CM-NP1

Conventional Fire Alarm Control Panel

Operation Manual

CHUNG MEI

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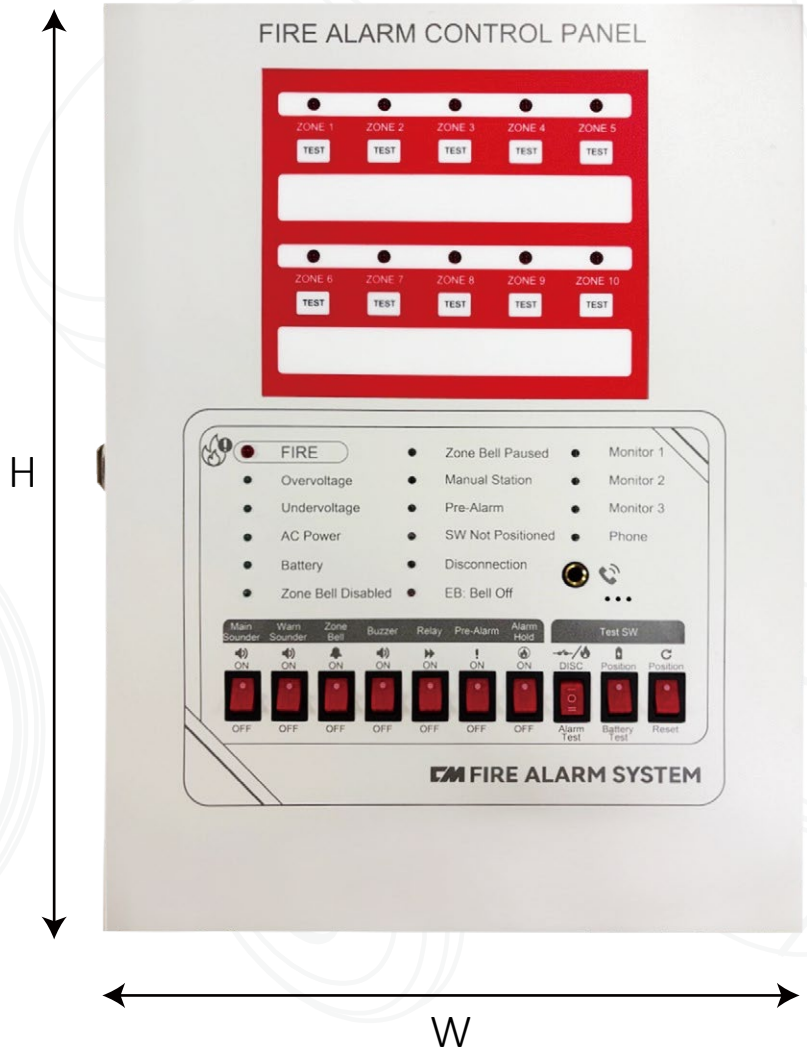
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1. Dimensions and Specifications

