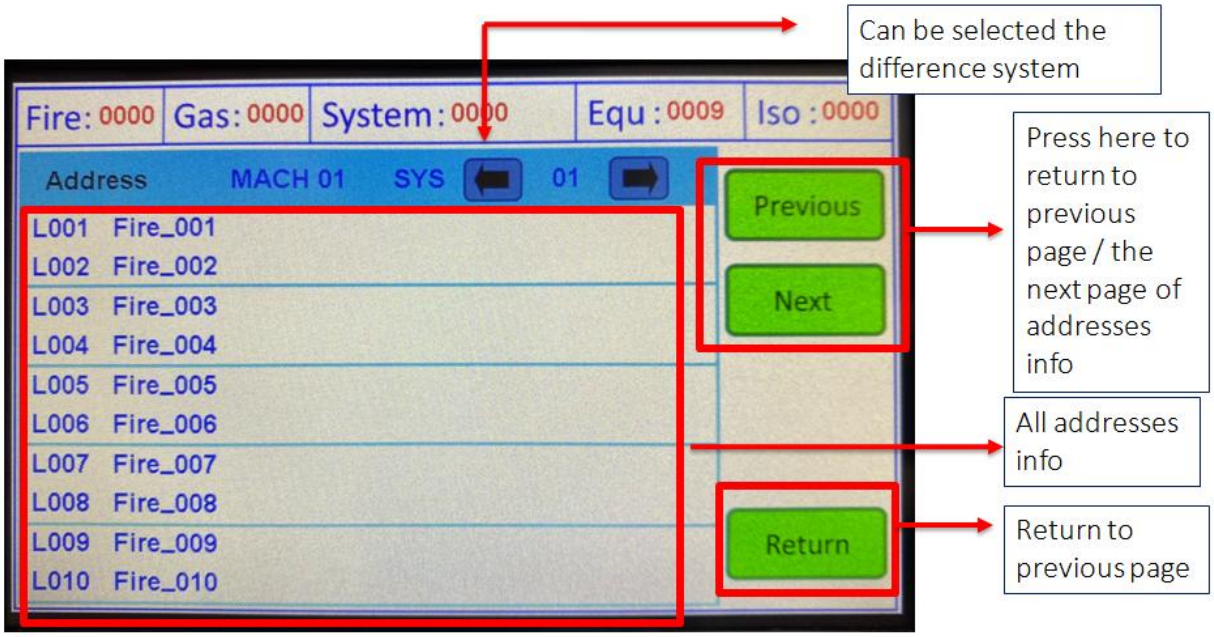
(7) Sys init：System initialization.



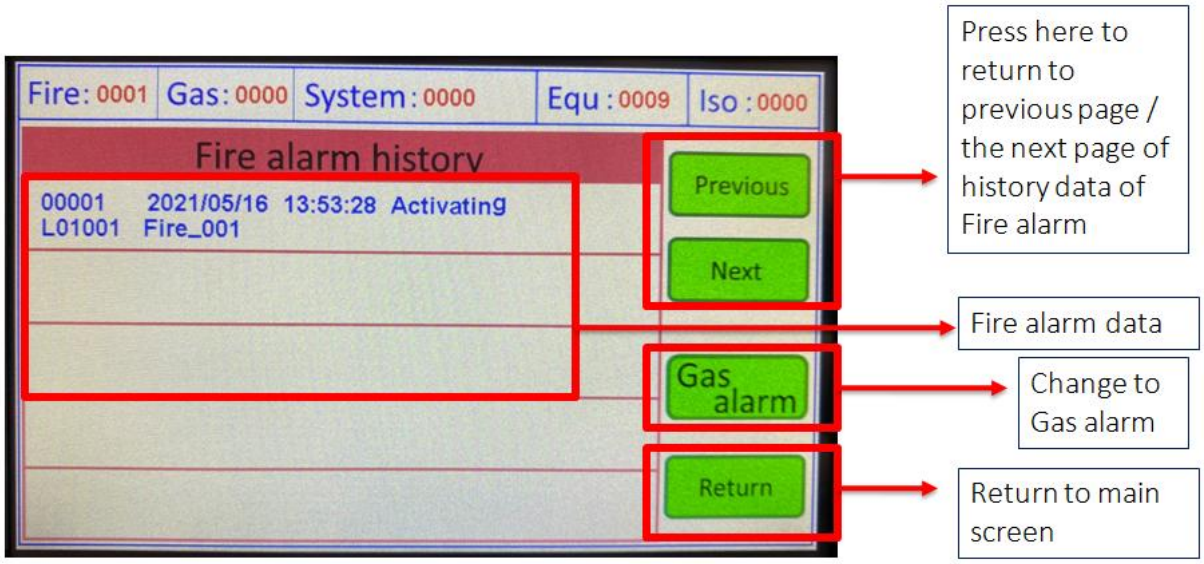
(8) Backup：Insert the pre-backup SD card and press here to automatically backup.

