



SYSTEM SENSOR PDRP-1001 Deluge Preaction Control Panel User Guide

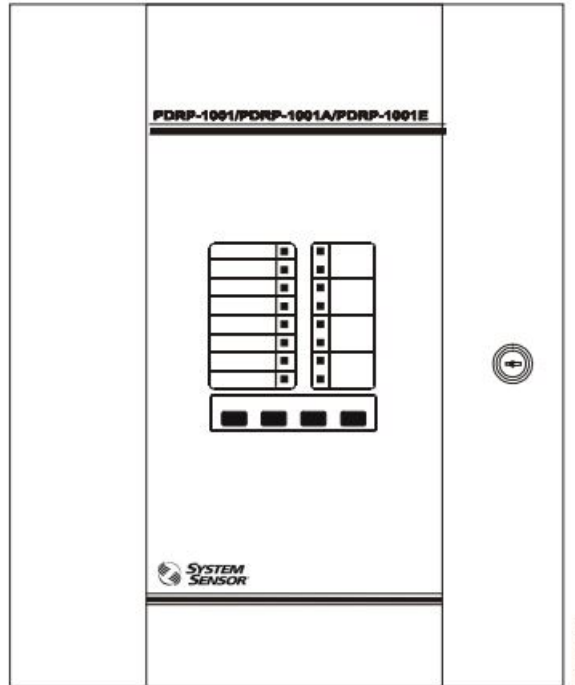
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Control Panel User Guide



**SYSTEM
SENSOR®**

System Sensor
3825 Ohio Avenue
St. Charles, IL 60174
1-800-SENSOR2
Fax: 630-377-6495



The PDRP-1001/PDRP-1001A/PDRP-1001E

Deluge Preaction Control Panel

Manual

Document 50734
156-933-01

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Revision:

C

PN 50734:C

ECN 99-166

Installation Precautions – *Adherence to the following will aid in problem-free installation with long-term reliability:*

WARNING – *Several different sources of power can be connected to the fire alarm control panel. Disconnect all sources of power before servicing. Control unit and associated equipment may be damaged by removing and/or inserting cards, modules, or interconnecting cables while the unit is energized. Do not attempt to install, service, or operate this unit until this manual is read and understood.*

CAUTION – *System Reacceptance Test after Software Changes:* To ensure proper system operation, this product must be tested in accordance with NFPA 72-1993 Chapter 7 after any programming operation or change in site-specific software. Reacceptance testing is required after any change, addition or deletion of system components, or after any modification, repair or adjustment to system hardware or wiring.

All components, circuits, system operations or software functions known to be affected by a change must be 100% tested. In addition, to ensure that other operations are not inadvertently affected, at least 10% of initiating

devices that are not directly affected by the change, up to a maximum of 50 devices must also be tested and proper system operation verified.

This system meets NFPA requirements for operation at 0-49[°] C/ 32-120[°] F and at a relative humidity of 85% RH (non-condensing) at 30[°] C/86[°] F. However, the useful life of the system's standby batteries and the electronic components may be adversely affected by extreme temperature ranges and humidity. Therefore, it is recommended that this system and its peripherals be installed in an environment with a nominal room temperature of 15-27[°] C/60-80[°] F.

Verify that wire sizes are adequate for all initiating device loops. Most devices cannot tolerate more than a 10% I.R. drop from the specified device voltage.

Fire Alarm System Limitations

An automatic fire alarm system – typically made up of smoke detectors, heat detectors, manual pull stations, audible warning devices and a fire alarm control with remote notification capability can provide early warning of a developing fire. Such a system, however, does not assure protection against property damage or loss of life resulting from a fire.

Any fire alarm system may fail for a variety of reasons:

Smoke detectors may not sense fire where smoke cannot reach the detectors such as in chimneys, in walls, or roofs, or on the other side of closed doors. Smoke detectors also may not sense a fire on another level or floor of a building. A second floor detector, for example, may not sense a first floor or basement fire. Furthermore, all types of smoke detectors – both ionization and photoelectric types, have sensing limitations. No type of smoke detector can sense every kind of fire caused by carelessness and safety hazards like smoking in bed, violent explosions, escaping gas, improper storage of flammable materials, overloaded electrical circuits, children playing with matches, or arson.

IMPORTANT! *Smoke detectors must be installed in the same room as the control panel and in rooms used by the system for the connection of alarm transmission wiring, communications, signaling and /or power.* If detectors are not so located, a developing fire may damage the alarm system, crippling its ability to report a fire.

Like all solid state electronic devices, this system may operate erratically or can be damaged when subjected to lightning induced transients. Although no system is completely immune from lightning transients and interferences, proper grounding will reduce susceptibility. *Overhead or outside aerial wiring is not recommended, due to an increased susceptibility to nearby lightning strikes.* Consult with the Technical Services Department if any problems are anticipated or encountered.

Disconnect AC power and batteries prior to removing or inserting circuit boards. Failure to do so can damage circuits.

Remove all electronic assemblies prior to any drilling, filing, reaming or punching of the enclosure. When possible, make all cable entries from the sides or rear. Before making modifications, verify that they will not interfere with battery, transformer and printed circuit board location.

Do not tighten screw terminals more than 9 in-lbs. Over tightening may damage threads, resulting in reduced terminal contact pressure and difficulty with screw terminal removal.

This system contains static-sensitive components. Always ground yourself with a proper wrist strap before handling any circuits so that static charges are removed from the body. Use static suppressive packaging to protect electronic assemblies removed from the unit.

Follow the instructions in the installation, operating and programming manuals. These instructions must be followed to avoid damage to the control panel and associated equipment. FACP operation and reliability depend upon proper installation.

While installing a fire alarm system may make lower insurance rates possible, it is not a substitute for fire insurance!

Audible warning devices such as bells may not alert people if these devices are located on the other side of closed or partly open doors or are located on another floor of a building.

A fire alarm system will not operate without any electrical power. If AC power fails, the system will operate from standby batteries only for a specified time.

Rate-of-Rise heat detectors may be subject to reduced sensitivity over time. For this reason, the rate-of-rise feature of each detector should be tested at least once per year by a qualified fire protection specialist.

Equipment used in the system may not be technically compatible with the control panel. It is essential to use only equipment listed for service with your control panel.

Telephone lines needed to transmit alarm signals from a premise to a central monitoring station may be out of service or temporarily disabled.

The most common cause of fire alarm malfunctions, however, is inadequate maintenance. All devices and system wiring should be tested and maintained by professional fire alarm installers following written procedures supplied with each device. System inspection and testing should be scheduled monthly or as required by National and/or local fire codes. Adequate written records of all inspections should be kept.

FCC Warning

WARNING: This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for class A computing device pursuant to Subpart B of 15 of FCC Rules, which is designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user will be required to correct the interference at his own expense.

Canadian Requirements

This digital apparatus does not exceed the Class A limits for radiation noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

NFPA Standards

This control panel complies with the following NFPA standards:

NFPA 13 Sprinkler Systems

NFPA 15 Water Spray Systems Systems

NFPA 16 Foam-Water Deluge and Foam-Water Spray Systems

NFPA 72 Central Station Signaling Systems (Automatic, Manual, and Waterflow). Protected Premises Unit (Requires NOTI•FIRE 911AC DACT or MS-5012 Slave Communicator)*

NFPA 72 Local (Automatic, Manual, Waterflow and Sprinkler Supervisory) Fire Alarm Systems NFPA 72 Auxiliary (Automatic, Manual, and Waterflow) Fire Alarm Systems. (Requires 4XTM) NFPA 72 Remote Station (Automatic, Manual, and Waterflow) Fire Alarm Systems. Requires 4XTM, NOTI•FIRE 911AC DACT*

**Applications which require the NOTI•FIRE 911AC are not FM approved.*

Additional Information

Before proceeding, the installer should be familiar with the following documents and standards:

NFPA Standards:

NFPA 13 Sprinkler Systems

NFPA 15 Water Spray Systems Systems

NFPA 16 Foam-Water Deluge and Foam-Water Spray Systems

NFPA 72 Installation, Maintenance and Use of Central Station Signaling Systems NFPA 72 Local, Auxiliary, Remote Station and Proprietary Fire Alarm Systems NFPA 72 Automatic Fire Detectors

NFPA 72 Installation, Maintenance and Use of Notification Appliances for Fire Alarm Systems NFPA 72 Testing Procedures for Signaling Systems

Underwriters Laboratories Documents:

UL 38 Manual Actuated Signaling Boxes

UL 217 Smoke Detectors, Single and Multiple Station UL 228 Door Closers – Holders for Fire Alarm Systems UL 268 Smoke Detectors for Fire Alarm Systems

UL 268A Smoke Detectors for Duct Applications UL 346 Waterflow Indicators for Fire Alarm systems UL 464 Audible Signaling Appliances

UL 521 Heat Detectors for Fire Alarm Systems

UL 864 Standard for Control Units for Fire Alarm Systems UL 1481 Power Supplies for Fire Alarm Systems

UL 1638 Visual Signaling Appliances

UL 1971 Signaling Devices for the Hearing Impaired

CAN/ULC-S524-M91 Standard for Installation of Fire Alarm Systems CAN/ULC-S527-M87 Standard for Control Units for Fire Alarm Systems

Other:

NEC Article 300 Wiring Methods NEC Article 760 Fire Alarm Systems

Applicable Local and State Building Codes Requirements of the Local Authority Having Jurisdiction Notifier Device Compatibility Document, 15378

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1 The PDRP-1001/PDRP-1001A/PDRP-1001E

Features

- Microprocessor-controlled
- Alarm and trouble resound
- Four Class B (Style B)/Class A (Style D) Initiating Device Circuits
- Two Class B (Style Y)/Class A (Style Z) Notification Appliance Circuits
- Two Class B (Style Y) Release Circuits
- General alarm and trouble relays
- Optional module for 4 zone/function relays (4XZM)
- Optional transmitter module (4XTM). Complies with NFPA 72 Auxiliary and Remote Station Fire Alarm Systems
- Optional volt/amp meter module (4XMM)
- Optional supervised remote annunciator RZA-4X). Requires LED Interface Module (4XLM)
- Optional digital communicator (NOTI•FIRE 911AC)*
- Complies with NFPA 72 Central Station and NFPA 72 Remote Station Fire Alarm Systems
- Designed for sprinkler standards NFPA 13, 15, and 16
- Disable/enable controls per initiating zone
- Last Event Recall
- Battery/Earth fault supervision
- Fuse protection on all Notification/Release Circuits
- RMS regulated output power, 2.25 amps
- 7 amp/hour to 15 amp/hour battery options, up to 90 hours standby
- Resettable and non-resettable regulated power outputs
- Extensive transient protection
- Watchdog timer to supervise microprocessor (includes MICRO FAIL LED)
- Output circuits protected against false activations
- Slide-in zone identification labels
- Steel cabinet 14.5" wide by 16" high by 5" deep
- Dead-front dress panel option (DP-4X)
- Trim ring for flush mount between 16" center studs (TR-4XR)
- Cross-zone (double-interlock) option
- Municipal Box output
- Interface Module (4XLM)
- Dual hazard operation

- Adjustable discharge timer

*Applications which require the NOTI•FIRE 911AC are not FM approved.

Circuits

Input Circuits

Manual Release/Detector Circuit 1, Class A (Style D)/Class B (Style B) Detector Circuit 2, Class A (Style D)/Class B (Style B)

Waterflow, Class A (Style D)/Class B (Style B) Supervisory, Class A (Style D)/Class B (Style B)

Output circuits (optional auxiliary relays track these four circuits)

Alarm/Waterflow Bell, Class A(Style Z)/Class B (Style Y) Waterflow/Supervisory Bell, Class A(Style Z)/Class B (Style Y) Releasing Circuit 1, Class B (Style Y)
Supervisory Bell/Release Circuit 2, Class B (Style Y)

Front Panel Control Switches

Switch 1	Tone Silence
Switch 2	Alarm Silence
Switch 3	Alarm Activate
Switch 4	System Reset

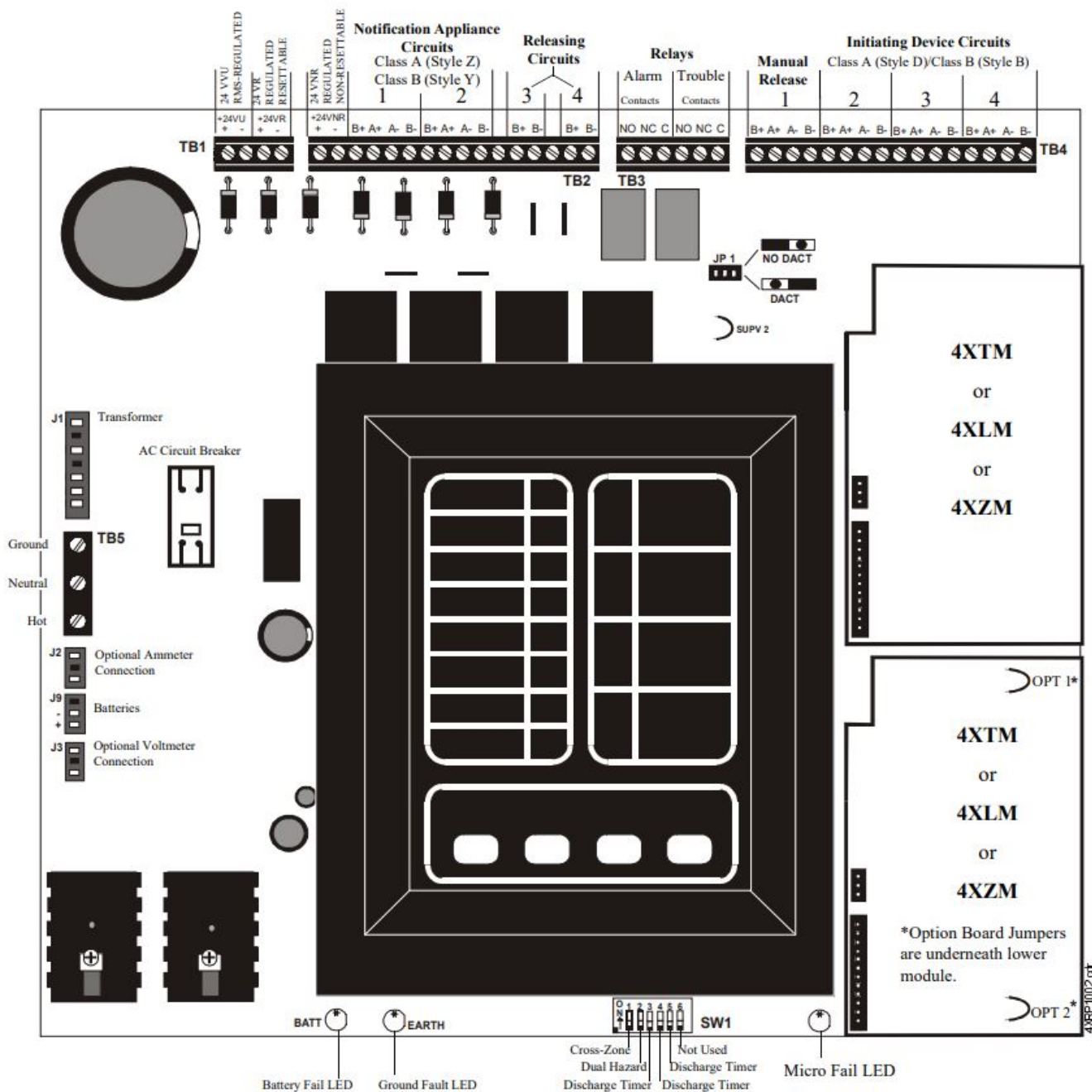


Figure 1 PDRP-1001/PDRP-1001A/PDRP-1001E Installation Diagram

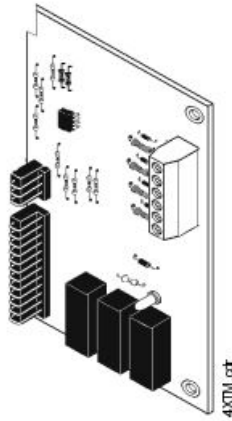
Optional Boards

The PDRP-1001/PDRP-1001A/PDRP-1001E has mounting slots for two option boards. Any two of the three option modules may be installed.

