

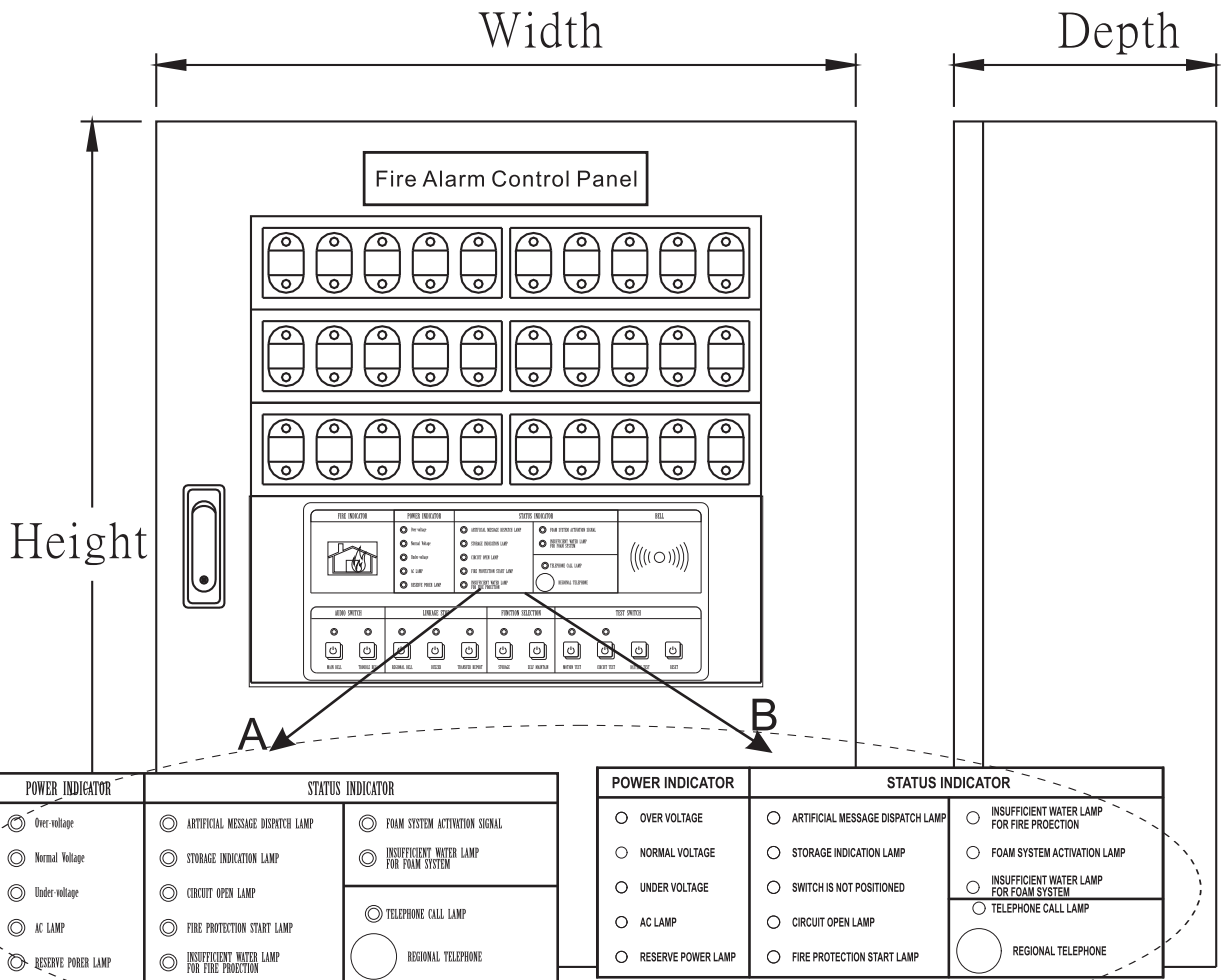
Accumulation-Type Fire Alarm Control Panel



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Fire Alarm Control Panel



SIZE MODEL	Height(mm)×Width(mm)×Depth(mm)	SIZE MODEL	Height(mm)×Width(mm)×Depth(mm)
5L	400 X 300 X 120	75-80L	1020 X 580 X 200
10L	400 X 300 X 120	85-90L	1195 X 580 X 200
15L	495 X 300 X 120	95-100L	1350 X 580 X 200
20L	580 X 300 X 120		
25-30L	580 X 480 X 180		
35-40L	700 X 480 X 180		
45-50L	760 X 480 X 180		
55-60L	840 X 480 X 200		
65-70L	930 X 480 X 200		

※ No notification for any change of dimension

General Introduction

All base boards use a modular design. Performance of the circuit is stable. And the appearance is simple and elegance. With two phase accumulation function to reduce false alarm, operator can know the situation instantly and the maintenance is easy.