1.1 Wall-Mount Dimensions



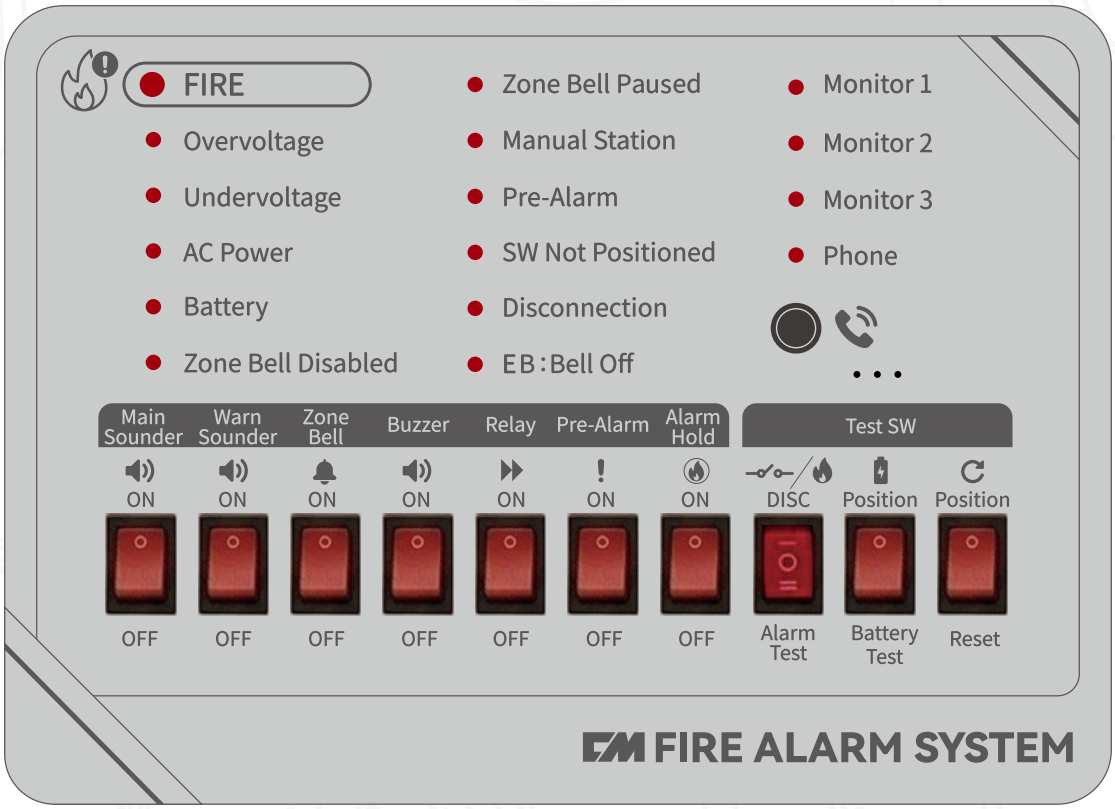
Zones	5~10L	15~20L	25~30L
Height (mm)	400	580	500
Width (mm)	300	300	420
Depth (mm)	120	120	180

1.2 Specification

Specification	Content
Power Supply	AC220V 50/60Hz
Standby Battery	DC24V 1.2Ah ~ 2.3Ah (depending on model)
Charging voltage	DC26V, under 400mA, constant-voltage trickle charging
Circuit voltage	DC24V operation voltage, below DC5 ~ 8V 32mA
Rated Impedance	To-and-fro below 50Ω; Ground resistance above 2MΩ
Quantity of Detectors	*No limitation for mechanical rate-of-rise and fixed-temperature heat detectors. *Max. output : 1.2mA / 24VDC for smoke detectors per zone.
EOL Resistor	Zone resistor 10KΩ 1/4W
Quantity of Indicating lamps/ Zone bells	Shared 2A/ panel
Case Material	Powder-coated steel plate
Main Audio	Single-tone buzzer, above 85dB/M
Report contacts	No voltage, NO contact AC250V/6A, 2 sets

2. Front Panel Layout and Descriptions

2.1 Layout



2.2 Descriptions

(1) Fire: When any zone detects a fire, this red light flashes to show the system is in fire alarm status.

(2) AC Power: A steady green light means AC power is normal. A flashing green light means the AC power supply is abnormal.

(3) Battery: A steady yellow light means the panel is running on backup battery power. A flashing yellow light means the battery switch is turned OFF or no battery is detected.

(4) Overvoltage: A steady yellow light means the system voltage (AC) is too high.

(5) Undervoltage: A steady yellow light means the system voltage (AC) is too low. A flashing yellow light means the DC 24V loop power supply is abnormal.

(6) Zone Bell Disabled / Emergency Broadcast Total Silence LED: A steady yellow light means the internal silence switch is ON (a non-silenceable warning tone will sound at the same time).