Transmitter Module (4XTM – NOTIFIER)

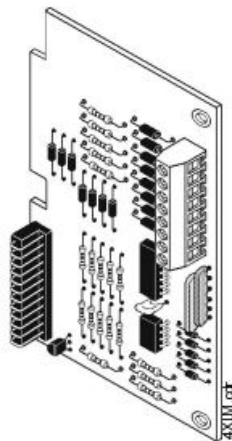
The Transmitter Module provides a supervised output for local energy municipal box transmitter (for NFPA 72 Auxiliary Fire Alarm System) and alarm and trouble reverse polarity circuits (for NFPA 72 Remote Station Fire Alarm System). Also included is a DISABLE switch and disable trouble LED.

As a jumper option, the alarm reverse polarity circuit will open on trouble if no alarm exists.



LED Interface Module (4XLM – NOTIFIER)

The LED Interface Module supports the RZA-4X Remote Annunciator module. Annunciator wiring is supervised for open conditions by this module. The Annunciator Driver Module mounts to the main board, occupying one of the two option connectors.

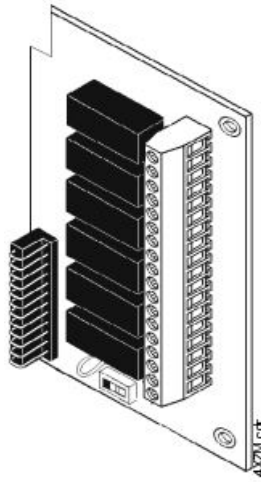


Zone Relay Module (4XZM – NOTIFIER)

The Zone Relay module provides Form-C contacts for the following:

- Alarm/Waterflow Bell
- Waterflow/Supervisory Bell
- Releasing Circuit 1
- Supervisory Bell/Release Circuit 2
- System Alarm
- System Trouble

As a jumper option, the first four relays described below can be made silence able.



Transmitter Module (4XTM – NOTIFIER)

For Local Energy Municipal Box service (NFPA 72 Auxiliary Fire Alarm System)
Supervisory current: 5.0 mA

Trip current: 0.35 amps. (Subtracted from Notification Appliance power) Coil Voltage: 3.65 VDC
Coil resistance: 14.6 ohms
Maximum allowable wire resistance between panel and trip coil: 3 ohms Municipal Box wiring can leave the building

For Remote Station Service

(NFPA 72 Remote Station Fire Alarm System):

Maximum load for each circuit: 10mA Reverse polarity output voltage: 24 VDC

Remote Alarm and Remote Trouble wiring can leave the building

LED Interface Module (4XLM – NOTIFIER)

Maximum voltage/current, each output: 27.6V/8mA

Note: Outputs are power limited

Zone Relay Module (4XZM – NOTIFIER)

Dry Form-C contacts rated: 2.0 amps @ 30VDC (resistive), 0.5 amps @ 30 VAC (resistive)

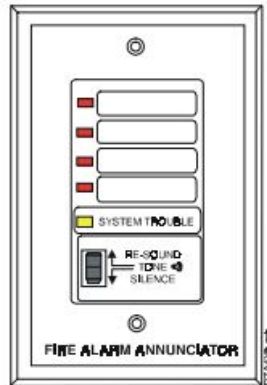
Remote Annunciator

Remote Annunciator (RZA-4X – NOTIFIER)

The Remote Annunciator mounts on a standard single- gang box, and provides LED indication of the following:

- Alarm/Waterflow Bell (red)
- Waterflow/Supervisory Bell (red)
- Releasing Circuit 1 (red)

- Supervisory Bell/Release Circuit 2 (red)
- System Trouble LED (yellow)



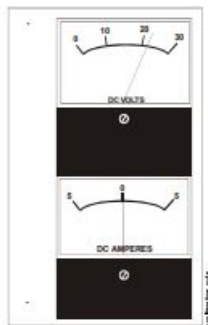
A Local Trouble Sounder and Silence Switch are also provided. All LED wiring is supervised for open conditions. Any open condition will cause the System Trouble LED to illuminate.

Note: The Remote Annunciator requires the use of an LED Interface module (4XLM).

Optional Meters

Voltage, Current Meters (4XMM – NOTIFIER)

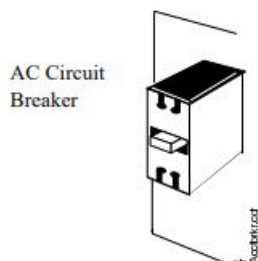
The Meter Module provides a voltmeter to measure the voltage across the batteries and an ammeter to measure the charging current to the batteries. The meters are provided as an assembly that mounts to the lower left- hand corner of the cabinet.



Specifications

AC Power

For the PDRP-1001/PDRP-1001A/PDRP-1001E: 120 VAC, 50/60 Hz, 1.2 amps
 For the PDRP-1001E: 220/240 VAC, 50 Hz, 0.6 amps
 Wire size: minimum #14 AWG with 600V insulation



Battery (lead acid only)

Maximum Charging Circuit: 27.6V, 1.5 amps

Maximum Battery Capacity: 15 AH. (Batteries larger than 12 AH require NOTIFIER #BB-17 or other UL listed external battery cabinet.)

Initiating Device Circuits

Power-limited circuitry

Operation: Class A (Style D)/Class B (Style B)

Normal Operating Voltage: 24 VDC (ripple = 1.0V peak-to-peak) Alarm current: 15 mA minimum

Short circuit current: 40 mA maximum

Maximum detector current in standby: 2 mA (max) per zone Maximum loop resistance: 200 ohms

End-of-line resistor: 4.7K, 1/2-Watt (NOTIFIER part # 71252, UL listed)

Detector loop current is sufficient to ensure operation of one alarmed detector per zone. Supervisory current: 5 mA (including end-of-line resistor)

Notification Appliance and Releasing Circuits

Power-limited circuitry

Maximum allowable voltage drop due to wiring: 2 VDC Normal Operating Voltage: 24 VDC

Total current available to all external devices: 2.25 amps

Maximum signaling current per circuit: 1.5 amps

End-of-line resistor: 4.7K, 1/2-Watt (NOTIFIER part # 71252, UL listed)

Alarm and Trouble Relays

Dry Form-C contacts rated: 2.0 amps @ 30 VDC (resistive), 0.5 amps @ 30 VAC (resistive). All relays must be connected to a power limited power supply.

Four-wire Smoke Detector Power

Up to 200 mA is available for powering 4-wire smoke detectors. Maximum ripple voltage: 1.0 V p/p

Non-resettable Power

Total DC current available from this output is up to 200 mA (subtracted from 4-wire smoke power).

Maximum ripple voltage: 1.0 V p/p

RMS Regulated Power

Total DC current available for powering external devices is 0.5 amp (subtracted from

2.25 amps available to notification appliance circuits). Maximum ripple voltage: 100 mV p/p

Note: For device compatibility, refer to Device Compatibility Chart.

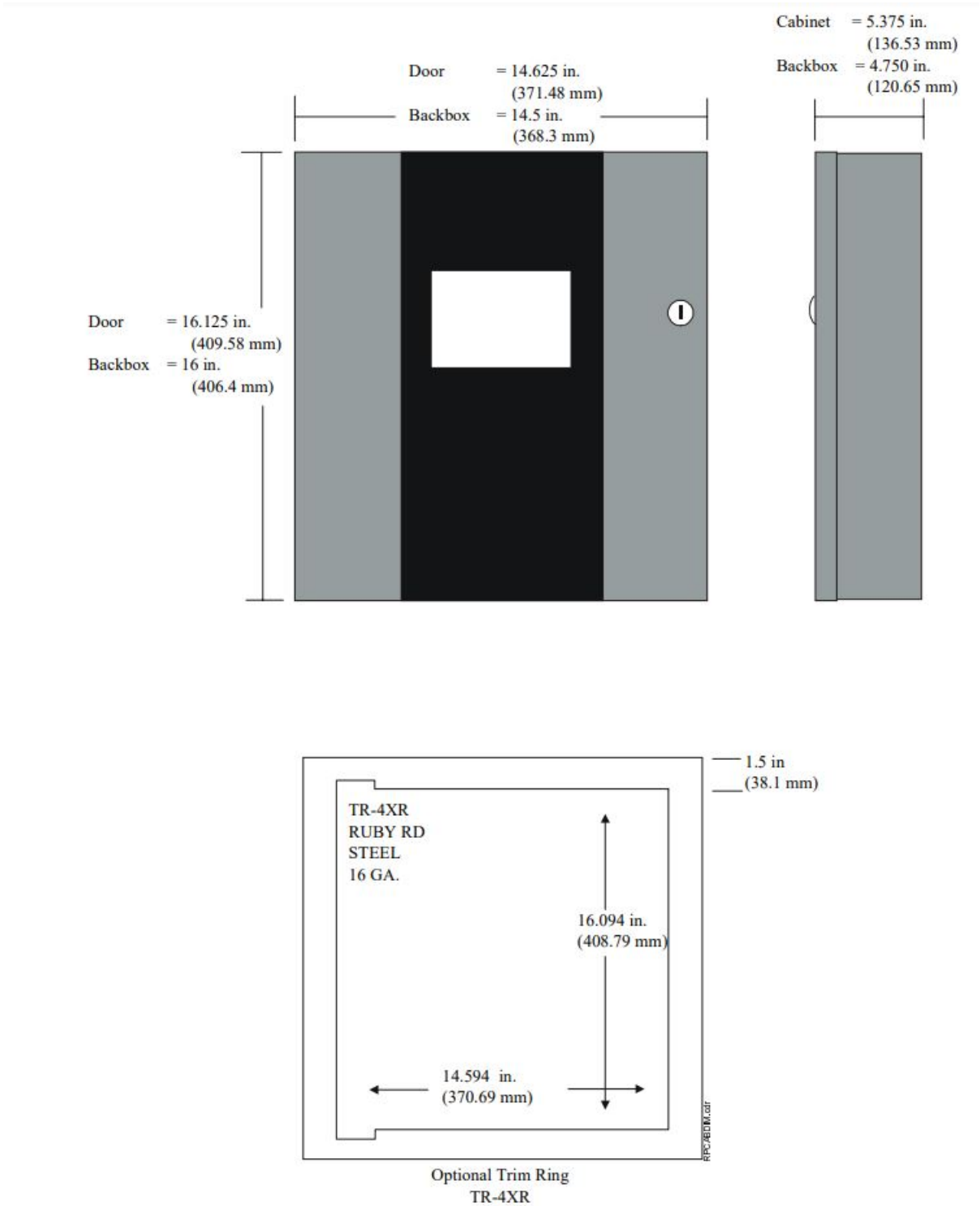
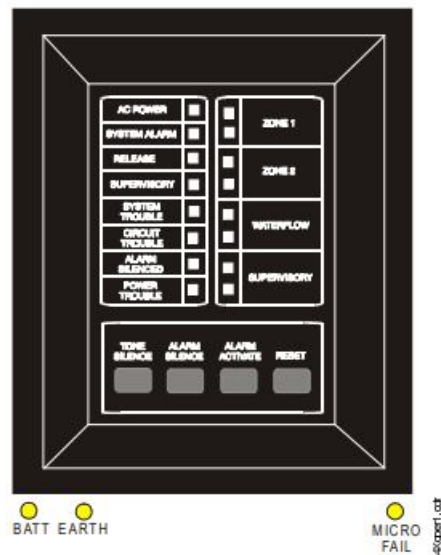


Figure 2 Cabinet Dimensions

2 System Operation

System Status LEDs



Alarm, Trouble and Supervisory LEDs will flash on and off until the event(s) has been acknowledged (TONE or ALARM SILENCE), at which point the LED will illuminate steadily.

AC POWER

Green LED that illuminates steadily to indicate presence of AC power.

SYSTEM ALARM

Red LED that flashes when an alarm occurs.

RELEASE

Red LED that illuminates steadily when release occurs.

SUPERVISORY

Yellow LED that flashes upon activation of a supervisory device (such as tamper switch) on Output 4 if selected (see "Setting Mode of Operation" in Section 3 of this manual).

SYSTEM TROUBLE

Yellow LED that flashes for any trouble condition, including those associated with option boards.

CIRCUIT TROUBLE

Yellow LED that flashes for trouble conditions on output circuits (notification and releasing circuits).

ALARM SILENCED

Yellow LED that illuminates steadily when the ALARM SILENCE switch has been pushed after an alarm.

POWER TROUBLE

Yellow LED that flashes for low or disconnected batteries and earth fault conditions.

BATT

Yellow LED that illuminates steadily on motherboard when battery is low or not detected (not visible through door).

EARTH

Yellow LED that illuminates steadily on motherboard during a ground fault condition (not visible through door)

MICRO FAIL

Yellow LED that illuminates on motherboard when watchdog timer detects microprocessor failure (not visible through door)

Tone Silence

Acknowledge alarms, troubles and supervisories. The panel has alarm and trouble resound with LED flash of new conditions. The flashing trouble LED(s) illuminate steadily on TONE SILENCE and the piezo sounder silences. A second trouble will resound the piezo. The piezo has three sounds for alarm, trouble, and supervisory. Trouble conditions are self-restoring. Alarms latch and require RESET to clear.

Alarm Silence

Acknowledge for alarms and supervisories. The ALARM SILENCE switch will silence the local piezo, change any flashing alarm LEDs to steady, and turn off the notification circuits (not the releasing circuits). The "ALARM SILENCED" LED will illuminate. Alarm silence is a latching function and requires a RESET to clear.