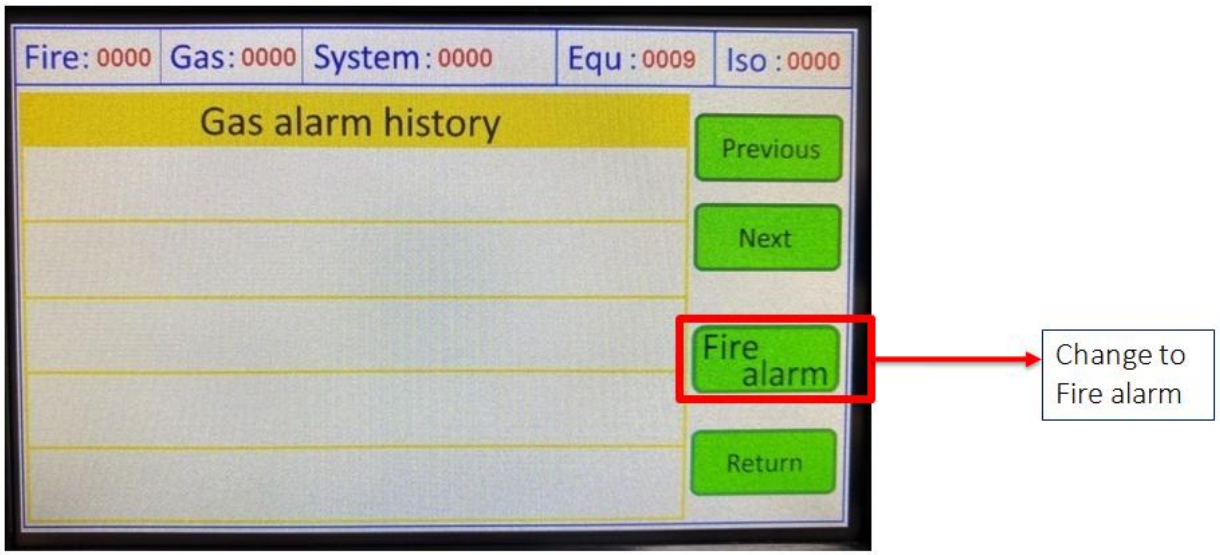


C. **Address table**：The data of the addresses are appeared here.

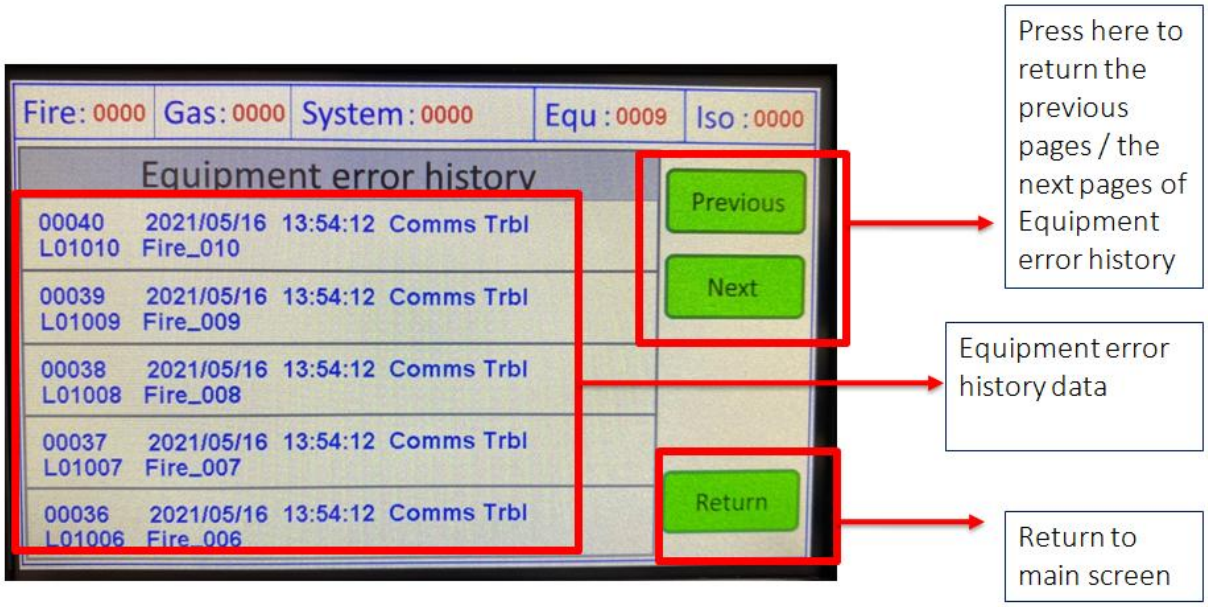


D. **History record:** The history data of all fire alarms are appeared here.

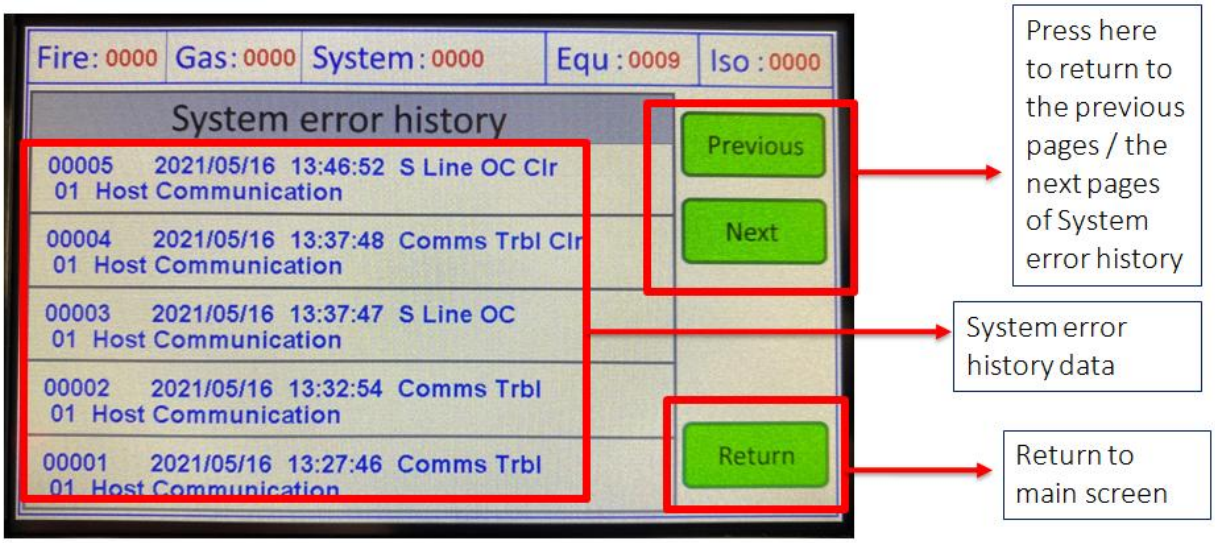




E. **Equipment error:** The history of equipment errors are appeared here.



F. **System error record:** The history of system errors are appeared here.



G. Appearance, Dimensions, and Specifications

Dimensions of the exterior iron cabinet

Casing Type	Mounting							
Addresses	256/1CH		512/2CH	768/3CH	1024/4CH	1280/5CH	1536/6CH	1792/7CH	2048/8CH
Height(mm)	495	450	450	870					
Width(mm)	300	480	480	560					
Depth(mm)	120	160	160	200					
Casing Type	Mounting				Standing			
Addresses	2304/9CH	2560/10CH	2816/11CH	3072/12CH	3328/13CH	3584/14CH	3840/15CH	4096/16CH
Height(mm)	1500							
Width(mm)	560							
Depth(mm)	260/360							

Note: The above table is the standard size; it can be adjusted and customized according to the project space.

Specification Table

Item	Specification							
Main Power Supply	AC110V 50/60Hz、AC220V 50/60Hz							
No. of Addresses / No. of Units	256/1CH	512/2CH	768/3CH	1024/4CH	1280/5CH	1536/6CH	1792/7CH	2048/8CH
	2304/9CH	2560/10CH	2816/11CH	3072/12CH	3328/13CH	3584/14CH	3840/15CH	4096/16CH
Standby Battery	DC24V							
Loop Voltage	Load Power/ Indicator Light/ Zone Telephone: DC24V SLC Power Source: AC32V							
Power Consumption	Main Control Panel Monitoring (Max): 530mA Communication Module (Each System) Monitoring (Max): 380mA							
Transmission Method	Selective / Sequential							
Broadcast Output Method	Relay Output: Interlock Relay Board x 26 Sets for a Maximum of 4080 Contacts (Relay Board = 40 Contacts (Standard), 160 Contacts (Expansion))							
Main Audio	Synthesized Sound, Human Voice, or Alarm Sound (over 90 dB)							
Temperature Range	0~40℃							
Cabinet Material	Powder Coating Steel							

H. Maintenance Essentials

1. When the control panel is in standby monitoring mode: AC power indicator light is lit, voltage monitor reads DC24V (within the green operating range), backlight power-saving function of the LCD is on, no indicator lights are lit, and the external operation panel light is lit.

2. In the event of power outage, the main panel automatically switches to standby power (battery). AC power indicator light is off and the standby power indicator light is lit. All other parameters are identical with that during AC power monitoring (indicator light is off and flashes when a fire alarm is activated).
3. At least two annual maintenances are suggested every year to ensure the proper functioning of the devices.