(7) Zone Bell Paused / Emergency Broadcast Silenced LED: A steady yellow light turns on after pressing the zone bell button. (The alarm will automatically sound again after about 4.5 minutes.)

(8) Manual Station: A flashing red light indicates an alarm triggered by a manual call point.

(9) Pre-Alarm (Accumulation): A flashing red light shows that the zone is in pre-alarm/ accumulating condition (filtering false alarms).

(10) SW Not Positioned: A flashing red light warns that one or more control switches are not in their normal positions.

(11) Disconnection/ Open Circuit / Fault LED: A flashing yellow light indicates an open circuit (broken wire) on an external zone line. A steady yellow light indicates a communication error (please check if communication cables are connected properly and the address DIP switches are set correctly).

(12) EB Bell Off LED: A flashing yellow light shows that the external emergency microphone is active, and zone alarm bell output is temporarily stopped.

(13) Monitor 1/Water Tank Low: A flashing yellow light means the fire pump water tank is short of water.

(14) Monitor 2/Fire Pump Run: A flashing yellow light means the fire pump is currently running.

(15) Monitor 3/Foam Pump Run: A flashing yellow light means the foam pump is currently running.

(16) Phone: A steady red light turns on with a continuous buzzer tone. Please plug in the phone handset to talk.

(17) Icon/ Phone Jack: Connect the phone handset here to talk directly with someone at a field manual station.

(18) Main Sounder: In the ON position, it buzzes when a zone triggers. In the OFF position, the SW not Positioned LED lights up, and the main panel buzzer stops.

(19) Warn Sounder: In the ON position, it sounds when a wire is broken, a pump starts, or water is low. In the OFF position, the SW not Positioned LED lights up, and the warning sounder stops.

(20) Zone Bell: In the ON position, bells ring when a zone triggers. In the OFF position, bells and emergency voice broadcast pause, but will automatically ring again after about 4.5 minutes.

Note on Taiwanese Fire Code Regulations:

Under standard fire safety rules for large buildings (5 floors or higher, with a total floor area over 3,000 square meters), zone alarm sounding operates as follows:

1. Fire on the 2nd floor or above: Bells ring only on the fire floor and the floor directly above it.

2. Fire on the ground floor (1st floor): Bells ring on the ground floor, the 2nd floor, and all basement levels.

3. Fire in the basement: Bells ring on the ground floor and all basement levels.
   (If within 10 minutes, or if the panel receives a second fire signal, the entire building must ring immediately.)

Compliance Note: This unit is factory-set to trigger the full-zone alarm after about 4.5 minutes or upon receiving a second fire signal.

(21) Buzzer: In the ON position, the buzzer sounds and smoke dampers open during an alarm. In the OFF position, the SW not Positioned LED lights up, the buzzer stops, and dampers close.

(22) Relay: In the ON position, dry relay contacts activate during an alarm. In the OFF position, the SW not Positioned LED lights up, and relay outputs are disabled.

(23) Pre-alarm: When active, fire alarm signals must stay steady for 5 to 8 seconds before triggering. In the OFF position, the SW not Positioned LED lights up, and alarms trigger instantly without delay/accumulation.

(24) Alarm Hold: In the ON position, the fire alarm status locks on once triggered. In the OFF position, the SW not Positioned LED lights up, and the fire alarm status resets automatically as soon as the detector returns to clean air.