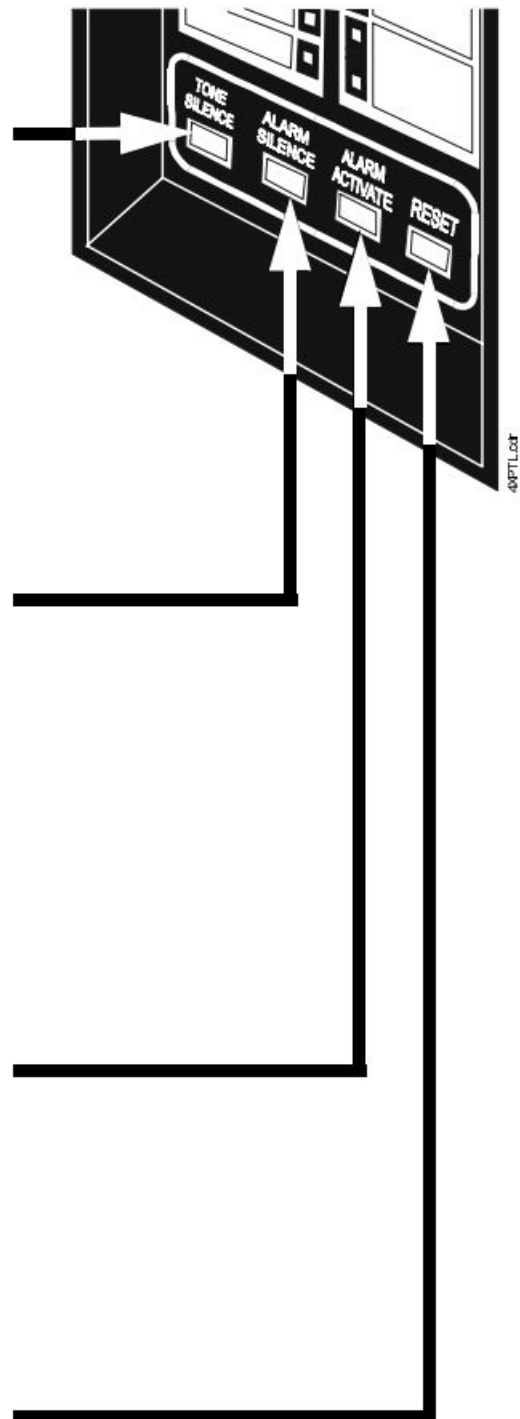
Note: Releasing Circuits will turn off only if Discharge Timer criteria is satisfied, see "Setting Mode of Operation" on page 27."

Alarm Activate

The ALARM ACTIVATE switch may be used to activate Notification Appliance Circuits. ALARM ACTIVATE also activates the System Alarm relay. ALARM Activate is a latching function. Pressing ALARM SILENCE silences the notification circuits and System Alarm Relay and lights the Alarm Silenced LED. Pressing RESET returns the system to normal.

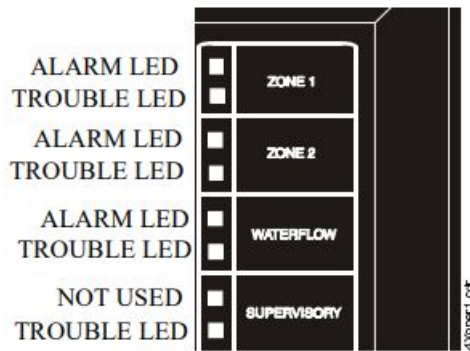
System Reset

The RESET switch breaks power to all initiating circuits, 4-wire smoke power and option boards and will clear any activated output circuits. If any alarms or troubles still exist after reset, they will reactivate the panel. Holding RESET down will perform a LAMP TEST function and will activate the piezo sounder.



Zone Status LEDs

The alarm and/or trouble LED(s) will flash until the event(s) has been acknowledged (TONE or ALARM SILENCE), at which point the LED(s) will illuminate steadily

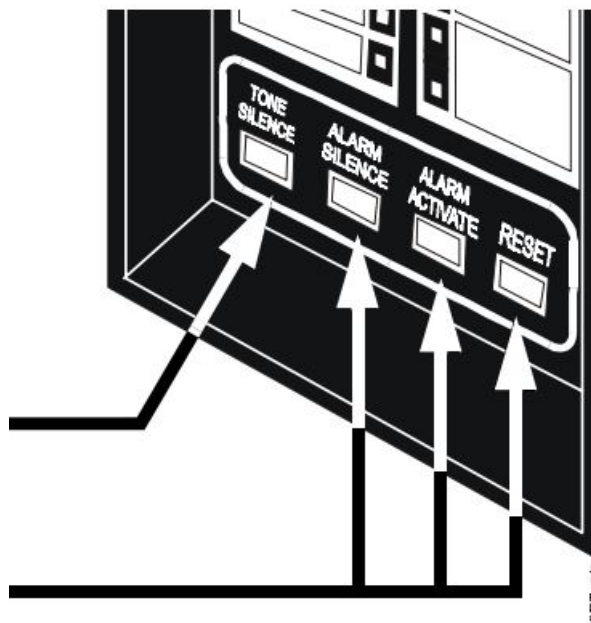


Supervisory

Zone 4 is always used for monitoring supervisory devices (such as valve tamper switches). A short circuit on this zone (activation of a N.O. contact) will cause the supervisory LED and the zone 4 yellow LED to flash. The piezo sounder will generate a unique Pressing TONE SILENCE will silence the piezo and cause the supervisory LED to illuminate steadily, but the Zone 4 Trouble LED will continue to flash.

Supervisory signals latch and require RESET to clear. The ALARM SILENCE switch will silence the piezo, cause the supervisory LED to illuminate steadily and turn off the Supervisory Notification Appliance Circuit. An open circuit on Zone 4 will be reported as a zone trouble.

Zone Disable



If a zone has been disabled, an alarm that occurs on that zone will flash the red zone LED, but not the piezo or any output circuit. *If both power sources are removed from the system, all zones will be re-enabled upon restoration of power. Disable status will be lost.*

The Zone Disable routine makes use of the four panel switches as follows:

1. Press and hold in the TONE SILENCE switch.
2. With the TONE SILENCE switch held in, press (in sequence) the ALARM SILENCE switch, the ALARM ACTIVATE switch, and then the RESET switch.
3. The Zone 1 Alarm LED will
4. To disable Zone 1, press the RESET The Zone 1 yellow LED will light to show that the zone is disabled.

Note: The RESET switch toggles disable status for the selected zone.

5. To select the next zone, press the ALARM SILENCE
6. To select the previous zone, press the ALARM ACTIVATE
7. When disable selections are complete, release the TONE SILENCE

If any zone has been disabled, the trouble relay will activate and System Trouble LED will flash.

Last Event Recall

Last Event Recall allows the user to display the previous panel status. The last event recall uses the four panel switches as follows:

1. Press and hold in the TONE SILENCE
2. With the TONE SILENCE switch held in, press (in sequence) the RESET switch, the ALARM ACTIVATE switch, and then the ALARM SILENCE
3. Last Event is
4. Release the TONE SILENCE switch to return to normal

Note: To clear the last event buffer, press RESET twice.

3 Installation Procedure

General

Carefully unpack the system and check for shipping damage. Mount the cabinet in a clean dry, vibration-free area in which extreme temperatures are not encountered. The location should be readily accessible with sufficient room for easy installation and maintenance. Locate the top of the cabinet approximately five feet above the floor with the hinge mounting on the left. Determine the number of conductors required for the devices to be employed. Pull required conductors into the box through the knockout provided. All wiring should be in accordance with the National and/or Local codes for fire alarm systems.

UL Power Limited Wiring Requirements

Power limited and non-power limited circuit wiring must remain separated in the cabinet. All power limited circuit wiring must remain at least 0.25 in (6.35 mm) away from any non-power limited circuit wiring. Furthermore, all power limited circuit wiring and non-power limited circuit wiring must enter and exit the cabinet through different knockouts and/or conduits. A typical wiring diagram for the PDRP-1001/ PDRP-1001A/PDRP-1001E is shown below.

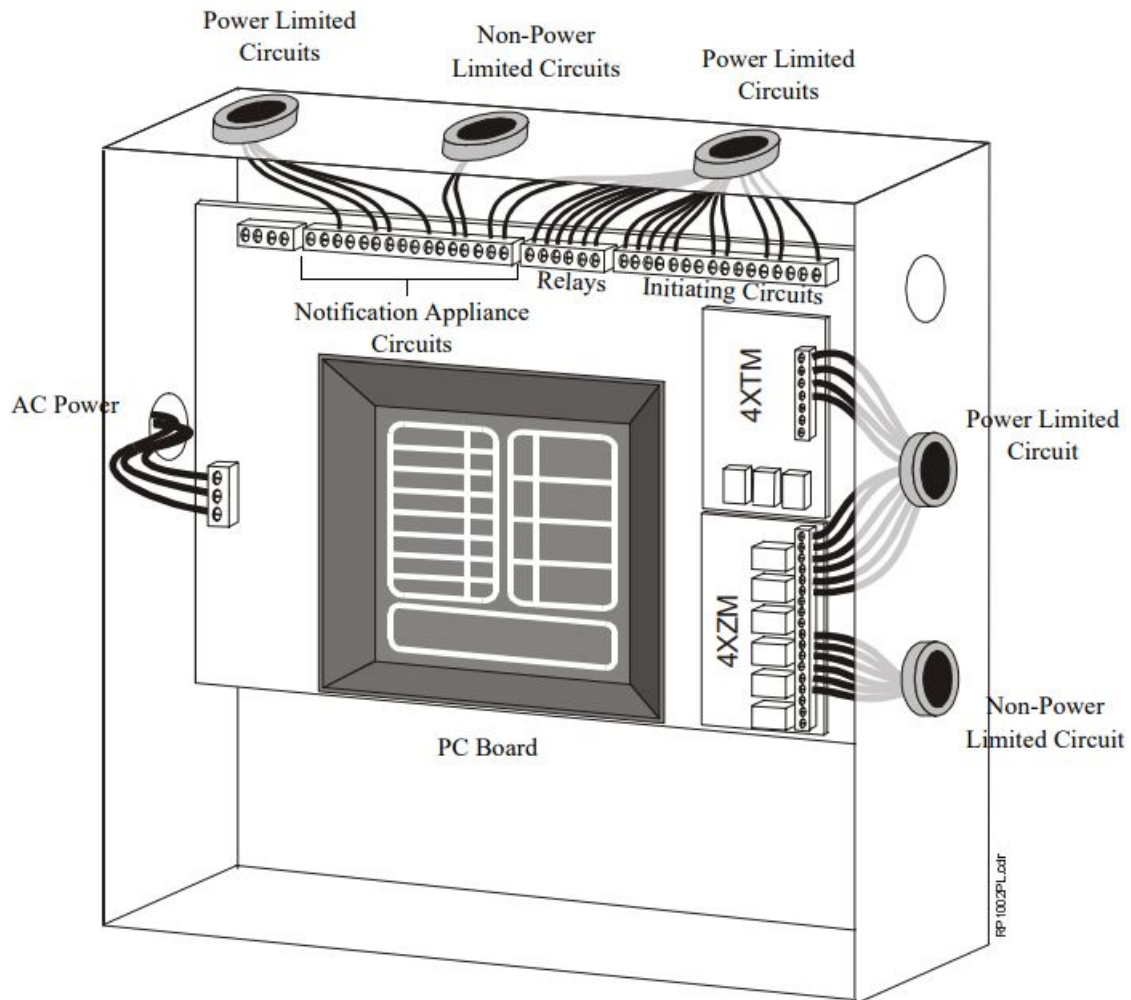


Figure 3 Typical Wiring Diagram for UL Power Limited Requirements

Initiating Device Circuits

Zones

Wire all alarm initiating devices sequentially for proper supervision. Initiating devices include: heat, photoelectric, and ionization type detectors; and waterflow alarm devices. Refer to the Compatibility Chart in Appendix B.

Note:

- Observe polarity when connecting polarized
- All circuits are supervised and power
- Leave Dummy Load (provided) on all unused

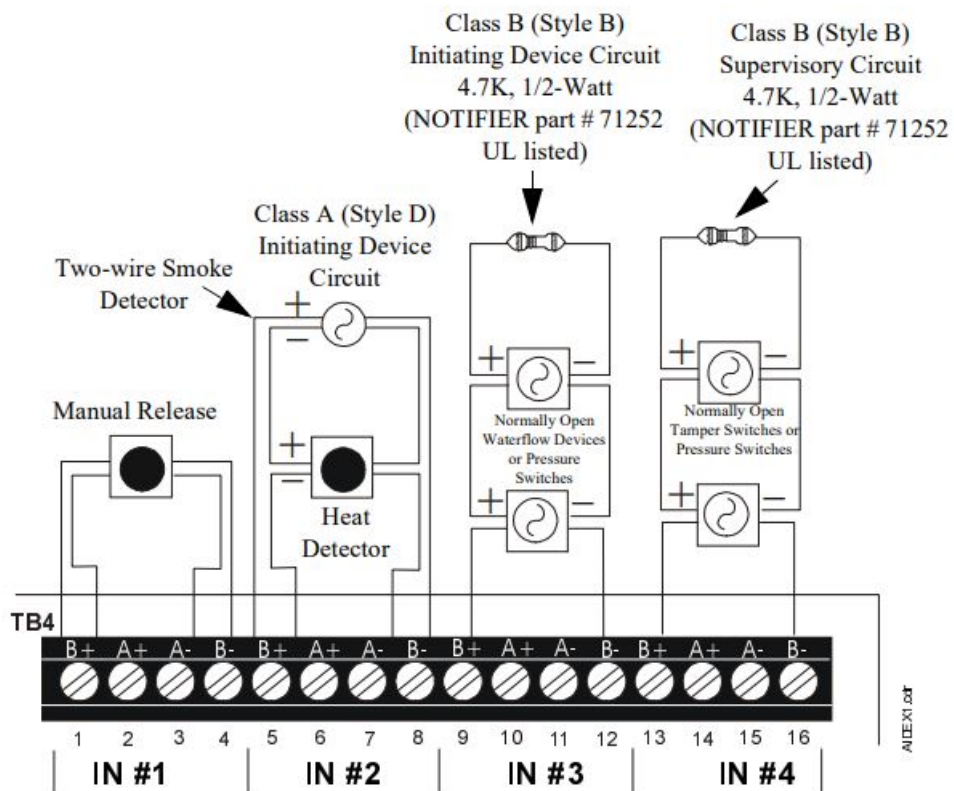


Figure 4 Example of an Alarm Initiating Device

4- Wire Smoke Detector Connections

Refer to the Device Compatibility Document for suitable 4-wire smoke detectors.