Description of Functions

1. Accumulation function : Fire warning will be activated only after circuit detection and confirmation after certain period of time. This function can eliminate circuit interference and reporting mistakes, as well as increase the reliability of the mainframe.
2. Standby power supply protection device : In case of power failure and the standby voltage below DC 18V, discharge will be stopped automatically to extend battery life.
3. Integration design : External wires are configured into the terminal wiring board through wiring ducts and separated from circuit boards. In case of maintenance, the circuit board can be independently and promptly removed without removing the external lines.

Electrical Features

1. Voltage over-high: The red LED on, indicating the system voltage is over-high.
2. Voltage standard: The green LED on, indicating the system voltage is normal.
3. Voltage over-low: The yellow LED on, indicating the system voltage is over-low.

(Note: Directly read the volume with indicator type)

List of Panel LED Function

4. AC power light: The green LED on, indicating AC power supply is in normal condition.
5. Standby power light: The yellow LED on, indicating standby power is in use.
6. Alarm signal light: The red LED blinking along with zone circuit light on, indicating fire alarm signal.
7. Accumulation light: The red LED on, indicating the circuit is in accumulating.
8. Disconnected light: The yellow LED on, indicating external wire of the circuit disconnected.
9. Fire Fighting activated light: The yellow LED blinking, indicating fire fighting pump is activated.
10. No fire fighting water light: The yellow LED blinking, indicating the shortage of water in fire fighting pump tank.

11. Foam activated light: The yellow LED blinking, indicating foam pump is activated.
12. No foam light: The yellow LED blinking, indicating the shortage of foam in foam pump tank.
13. Phone call light: The red LED on along with long beep, indicating plug in phone set for communication.
14. Switch light: The red LED on, indicating the switch is not in position.
(Note: <A> Tack switch type-->the light is on the top of switch;
Switch type-->indicating by general light)

Descriptions of Switch Function

1. Main audio switch: As circuit activating main audio sounds, press the switch then the switch light on and main audio stops sounding.
2. Alarm audio switch: Sounds as circuit disconnected, pump activated or out of water; press the switch then the switch light on and alarm audio stops sounding.
3. Zone audio switch: As circuit activating zone audio sounds, press the switch then the switch light on and zone audio stops sounding.
4. Buzzer/Gate switch: As circuit activating buzzer sounds/gate open; press the switch then the switch light on, buzzer stops sounding /gate close.
5. Reporting switch: As circuit activating broadcast reports, press the switch then the switch light on and broadcast stops reporting.
6. Accumulation switch: Circuit activated after 5~8 seconds accumulating as the switch light off; press the switch then the light on and circuit activated directly.
7. Auto-reserved switch: Circuit activated as the light off, the state will be kept in memory; press the switch and the light on. Then circuit activated without keeping state in memory.
8. Disconnected test switch: Press the switch and the light on then make disconnected test for each circuit directly.
(Do not press activity test switch simultaneously)
9. Activity test: Press the switch and the light on then make activity test for each circuit directly.
(Do not press disconnected test switch simultaneously)
10. Battery test switch: Press switch to identify whether the standby power is normal.
11. Reset switch: Press switch to remove circuit state in memory and reset the system.

Note of Maintenance

- 1-1. Normal condition of the control panel- AC power light on, the normal light of voltage on , all switch light off and external PBL indicative light on.
- 1-2. Power failure condition- AC current light off, standby power light on and others are in normal state , indicative light off except it is activated with blinking.
- 2-1. Damaged or failure devices must be repaired as first priority.
- 2-2. Periodical maintenance, including external and function, must be performed at least twice a year.
- 3-1. overall examination should be performed every year. Examination performed by professional institution or original manufacturer is required.
Examination results should be recorded and filed. Examples of examination Items is listed below for reference :
 - (1). Power supply circuit : AC power and standby power should meet requirements.
 - (2). Control panel :
 - a. Fire alarm / disconnection testing : using the circuit testing switch to test the function of fire alarm / disconnection. The function of fire alarm / disconnection should work normally.
 - b. Function of each LED indicator on the control panel should work normally.
 - c. Function of each switch on the control panel should work normally.
 - (3). Detectors : functions of the on-site detectors should work correctly. Confirmation LED of the detectors should not fail.
 - (4). Signal transmitter : Functions of signal transmitter should work normally.
 - (5). LED indicator : LED is on in normal condition and blinking in fire alarm activation.
 - (6). Zone audio / water flow alarm : When activated, the on-site audios should sound normally.
 - (7). Insulation testing : Insulation of both power terminal and grounding terminal should exceed 20M Ω
 - (8). Periodically check functions of each pump. Each water storage tank should be full of water.
 - (9). Appearance and the control panel should be cleaned periodically.
 - (10). To extend service life of the control panel, please do not place the control panel in such environment with high temperature, high humidity and direct sunlight.