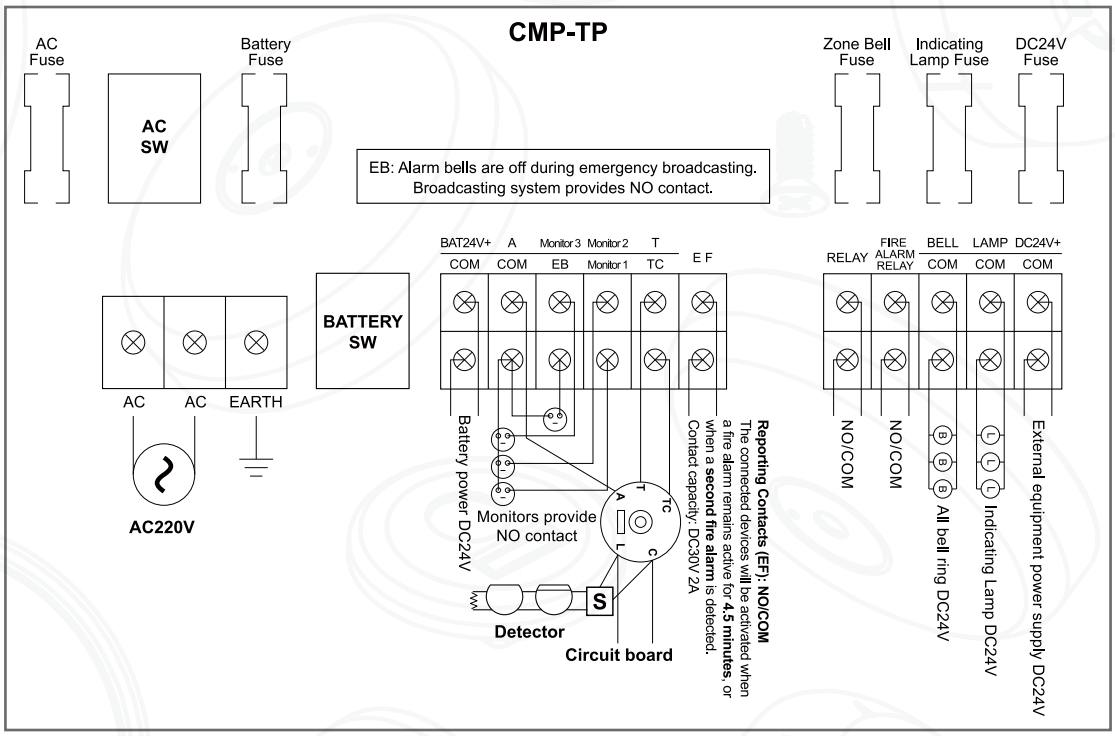
(25) Test Switch (3-Position: Disconnection / Normal / Alarm Test): Keep this switch set to Normal for daily monitoring. Switch to Disconnection to check broken-wire detection for each zone. Switch to Alarm Test to test fire response for each zone.

(26) Battery Test: Press and hold this switch to test if the backup battery operates properly.

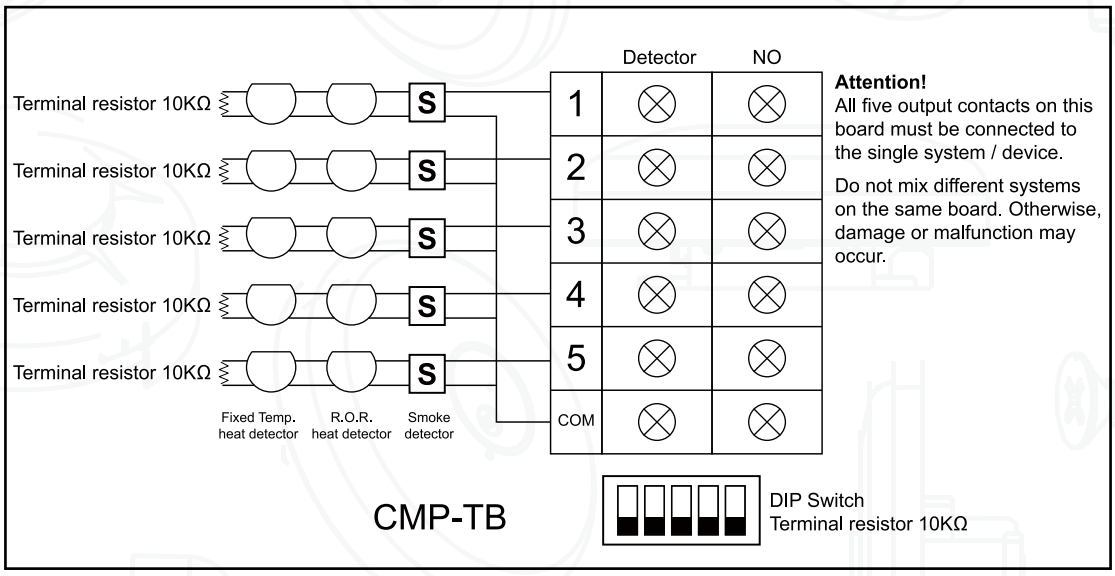
(27) Reset: System reset-Press this switch to clear all active conditions and return the entire panel to normal standby status.

