



P-9907 Active End of Line Unit Installation and Operation Manual (Issue 2.0, March 2003)

I General

A conventional fire alarm system usually depends on a resistor at the end of the loop to keep its normal operation, inappropriate matching will lead to abnormal operation of the whole system, even result in problems like nuisance alarm. Matching with multi-wire fire alarm controller or intelligent zone monitor unit, P-9907 Active End of Line Unit (hereinafter called the unit) takes the place of terminal resistor and solves the above problem, thus increases reliability of conventional fire alarm system.

II Features

1. Zone two-bus, simple and convenient for mounting and wiring.
2. Fault alarm for removal of detectors.
3. Can be used as the base, sparing space.
4. Stable and reliable performance.
5. Anti-interruption ability.

III Technical Specifications

1. Operating Voltage:
Power Bus Voltage: DC24V Range Allowed: DC15V~DC28V
2. Operating Current $\leq 5\text{mA}$
3. Equivalent Resistance: $4.7\text{K}\Omega$
4. Wiring: Zone two-bus, polarized
5. Operating Environment:
Temperature: $-10^{\circ}\text{C}\sim+50^{\circ}\text{C}$ Relative Humidity $\leq 95\%$, no condensation
6. Dimension: $\phi 103\text{mm}\times 37.4\text{mm}$
7. Material and Color of Enclosure: ABS, ivory white
8. Weight: 88g
9. Mounting Hole Distance: 60mm

IV Structure and Operation Principle

1. The bottom is shown in Fig.1.

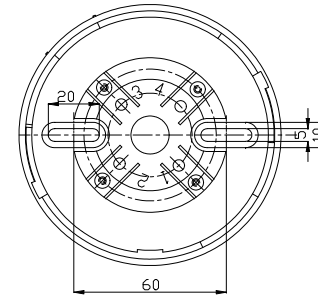


Fig. 1 Bottom

2. Operation Principle

The unit is installed at the end of zone loop composed of multi-wire fire alarm controller or intelligent zone monitor unit. When multi-wire fire alarm controller or intelligent zone monitor unit is powered up and in normal operation, the unit is acting as a load to produce periodic plus-minus alternating differential pulse signals. Due to the voltage dividing of current limiting resistor, the filtered power voltage is reduced, the system is in normal operation state. When the detector is removed, a diode is put in the loop and changes plus-minus pulse to one-way pulse, reducing the load of the unit and increasing the power voltage after dividing and filtering. The multi-wire fire alarm controller or intelligent zone monitor unit can judge fault signal according to this. The judging method of short or broken circuit of zone loop is similar with the above method.

The unit, matching with multi-wire fire alarm controller or intelligent zone monitor unit, can not only keep normal operation of conventional fire alarm system, but also alarm fault (without affecting fire alarm by other field devices) when removing detectors, alarm fault on open circuit and alarm fire on short circuit, etc.

V Mounting and Wiring

Warning: Before installing the device, disconnect the power from the loop and verify that all bases are securely installed and that the wiring polarity is correct at each base.

The mounting method of the unit is the same as that of detector base, there are two wiring mode:

1. When the unit is used as a detector base, a conventional detector can be mounted on it. Connect the anode of zone loop to terminal "1" and cathode to terminal "3" as shown in Fig. 2.

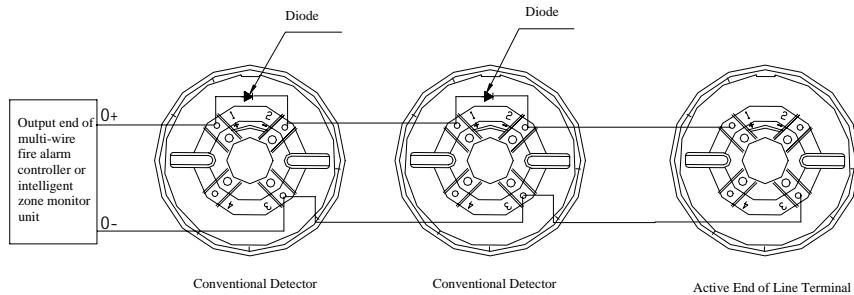


Fig. 2 System composition when the unit used as detector base

2. If the unit is not installed with a detector, the anode of zone loop should be connected to terminal "2" and cathode to terminal "3" as shown in Fig. 3.

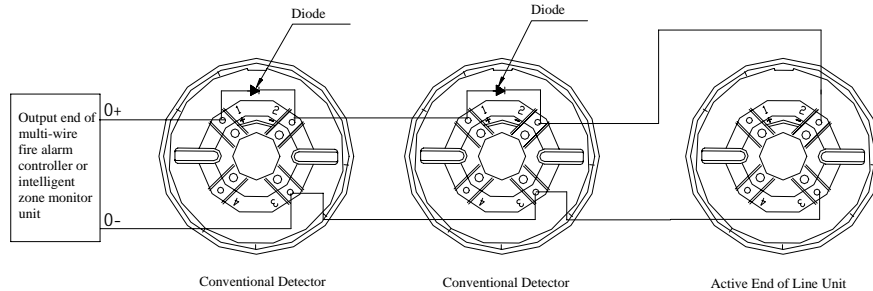


Fig.3 System composition when the unit not used as a detector base

VI Testing

Warning: Power up only after all devices are well connected.

1. Test should be made to the unit after installation and at least once half a year after put into operation.
2. Before testing, notify the proper authorities that the system is undergoing maintenance and will temporarily be out of service. Disable the zone or system undergoing maintenance to avoid unwanted alarms.
3. Remove a detector at any position of the tested zone loop, the system should alarm fault.
4. When the fault is not cleared, make any one of other detectors or manual call points alarm fire, the system should also alarm fire.
5. Carry out "clear" operation on the controller, the fault and fire should be cleared.

6. After testing, resume the unit. Notify the proper authorities the system is back in operation.
7. If a unit fails in testing, check its connection and test again. If it still fails, return for repair.

VII Troubleshooting

1. The system alarms fault after power up:
Check power supply to the zone loop.
2. The system alarms unwanted fire alarm after power up:
Check polarity of power supply to the zone loop reverse or not.

VIII Cautions

1. **Polarity of zone loop should not be reversed.**
2. **When the detector is removed, make sure the diode be in sequence in the circuit.**

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