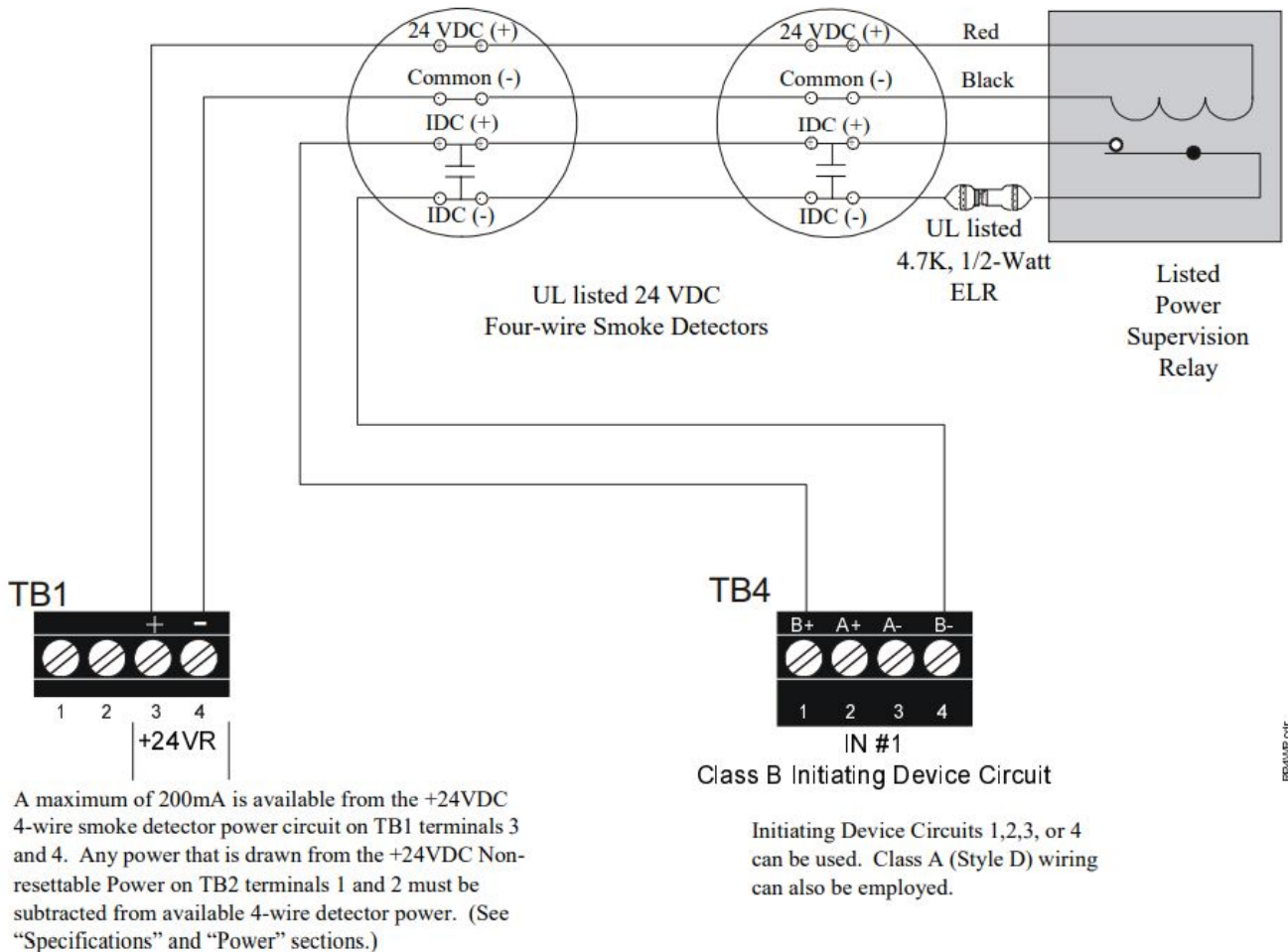


Figure 5 Diagram of Connections for a 4-Wire Smoke Detector

Notes on Class A (Style D) and Class B (Style B) field wiring:

1. The Power Supervision Relay coil leads must be connected to the last detector base 24V screw terminals.
2. Calculation of the maximum allowable resistance in the 24VDC detector power wiring:

$$R_{MAX} = \frac{(20.6 - V_{OM})}{(N \times I_S) + (N_A \times I_A) + (I_R)}$$

Where:

R_{MAX} is the maximum resistance of the 24V wires.

V_{OM} is the minimum operating voltage of the detector or end-of-line relay, whichever is greater, in volts.

N is the total number of detectors on the 24V supply loop.

I_S is the detector current standby.

N_A is the number of detectors on the 24V power loop which must function at the same time in alarm.

I_A is the detector current in alarm.

I_R is the end-of-line relay current.

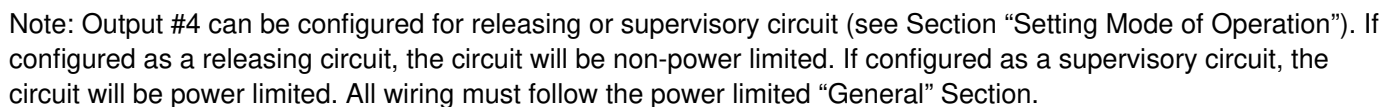
Output Circuits

Notification Appliance Circuits

This control panel can provide two Class A (Style Z)/Class B (Style Y) Notification Appliance Circuits and two Class B (Style Y) Releasing Circuits (see section “Setting Mode of Operation” for DIP switch configuration). Each circuit is capable of 1.5 amps of current. Total current drawn from all four circuits cannot exceed 2.25 amps. Refer to the Compatibility Chart. Circuits are supervised and power-limited.

Note: Wiring must be configured to maintain a minimum voltage of 20.4V on release circuits. Calculation of maximum allowable resistance:

Where: R_{MAX} = maximum allowable resistance of wiring
 I_s = solenoid current



One Form-C dry alarm contact is provided in the basic panel for controlling supplementary devices. It is rated 2 amps at 30 VDC and 0.5 amps at 30 VAC (resistive), and is non-silence able when an alarm occurs. See below for terminal location.

Trouble Relay

One Form-C dry trouble contact is provided in the basic panel for controlling supplementary devices. It is rated 2 amps at 30 VDC and 0.5 amps at 30 VAC (resistive), and will silence when trouble condition is cleared. See below for terminal location.

Note: The alarm and trouble Form-C dry contact relays must be power limited relays. They must be wired from one of the 24V power limited terminals as shown in the figure below or a comparable UL listed power limited power supply.

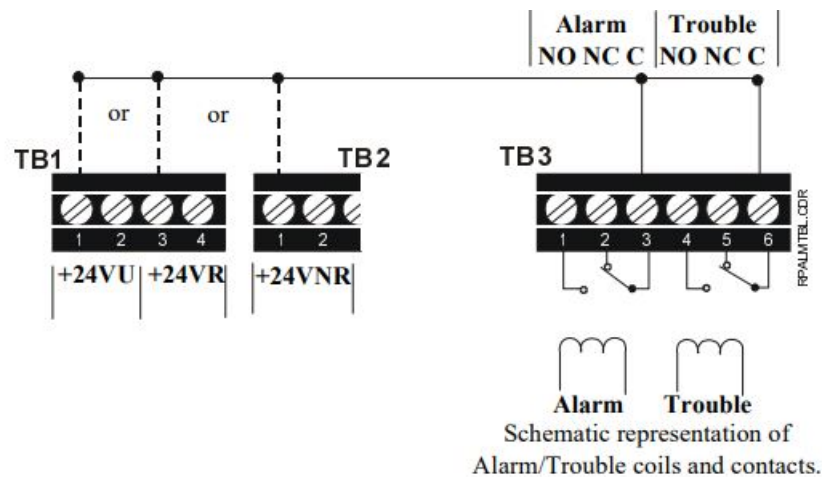


Figure 7 Alarm/Trouble Coils and Contacts

Power

⚠ CAUTION: Several different sources of power can be connected to this panel. Disconnect all sources of power before servicing. The panel and associated equipment may be damaged by removing and/or inserting cards, modules, or interconnecting cables while this unit is energized.

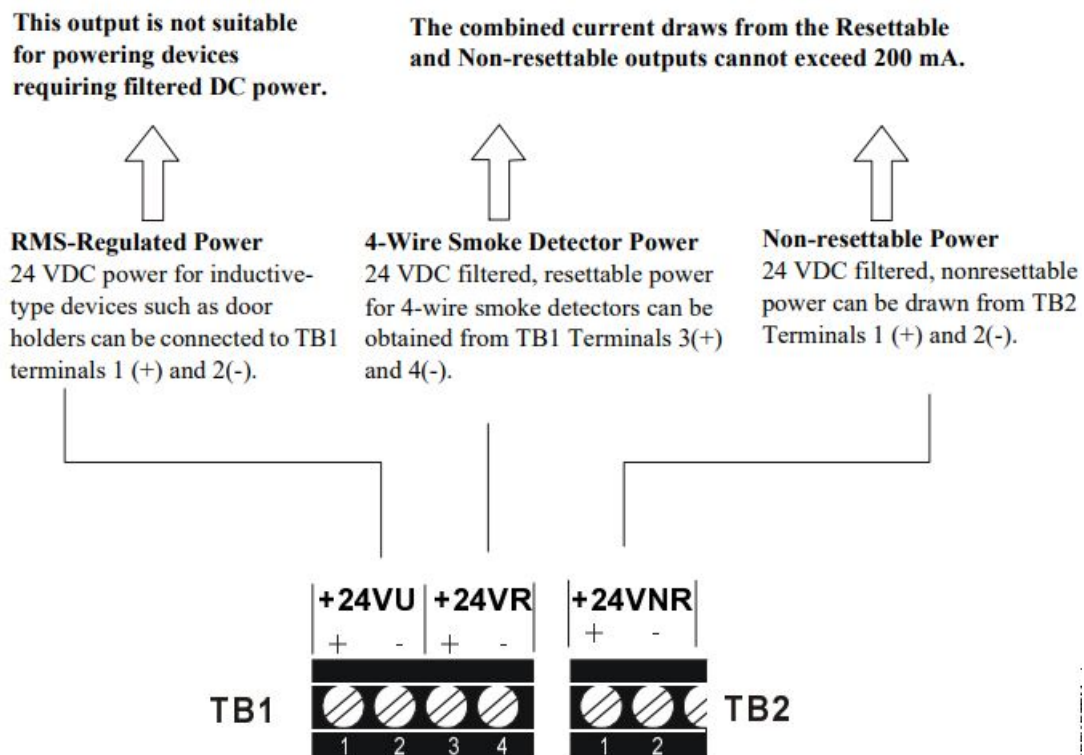


Figure 8 Diagram of Power Terminals

AC Power

Primary power required for the PDRP-1001/PDRP-1001A/PDRP-1001E panel is 120 VAC, 50/60 Hz, 1.2 amps and primary power for the PDRP-1002E is 220/240 VAC, 50 Hz, 0.6 amps. Overcurrent protection for this circuit must comply with Article 760 of the National Electrical Code (NEC) and/or local codes. Use #14 AWG (2.00 mm²) or larger wire with 600 volt rating.

Battery Power

Observe polarity when connecting battery. Connect battery cable to J9 on the main board using the plug-in connector provided. See Appendix A for calculation of correct battery rating.

⚠ CAUTION: Batteries contain sulfuric acid which can cause severe burns to the skin and eyes, and can destroy fabrics. If contact is made with sulfuric acid, immediately flush skin or eyes with water for 15 minutes and seek immediate medical attention.

Voltmeter/Ammeter

To monitor battery voltage and battery charging current, a 4XMM (NOTIFIER) is required. To install the power meter module, remove the jumper labeled “AMP” and connect cable assembly P2 to pin connector J2 and cable assembly P3 to pin connector J3 on the main board. Secure the 4XMM to the backbox with the two screws provided. On some models, it will be necessary to install the meter bracket with the nuts and bolts provided.

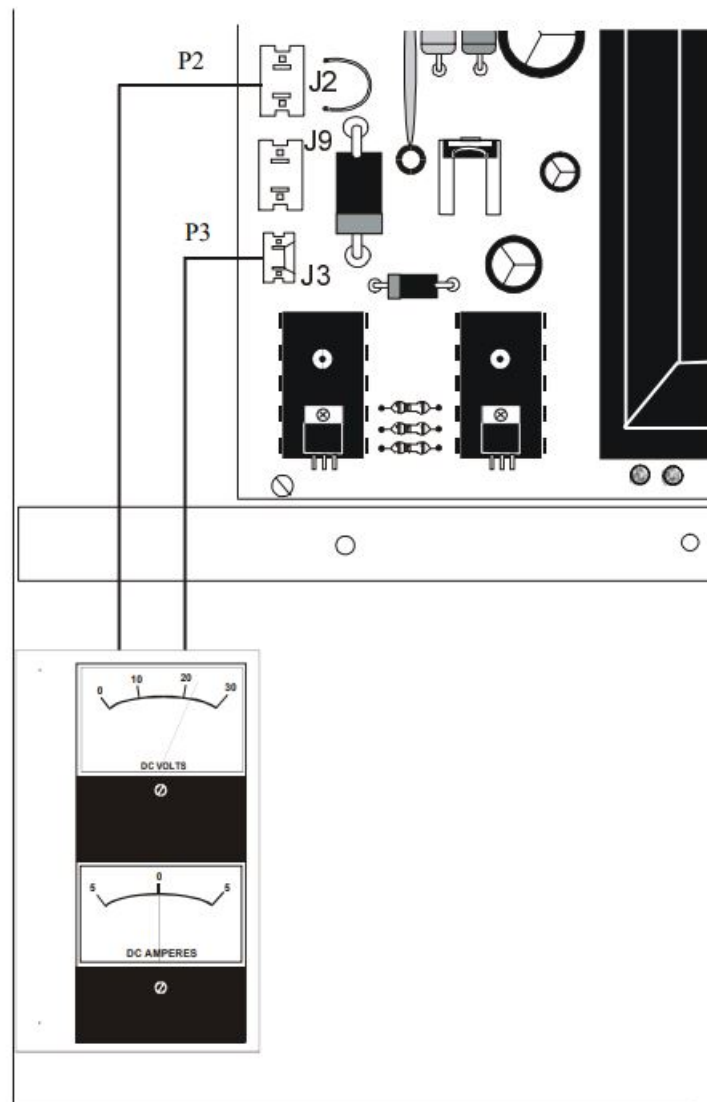
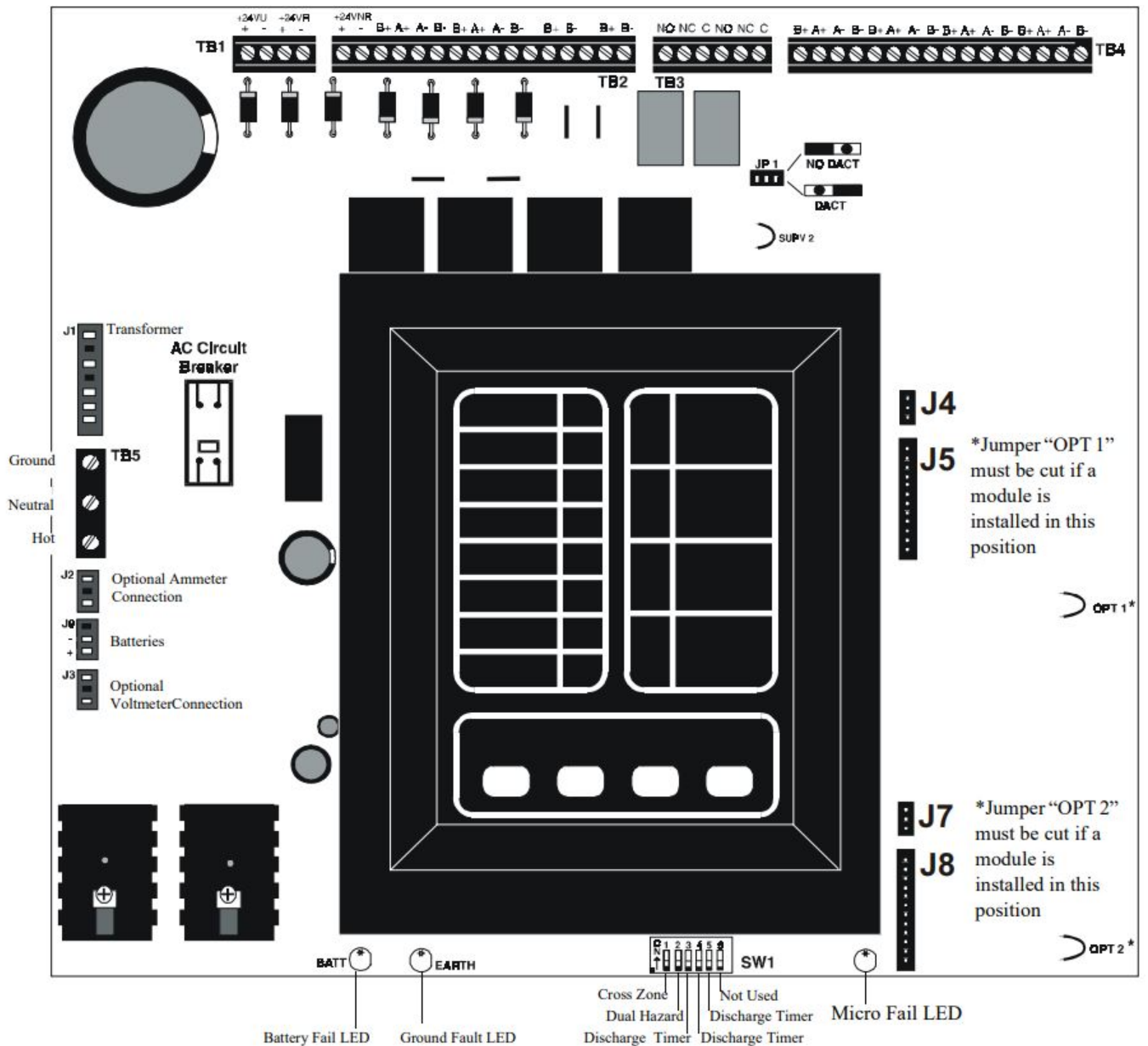


