

Electric Release PDRP-2001 Panel Wiring Tips



The PDRP-2001 Fire Alarm Control Panel (FACP) is a six-zone control panel for single and dual hazard deluge and preaction applications. The FACP is compatible with conventional input devices (2-wire or 4-wire), pull stations, waterflow devices, tamper switches, and other normally-open contact devices.

The PDRP-2001 FACP has four programmable NAC outputs or releasing solenoids, and three programmable form-C relays.

SPECIFICATIONS

**AC POWER: 120 VAC, 60 Hz, 3.66 amps
240 VAC, 50Hz, 2.085 amps (PDRP2001E)
Wire Size: minimum #14 AWG (2.0 mm²) with 600 V insulation
Supervised, nonpower-limited**

BATTERY: Maximum Charging Circuit – Normal Flat Charge: 27.6VDC @ 1.4 amp
Supervised, nonpower-limited
Maximum Charger Capacity: 26 Amp Hour battery (two 18 Amp Hour batteries can be housed in the FACP cabinet).
Minimum Battery Size: 7 Amp Hour

INITIATING CIRCUITS: Six Alarm Zones
Supervised and power-limited circuitry
Operation: All zones Style B (Class B)
Normal Operating Voltage: Nominal 20 VDC
Alarm Current: 15mA minimum
Short Circuit Current: 40 mA Maximum
Maximum Loop Resistance: 100 ohms
Standby Current: 2 mA
End-of-Line Resistor: 4.7K ohms, ½ watt

NOTIFICATION APPLIANCE AND RELEASING CIRCUITS: Four Output Circuits
Operation: Style Y (Class B)
Special Application power
Supervised and power-limited circuitry
Normal Operating Voltage: Nominal 24VDC
Maximum Signaling Current: 7.0 amps (3.0 amps max/NAC)
End-of-Line Resistor: 4.7K ohms, ½ watt
Maximum Wiring Voltage Drop: 1.5VDC

ALARM AND TROUBLE RELAYS: Three Form-C Programmable Relays
– Relay 1 (factory default- Alarm Relay)
– Relay 2 (factory default- fail-safe Trouble Relay)
– Relay 3 (factory default- Supervisory Relay)
Relay Contact Ratings: 2 amps @ 30 VDC (resistive) and 0.5 amps @ 30 VAC (resistive)

AUXILIARY TROUBLE INPUT: Is an open collector, unsupervised circuit which can be used to monitor external devices for trouble conditions.

SPECIAL APPLICATION RESETTABLE POWER: Operating Voltage: Nominal 24 VDC
Maximum Available Current: 500mA (appropriate for powering 4-wire smoke detectors)
Power-limited Circuitry
JP31 jumper selectable for resettable or nonresettable power

PANEL DIMENSIONS: 16.65" wide x 19" high x 5.2" deep

JOB/OWNER

System No. _____
Location _____

CONTRACTOR

Submitted By _____
Date _____

ENGINEER

Spec Sect _____ Para _____
Approved _____
Date _____

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SYSTEM INSTALLATION AND SERVICE

GENERAL

CONTROL PANEL

The Model PDRP-2001 Releasing Panel current output is 7.0 amps maximum. The total current drain for all system components: remote trouble signal, alarm bell, solenoid valve and detection devices must not exceed this output.

The electrical control unit, standby batteries and rectifier are in one panel. The panel should be mounted at a convenient observable location near the deluge/preaction valve.

All wiring shall be installed in accordance with the National Electrical Code and the manufacturer's drawings. Wire no smaller than No. 14 AWG (2.00mm², 1.6mm O.D.) (American Wire Gauge) shall supply A.C. power to the panel. The panel requires 120 VAC, 60 Hz, 3.66 amps for the PDRP-2001 or 240 VAC, 50 Hz, 2.085 amps for the PDRP-2001E.

Two 12 VDC – batteries are required for standby condition. Batteries are maintenance free and leak proof gel cell. The batteries require 48 hours to reach full charge after connection to the panel. 12AH batteries are provided standard. Battery AH calculations must be completed to ensure adequate back-up supply is available per NFPA and system requirements. Refer to the Power Supply Calculations section in the PDRP-2001 instruction manual for calculating system current draw and battery sizing.

Prior to powering the panel or installing optional modules, complete all wiring for the detectors, alarm and trouble bell and solenoid valve wiring to the panel as shown on the appropriate Field Wiring Diagram (figures 1-4). Prior to connecting batteries and A.C. power, refer to the PDRP-2001(E) installation booklet and the appropriate Test Outline in this bulletin for start-up sequence and indications of correct operation.

INPUT CIRCUITS

The PDRP-2001 has six programmable initiating device circuits (IDC). Each circuit is configured for Style B (Class B) operation will accept, any normally-open contact devices as well as conventional 2-wire or 4-wire, 24 VDC smoke detectors.

Initiating device circuits can be converted to Style D (Class A) by installing the optional Class A converter module.