4. Please promptly service and repair devices when malfunctioning is noted or when the outer equipment becomes damaged to avoid compromising normal operations or resulting in subsequent damages.

5. Please contract professional organization(s) or relevant qualified maintenance personnel to test the devices. Tests should be recorded and reported to relevant authorities for reference to guarantee the safety of the public. The below test items are for reference:

   ①Power: Whether the switch between AC power and standby power is normal and whether the standby battery charges normally.

   ②Fire alarm/disconnection test:
   Under normal operation, the panel automatically detects the main panel. When abnormality is detected, please

promptly inspect and repair the device(s). Exterior loop test should be conducted using the actual loop line on-site to ensure that monitoring is normal at each loop point.

③Inspect whether the indicator lights and display are normal on the operation panel.

④Inspect whether the switch, visual, and audio indicators on the operation panel are normal.

⑤Reference history record listings to keep track of abnormalities.

⑥Test exterior relay devices.

6. Maintain the surrounding environment of devices and avoid locations with high humidity, high temperature, or unstable power or voltage (excessive voltage) to guarantee the working life of the electronic parts.

7. Maintain the cleanliness of the LCD window at all times.

I. EZ Troubleshooting

1. **Power indicator light is off:**

①AC power indicator is off:

Check whether AC power is supplying power normally, whether the AC power switch is turned to (ON) on the main power board, or whether the AC fuse on the main power board is burnt out.

②Standby power indicator is off:

Check whether standby power switch is turned on (ON) on the main power board, whether the power fuse is burnt out, and whether the standby power (battery) is charged.

2. **Disconnection/Fire is displayed on the LCD:**

Please first check the corresponding external locator (repeater) and then inspect the end of line detector and the corresponding wiring.

3. **Switch dislocation indicator is flashing:**

Press the ON/OFF switch again to restore the specific output function.

4. **System Error**: Check the LCD communication history and proceed on-site to check whether the communication wiring has been damaged or whether the locator (repeater) has loosened or fallen off. If definite cause cannot be determined after inspection, please contact the distributer or the manufacturer.

J. Installation Cautions

1. Please make sure that the exterior wires correspond to the labeled contents prior to installation. Ground resistance must be greater than 2MΩ.