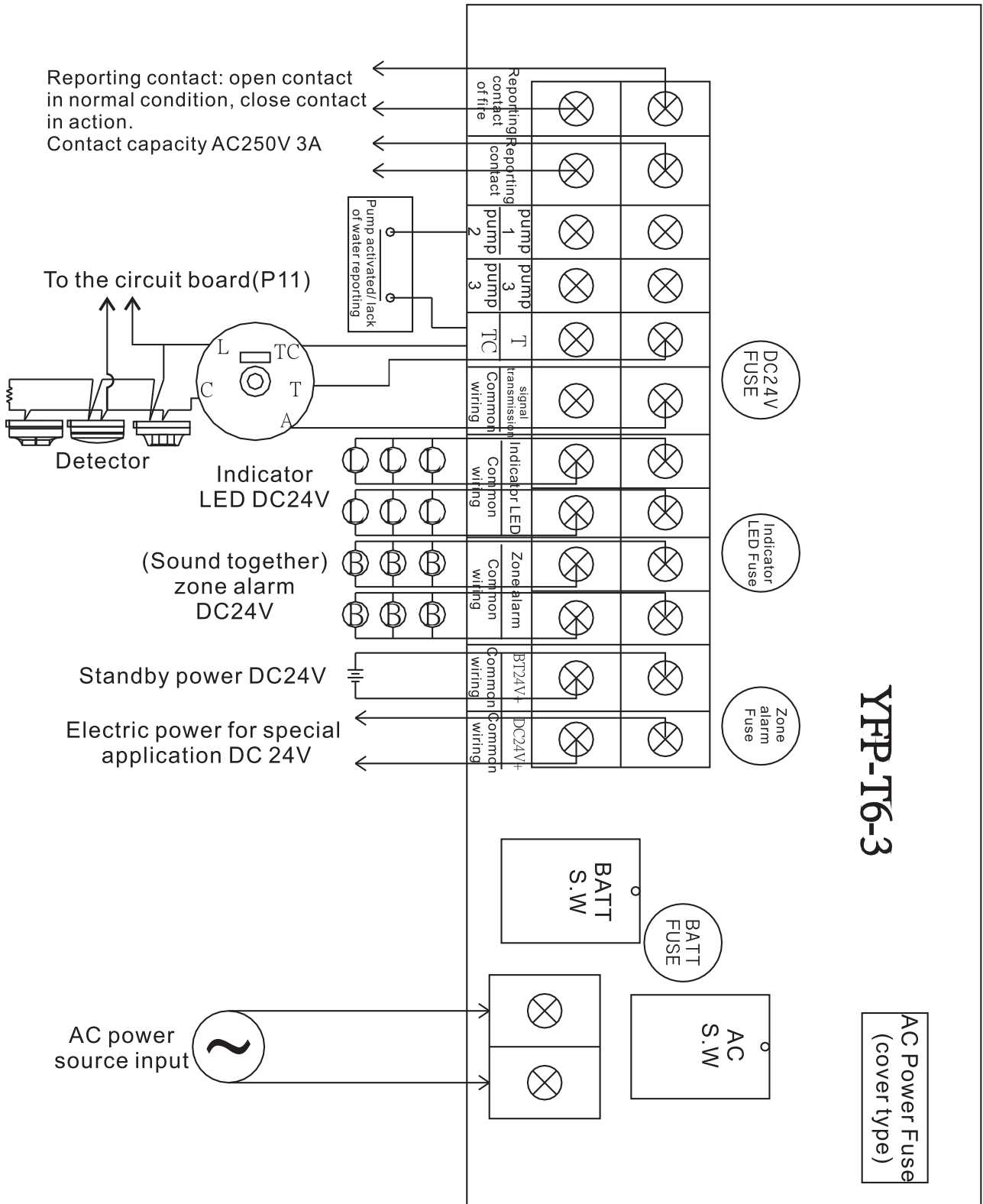
Quick Troubleshooting

SYMPTOM	CORRECTIVE ACTIONS
1.AC power indicator (green LED) is off	1.Check AC power 2.If fuse for the AC power is burnt, please replace a new one.
2.Standby power indicator LED is off	1.Verify that the standby power is ON. 2.If fuse for the standby power is burnt, please replace a new fuse. 3.If AC power failure lasts a long time, the standby battery voltage will decrease continuously. Once the voltage is below DC 18V, the panel will turn off automatically. Return of AC power supply can re-charge the battery and turn on the control panel to normal condition. 4.Replace a new standby battery
3.Circuit disconnection indicator LED is on and buzzer sounds.	1.Circuit's terminal resistor is loosed. 2.Detector in the circuit is not installed or not well configured.