Figure 9 Diagram of the 4XMM Voltmeter Connected to the Main Board

Optional Modules

The fire control panel has two module connectors – J5 and J8. Three modules are available for the panel and they can be used in any combination, including duplicate modules. The corresponding option jumper must be cut before installation of an optional module, to enable module supervision.



Note:

- Optional 4XLM module for an RZA-4X Annunciator must be installed on J7 and J8 **only**.
- 4XTM and 4XZM modules can be installed in either location.

Figure 10 Optional Panel Modules

Installing Option Modules

Insert the two stand-offs (provided) into the holes located on the right-side edge of the main board. Carefully align the pins on the main board with J1 and/or J2 on the option board. Insert screw through the option board until it is secured on the stand-offs. Affix the terminal identification labels provided with the option modules as shown below.

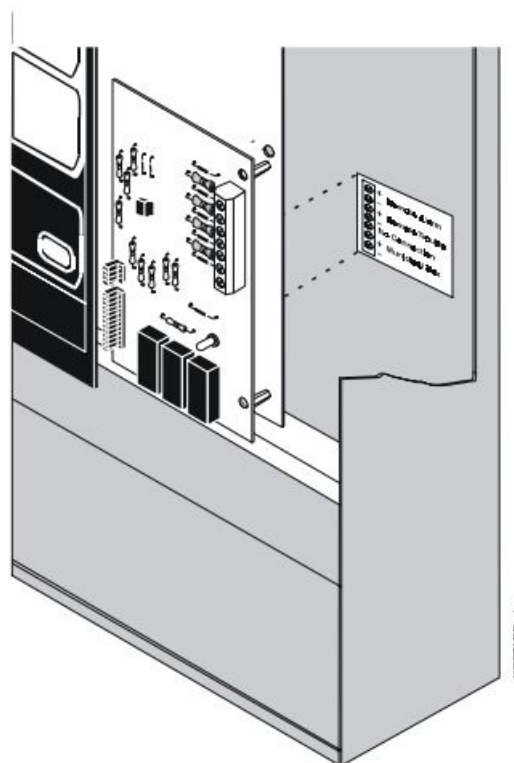
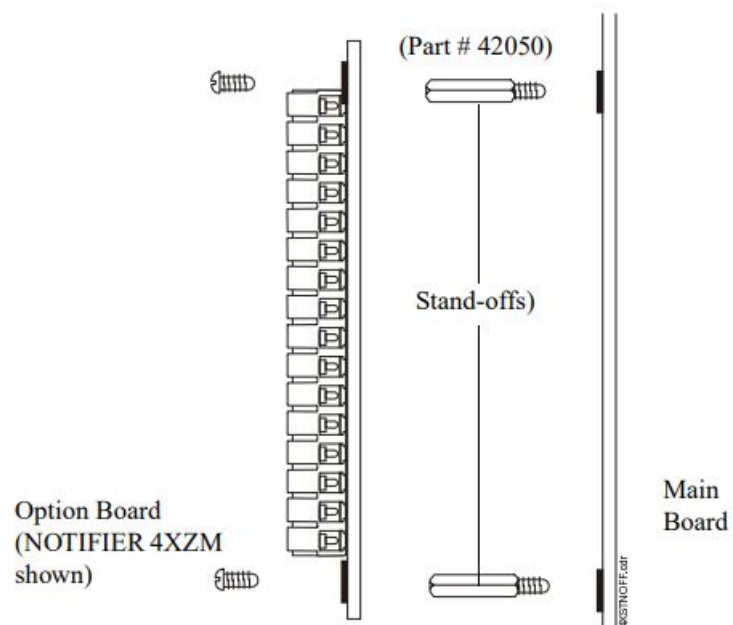
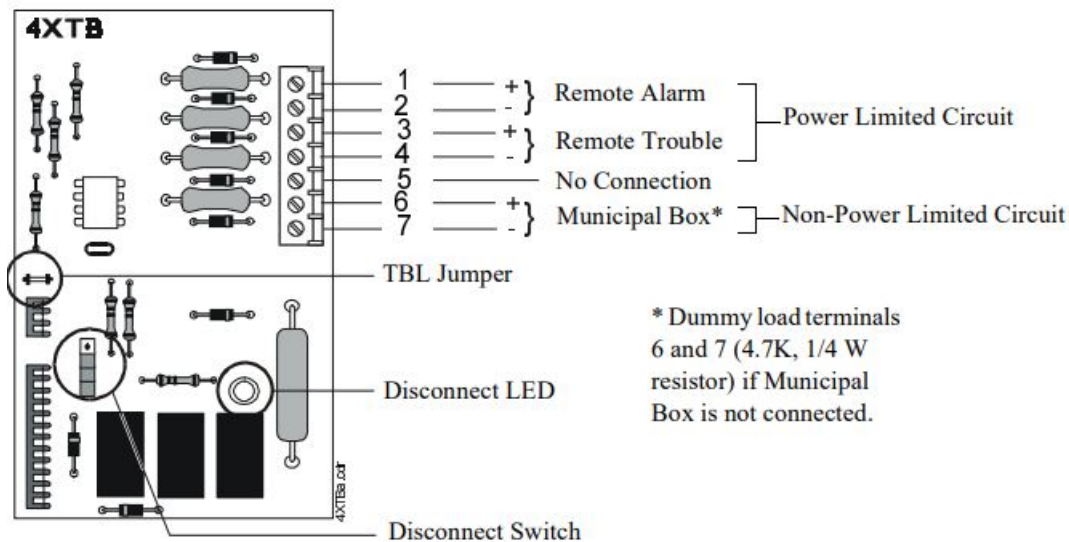


Figure 11 Installing Option Modules.

Transmitter Module – 4XTM (NOTIFIER)

Polarities shown in activated positions. The wiring of this module must follow the requirements as specified in the “General” section, “*UL Power Limited Wiring Requirements.*”



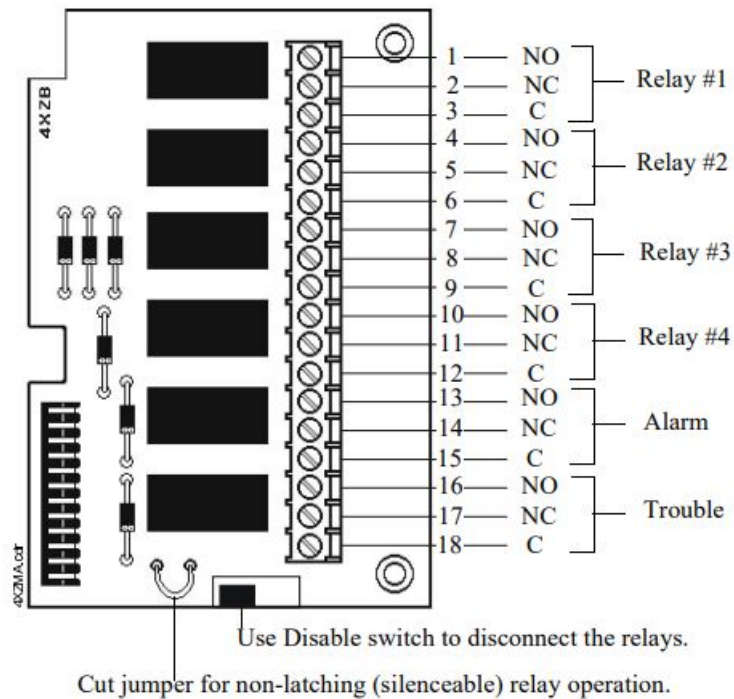
Push the disconnect switch down to prevent unwanted activation of the Municipal Box and Remote Station Outputs during testing of the control panel. The Disconnect LED will remain illuminated while the Municipal Box is disconnected. The System Trouble LED will indicate disconnected and/or Open Circuit conditions on the Municipal box. *Cutting the TBL jumper will allow the alarm reverse polarity circuit to open on trouble, if no alarm exists.*

Note: Remote Alarm, Remote Trouble, and Municipal Box wiring can leave the building.

Zone Relay Module – 4XZM (NOTIFIER)

Non-power limited and power limited wiring must have a minimum distance of 0.25 in. (6.35 mm) wire to wire. If this module is used to drive non-power limited and power limited circuits, please follow the instructions below.

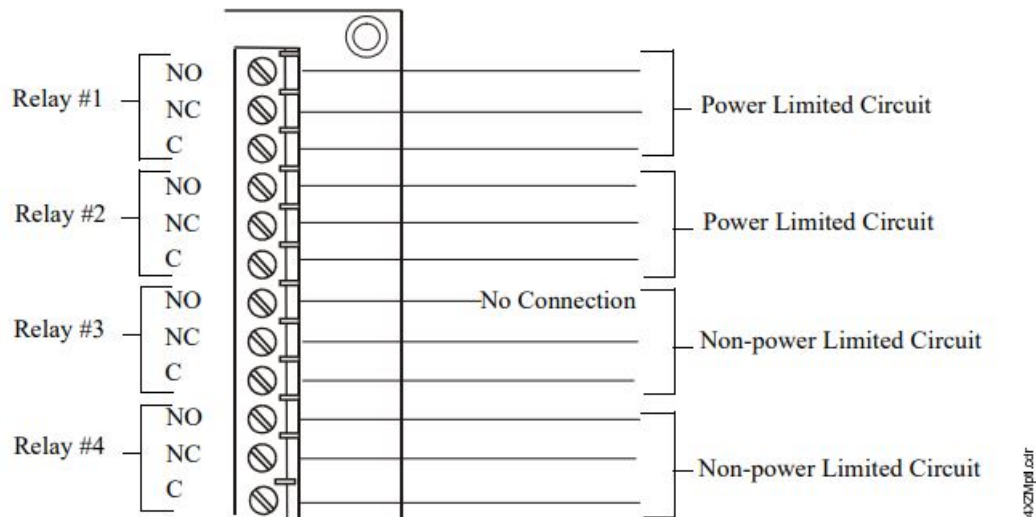
Relay #1 through #4 will activate with Output #1 through #4 and remain latched unless jumper “LATCH” is cut.



1) Skip a set of dry contacts to maintain the 0.25 in (6.35 mm) required space between power limited and non-power limited circuits. The wiring of this module must follow the requirements as specified in the “General” section, “UL Power Limited Wiring Requirements.”

OR

2) If this module is needed to drive power limited and non-power limited relays that are next to each other, refer to the figure below showing a typical connection.



Note: Refer to the Protected Premises Unit label, located on the door of the control panel, to indicate if any dry contacts are to be used as non-power limited dry contacts.

LED Interface Module – 4XLM (NOTIFIER)

The wiring of this module must follow the requirements as specified in section “UL Power Limited Wiring Requirements.”