3. External Wiring Diagrams and Instructions

3.1 Main Control Board Wiring Diagram



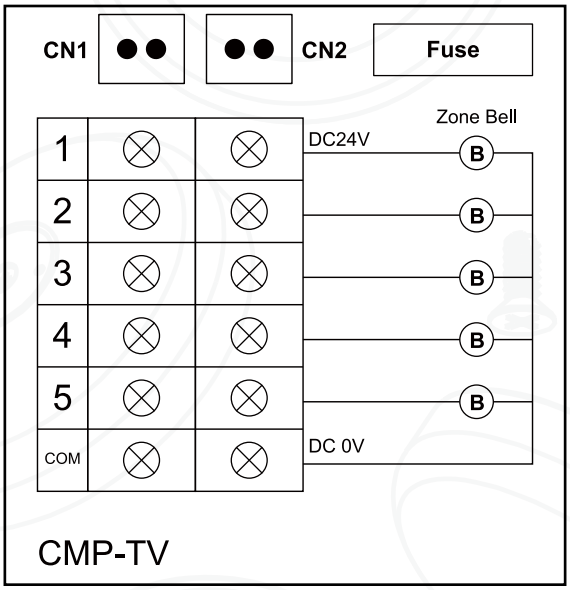
3.2 Detector / Manual Station / Broadcast Wiring Diagram



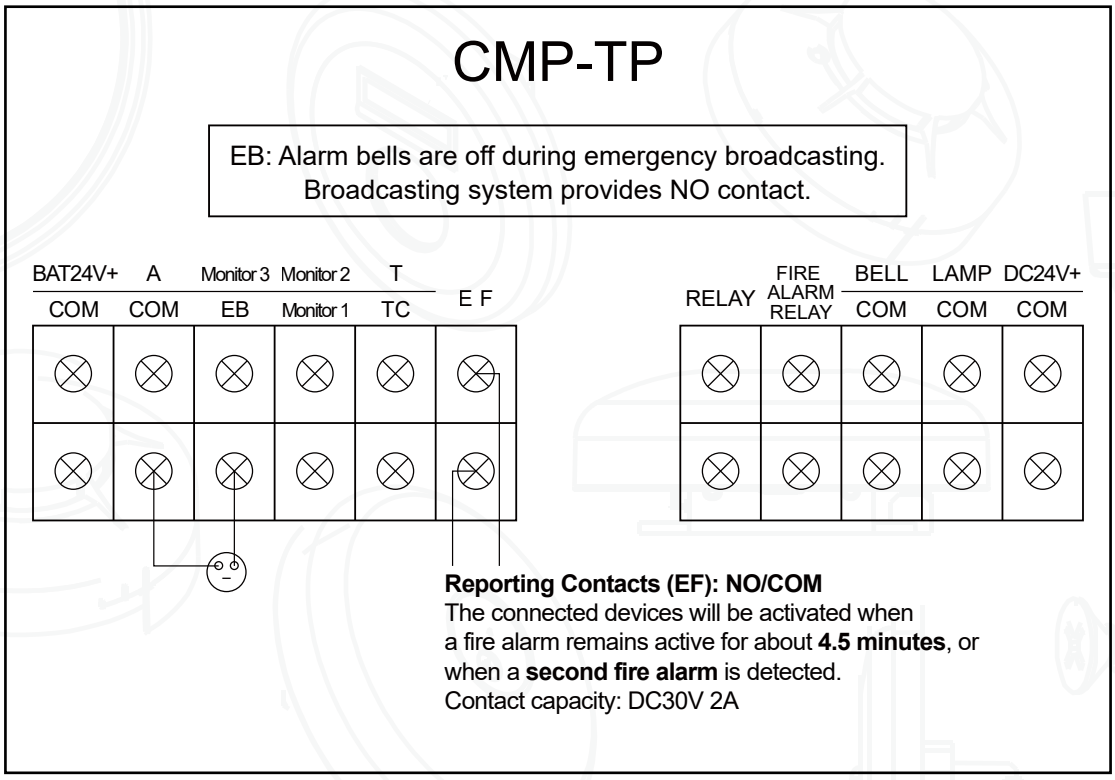
Attention!
All five output contacts on this board must be connected to the single system / device.