The maximum loop resistance limit for each IDC is 100 ohms (figure 4). The maximum number of detectors per zone is 25. The field wiring for each zone is supervised for opens, shorts and ground faults. All conditions are visually and audibly annunciated.

Class B Initiating Device Circuits are supervised and power-limited with a 4.7K ohm, ½ watt resistor.

A combination Waterflow/Supervisory Zone circuit allows an FACP to distinguish between an Alarm switch and Supervisory (tamper) switch installed on the same circuit. Any circuit can be programmed as a Combo Type zone. Refer to PDRP2001 panel for connection requirements.

OUTPUT CIRCUITS

Four Style Y (Class B) Notification Appliance Circuits can output a maximum of 3.0 amps of current. Total current drawn from these as well as other DC power outputs cannot exceed 7.0 amps. Each circuit is supervised, power-limited and provides special application power.

The NAC's can be converted to Style Z (Class A) configuration by installing two optional Class A converter modules.

Class B Notification Appliance Circuits are supervised and power-limited with a 4.7K ohm, ½ watt resistor.

Short Circuit Supervision selection programming application requirements. The use of a REL 4.7K (Tranzorb) is required when the Short Circuit Supervision is enabled.

PROGRAMMABLE RELAYS

Three programmable Form-C relays, each rated for 2 amps @ 30 VDC (resistive) and 0.5 amps @ 30 VAC (resistive).

The PDRP-2001 FACP provides a factory default programmed alarm relay, fail-safe trouble relay and supervisory relay.

The trouble relay is a fail-safe relay which will transfer on any trouble or total power failure.

POWER-LIMITED WIRING

Power-limited and nonpower-limited circuit wiring must remain separated in the cabinet. All power-limited circuit wiring must remain at least 0.25" (6.35 mm) away from any nonpower-limited circuit wiring.

SPECIAL APPLICATION DC POWER OUTPUT

Special application resettable and nonresettable 24 VDC power is available on the PDRP-2-001 control panel. Power-limited, 24 VDC filtered power is provided at terminal connection TB9.

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OPTIONAL MODULES AND ACCESSORIES

CAC-5X CLASS A CONVERTER MODULE

Two CAC-5X Modules are required to convert all output circuits and/or initiating device circuits to Class A. The CAC-5X Module can be used to convert five Class B, IDC to Class A, and two Class B, NAC to Class A.

Refer to Figure 3. for applicable wiring connections.

4XTM MUNICIPAL BOX TRANSMITTER MODULE

The 4XTM Module provides a supervised output for local energy municipal box transmitter and alarm and trouble reverse polarity.

The 4XTM mounts to the main circuit board connectors J4 and J5.

ANN-80LCD ANNUNCIATOR

The ANN-80 is a remote LCD annunciator that replicates the information displayed on the FACP LCD display.

ANN-LED ANNUNCIATOR MODULE

The ANN-LED Annunciator Module mounts in a Dress Panel and provides three LED's for each zone: Alarm, Trouble, and Supervisory.

ANN-RLY RELAY MODULE

The ANN-RLY Module provides 10 Form-C Relays, and can be mounted inside the cabinet.

ANN-S/PG SERIAL/PARALLEL PRINTER GATEWAY

The ANN-S/PG module provides a connection port for serial or parallel printer.

ANN-I/O LED DRIVER MODULE

The ANN-I/O module provides connections to a user supplied graphic annunciator.

BATTERY BOX

The battery box is used to house two batteries greater than 18 Amp Hour. The battery box mounts directly below the control panel cabinet, centered to the main circuit board.

DRESS PANEL (DP-51050)

The dress panel restricts access to the system wiring while allowing access to the membrane switch panel.

TR-CE TRIM-RING

The trim-ring allows semi-flush mounting of the cabinet.

INSTALLATION

The PDRP-2001 panel may be surface mounted or semi-flush mounted. The cabinet should be mounted in a clean, dry, vibration-free area where extreme temperatures or levels of humidity are not encountered. The area should be readily accessible with sufficient room to easily install and maintain the panel. Locate the top of the cabinet approximately 5 feet (1.5 m) above the floor with the hinge mounting on the left.

All wiring should be in accordance with the National and/or Local codes for fire alarm systems.

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PROGRAMMING

The PDRP-2001 is completely field programmable using the panel keypad and requires no special software skills.

Seven program templates are provided to allow the panel to be quickly programmed with typical job-site configurations or one custom template which can be programmed by the user.

There are two factory set programming passwords (master and maintenance) which will access the programming screens. The factory set passwords can be changed by the user.

Refer to the PDRP-2001 instruction manual for detailed programming instruction.