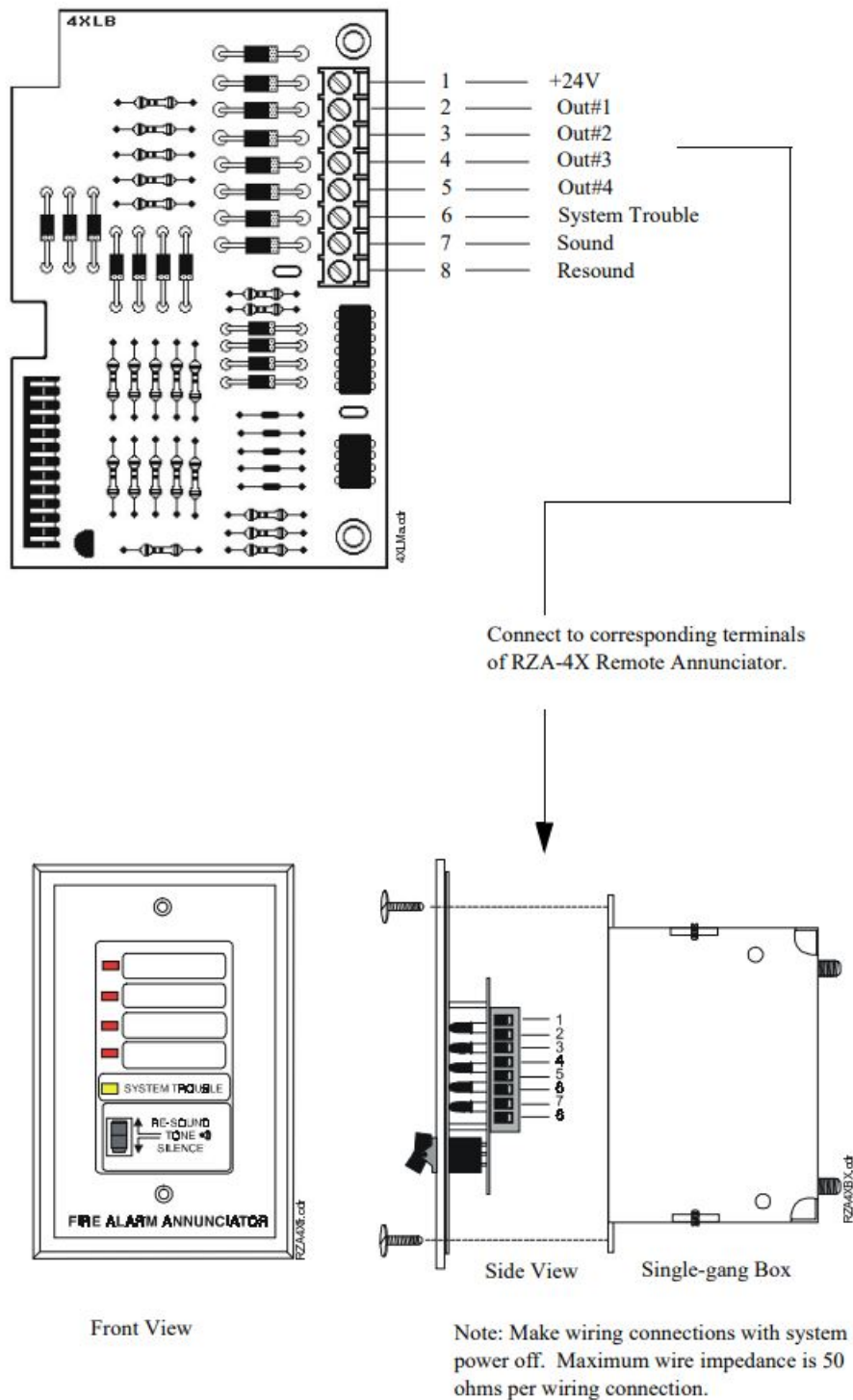
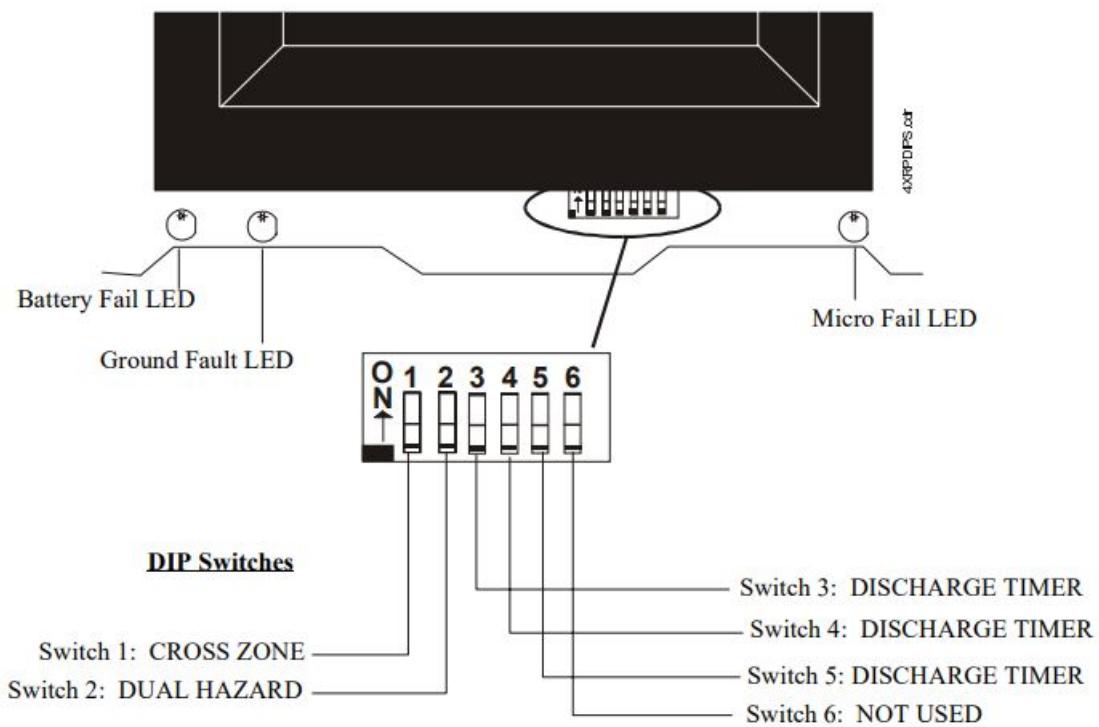


Figure 12 LED Interface Module - 4XLM

Dip Switch Location and Descriptions

For DIP switch settings, refer to the Section “*Setting Mode of Operation.*”



Setting Mode of Operation

Basic Program

Select the desired mode of operation and set SW1 DIP switches 1 and 2 per the appropriate column.

	MODE #1 Single Hazard Two Zone	MODE #2 Single Hazard Cross Zone	MODE #3 Dual Hazard Combined Release	MODE #4 Dual Hazard Split Release
Switch 1	OFF	ON	OFF	ON
Switch 2	OFF	OFF	ON	ON
	Outputs 1 and 3- activated by an alarm on either Zone 1 or Zone 2 . Output 2- activated by a waterflow alarm on Zone 3 . Output 4- activated by a supervisory condition on Zone 4 .	Output 1- activated by an alarm on either Zone 1 or Zone 2 . Output 2- activated by a waterflow alarm on Zone 3 . Output 3- activated by alarms on both Zone 1 and Zone 2 . Output 4- activated by a supervisory condition on Zone 4 .	Output 1- activated by an alarm on either Zone 1 or Zone 2 or a waterflow alarm on Zone 3 . Output 2- activated by a supervisory condition on Zone 4 . Output 3 and 4- activated by an alarm on either Zone 1 or Zone 2 .	Output 1- activated by an alarm on either Zone 1 or Zone 2 or a waterflow alarm on Zone 3 . Output 2- activated by a supervisory condition on Zone 4 . Output 3- activated by an alarm on Zone 1 . Output 4- activated by an alarm on Zone 2 .

Note: Zones 1 and 2 refer to Initiating Device Circuits 1 and 2.

Discharge Timer

Select the desired Discharge Timer setting by setting SW1 DIP switches 3, 4 and 5.

	Disabled	10 Minutes	15 Minutes
Switch 3	OFF	ON	ON
Switch 4	OFF	ON	ON
Switch 5	OFF	OFF	ON

For NFPA 13 and 15 applications, Timer must be set to DISABLED.

For NFPA 16 applications, Timer may be set to 10 MINUTES or 15 MINUTES.

Note: **Discharge Timer:**

- Timer will always start at Zone 2 normal to alarm Upon time-out, corresponding release circuits will shut off.
- Zone 1 will always override timer shutoff (except for Mode #4 – Split Release).

Appendix A: Power Calculations

Standby Battery Requirements

The Standby Battery Current figure obtained in the following table (Table 1) represents the amount of current that must be supplied by the secondary power source (batteries) to sustain control panel operation for one hour.

Standby Battery Current
Convert the total from
Table 1 to amps and enter
here

StandbyTime
24, 60, or 90
hours

<input type="text"/>	amps	X	<input type="text"/>	hours	=	<input type="text"/>	Standby amp/hours
						<input type="text"/>	
Enter 0.25 for 5 minutes in alarm or 0.5 for 10 minutes in alarm						+	<input type="text"/>
							Alarm amp/hours
						<input type="text"/>	
Add Standby and Alarm amp/hours =							Total amp/ hours needed
						<input type="text"/>	

Table 2 Ampere-Hour Calculations

Select a battery with an equal or greater amp/hour rating than the figure obtained in Table 2. Batteries must be lead-acid type.

PS-1270 12 volt, 7 amp/hour (two required) PS-12120 12-volt, 12 amp/hour (two required)

Notes:

1. Alarm amp-hours assumes a maximum system draw of 3 amps in alarm for 5 minutes (0.25 amp/hour) or for 10 minutes (0.5 amp/hour)
2. NFPA 72 Central Station and Local and Proprietary Fire Alarm Systems require 24 hours of
3. NFPA 72 Auxiliary and Remote Station Fire Alarm Systems require 60 hours of
4. Factory Mutual Systems require 90 hours of
5. The battery charger in this panel will charge a maximum of 15 amp/hours of batteries within 48 hours (7 amp/hour minimum). Batteries larger than 12 amp/ hour will require a UL listed battery cabinet (e.g. NOTIFIER BB-17).

Appendix B: Device Compatibility

Smoke Detector/Base	Detector Type	Max Standby Current (mA)	Max Alarm Current (mA)
System Sensor 2424	Photoelectric	0.10	41
System Sensor 2424TH	Photoelectric	0.10	41
System Sensor 2451	Photoelectric	0.10	39
System Sensor 2451TH (with/B402B Base)	Photoelectric	0.10	39
System Sensor 1424	Ionization	0.10	41
System Sensor 1451 (w/B402B Base)	Ionization	0.10	39
System Sensor 2412	Photoelectric	0.12	77
System Sensor 2412AT	Photoelectric	0.12	58
System Sensor 2412TH	Photoelectric	0.12	77
System Sensor 2312/24TB	Photoelectric	0.12	50
System Sensor B112LP	Base	0.12	36
System Sensor B114LP	Base	—	—
System Sensor B404B	Base	—	—
System Sensor 6424	Projected Beam	10	28.4
System Sensor DH400ACDCI	Ionization Duct	25	95
System Sensor DH400ACDCP	Photoelectric Duct	25	95
System Sensor 1112/24	Ionization	0.05	50
System Sensor 2112/24	Photoelectric	0.05	50
System Sensor 2112/24B	Photoelectric	0.05	65
System Sensor 2112/24T	Photoelectric w/135° Thermal	0.05	50
System Sensor 2112/24TSRB	Photoelectric w/135° Thermal Supervisory Relay	15	45

Table 3 UL Listed Four-Wire Smoke Detectors

FM-Approved Releasing Devices

(System Sensor's PDRP-1001/PDRP-1001A/PDRP-1001E)

Solenoid Group [A]

Skinner solenoid valve Model LV2LBX25, 24 VDC, 11 Watts, 458 mA, 1/2 in. NPS, 5/ 8 in. orifice.

Solenoid Group [B] These valves are interchangeable.

ASCO solenoid valve Model T8210A107, 24 VDC, 16.8 Watts, 700 mA, 1/2 in. NPS, 5/8 in. orifice.

ASCO solenoid valve Model R8210A107, 24 VDC, 16.8 Watts, 700 mA, 1/2 in. NPS, 5/8 in. orifice.

ASCO solenoid valve Model 8210A107, 24 VDC, 16.8 Watts, 700 mA, 1/2 in. NPS, 5/8 in. orifice.

Solenoid Group [C]

Star Sprinkler Corp. Solenoid P/N 5550, 24 VDC, part of Model D deluge valve. Kidde-Fenwal Electric Control Head P/N 890181; 24V, 2.0 Amps

Kidde-Fenwal Electric Control Head P/N 899175; 24V, 2.0 Amps

Kidde-Fenwal Electric Control Head Stackable (XP) P/N 48650001; 24V, 0.2 Amps

Kidde-Fenwal Electric and Cable Op Control Head (XP) P/N 897494; 24V, 1.5 Amps, 33 Watts

Refer to the FM approval guide for automatic water control valves which are compatible with solenoids listed above.

Model	Type	Current (mA)
FM980-24	Floor Mount, single	68
FM996-24	Wall Mount Surface Wiring	68
FM998-24	Wall Mount Concealed Wiring	68
DH150A	Floor Mount	96
DH154A	Flush Mount	96
DH158A	Surface Mount	96

Table 4 24 VDC Door Holders

Vendor	Model	Current(mA)
System Sensor	A77-716B	20
Air Products & Controls, LTD	MR-101/C	15
	MR-201/C	35

Table 5 UL Listed 24 VDC Relays

SYSTEM SENSOR	Rated Voltage ²	FWR DC	Filtered DC
System Sensor MA-12/24D Electronic Sounder	24VDC	73	46
System Sensor SS24 Strobe	24VDC	note 5	30
System Sensor SS24LO Strobe	24VDC	45	25

System Sensor SS24LOC Ceiling Strobe (SS24LOBC – beige)	24VDC	45	25
System Sensor SS24M Strobe	24VDC	125	75
System Sensor SS24MC Ceiling Strobe	24VDC	125	75
System Sensor MASS24D Electronic Sounder/Strobe	24VDC	118	71
System Sensor MASS24LO Electronic Sounder/Strobe	24VDC	118	71
System Sensor MASS24LOC Electronic Ceiling Sounder/Strobe	24VDC	118	71
System Sensor MASS24LOLA Electronic Sounder/Strobe with Fuego lens	24VDC	118	71
System Sensor MASS24M Electronic Sounder/Strobe	24VDC	198	121
System Sensor MASS24MC Electronic Ceiling Sounder/Strobe	24VDC	198	121
System Sensor PA400R Sounder	24VDC	<i>note 5</i>	15
System Sensor PS24LO Add-on Strobe	24VDC	45	25
System Sensor SS2415ADA Signaling Strobe	24VDC	90	75
System Sensor SS2475ADA Signaling Strobe	24VDC	200	170
System Sensor SS24110ADA Signaling Strobe	24VDC	245	210
System Sensor SS241575ADA Signaling Strobe	24 VDC	120	93
System Sensor SS2415ADAS Signaling Strobe with Synch. Circuit	24 VDC	125	106
System Sensor SS241575ADAS Signaling Strobe with Synch. Circuit	24 VDC	180	115
System Sensor MASS2415ADA Sounder/Signaling Strobe	24VDC	163	121
System Sensor MASS2475ADA Sounder/Signaling Strobe	24VDC	273	216
System Sensor MASS24110ADA Sounder/Signaling Strobe	24VDC	318	256
System Sensor MASS241575ADA Sounder/Signaling Strobe	24 VDC	193	139
System Sensor MASS2415ADAS Sounder/Signaling Strobe w/ Synch. Ckt.	24 VDC	163	121
System Sensor MASS241575ADAS Sounder/Signaling Strobe w/ Synch. Ckt.	24 VDC	193	139
System Sensor PS2415ADA Mini-Sounder/Strobe	24VDC	110	90
System Sensor PS2475ADA Mini-Sounder/Strobe	24VDC	135	108
System Sensor PS241575ADA Mini-Sounder/Strobe	24VDC	135	108
System Sensor PS24110ADA Mini-Sounder/Strobe	24VDC	240	225
System Sensor SP1R2415ADA Speaker/Signaling Strobe	24VDC	90	75
System Sensor SP1R2475ADA Speaker/Signaling Strobe	24VDC	200	170
System Sensor SP1R24110ADA Speaker/Signaling Strobe	24VDC	245	210