Do not mix different systems on the same board. Otherwise, damage or malfunction may occur.

3.3 Alarm Bell Wiring Diagram



3.4 General Evacuation (EF) and Bell Cut (EB) Wiring Diagram



※ EF (General Evacuation Relay) Notes:

1. Wire the EF terminal only if your building uses a floor-by-floor zoned alarm broadcast.

2. How EF Works: While floor-by-floor alarm is ringing, if a new fire alarm signal comes in OR a pre-set time passes (about 4.5 minutes), the system automatically switches to full-building evacuation alarming.

3. The EF contact is a dry contact output C/NO (Rating: 2A / 30V DC). Connect it to the EF input terminal of your emergency broadcast system.

4. Do not share this contact with other equipment.

※ EB (Emergency Bell Cut) Notes:

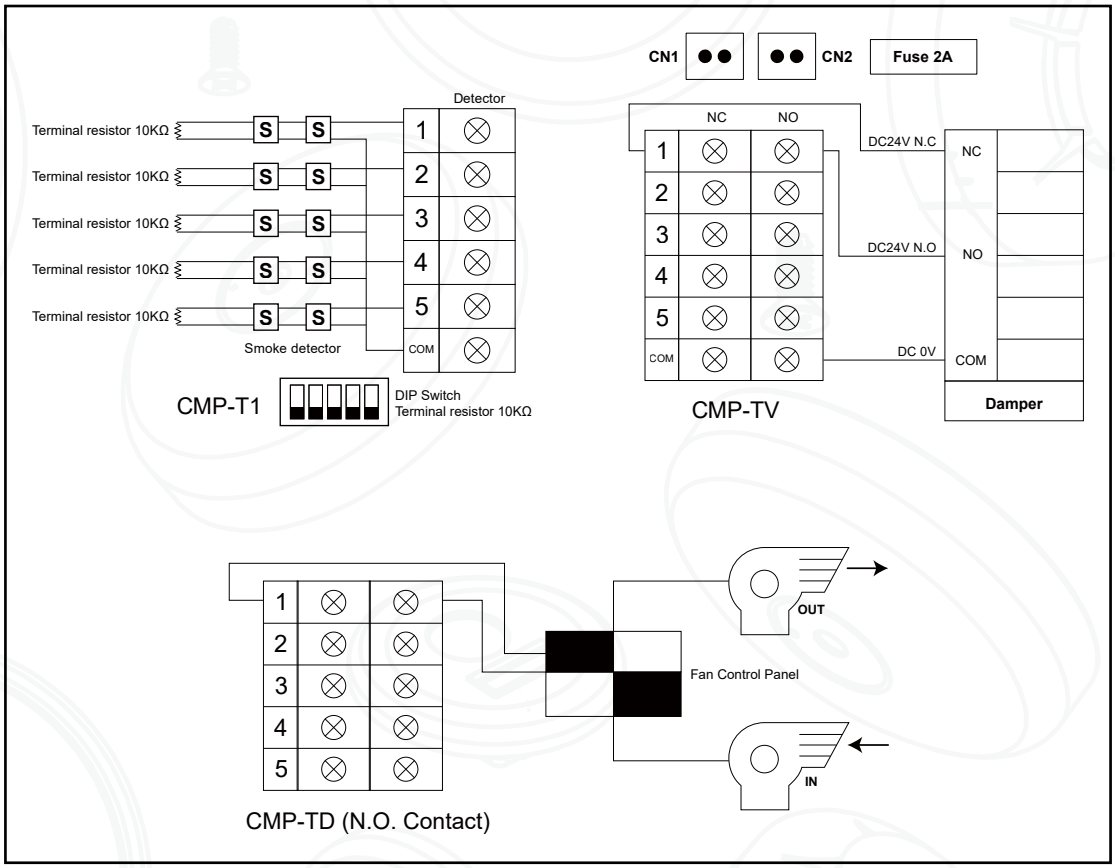
1. Wire the EB terminal only when using both alarm bells and an emergency voice broadcast system together.