Template 7: Single Hazard – 3 Zone

Input Zone Types:

- Zone 1 = 2-wire smoke
- Zone 2 = Fire
- Zone 3 = Waterflow - no waterflow delay since Waterflow Delay Timer is set to 0
- Zone 4 = Manual Release
- Zone 5 = Pull Station
- Zone 6 = Supervisory

Output Circuit Types:

- Output 1 = Alarm NAC
- Output 2 = Waterflow NAC - no waterflow delay since Waterflow Delay Timer is set to 0
- Output 3 = Release Solenoid 1 (unsupervised for shorts)
- Output 4 = Supervisory Bell NAC

Timers

- Soak Timer 1 - set for 10 minutes
- Soak Timer 2 - set for 10 minutes
- Waterflow Delay Timer - set for 0 seconds
- AC Loss Delay Timer - set for 2 hours

Operation

- Activation of Input Zone 1 (2-Wire Smoke) or Zone 2 (Fire) or Zone 4 (Manual Release) or Zone 5 (Pull Station) will operate the Alarm NAC Output #1 and Release Solenoid 1 Output #3. Release Solenoid 1 will turn off water release following time-out of the 10 minute Soak Timer 1
- Activation of Input Zone 3 (Waterflow) will operate the Waterflow NAC Output #2. There is no FACP initiated delay in activation since the Waterflow Delay Timer is set to 0 seconds Activation of Input Zone 6 (Supervisory) will operate the Supervisory Bell NAC Output #4

FACP Relay Operation

The following description of FACP relay operations are in addition to normal system operation.

- Alarm Relay - activation of Input Zone 1 (2-Wire Smoke) or Zone 2 (Fire) or Zone 3 (Waterflow - with Waterflow Delay time) or Zone 4 (Manual Release) or Zone 5 (Pull Station) will operate Alarm Relay
- Trouble Relay - any system trouble will activate the Trouble Relay
- Supervisory - activation of Zone 6 (Supervisory) will operate the Supervisory Relay

NOTE: The #7 Template of the PDRP-2001 is equivalent to the PDRP-1001 Mode 1 operation

Template 7: SINGLE HAZARD – 3 ZONE						
OUTPUT CIRCUITS	INPUT ZONES					
	1 2-WIRE SMOKE	2 FIRE	3 WATER-FLOW	4 MANUAL RELEASE	5 PULL STATION	6 SUPV.
#1 Alarm NAC	X	X	X	X	X	
#2 Supv Bell NAC						X
#3 Release Solenoid 1	X	X		X	X	
#4 Release Solenoid 2	X	X		X	X	

Table Legend: X = direct correlation between Input Zone and Output Circuit (input zone activation will turn on corresponding output circuit).

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Template 8: Single Hazard - Cross-Zone With Manual Release

Input Zone Types:

- Zone 1 = 2-wire smoke
- Zone 2 = Fire
- Zone 3 = Waterflow - activation delayed for 60 seconds (Waterflow Delay set to 60 secs.)
- Zone 4 = Manual Release
- Zone 5 = Pull Station
- Zone 6 = Supervisory

Output Circuit Types:

- Output 1 = Alarm NAC
- Output 2 = Waterflow NAC - activation delayed for 60 seconds (Waterflow Delay set to 60 sec)
- Output 3 = Release Solenoid 1 (unsupervised for shorts)
- Output 4 = Supervisory Bell NAC

Timers

- Soak Timer 1 - set for 10 minutes
- Soak Timer 2 - set for 10 minutes
- Waterflow Delay Timer - set for 60 seconds
- AC Loss Delay Timer - set for 2 hours

Operation

- Activation of both Input Zone 1 (2-Wire Smoke) and Zone 2 (Fire) at the same time, or Zone 4 (Manual Release) or Zone 5 (Pull Station) will operate the Release Solenoid 1 Output #3. Release Solenoid will turn off water release following time-out of the 10 minute Soak Timer 1. Activation of any one of these zones will operate Alarm NAC Output #1
- Activation of Input Zone 3 (Waterflow) will operate the Waterflow NAC Output #2. There is a 60 second FACP initiated delay in activation since Waterflow Delay Timer is set to 60 seconds
- Activation of Input Zone 6 (Supervisory) will operate the Supervisory Bell NAC Output #4

FACP Relay Operation

The following description of FACP relay operations are in addition to normal system operation.

- Alarm Relay - activation of Input Zone 1 (2-Wire Smoke) or Zone 2 (Fire) or Zone 3 (Waterflow - with Waterflow Delay time) or Zone 4 (Manual Release) or Zone 5 (Pull Station) will operate Alarm Relay
- Trouble Relay - any system trouble will activate the Trouble Relay
- Supervisory - activation of Zone 6 (Supervisory) will operate the Supervisory Relay

NOTE: The #8 Template of the PRDP-2001 is equivalent to the PDRP-1001 Mode 2 operation

Template 8: SINGLE HAZARD – CROSS ZONE WITH MANUAL RELEASE						
OUTPUT CIRCUITS	INPUT ZONES					
	1 2-WIRE SMOKE	2 FIRE	3 WATER-FLOW	4 MANUAL RELEASE	5 PULL STATION	6 SUPV.
#1 Alarm NAC	X	X		X	X	
#2 Supv Bell NAC					X	
#3 Release Solenoid 1	C1	C1		X	X	
#4 Release Solenoid 2						X

Table Legend: X = direct correlation between Input Zone and Output Circuit (input zone activation will turn on corresponding output circuit).