Specifications of Control Panel

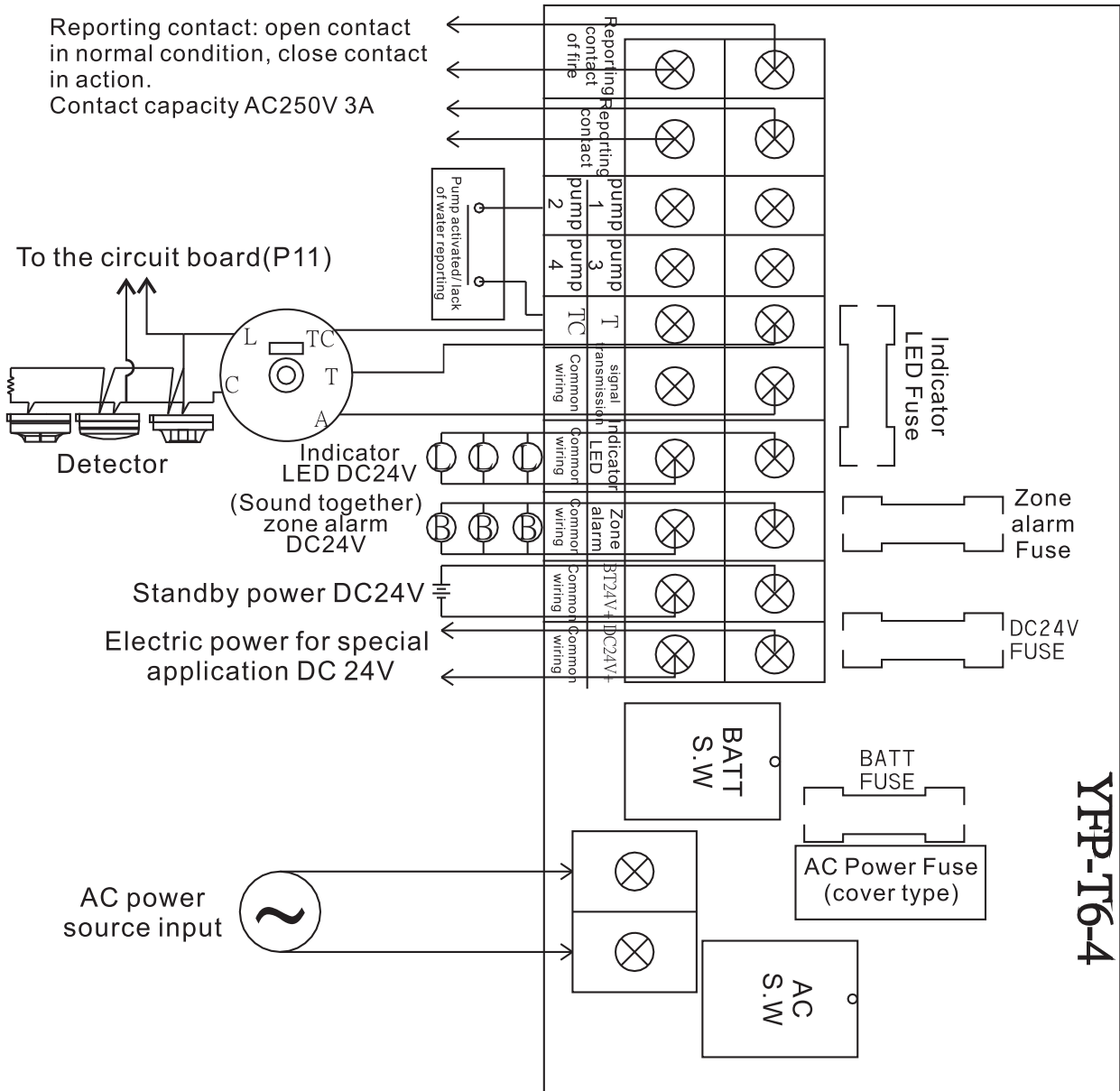
ITEM	SPECIFICATION
Model	YF-1
Type	P-type control panel
Appearance	Wall-mounted and stand type
Standard	Comply with Chinese National Standard CNS-8877
AC power	AC 110V / 220V 50/60Hz
Standby battery	DC 24V sealed lead acid battery
Electrical charge	Below DC 26.4V, 450mA, constant charge
Circuit voltage and current	DC 24V, short circuit at 5V, below 32mA
External circuit resistor	Round trip below 50Ω
Detector	Unlimited installation number for rate-of-rise heat detector and fixed temperature heat detector. Smoke detector (DC 24V 45μA) and digital rate-of rise heat detector. For smoke detector which is available to connect below 30 units per circuit.
Terminal resistor	10KΩ
Number of Indicator LED	1.2 times of panel circuit
Number of zone alarm	1.2 times of panel circuit
Case material	1.2mm~2.0mm standard material Single-sound buzzer, above 85db
Main audio	Single-sound buzzer, above 85db
Reporting contact	No voltage, open contact, capacity AC 250V 7A X 2 sets
Accessories	5fuses, amount of terminal resistor is same as amount of circuit, zone phone for 2 sets and 1 operation manual

Wiring Diagram of Control Mainframe



Wiring Diagram of Control Mainframe

Simple Wiring Diagram of Fire Alarm Main Control Board



Notes of Installation

1. Please verify that all water-shortage-activated pumps use no voltage contact point
2. To prevent damage on mainframe,, polarity of the standby battery must be correctly installed
3. As AC power switch is off, please also turn off BATT power switch to avoid battery discharging for long time and out of electric.
4. Grounding is required in installation
5. Insulation resistance of external circuit grounding must be greater than $2M\Omega$
6. Calculation of fuse capacity:
 - (1) Indicator LED: $0.03A \times \text{Circuit number} \times 1.5$
 - (2) Zone audio: $0.03A \times \text{Circuit number} \times 1.5$
 - (3) DC power: $0.08A \times \text{Circuit number} \times 1.5$
 - (4) AC power: $\text{power consumption} W/100 \times 1.5$
 - (5) Standby power: $\text{power consumption} W/24 \times 1.5$
 - (6) Output of sprinkler buzzer: DC 24V, 0.5A(1L)
 - (7) Output of smoke evacuation gate control: AC 110V/2A
 - (8) Connection type of smoke evacuating fan: no voltage connection