System Sensor SP1R241575ADA Speaker/Signaling Strobe	24 VDC	120	93
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System Sensor V4R2415ADA Speaker/Signaling Strobe	24VDC	90	75
System Sensor V4R2475ADA Speaker/Signaling Strobe	24VDC	200	170
System Sensor V4R24110ADA Speaker/Signaling Strobe	24VDC	245	210
System Sensor V4R241575ADA Speaker/Signaling Strobe	24 VDC	120	93
System Sensor SP100W24LOC Ceiling Speaker/Strobe, 8" round grille	24VDC	45	25
System Sensor SP101R24LO Speaker/Strobe, 5" square grille	24VDC	45	25
System Sensor SP101R24M Speaker/Strobe, 5" square grille	24VDC	125	75
System Sensor SP100W24MC Ceiling Speaker/Strobe, 8" round grille	24VDC	125	75
System Sensor MA12/24EH Multi Alert Horn with Mechanical Tone	12VDC/ 24VDC	20/64	38/43
System Sensor MAEH24LO Multi Alert Horn with Mechanical Tone/Strobe	24VDC	109	68
System Sensor MAEH24LOC Multi Alert Horn with Mechanical Tone/Strobe	24VDC	109	68
System Sensor MAEH24LOLA Multi Alert Horn with Mechanical Tone/Strobe	24VDC	153	96
System Sensor MAEH24M Multi Alert Horn with Mechanical Tone/Strobe	24VDC	189	118
System Sensor MAEH24MC Multi Alert Horn with Mechanical Tone/Strobe	24VDC	189	118
System Sensor MAEH1215ADA Multi Alert Horn with Mechanical Tone/Strobe	12VDC	240	191
System Sensor MAEH121575ADA Multi Alert Horn with Mechanical Tone/Strobe	12VDC	310	246
System Sensor MAEH2415ADA Multi Alert Horn with Mechanical Tone/Strobe	24VDC	278	216
System Sensor MAEH2475ADA Multi Alert Horn with Mechanical Tone/Strobe	24VDC	273	216
System Sensor MAEH241575ADA Multi Alert Horn with Mechanical Tone/Strobe	24VDC	343	271
System Sensor MAEH24110ADA Multi Alert Horn with Mechanical Tone/Strobe	24VDC	318	256
System Sensor MAEH2415ADAS Multi Alert Horn with Mechanical Tone/Strobe	24VDC	198	152
System Sensor MAEH241575ADAS Multi Alert Horn with Mechanical Tone/Strobe	24VDC	253	241
System Sensor H12 SpectrAlert Horn	12VDC	25	14
System Sensor H42 SpectrAlert Horn3	24VDC	42	37
System Sensor S1215 SpectrAlert Strobe	12VDC	159	133
System Sensor S121575 SpectrAlert Strobe	12VDC	182	168

System Sensor S2415 SpectrAlert Strobe3	24VDC	142	83
System Sensor S241575 SpectrAlert Strobe3	24VDC	132	76
System Sensor S2475 SpectrAlert Strobe3	24VDC	170	145
System Sensor S24110 SpectrAlert Strobe3	24VDC	220	169
System Sensor P1215 SpectrAlert Horn/Strobe	12VDC	173	144
System Sensor P121575 SpectrAlert Horn/Strobe	12VDC	196	179
System Sensor P2415 SpectrAlert Horn/Strobe3	24VDC	165	94
System Sensor P241575 SpectrAlert Horn/Strobe3	24VDC	177	111

System Sensor P2475 SpectrAlert Horn/Strobe3	24VDC	215	180
System Sensor P24110 SpectrAlert Strobe3	24VDC	265	214
System Sensor RP1215ADAARetrofit Strobe Plate	12VDC	200	170
System Sensor RP121575ADAARetrofit Strobe Plate	12VDC	240	255
System Sensor RP2415ADAARetrofit Strobe Plate	24VDC	90	75
System Sensor RP241575ADAARetrofit Strobe Plate	24VDC	120	93
System Sensor RP2475ADAARetrofit Strobe Plate	24VDC	200	170
System Sensor RP24110ADAARetrofit Strobe Plate	24VDC	245	210
System Sensor H24 SpectrAlert	24VDC	42	37
System Sensor S2415 SpectrAlertStrobe3	24VDC	142	83
System Sensor S241575 SpectrAlert Strobe3	24VDC	132	76
System Sensor S2475 SpectrAlert Strobe3	24VDC	170	145
System Sensor S24110 SpectrAlert Strobe3	24VDC	220	169
System Sensor S2415 SpectrAlert Horn/Strobe3	24VDC	165	94
System Sensor S241575 SpectrAlert Horn/Strobe3	24VDC	177	111
System Sensor S2475 SpectrAlert Horn/Strobe3	24VDC	215	180
System Sensor P24110 SpectrAlert Horn/Strobe3	24VDC	265	214
System Sensor S2415 SpectrAlertStrobe3	24VDC	142	83
System Sensor S241575 SpectrAlert Strobe3	24VDC	132	76
<p>Note:</p> <ol style="list-style-type: none"> 1) Control panels supplying Special Application (FWR, Filtered) power must use the notification appliances, relays or door holders listed in this table. 2) All currents are in Millamperes and worst case average. 3) Nominal Operating voltage. 4) Refer to Installation Instructions for more information. 5) Contact manufacturer for currents. 			

Table 6 UL Listed Notification Appliances

						Number of Detectors Per Zone
Model	Det. I D	Detector Type	Base Model	Base ID	Standby Current (uA)	PDRP-1001/ PDR P-1001A/ PDRP-1001E
System Sensor 1400	A	Ionization	n/a	n/a	100	20

System Sensor 1451	A	Ionization	B401B / B406B	A	120	15 / 1
System Sensor 1851DH	A	Ionization	DH1851DC	A	120	15
System Sensor 2400	A	Photoelectric	n/a	n/a	120	15
System Sensor 2400AIT	A	Photo / Isolated Thermal / Horn	n/a	n/a	120	1
System Sensor 2400AT	A	Photo / Thermal / Horn	n/a	n/a	120	1
System Sensor 2400TH	A	Photo / Thermal	n/a	n/a	120	15
System Sensor 2451	A	Photoelectric	B401B / B406B	A	120	15 / 1
System Sensor 2451TH	A	Photo / Thermal	B401B / B406B	A	120	15 / 1
System Sensor 2851DH	A	Photoelectric	DH2851DC	A	120	15
System Sensor 1451DH	A	Ionization	DH-400	A	120	15
System Sensor 2451	A	Photoelectric	DH-400	A	120	15
System Sensor 2300T	A	Photo / Thermal	n/a	n/a	120	15
System Sensor 1800	A	Ionization	n/a	n/a	100	n/a
System Sensor 1851B	A	Ionization	B101B	A	120	n/a
System Sensor 1851B	A	Ionization	B107B	A	120	n/a
System Sensor 2800	A	Photoelectric	n/a	n/a	120	n/a
System Sensor 2800TH	A	Photo / Thermal	n/a	n/a	120	n/a
System Sensor 2851B	A	Photoelectric	B101B	A	120	n/a
System Sensor 2851B	A	Photoelectric	B107B	A	120	n/a
System Sensor 2851BTH	A	Photo / Thermal	B101B	A	120	n/a
System Sensor 2851BTH	A	Photo / Thermal	B107B	A	120	n/a
System Sensor 1151	A	Ionization	B401 / B110LP / B116LP	A	120	15 / 15 / 1
System Sensor 2151	A	Photoelectric	B401 / B110LP / B116LP	A	120	15 / 15 / 1

Table 7 UL Listed, Compatible Two-Wire Smoke Detectors for Notifier Control Panels

Appendix C: NFPA Standard-Specific Requirements

The PDRP-1001/PDRP-1001A/PDRP-1001E has been designed for use in commercial, industrial, and institutional applications and meets the requirements for service under the National Fire Protection Association (NFPA) Standards outlined in this appendix. The minimum system components required for compliance with the appropriate NFPA standards are listed below.

PDRP-1001/PDRP-1001A/PDRP-1001E Control Panel containing the main control board, cabinet (backbox and door), main supply transformer and power supply.

Batteries (refer to Appendix A for Standby Power Requirements).

Initiating Devices – connected to one of the control panel's Initiating Device Circuits.

Notification Appliances – connected to one of the control panel's Notification Appliance Circuits.

Releasing Devices – connected on one of the control panel's Releasing Circuits.

The following additional equipment is needed for compliance with the NFPA standards listed below.

NFPA 72 Signaling Systems for Central Station Service

(Protected Premises Unit) NOTI•FIRE 911AC DACT* – for connection to a Central Station Receiver or Protected Premises Receiving Unit. This unit must be installed as illustrated below. For additional information on the 911AC, refer to document 74-06200-005.

All connections between the FACP and 911AC must be in conduit, less than 20 ft (609.6cm) in length in the same room. If the NOTI•FIRE 911AC is not mounted in the PDRP-1001/PDRP-1001A/PDRP-1001E backbox all connections must be in conduit, less than 20 ft. (609.6 cm) in length in the same room.

*This application using the NOTI•FIRE 911AC is not FM approved.

Note: For 911AC

- The Maximum standby load shall be 125 mA.
- The Standby by Battery Requirement: 24VDC, 7Amp-Hour-Max.
- The PDRP-1001/PDRP-1001A/PDRP-1001E is not suitable for transmission of a supervisory signal to the DACT.

Note: The PDRP-1001/
PDRP-1001A/PDRP-
1001E is not suitable for
transmission of a
supervisory signal to the
DACT

NOTE on STD DACT:
Place jumper over pins 2 and 3,
marked DACT, when employing a
DACT. This directs the control panel
to transmit all trouble conditions
except AC LOSS.

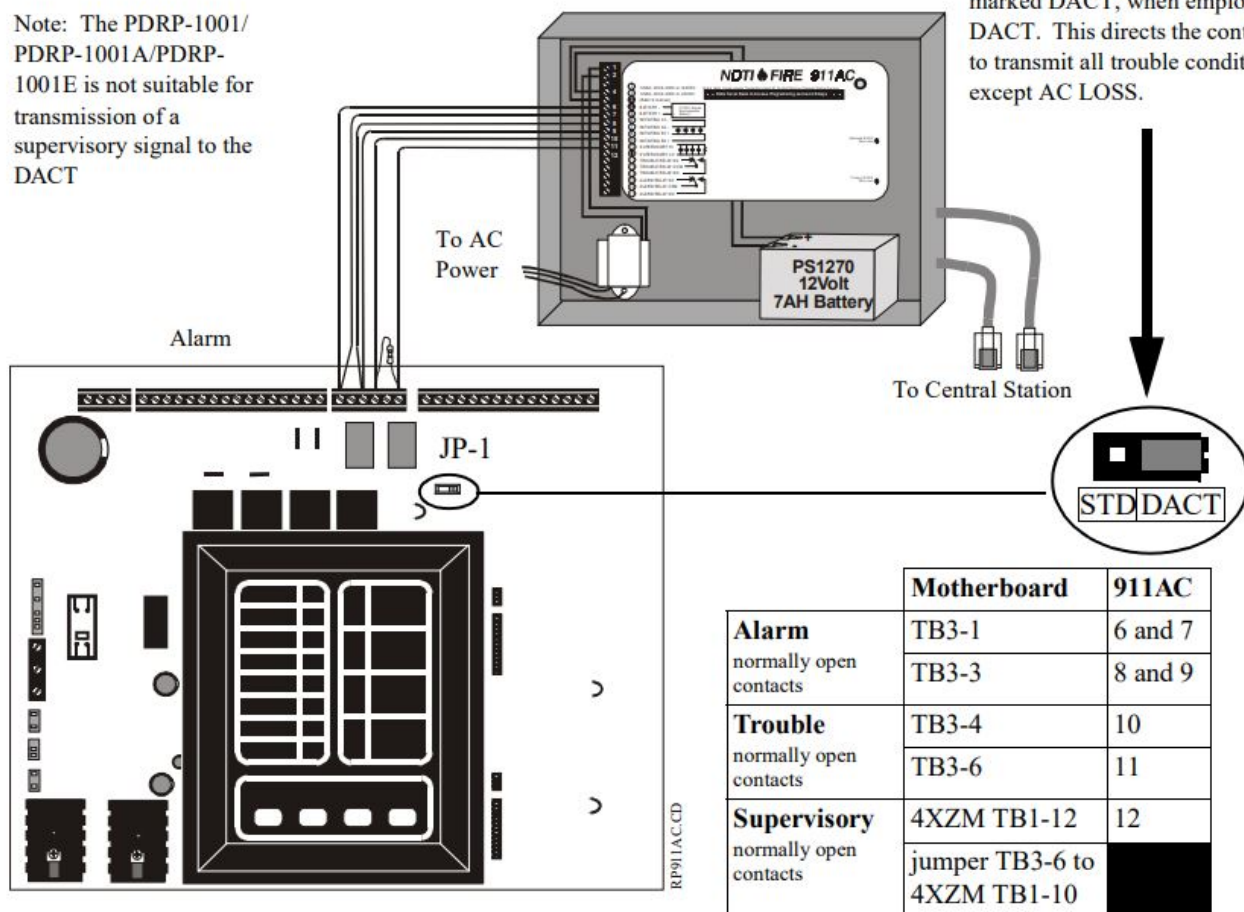


Figure 13 NFPA 72 Signaling Systems for Central Station Service

Using the MS-5012 as a DACT

1. Reference the MS-5012 manual for additional information.
2. Program the MS-5012 for slave applications.
3. The PDRP-1001/PDRP-1001A/PDRP-1001E is not suitable for transmission of a supervisory signal to the DACT.