Cx = cross-zone where x is the number of the Release Solenoid. All inputs with the same Release Solenoid number must be active at the same time to turn on the corresponding solenoid output circuit

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Template 9: Dual Hazard - Combined Release

Input Zone Types:

- Zone 1 = 2-wire smoke
- Zone 2 = Fire
- Zone 3 = Waterflow - activation delayed for 10 seconds (Waterflow Delay set to 10 secs.)
- Zone 4 = Manual Release
- Zone 5 = Pull Station
- Zone 6 = Supervisory

Output Circuit Types:

- Output 1 = Alarm NAC
- Output 2 = Supervisory Bell NAC
- Output 3 = Release Solenoid 1 (unsupervised for shorts)
- Output 4 = Release Solenoid 2 (unsupervised for shorts)

Timers

- Soak Timer 1 - set for 10 minutes
- Soak Timer 2 - set for 10 minutes
- Waterflow Delay Timer - set for 10 seconds
- AC Loss Delay Timer - set for 2 hours

Operation

- Activation of Input Zone 1 (2-Wire Smoke) or Zone 2 (Fire) or Zone 4 (Manual Release) or Zone 5 (Pull Station) will operate the Alarm NAC Output #1, Release Solenoid 1 Output #3 and Release Solenoid 2 Output #4. Release Solenoid 1 will turn off water release following time-out of the 10 minute Soak Timer 1 and Release Solenoid 2 will turn off water release following time-out of the 10 minute Soak Timer 2
- Activation of Input Zone 3 (Waterflow) will operate the Alarm NAC Output #1. There is a 10 second FACP initiated delay in activation since Waterflow Delay Timer is set to 10 seconds
- Activation of Input Zone 6 (Supervisory) will operate the Supervisory Bell NAC Output #2

FACP Relay Operation

The following description of FACP relay operations are in addition to normal system operation.

- Alarm Relay - activation of Input Zone 1 (2-Wire Smoke) or Zone 2 (Fire) or Zone 3 (Waterflow - with Waterflow Delay time) or Zone 4 (Manual Release) or Zone 5 (Pull Station) will operate Alarm Relay
- Trouble Relay - any system trouble will activate the Trouble Relay
- Supervisory - activation of Zone 6 (Supervisory) will operate the Supervisory Relay

NOTE: The #9 Template of the PDRP-2001 is equivalent to the PDRP-1001 Mode 3 operation

Template 9: DUAL HAZARD – COMBINED RELEASE						
OUTPUT CIRCUITS	INPUT ZONES					
	1 2-WIRE SMOKE	2 FIRE	3 WATER-FLOW	4 MANUAL RELEASE	5 PULL STATION	6 SUPV.
#1 Alarm NAC	X	X	X	X	X	
#2 Supv Bell NAC						X
#3 Release Solenoid 1	X	X		X	X	
#4 Release Solenoid 2	X	X		X	X	

Table Legend: X = direct correlation between Input Zone and Output Circuit (input zone activation will turn on corresponding output circuit).

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Template 10: Dual Hazard - Split Release

Input Zone Types:

- Zone 1 = 2-wire smoke
- Zone 2 = Fire
- Zone 3 = Waterflow - activation delayed for 10 seconds (Waterflow Delay Timer 10 set to secs.)
- Zone 4 = Supervisory
- Zone 5 = Manual Release
- Zone 6 = Pull Station

Output Circuit Types:

- Output 1 = Alarm NAC
- Output 2 = Supervisory Bell NAC
- Output 3 = Release Solenoid 1 (unsupervised for shorts)
- Output 4 = Release Solenoid 2 (unsupervised for shorts)

Timers

- Soak Timer 1 - set for 10 minutes
- Soak Timer 2 - set for 10 minutes
- Waterflow Delay Timer - set for 10 seconds
- AC Loss Delay Timer - set for 2 hours

Operation

- Activation of Input Zone 1 (2-Wire Smoke) will operate Release Solenoid 1 Output #3 and Alarm NAC Output #1. Activation of Input Zone 2 (Fire) will operate Release Solenoid 2 Output #4 and Alarm NAC Output #1. Activation of Input 5 (Manual Release) or Input 6 (Manual Pull Station) will operate Solenoid 1 Output #3 and Solenoid 2 (Output #4) and Alarm NAC Output #1. Release Solenoid 1 will turn off water release following time-out of the 10 minute Soak Timer 1 and Release Solenoid 2 will turn off water release following time-out of the 10 minute Soak Timer 2
- Activation of Input Zone 3 (Waterflow) will operate the Alarm NAC Output #1. There is a 10 second FACP initiated delay in activation since Waterflow Delay Timer is set to 10 seconds
- Activation of Input Zone 4 (Supervisory) will operate the Supervisory Bell NAC Output #2

FACP Relay Operation

The following description of FACP relay operations are in addition to normal system operation.