2. Please make sure that the voltage is normal prior to turning on AC power.

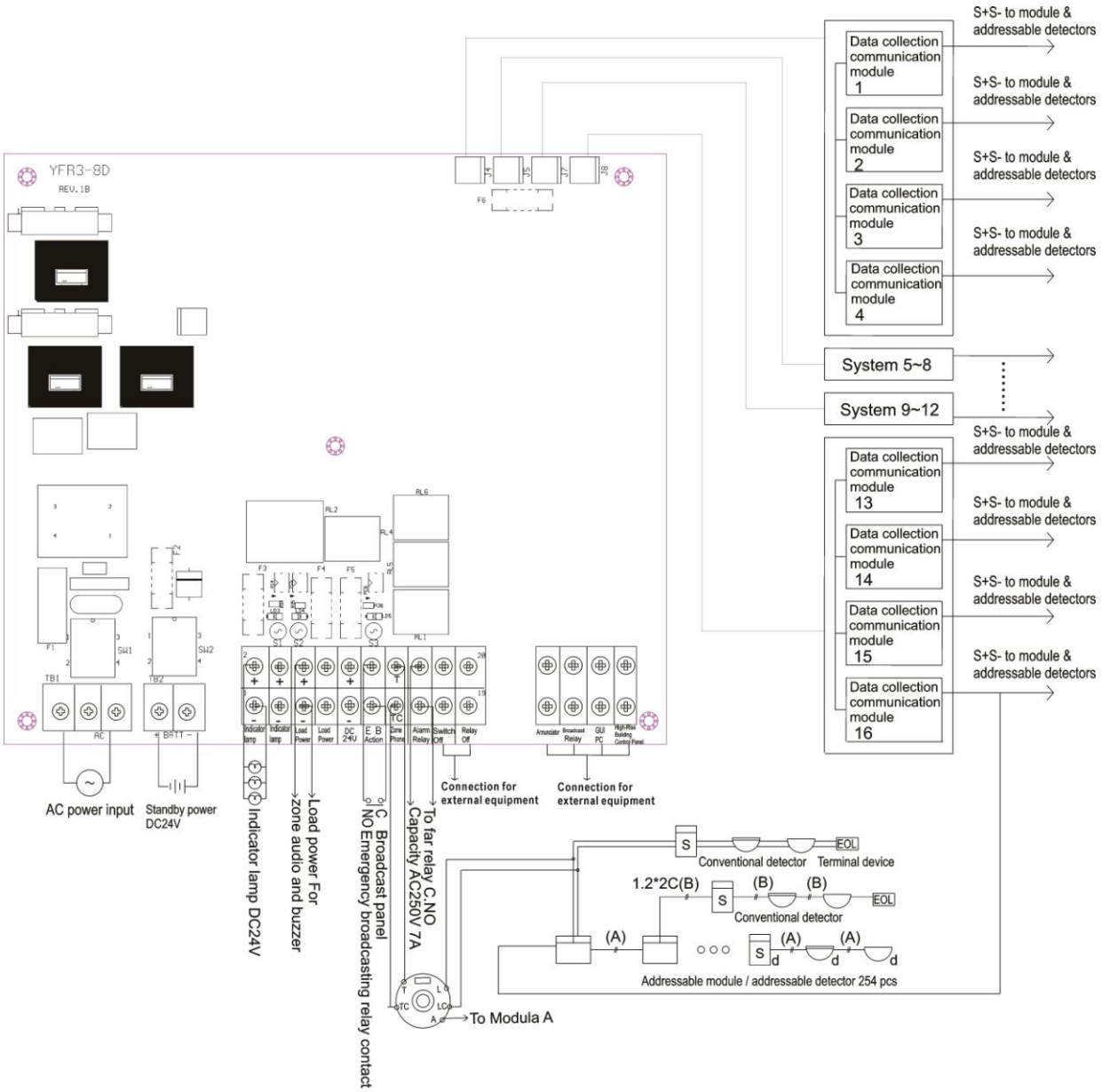
3. Please turn off the battery power when loading or unloading the battery. Confirm the polarity and install the battery correctly into the battery terminal.

4. Make sure that the device is grounded.

5. During test, after the AC power switch is turned off (OFF), please also turn off the standby power to prevent excessive power discharge of the standby battery which may result in lack of power during the next test (need to await recharge).