2. How EB Works: When the emergency broadcast microphone is activated, panel bells must silence so people can hear live emergency announcements clearly.

3. The EB terminal only accepts a dry contact C/NO input. Connect it to the EB bell-cut output terminal of the emergency broadcast system.

4. Do not share this terminal with other equipment.

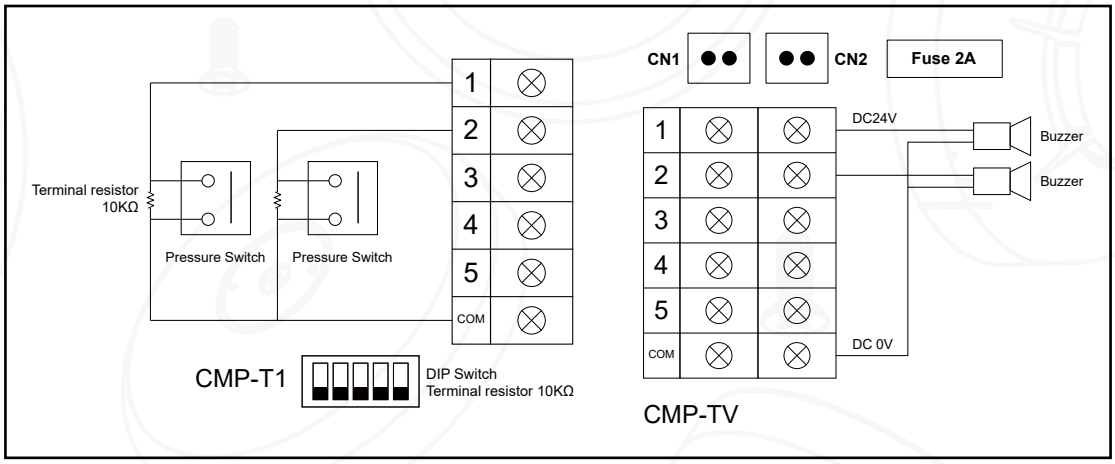
3.5 Smoke Control and Exhaust Fan Wiring Diagram



※ Notes:

1. Smoke Detector Limits: Maximum 30 smoke detectors(CM-WT32L) per zone. Exceeding 30 units may cause the disconnection/open-circuit (broken wire) detection to fail. For other smoke detector models: 1.2 mA / 24 VDC per zone for connection.
2. Damper Voltage: To change damper control voltage, reconfigure the CN1/CN2 jumpers. Contact your supplier if you need help.
3. The exhaust fan control contact is a dry contact N.O. (Rating: AC 250V / 6A).