- Alarm Relay - activation of Input Zone 1 (2-Wire Smoke) or Zone 2 (Fire) or Zone 3 (Waterflow - with Waterflow Delay time) or Zone 5 (Manual Release) or Zone 6 (Pull Station) will operate Alarm Relay
- Trouble Relay - any system trouble will activate the Trouble Relay
- Supervisory - activation of Zone 4 (Supervisory) will operate the Supervisory Relay

NOTE: The #10 Template of the PDRP-2001 is equivalent to the PDRP-1001 Mode 4 operation

Template 10: DUAL HAZARD – SPLIT RELEASE						
OUTPUT CIRCUITS	INPUT ZONES					
	1 2-WIRE SMOKE	2 FIRE	3 WATER-FLOW	4 MANUAL RELEASE	5 PULL STATION	6 SUPV.
#1 Alarm NAC	X	X	X		X	X
#2 Supv Bell NAC				X		X
#3 Release Solenoid 1	X				X	X
#4 Release Solenoid 2		X			X	X

Table Legend: X = direct correlation between Input Zone and Output Circuit (input zone activation will turn on corresponding output circuit).

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Template 11: Single Hazard - 3 Zones and Low Pressure

Input Zone Types:

- Zone 1 = 2-wire smoke
- Zone 2 = Fire
- Zone 3 = Waterflow - activation delayed for 10 seconds (Waterflow Delay set to 10 secs.)
- Zone 4 = Manual Release
- Zone 5 = Pull Station
- Zone 6 = Low Pressure

Output Circuit Types:

- Output 1 = Alarm NAC
- Output 2 = Waterflow NAC - activation delayed for 10 secs. (Waterflow Delay set to 10 secs.)
- Output 3 = Supervisory Bell NAC
- Output 4 = Release Solenoid 1 (unsupervised for shorts)

Timers

- Soak Timer 1 - set for 10 minutes
- Soak Timer 2 - set for 10 minutes
- Waterflow Delay Timer - set for 10 seconds
- AC Loss Delay Timer - set for 2 hours

Operation

- Activation of Input Zone 1 (2-Wire Smoke) or Zone 2 (Fire) or Zone 4 (Manual Release) or Zone 5 (Pull Station) will operate the Alarm NAC Output #1 and Release Solenoid 1 Output #4. Release Solenoid 1 will turn off water release following time-out of the 10 minute Soak Timer 1
- Activation of Input Zone 3 (Waterflow) will operate the Waterflow NAC Output #2. There is a 10 second FACP initiated delay in activation since Waterflow Delay Timer is set to 10 seconds
- Activation of Input Zone 6 (Low Pressure) will operate the Supervisory Bell NAC Output #3

FACP Relay Operation

The following description of FACP relay operations are in addition to normal system operation.

- Alarm Relay - activation of Input Zone 1 (2-Wire Smoke) or Zone 2 (Fire) or Zone 3 (Waterflow - with Waterflow Delay time) or Zone 4 (Manual Release) or Zone 5 (Pull Station) will operate Alarm Relay
- Trouble Relay - any system trouble will activate the Trouble Relay
- Supervisory - activation of Zone 6 (Supervisory) will operate the Supervisory Relay
- NOTE: The #10 Template of the PDRP-2001 is equivalent to the PDRP-1001 Mode 4 operation

Template 11: SINGLE HAZARD – 3 ZONES AND LOW PRESSURE						
OUTPUT CIRCUITS	INPUT ZONES					
	1 2-WIRE SMOKE	2 FIRE	3 WATER-FLOW	4 MANUAL RELEASE	5 PULL STATION	6 SUPV.
#1 Alarm NAC	X	X		X	X	
#2 Supv Bell NAC				X		X
#3 Release Solenoid 1	X				X	
#4 Release Solenoid 2	X	X		X	X	

Table Legend: X = direct correlation between Input Zone and Output Circuit (input zone activation will turn on corresponding output circuit).

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Template 12: Single Hazard - 2 Zones Cross-Zoned With All Active

Input Zone Types:

- Zone 1 = 2-wire smoke
- Zone 2 = Fire
- Zone 3 = Waterflow - activation delayed for 10 seconds (Waterflow Delay set to 10 secs.)
- Zone 4 = Manual Release
- Zone 5 = Pull Station
- Zone 6 = Low Pressure

Output Circuit Types:

- Output 1 = Alarm NAC
- Output 2 = Waterflow NAC - activation delayed for 10 seconds (Waterflow Delay set to 10 secs.)
- Output 3 = Supervisory Bell NAC
- Output 4 = Release Solenoid 1 (unsupervised for shorts)

Timers

Soak Timer 1 - set for 10 minutes

Soak Timer 2 - set for 10 minutes

Waterflow Delay Timer - set for 10 seconds

AC Loss Delay Timer - set for 2 hours

Operation

- Activation of both Input Zone 1 (2-Wire Smoke) and Zone 2 (Fire) at the same time, or Zone 4 (Manual Release) or Zone 5 (Pull Station) will operate the Release Solenoid 1 Output #4. Release Solenoid will turn off water release following time-out of the 10 minute Soak Timer 1. Activation of any one of these zones will operate Alarm NAC Output #1
- Activation of Input Zone 3 (Waterflow) will operate the Waterflow NAC Output #2. There is a 10 second FACP initiated delay in activation since Waterflow Delay Timer is set to 10 seconds
- Activation of Input Zone 6 (Low Pressure) will operate the Supervisory Bell NAC Output #3

FACP Relay Operation

The following description of FACP relay operations are in addition to normal system operation.