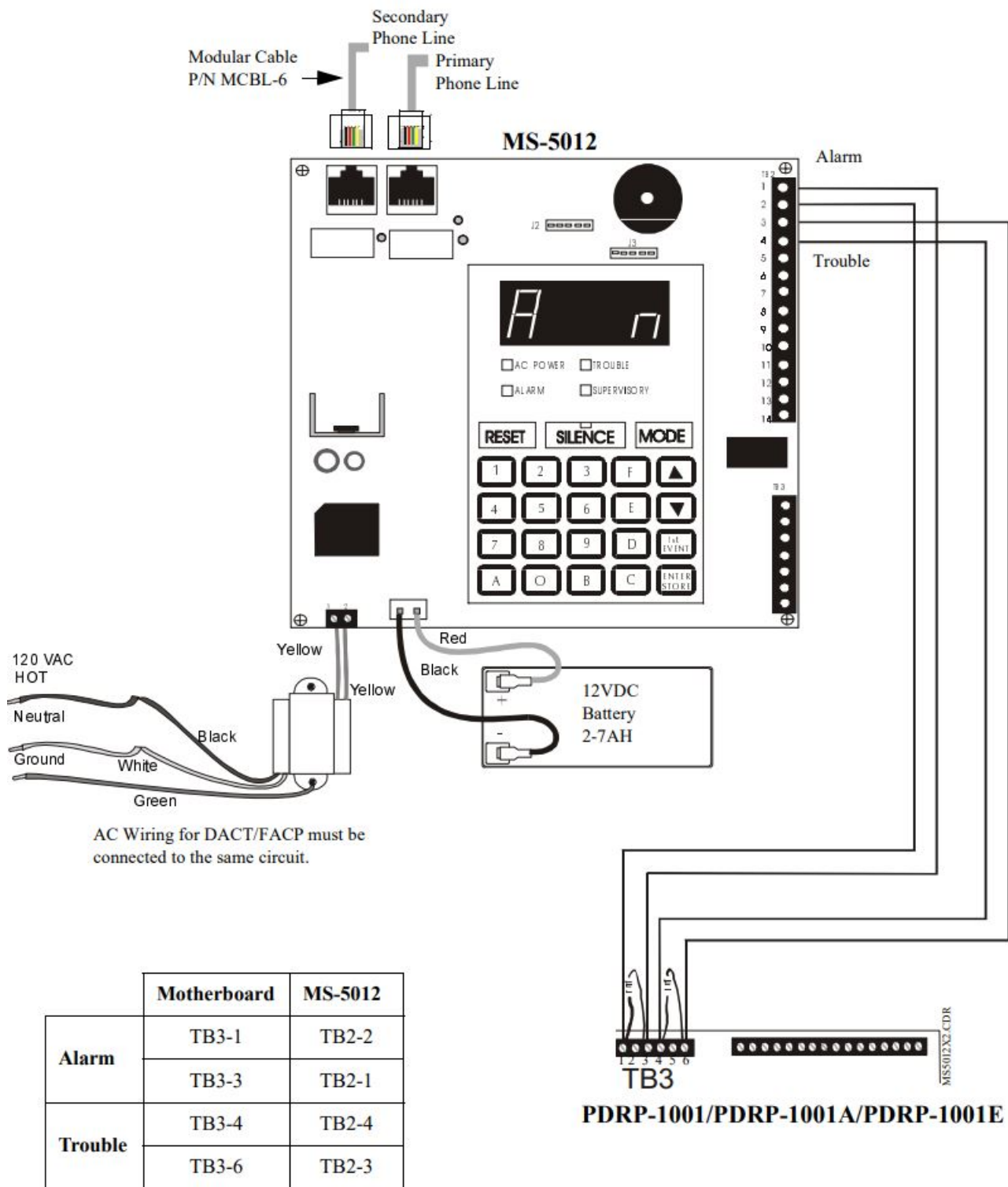


Figure 14 Using the MS-5012 as a DACT

NFPA 72 Auxiliary Fire Alarm System

All connections are power limited and supervised. This application is not suitable for separate transmission of sprinkler supervisory or trouble conditions.

Note: Maximum loop resistance allowed for wiring from control panel to Municipal Box is 3 ohms.

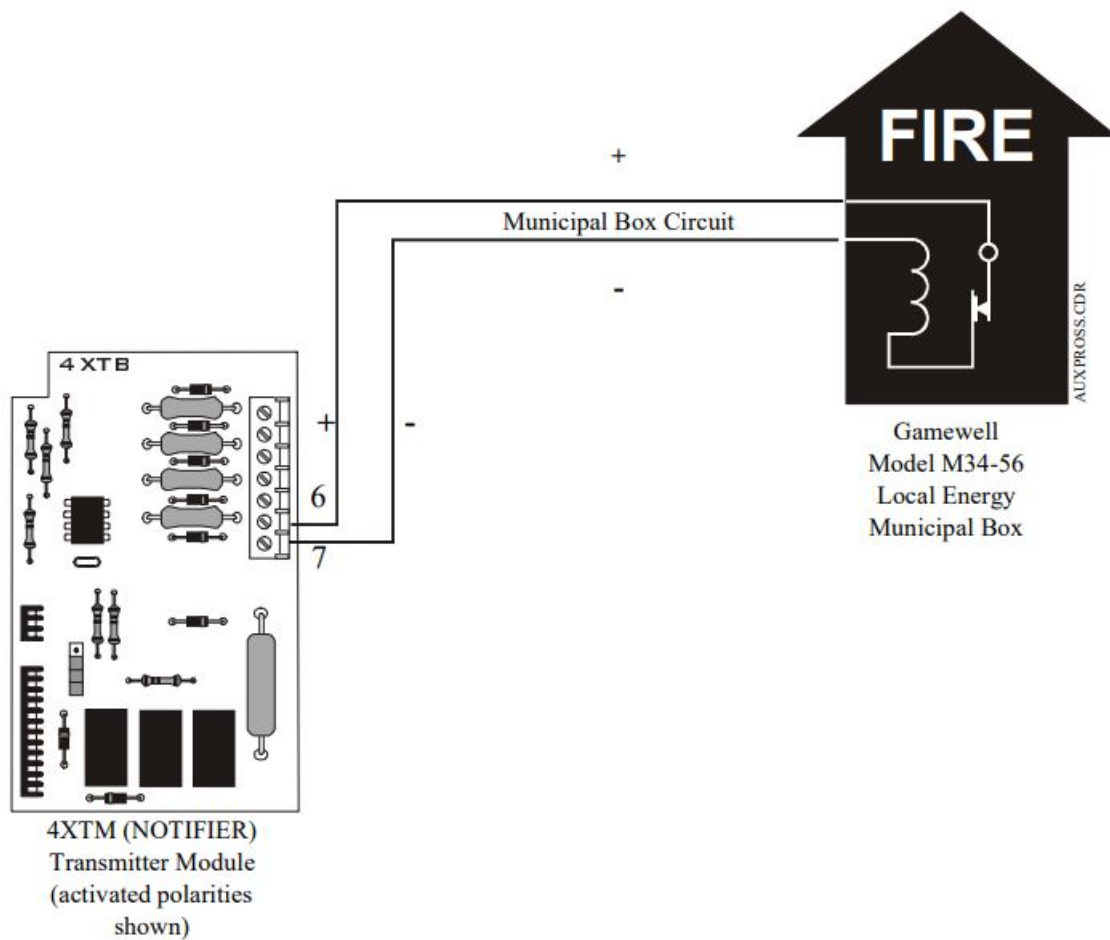


Figure 15 NFPA 72 Auxiliary Fire Alarm System

NFPA 72 Remote Station Fire Alarm System

Intended for connection to a polarity reversal circuit of a remote station receiving unit having compatible ratings. All connections are power limited and supervised with the exception of the reverse polarity loop. Supervision of the loop is the responsibility of the receiver.

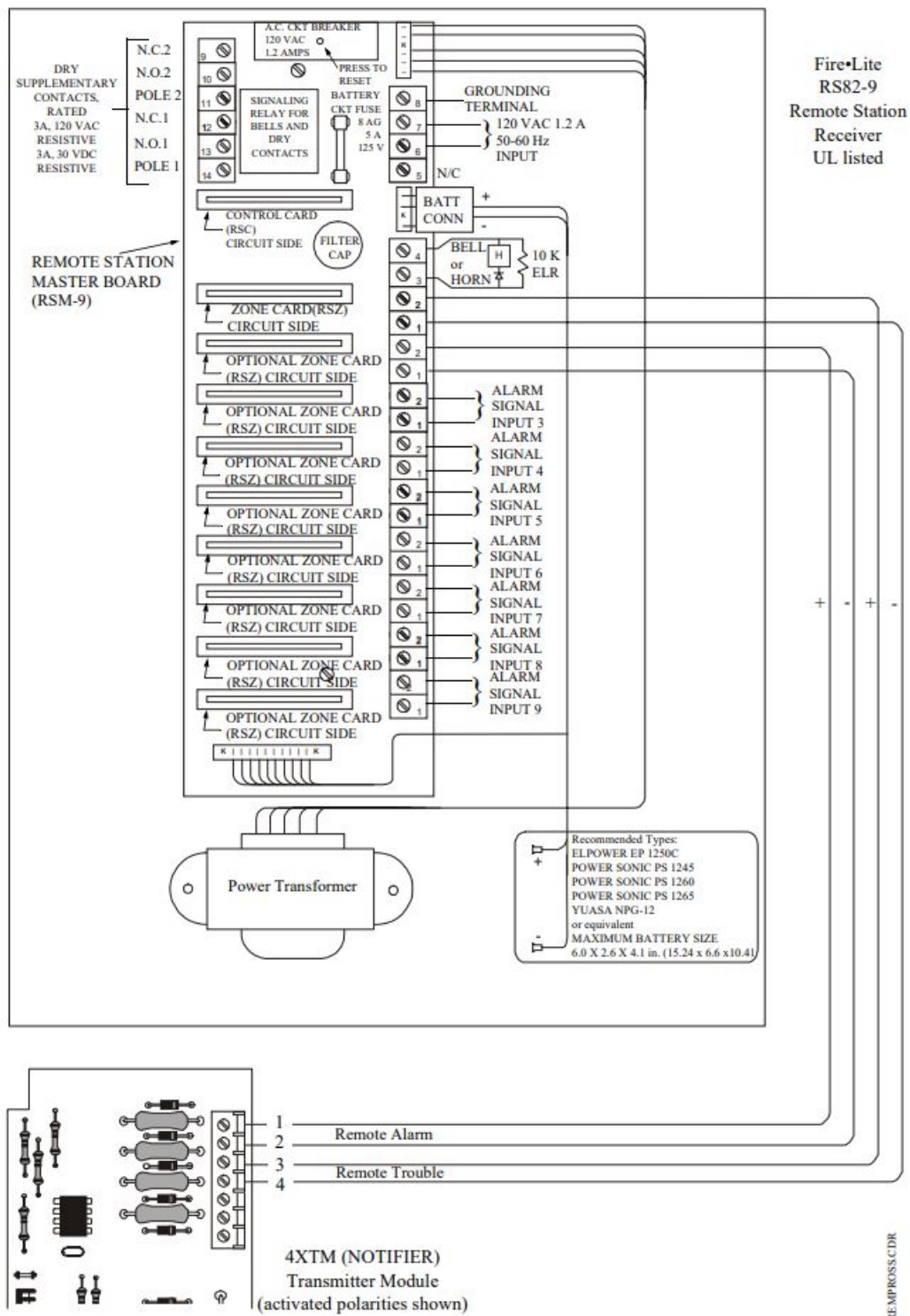


Figure 16 NFPA 72 Remote Station Fire Alarm System

Troubleshooting Table

SYMPTOM		PROBLEM		SOLUTION	
AC Power LED on	System trouble LED on	Circuit trouble LED on	Notification appliance circuit trouble		1. Check TB2 for proper connections. (TB3 for 4XB panels) 2. Remove all field wiring and install dummy ELR at output circuit. Check for supervisory voltage across it. (Normal -2.3 V). If problem persists, replace circuit board. 3. Removed dummy ELR, reconnect field wiring and measure voltage across output; (trouble -5V, short OV). 4. Check for ELR at last device. 5. Check field wiring.
		Any of the right column yellow LEDs flashing	Initiating zone open circuit trouble		1. Check TB4 for proper connections. 2. Remove field wiring for zone in trouble and install dummy ELR (4.7K for 24V; 2.2K for 12V). If problem persists, replace circuit board. 3. Check for ELR at last device. 4. Check field wiring.
		Any of the right column yellow LEDs steady on	Zone Disable		Check installation manual.
		Power trouble LED on	Battery trouble Batt yellow LED on	Missing or Disconnected	Check battery connections
				Low or damage battery	1. Remove batteries, check voltage across charger output (17 to 19V for 24V; 8-10V for 12V), otherwise replace circuit board. 2. Reconnect batteries, measure battery voltage at battery terminals. If voltage is less than 85% of rated voltage, allow them to charge for 48 hours. 3. If problem persists, replace batteries.
			Ground fault trouble Earth yellow LED on	1. Remove field wiring from main panel and optional module(s) (if installed). Install dummy ELR (4.7K for 24V; 2.2K for 12V). 2. Remove both battery leads. 3. If trouble clears, connect one circuit at a time to pinpoint the problem. 4. If trouble doesn't clear, replace circuit board.	
	Yellow LED on 4XTM on	4XTM		1. Move Municipal Box disconnect switch SW1 up	
			OPT1, OPT2 jumper cut		Install optional module(s) or replace jumper if module(s) is not used.
			Municipal Box open circuit		1. Install dummy load if Municipal Box option isn't used. 2. Check Municipal Box wiring.
	Any of the right column red LEDs on		Short on initiating circuit wiring		Remove field wiring and install ELR. If trouble clears, look for faulty or incorrectly wired devices.
	Disconnecting Municipal Box switch on 4XTM does not create a trouble		Jumper for optional modules isn't cut.		Cut associated jumper OPT1 or OPT2.
	4XZM: associated LED does not activate for alarm, trouble or supervisory conditions		Optional module trouble		1. Make sure module is properly installed. 2. Move disable switch SW1 on 4XZM to the left.
	RZA-4X piezo doesn't sound for alarm, trouble or supervisory conditions		4XLM		1. Make sure that 4XLM module is installed on J7 and J8. 2. Check field wiring.
	Micro Fail yellow LED on		Microprocessor damaged.		Replace circuit board.
	All RZA-4X LEDs stay on		Power wasn't removed prior to installation.		Hit system reset.
AC Power LED off	System trouble LED on	Loss of main power		Check incoming power (TB5). (TB1 for 4XB panels)	
		Damaged circuit breaker		Replace circuit board.	
	Micro Fail yellow LED on	Microprocessor damaged		Replace circuit board.	

Table 8 Trouble Shooting Table

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System Sensor® warrants its products to be free from defects in materials and workmanship for eighteen (18) months from the date of manufacture, under normal use and service. Products are date stamped at time of manufacture. The sole and exclusive obligation of **System Sensor®** is to repair or replace, at its option, free of charge for parts and labor, any part which is defective in materials or workmanship under normal use and service. For products not under **System Sensor®** manufacturing date-stamp control, the warranty is eighteen (18) months from date of original purchase by **System Sensor®** distributor unless the installation instructions or catalog sets forth a shorter period, in which case the shorter period shall apply. This warranty is void if the product is altered, repaired or serviced by anyone other than **System Sensor®** or its authorized distributors or if there is a failure to maintain the products and systems in which they operate in proper and workable manner. In case of defect, phone System Sensor® Repair Department, RA # _____, 3825

Ohio Avenue, St. Charles, IL 60174. Please include a note describing the malfunction and suspected cause of failure.

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Documents / Resources

	<p>SYSTEM SENSOR PDRP-1001 Deluge Preaction Control Panel [pdf] User Guide PDRP-1001 Deluge Preaction Control Panel, PDRP-1001, Deluge Preaction Control Panel, Preaction Control Panel</p>
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