3.6 Sprinkler / Foam Pressure Switch and Buzzer Wiring Diagram



※ Notes:

1. When connecting a polarized buzzer, check positive and negative (+ / -) polarity carefully. Do not wire backwards.

2. The fuse capacity is maximum 2A.

4. Installation Precautions

(1) The End-of-Line (EOL) resistor for detector loops is 10KΩ.

(2) For active zones in use, set the EOL DIP switch to OFF. For unused spare zones, set the switch to ON.

(3) Do not wire indicating lamp common wires together with zone bell commons or zone detector commons.

(4) When installed alongside a broadcasting/public address (PA) / voice system, do not run detector cables and audio speaker cables inside the same conduit to prevent signal interference.

(5) Follow the standard rule of 1 common wire for every 5 zones. Add another common wire if you exceed 5 zones.

(6) External wiring (zones, indicating lamps, alarm bells) must never short-circuit with any AC power cable.

(7) All external wiring—including zone loops and control lines—must have an insulation resistance of more than 2MΩ to ground.

(8) All fire pump status inputs (running and low water) must be dry contacts (voltage-free).

(9) When installing or replacing batteries, turn the battery switch OFF first. Check polarity carefully and screw terminals down tightly.

(10) Make sure the panel enclosure is securely grounded.

(11) Whenever you turn the main AC power switch OFF, turn the battery switch OFF as well. This protects batteries from deep discharging and damage.

5. Maintenance and Basic Troubleshooting

5.1 Maintenance Guide

(1) Normal Standby Condition: The AC Power LED is ON (green), all switch warning lights are OFF, and indicating lamps are steady ON.

(2) Power Outage (AC Fail): The AC Power LED turns OFF, and the Standby Power (Battery) LED turns ON. Other panel functions stay normal. Indicating lamps turn OFF to save power during standby, but will flash during an alarm.

(3) Prompt Repairs: If any fault occurs or field devices are damaged, repair them immediately to ensure continuous fire protection.

(4) Maintenance Schedule: Inspect the system at least twice a year to ensure reliable operation.

(5) Annual Full Inspection: Qualified technicians should perform an annual inspection and keep records for local fire authorities. Recommended checklist:

a. Power Supply: Verify smooth switching between AC and battery power; check battery charging health.

b. Control Panel:

- Fire / Disconnection Test: Use test switches to verify fire alarm and wire-break detection for each zone.
- Check that all LED indicators and zone lights work properly.
- Check all switches and push buttons for proper operation.

c. Detectors: Use testing tools in the field to check detector operation and confirmation LEDs.

d. Manual Call Points: Push call point buttons to test alarm triggering.

e. Indicating Lamps: Steady ON during standby, flashing on alarm. When running on battery backup: OFF during standby, flashing on alarm.

f. Zone Bells / Water Flow Indicators: Confirm that all bells, sounders, and flow switches ring loud and clear.

g. Insulation Test: Insulation resistance to ground must stay above 2MΩ.

h. Fire Pumps: Test run pump sets and check for low water levels in tanks.

i. Cleaning: Clean the exterior of the panel regularly to keep labels and indicators clearly visible.

j. Environment: Install the panel in a dry, cool area away from high temperatures, steam, humidity, or direct sunlight to extend component lifespan.

5.2 Basic Troubleshooting

(1) AC Power LED is OFF:

- Check if building AC power is supplying electricity properly.
- Check if the AC power switch on the main power board is turned ON.
- Check if the AC power fuse is blown.

(2) Battery (Standby Power) LED is OFF:

- Check if the backup battery switch on the main power board is turned ON.
- Check if the battery fuse is blown.
- Check battery voltage. (If AC power has been off for a long time and the battery drops below 19V, the auto-cutoff protects the battery. Once AC power is restored, the panel will automatically recharge the battery back to normal.)

(3) Zone Disconnection/Open-Circuit / Fault LED is ON:

- Check if the 10KΩ EOL resistor has fallen off or is loose.
- Check if any detector on that loop is removed or not seated properly in its base.