Estimation of Electric Power

Note: Comply with CNS 11039_2.10.3

C: Battery volume(AH)

L: Changing factor(0.8)

I_1 : Monitoring current

I_2 : Current for two activated circuit and other monitoring circuit

K_1 & K_2 : Volume conversion to time factor

Ni-Cd battery: $K_1=1.8$ $K_2=1/3$

Lead-acid battery: $K_1:2.3$ $K_2:0.65$

YF-1

Main power: DC 24V 0.12A_(I_1)

Power for monitoring circuit : DC24V 0.018A/per circuit

Power for circuit activity:DC24V 0.1A/per circuit

Estimate Electric Consumption of Standby Battery

Circuit Number	Battery Volume	Battery Specification	Battery Model
1L~5L	0.69AH	24V 1.2AH	NP1.2-24
6L~10L	0.85AH	24V 1.2AH	NP1.2-24
11L~15L	1.01AH	24V 1.2AH	NP1.2-24
16L~20L	1.18AH	24V 1.8AH	NP1.8-24
21L~35L	1.67AH	24V 2.1AH	NP2.1-24
36L~45L	1.99AH	24V 2.3AH	SP623
46L~70L	2.81AH	24V 4AH	NP4-24
71L~100L	3.41AH	24V 7AH	NP7.2-12(or PL7-12)
101L~155L	5.45AH	24V 7AH	NP7.2-12(or PL7-12)

Comply with CNS 11039_2.10.3

1. After monitoring for 60 minutes, the condition of two circuit activated for 10 minutes.

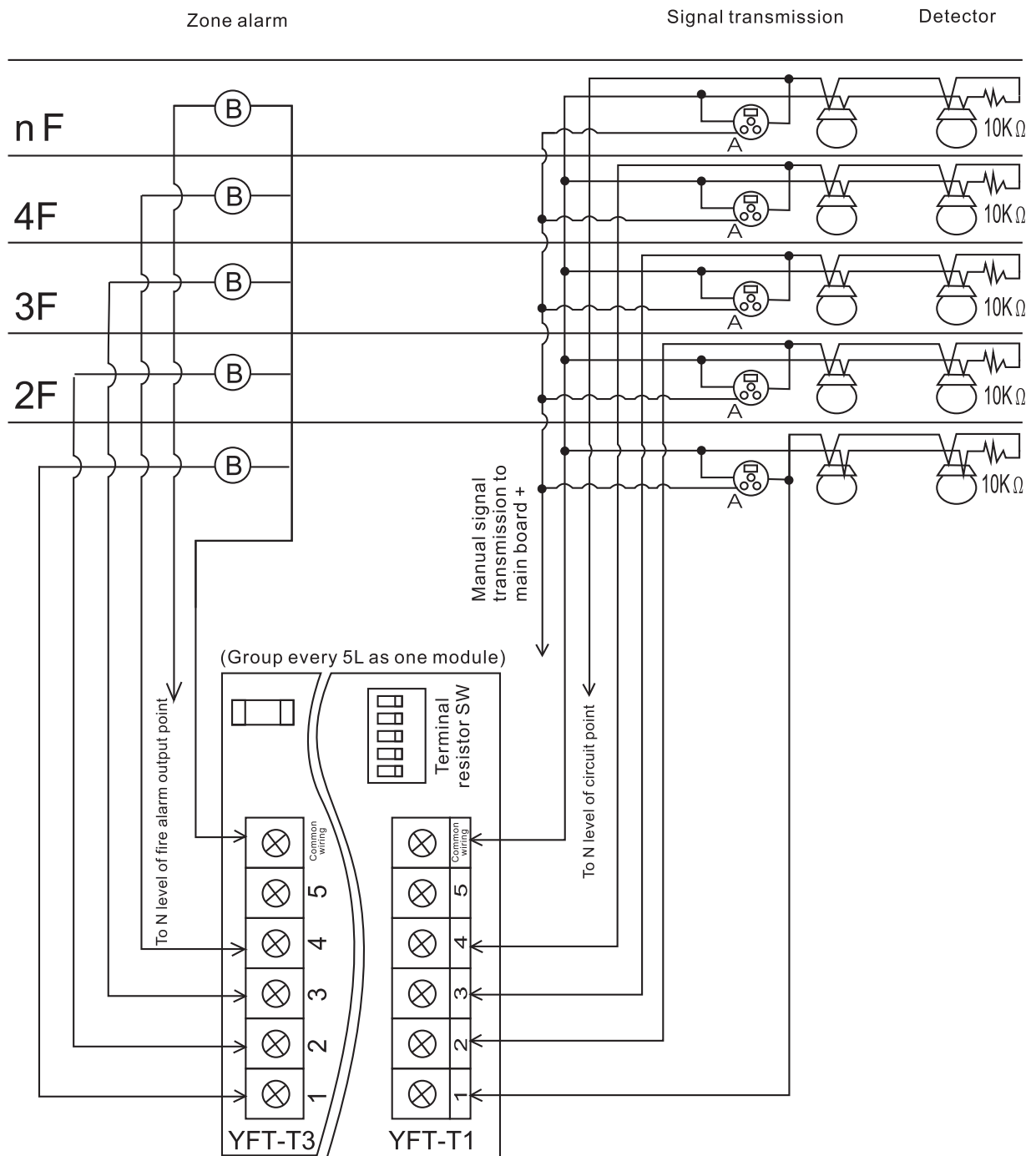
$$\begin{aligned}
 C &= 1/L \{ K_1 I_1 + K_2 (I_2 - I_1) \} \\
 &= 1/0.8 \times \{ 2.3 \times 0.12 + 0.65 \} \\
 &= 1.25 \times \{ 0.276 + 0.65 \times 2.78 \} \\
 &= 1.25 \times 2.083 \\
 &= 2.6037
 \end{aligned}$$