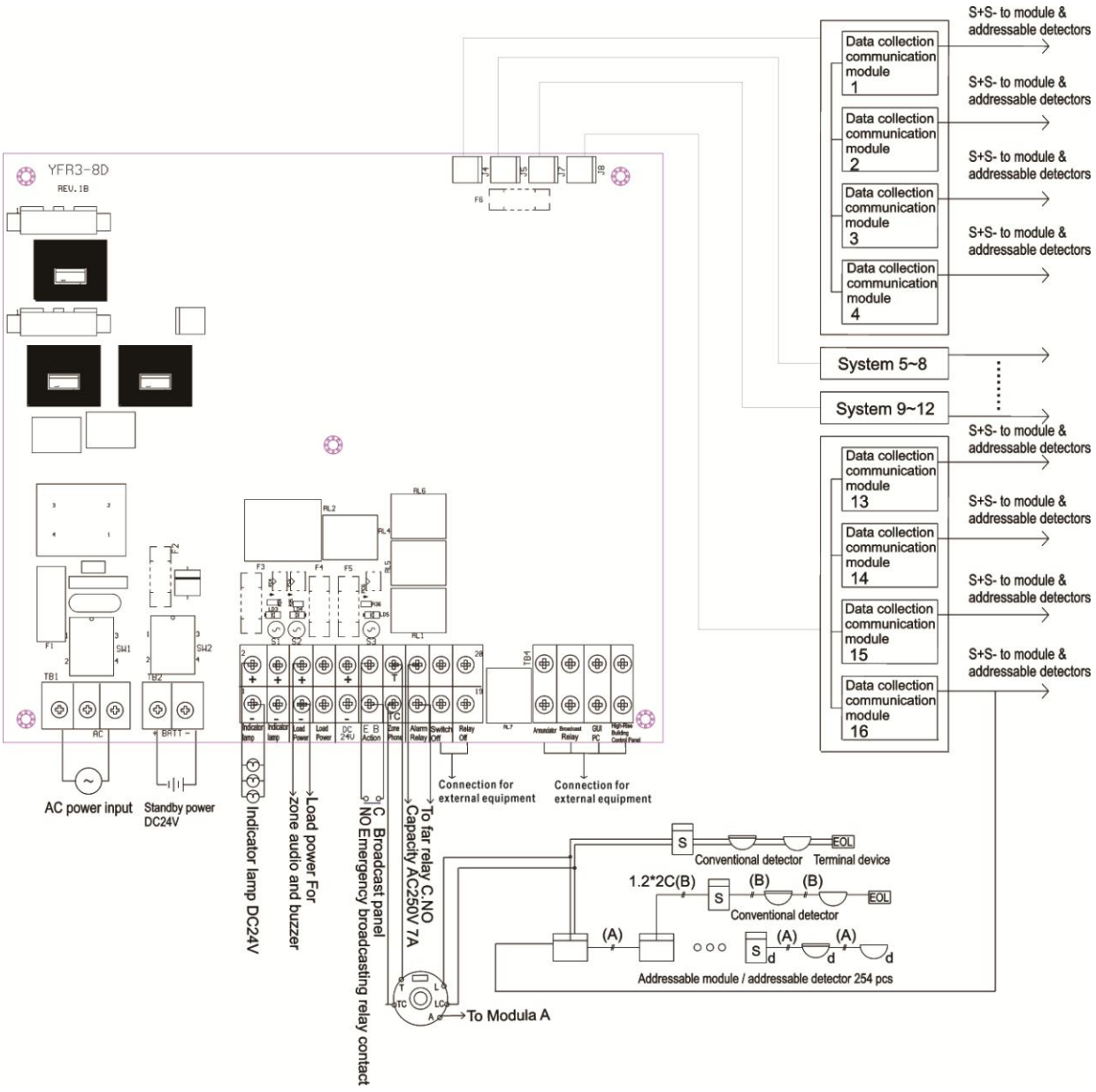
6. Exterior load capacity limit (each):
   ①Indicator light (LED): 20mA
   ②Local alarm: 30mA
   ③Sounder: 0.5A
   ④Exhaust / supply air damper 0.5A

K. External Wiring Diagram 1



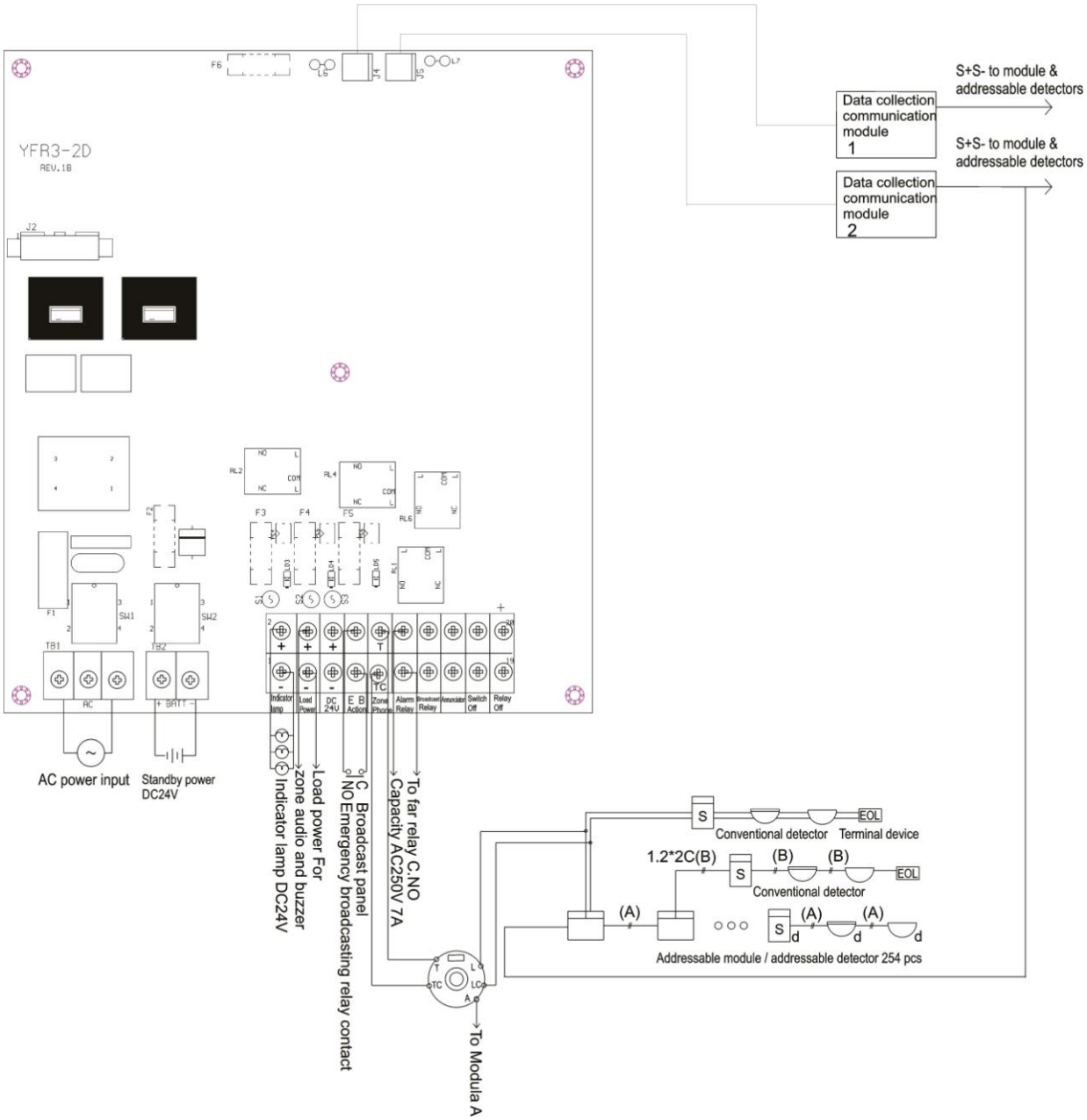
(NON SWITCH OFF/ AC POWER SWITCH RELAY)
(A) 1.25mm2× 2c Aluminum shielded twisted pair cable
(B) 1.20mm2× 2c