- Alarm Relay - activation of Input Zone 1 (2-Wire Smoke) or Zone 2 (Fire) or Zone 3 (Waterflow - with Waterflow Delay time) or Zone 4 (Manual Release) or Zone 5 (Pull Station) will operate Alarm Relay
- Trouble Relay - any system trouble will activate the Trouble Relay
- Supervisory - activation of Zone 6 (Supervisory) will operate the Supervisory Relay

Template 12: SINGLE HAZARD – 2-ZONES CROSS-ZONED WITH ALL ACTIVE						
OUTPUT CIRCUITS	INPUT ZONES					
	1 2-WIRE SMOKE	2 FIRE	3 WATER-FLOW	4 MANUAL RELEASE	5 PULL STATION	6 SUPV.
#1 Alarm NAC	X	X		X	X	
#2 Supv Bell NAC				X		
#3 Release Solenoid 1	X					X
#4 Release Solenoid 2	C1	C1		X	X	

Table Legend: X = direct correlation between Input Zone and Output Circuit (input zone activation will turn on corresponding output circuit).

Cx = cross-zone where x is the number of the Release Solenoid. All inputs with the same Release Solenoid number must be active at the same time to turn on the corresponding solenoid output circuit

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Template 13: Single Hazard - Dual Zone

Input Zone Types:

- Zone 1 = 2-wire smoke
- Zone 2 = Fire
- Zone 3 = Low Pressure
- Zone 4 = Waterflow - activation delayed for 10 seconds (Waterflow Delay set to 10 secs.)
- Zone 5 = Pull Station
- Zone 6 = Manual Release

Output Circuit Types:

- Output 1 = Alarm NAC
- Output 2 = Waterflow NAC - activation delayed for 10 seconds (Waterflow Delay set to 10 secs.)
- Output 3 = Release Solenoid 1 (unsupervised for shorts)
- Output 4 = Waterflow NAC - activation delayed for 10 seconds (Waterflow Delay set to 10 secs.)

Timers

- Soak Timer 1 - set for 10 minutes
- Soak Timer 2 - set for 10 minutes
- Waterflow Delay Timer - set for 10 seconds
- AC Loss Delay Timer - set for 2 hours

Operation

- Activation of Input Zone 1 (2-Wire Smoke) or Zone 2 (Fire) or Zone 5 (Pull Station) or Zone 6 (Manual Release) will operate the Alarm NAC Output #1 and Release Solenoid 1 Output #3. Release Solenoid will turn off water release following time-out of the 10 minute Soak Timer 1
- Activation of Input Zone 4 (Waterflow) will operate the Alarm NAC Output #1, Waterflow NAC Output #2 and Waterflow NAC Output #4. There is a 10 second FACP initiated delay in activation of these outputs since the Waterflow Delay Timer is set to 10 seconds
- Activation of Input Zone 3 (Low Pressure) will not operate any Output Circuits (see Relays)

FACP Relay Operation

The following description of FACP relay operations are in addition to normal system operation.

- Alarm Relay - activation of Input Zone 1 (2-Wire Smoke) or Zone 2 (Fire) or Zone 3 (Waterflow - with Waterflow Delay time) or Zone 4 (Manual Release) or Zone 5 (Pull Station) will operate Alarm Relay
- Trouble Relay - any system trouble will activate the Trouble Relay
- Supervisory - activation of Zone 3 (Low Pressure) will operate the Supervisory Relay

Template 13: SINGLE HAZARD – DUAL ZONE						
OUTPUT CIRCUITS	INPUT ZONES					
	1 2-WIRE SMOKE	2 FIRE	3 WATER-FLOW	4 MANUAL RELEASE	5 PULL STATION	6 SUPV.
#1 Alarm NAC	X	X		X	X	X
#2 Supv Bell NAC					X	
#3 Release Solenoid 1	X	X			X	X
#4 Release Solenoid 2				X		

Table Legend: X = direct correlation between Input Zone and Output Circuit (input zone activation will turn on corresponding output circuit).