2. Monitoring for 60 minutes

$$\begin{aligned}
 C &= I_1 + \text{total circuit number} \times I_2 \\
 &= 0.12 + 150 \times 0.018 \\
 &= 2.82
 \end{aligned}$$

$$(1) + (2) = 2.6037 + 2.82 = 5.457 \text{ AH}$$

Wiring Diagram of Fire Zone Alarm, Detector and Manual Signal Transmission Circuit

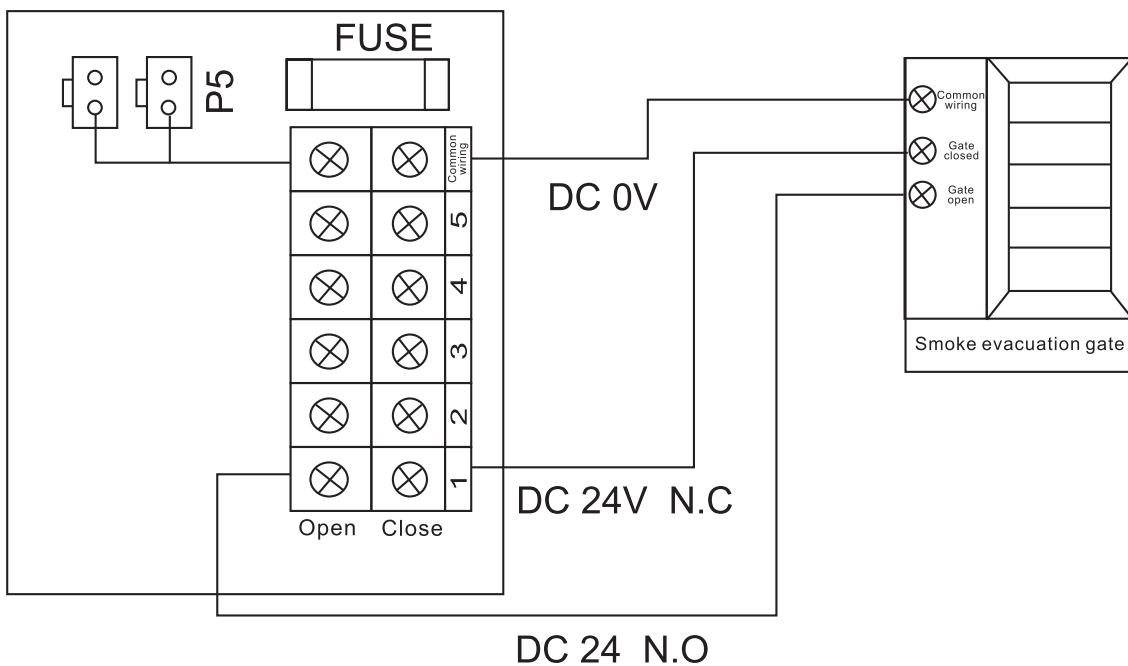
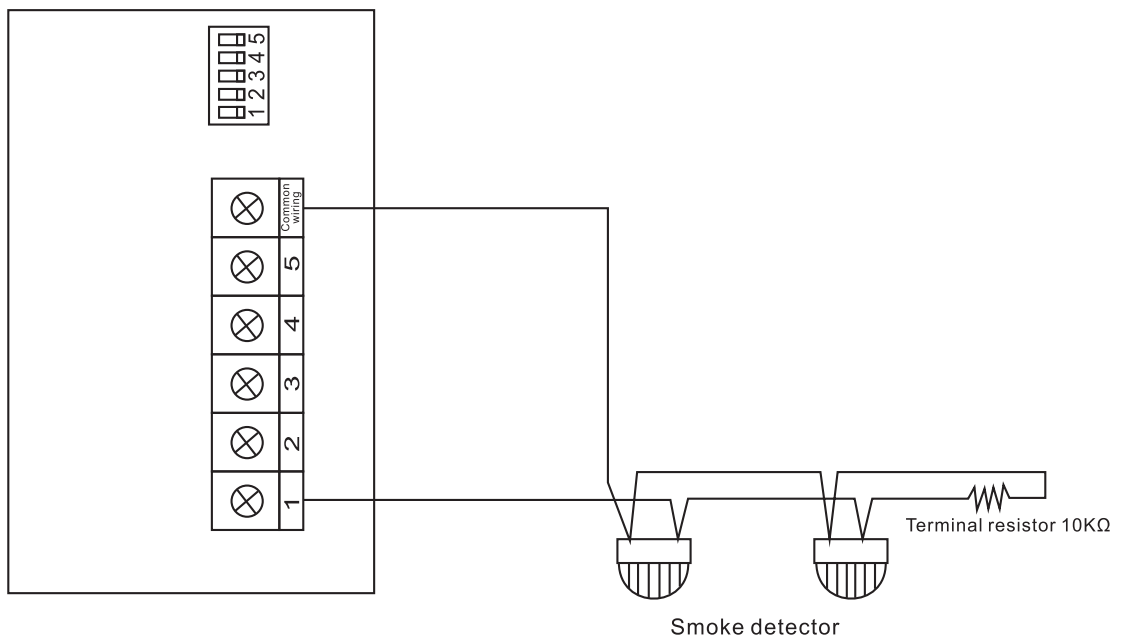