K. External Wiring Diagram 2



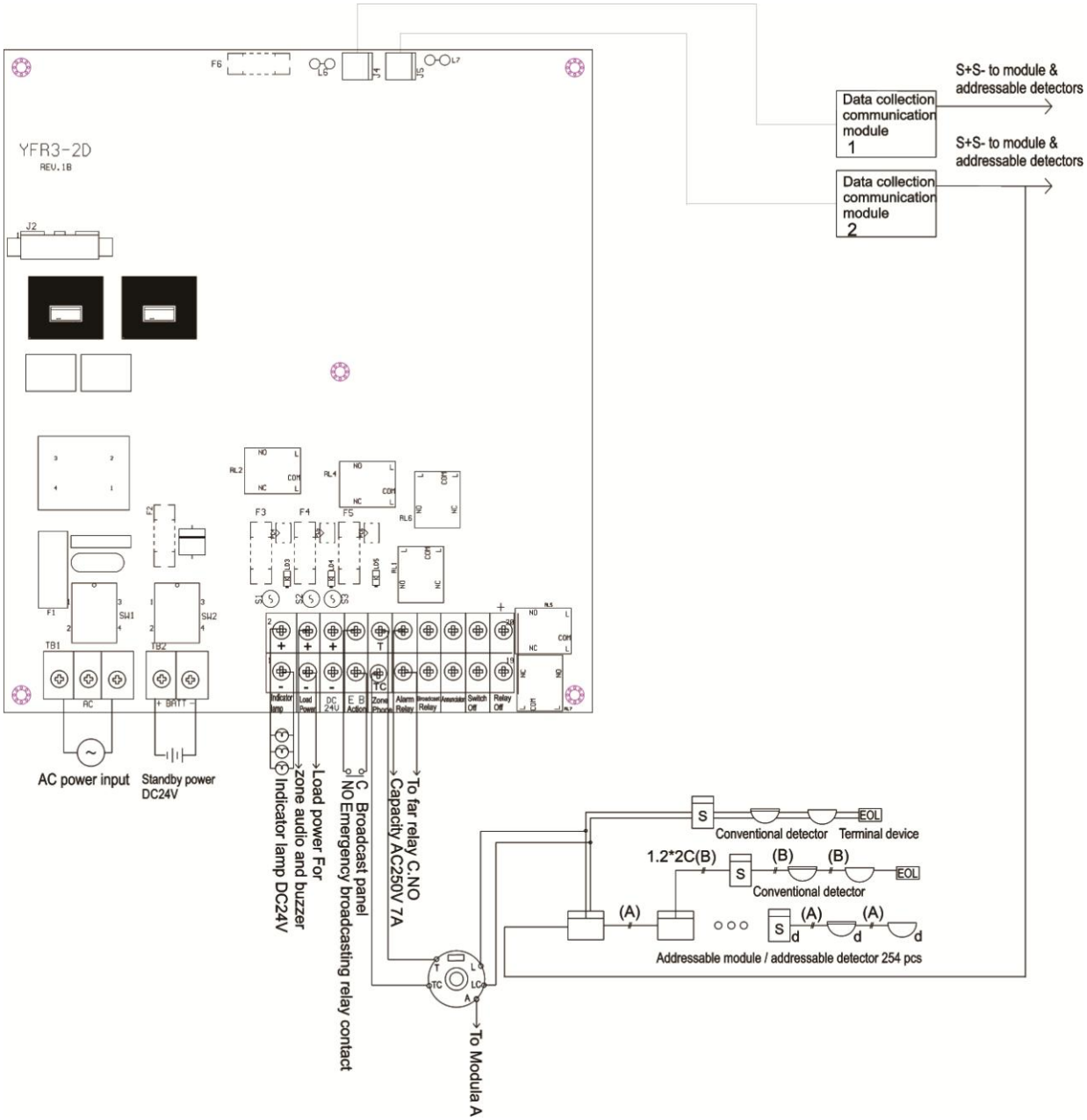
(SWITCH OFF/ AC POWER SWITCH RELAY)
(A) 1.25mm2× 2c Aluminum shielded twisted pair cable
(B) 1.20mm2× 2c