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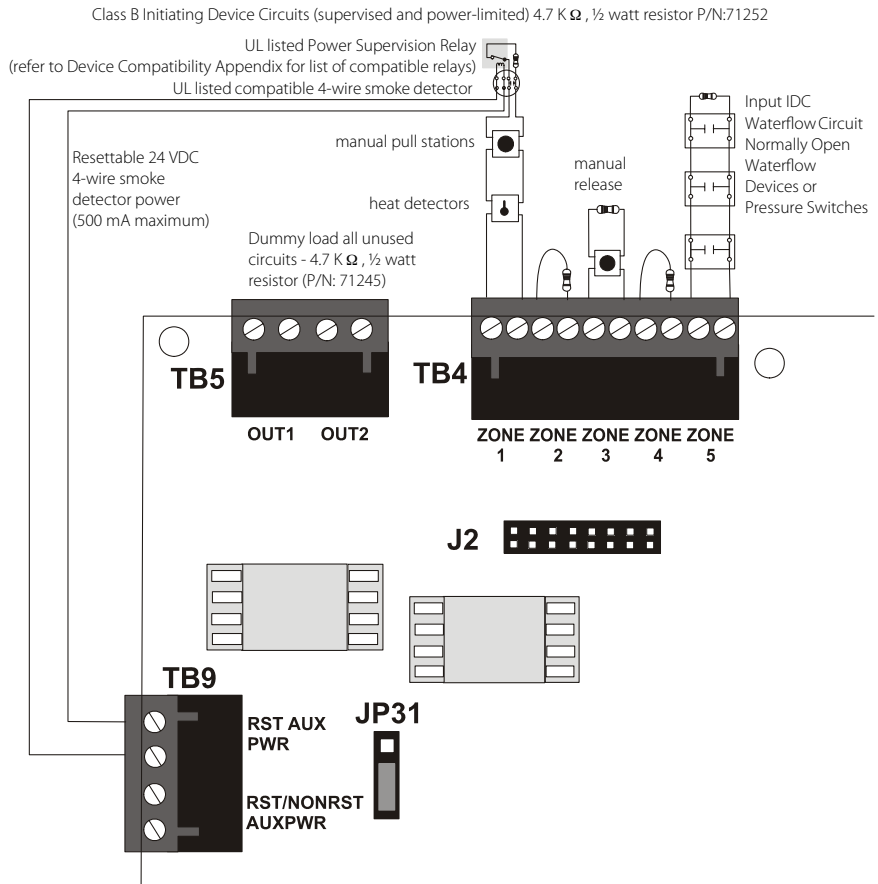


Figure 1. IDC Connections

Class B Notification Appliance Circuits (supervised and power-limited)
4.7 K Ω , 1/2 watt resistor P/N:71252

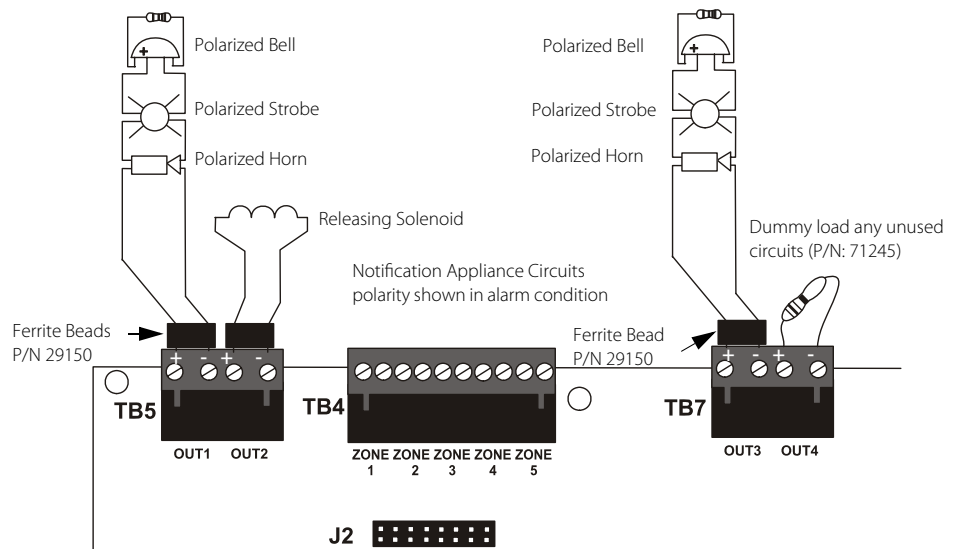


Figure 2. NAC Output Connections

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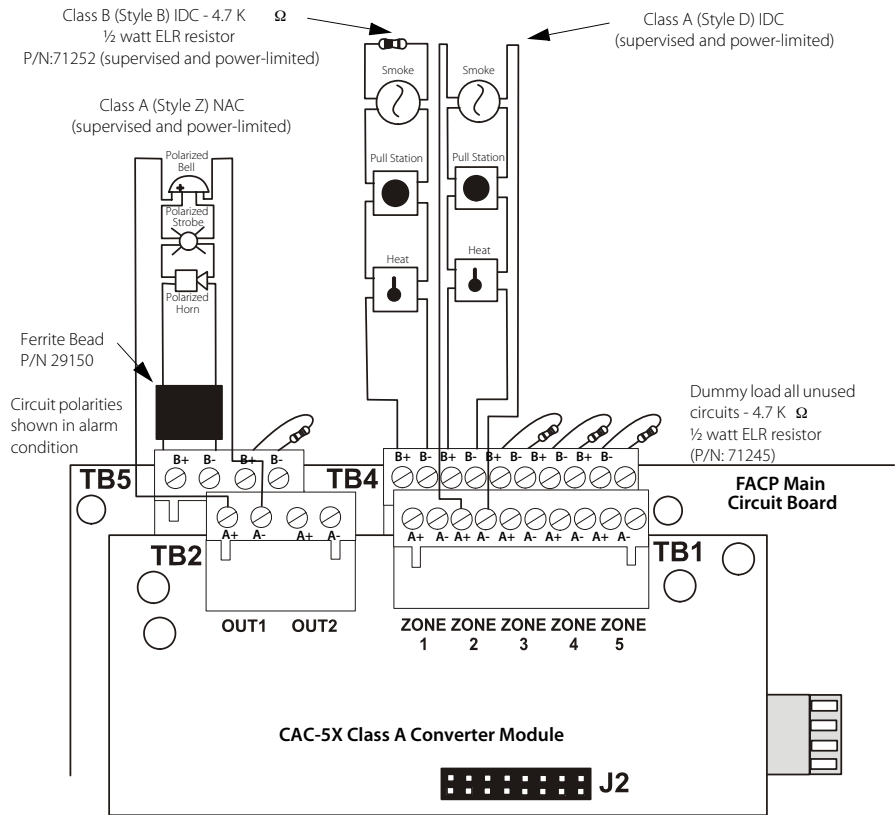