Notes for Installation

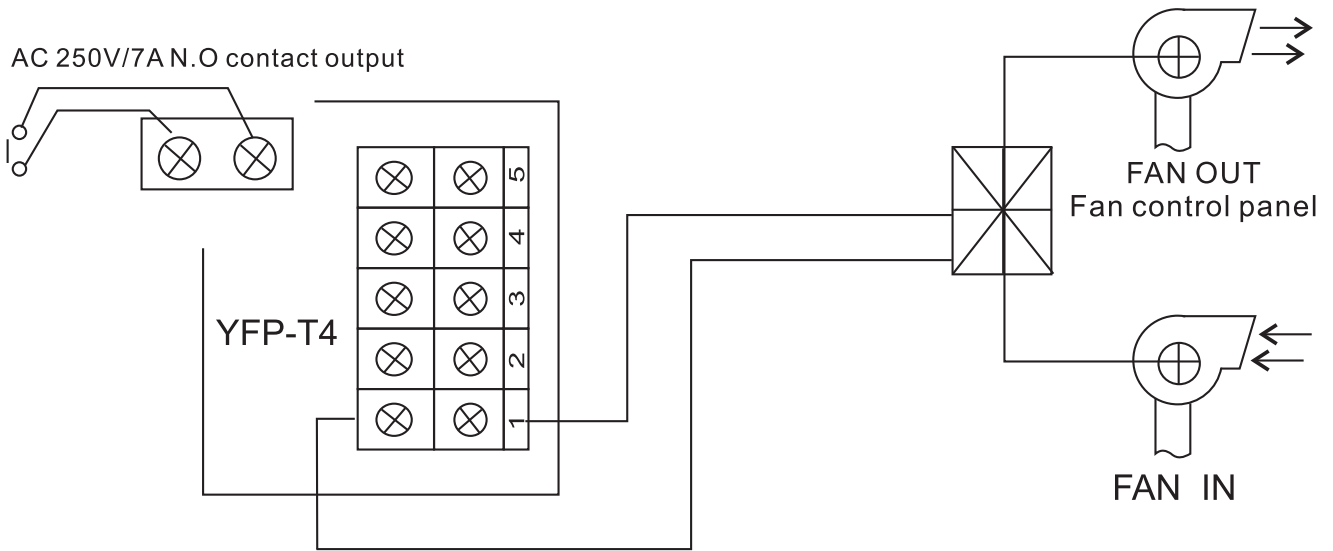
1. Detector's terminal resistor is 10KΩ.
2. If circuit is in use, the terminal resistor switch must be in OFF position. Similarly, circuit is not in use, the terminal resistor switch must be in ON position.
3. Do not connect the common wiring of indicator LED and the common wiring of both zone audio and circuit in parallel.

- 4.If both the control panel and the broadcast mainframe are equipped, do not place both electric circuit wire and amplifier wire in the same tube. Otherwise interference will occur.
- 5.Please follow the wiring rule(one common wiring for seven circuits) to perform wiring work, and so forth.
- 6.Each circuit, indicator LED and external wire, such as zone audio, cannot make short circuit with AC 110V power wire.