K. External Wiring Diagram 3



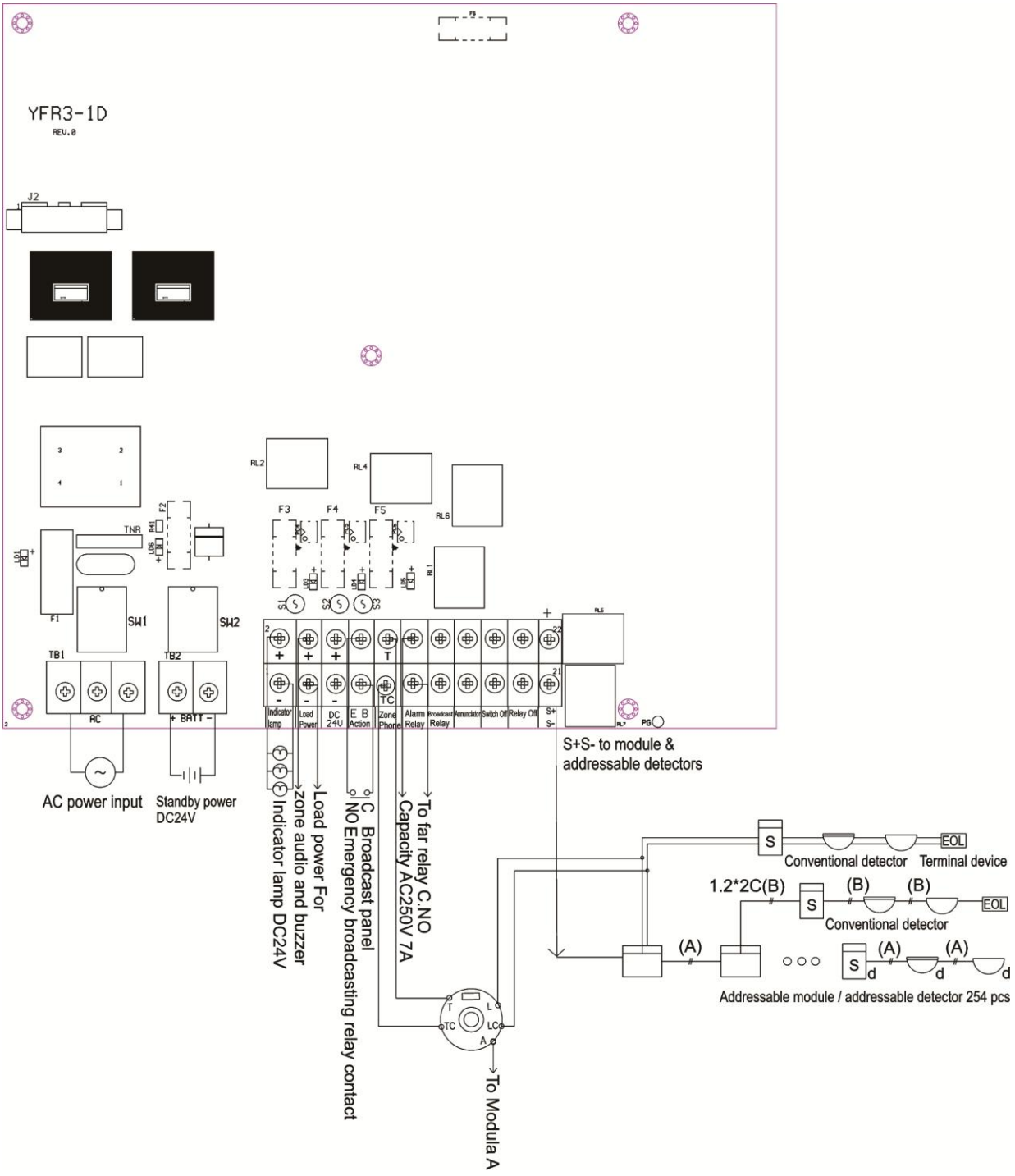
(NON SWITCH OFF/ AC POWER SWITCH RELAY)
(A) 1.25mm2× 2c Aluminum shielded twisted pair cable
(B) 1.20mm2× 2c