Figure 3. IDC and NAC for Class A Operation

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Wiring Distance: ANN-BUS Modules to FACP				
Total Worst Case Current Draw (amps)	22 Gauge	18 Gauge	16 Gauge	14 Gauge
0.100	1,852 ft.	4,688 ft.	* 6,000 ft.	*6,000 ft.
0.200	926 ft.	2,344 ft.	3,731 ft.	5,906 ft.
0.300	617 ft.	1,563 ft.	2,488 ft.	3,937 ft.
0.400	463 ft.	1,172 ft.	1,866 ft.	2,953 ft.
0.500	370 ft.	938 ft.	1,493 ft.	2,362 ft.

Note: The following formulas were used to generate the wire distance chart:

$$\text{Maximum Resistance (Ohms)} = \frac{6.0 \text{ Volts}}{\text{Total Worst Case Current Draw (amps)}}$$

$$\text{Maximum Wire Length (feet)} = \frac{\text{Maximum Resistance (Ohms)}}{\text{Rpu}} \quad *500$$

(6,000 feet maximum)

where: Rpu = Ohms per 1,000 feet for various Wire Gauges (see table below)

Wire Gauge	Ohms per 1,000 feet (Rpu)
22	16.2
18	6.4
16	4.02
14	2.54

Exception: When using the ANN-RLY module, the installer must ensure that the maximum 24VDC power line drop does not exceed 0.3 volts. This results in the following wiring limitations:

Wire Gauge	Maximum Wire Length
18	312 feet
16	497 feet
14	787 feet
12	1,250 feet

Figure 4. Wiring Distances

Electric Release PDRP-2001 Panel Wiring Tips

TROUBLESHOOTING GUIDE FOR MODEL PDRP-2001

The PDRP-2001 History option allows an authorized user to view or erase events that have occurred in the control panel. Isolating the panel from the field wiring provides effective control and isolation to rapidly identify the alarm/fault condition. Complete steps A through C below, to isolate the panel from the field wiring. The panel is then tested per the manufacturer's instruction manual. If the panel tests properly in Step D, the problem has then been isolated to the field wiring. Systematically reconnect the panel and the field wiring. This allows the problem to be specifically located and corrected in the field wiring. Prior to testing, notify the local Superintendent of Fire Alarms, then close main valve.

- A. Disconnect AC power from panel.
- B. Disconnect one end of each yellow battery jumper wire.
- C. Disconnect all external wiring from control panel. Install 4.7 Ohm 1/2 watt resistors to terminals (B+ and B-) marked as follows:
 1. Out #1, #2, #3, #4 and IN #1, #2, #3, #4, #5, #6. If a resistor is present, do not add another but verify its resistance - 4.7 ohm, replace if faulty.
 2. Alarm and trouble terminals remain vacant.
- D. Test panel as per manufacturer's instruction manual. Replace defective components as needed.
- E. The external circuit containing the problem may be identified by observing the control panel lights when reconnecting each external circuit, individually.

Electric Release PDRP-2001 Panel Wiring Tips

Electric Release PDRP-2001 Panel Wiring Tips

WARRANTY

Refer to the Warranty section of the current Price List or contact Victaulic for details.

NOTE

This product shall be manufactured by Victaulic or to Victaulic specifications. All products to be installed in accordance with current Victaulic installation/assembly instructions. Victaulic reserves the right to change product specifications, designs and standard equipment without notice and without incurring obligations.

WARNING**WARNING**

- This product must be installed by an experienced, trained installer, in accordance with the instructions provided with each valve. These instructions contain important information.

Failure to follow these instructions may result in serious personal injury, property damage, or valve leakage.

If you need additional copies of this product literature or the valve installation instructions, or if you have any questions about the safe installation and use of this device, contact Victaulic Company, P.O. Box 31, Easton, PA 18044-0031 USA, Telephone: 001-610-559-3300.



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For complete contact information, visit www.victaulic.com

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