Wiring Diagram of Smoke Evacuation Circuit



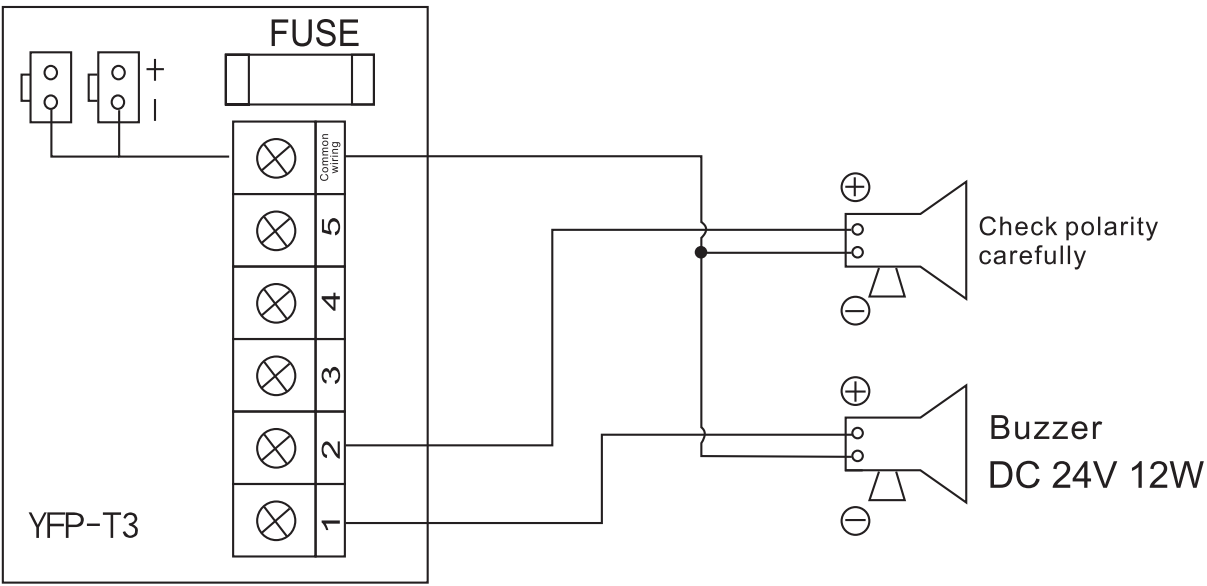
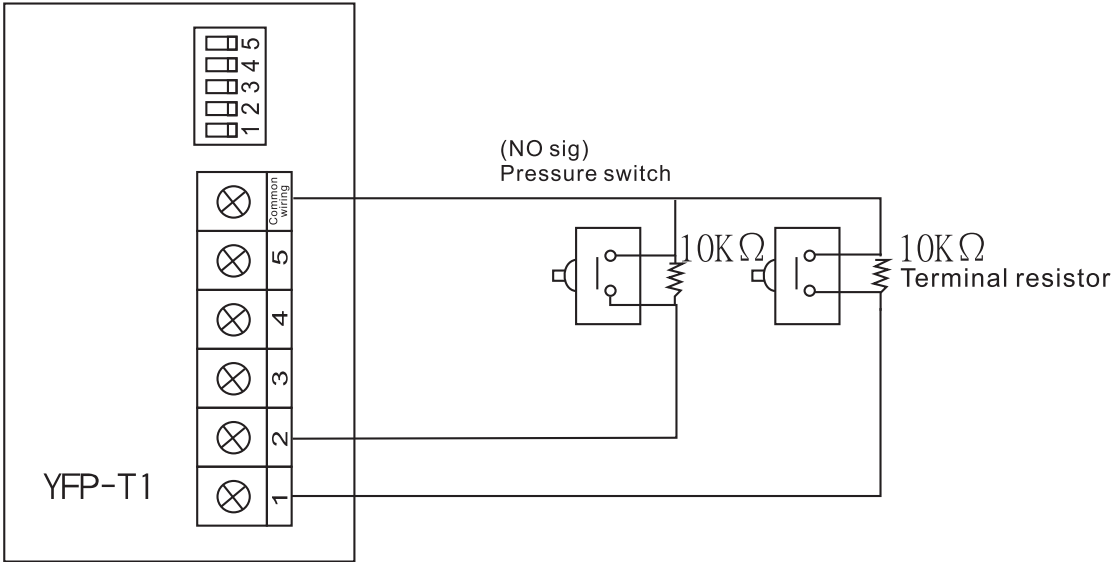
Wiring Diagram of Smoke Evacuation Circuit



Notes for Installation

1. Connection of the smoke detector : allowable number to each circuit is maximum 30 units. If over 30 units, it will cause disconnection and detection failure.
2. Changing of gate control voltage requires changing method of P5 connection. Please contact the original manufacturer for services.
3. Fan contact point is no-voltage contact(AC 250V /2A N.O)

Wiring Diagram of Sprinkling and Foam Circuit



Notes of Installation

1. Do not install buzzer polarity inversely.
2. Capacity of fuse is calculated by the equation: [total buzzer number (equipped with the circuit from 1 to 5) × 1.5]
3. Maximum allowable capacity of each circuit is DC 24V 5A

Diagram of Main Frame Circuit