K. External Wiring Diagram 4



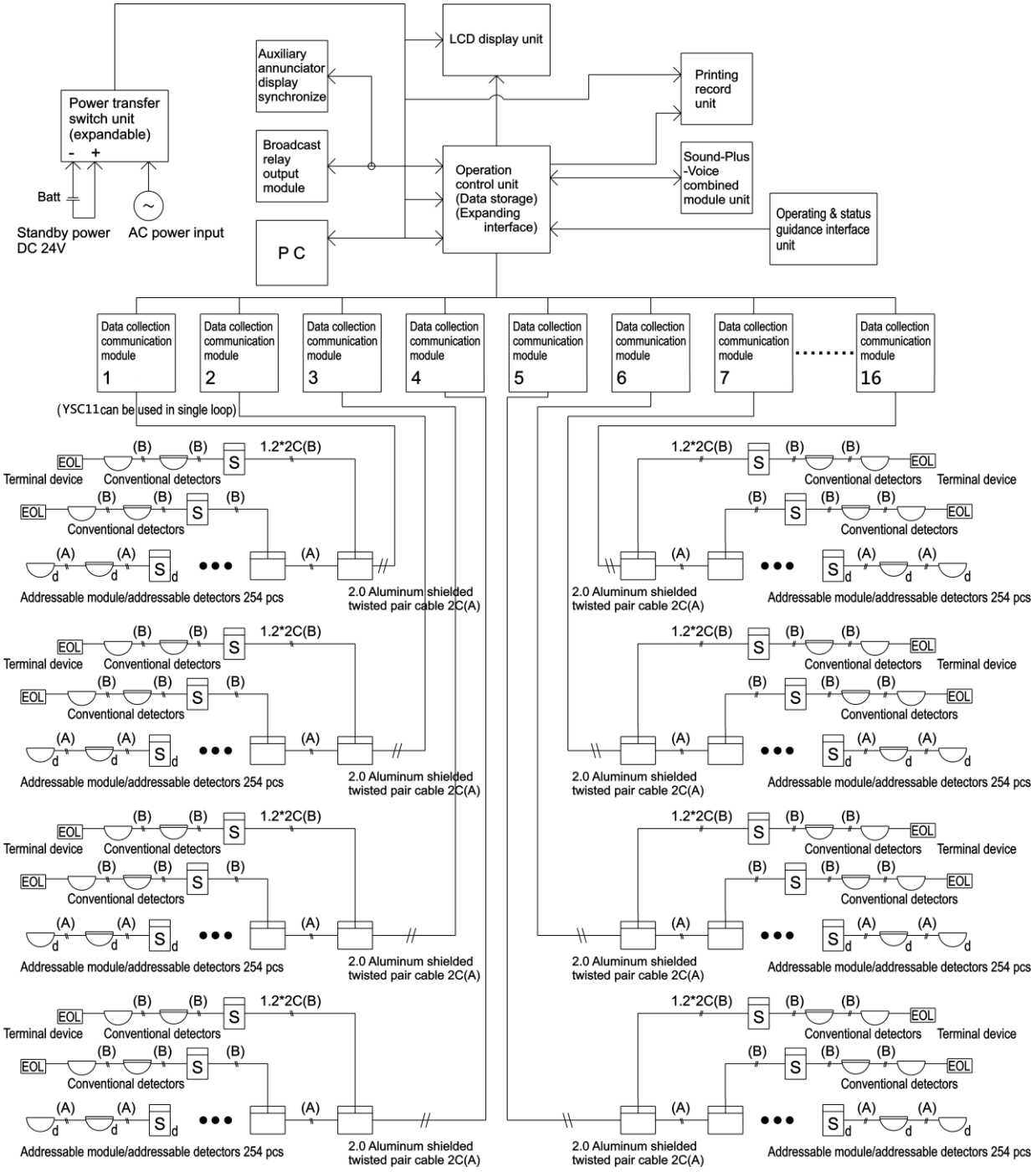
(SWITCH OFF/ AC POWER SWITCH RELAY)
(A) 1.25mm2× 2c Aluminum shielded twisted pair cable
(B) 1.20mm2× 2c

K. External Wiring Diagram 5



(SWITCH OFF/ AC POWER SWITCH RELAY)
(A) 1.25mm^2× 2c Aluminum shielded twisted pair cable
(B) 1.20mm^2× 2c

L. Structure Block Diagram



M. Battery Calculation Formula

Under the condition of 60 minutes of monitoring, 2 loops, 10 minutes of activation:

C：Battery Capacity (AH)　　K：coefficient 1.2

I_1：Main Panel Monitoring Current　　I_2：Loop Monitoring Current

L：Total Loop Number　　L_2：Total Activation Number(maximum of 20)

Exterior Load (alarm) Current: 30 mA

$$C = K \times 【 (1 + 1/6) \times (I_1 + L \times I_2) + 1/6 \times (L_2 \times 2 \times 0.03) 】$$

Main Panel Electricity Requirement (including activations):

DC24V 0.53 A (I_1)

(Note: I_1 is the total current consumption of the main panel while activated, excluding the loop board)

Monitoring Electricity Requirement (each system):

DC24V　0.3 A / Each Loop　(I_2)

Activation Electricity Requirement (each loop):

DC24V　30mA / Load Per Device(alarm)

N. Battery Requirement Estimation Formula

Item / No. of units	Capacity Requirement	Installed Battery Specification	Battery Catalog Number
1	1.51 AH	DC24V 2.3 AH * 1	NP2.3-6 (NP2.3-24) (SP623)
2	2.05 AH	DC24V 2.3 AH * 1	NP2.3-6 (NP2.3-24) (SP623)
3	2.58 AH	DC24V 4 AH * 1	NP4-6 (NP4-24) (PL4 - 6)
4	3.11 AH	DC24V 4 AH * 1	NP4-6 (NP4-24) (PL4 - 6)
5	3.64 AH	DC24V 4 AH * 1	NP4-6 (NP4-24) (PL4 - 6)
6	4.18 AH	DC24V 7 AH * 1	NP7.2 - 12 (PL7-12) (or NP7-12)
7	4.71 AH	DC24V 7 AH * 1	NP7.2 - 12 (PL7-12) (or NP7-12)
8	5.24 AH	DC24V 7 AH * 1	NP 7.2 - 12 (PL7-12) (or NP7-12)
9	5.77 AH	DC24V 7 AH * 1	NP7.2 - 12 (PL7-12) (or NP7-12)
10	6.30 AH	DC24V 7 AH * 1	NP7.2 - 12 (PL7-12) (or NP7-12)
11	6.84 AH	DC24V 7 AH * 2	NP 7.2 - 12 (PL7-12) (or NP7-12)
12	7.37 AH	DC24V 7 AH * 2	NP 7.2 - 12 (PL7-12) (or NP7-12)
13	7.90 AH	DC24V 7 AH * 2	NP7.2 - 12 (PL7-12) (or NP7-12)
14	8.43AH	DC24V 7 AH * 2	NP7.2 - 12 (PL7-12) (or NP7-12)
15	8.96 AH	DC24V 7 AH * 2	NP7.2 - 12 (PL7-12) (or NP7-12)
16	9.50 AH	DC24V 7 AH * 2	NP7.2 - 12 (PL7-12) (or NP7-12)