AutoPulse

New Series Photoelectric and Photoelectric/ Thermal Smoke Detectors (542R/542D)

Features

- Plug-in detector line – mounting base included.
- Large wire-entry port.
- In-line terminals with SEMS screws.
- Mounts to octagonal and single-gang backboxes, 4 in. (102 mm) square backboxes, or directly to ceiling.
- Stop-Drop 'N Lock™ attachment to base.
- Removable detector cover and chamber for easy cleaning.
- Built-in remote maintenance signaling.
- Drift compensation and smoothing algorithms.
- Simplified sensitivity measurement.
- Wide-angle, dual-color LED indication.
- Loop testing via "EZ Walk" feature.
- Built-in test switch.

Description

New Series photoelectric and photoelectric/ thermal smoke detectors represent a significant advancement in conventional detection, incorporating three key features: installation ease, intelligence, and instant inspection.

Installation ease: The New Series redefines installation ease with its plug-in design. This allows an installer to pre-wire the bases included with the heads. The large wire-entry port and in-line terminals provide ample room for neatly routing the wiring inside the base. The base accommodates a variety of backbox mounting methods, as well as direct mounting with drywall anchors. To complete the installation, New Series heads plug into the base with a simple Stop-Drop 'N Lock action.

Intelligence: New Series detectors offer a number of intelligent features to simplify testing and maintenance. Drift compensation and smoothing algorithms, to minimize nuisance alarms, are standard in the New Series. When connected to an AUTOPULSE 542R/542D Control Panel, two-wire New Series detectors are capable of generating a remote maintenance signal when they need cleaning. This signal is indicated by LEDs located at the AUTOPULSE 542R/542D Control Panel.

Instant inspection: The New Series provides wide-angle red and green LED indicators for instant inspection of detector condition. The LEDs indicate: normal standby, out-of-sensitivity, alarm, or freeze trouble conditions. The "EZ Walk" loop test feature is available on two-wire New Series detectors when connected to an AUTOPULSE 542R/542D Control Panel. The "EZ Walk" feature verifies the initiating loop wiring by providing LED status indication at each detector.

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Physical Specifications

Operating Temperature Range: For models 2W-B and 4WB: 32 °F to 120 °F (0 °C to 49 °C); for thermal models 2WT-B and 4WT-B: 32 °F to 100 °F (0 °C to 38 °C).

Storage Temperature Range: –4 °F to +158 °F (–20 °C to +70 °C).

Operating Humidity Range: 10% – 95% RH, non-condensing.

Thermal Sensor: 135 °F (57 °C) fixed (models 2WT-B, 4WT-B).

Freeze Trouble: 41 °F (5 °C) (models 2WT-B and 4WT-B).

Sensitivity: 2.5%/ft (0.762%/meter) nominal.

Input Terminals: Utilize 14 to 22 AWG wire.

Dimensions (including base): 5.3 in. (135 mm) diameter, 2.0 in. (51 mm) high.

Weight: 6.3 oz (178.6 grams).

Mounting Options: 3.5 in. (89 mm) octagonal backbox; 4 in. (102 mm) octagonal backbox; single-gang backbox; 4 in. (102 mm) square backbox with a plaster ring; or direct mount to ceiling.

Electrical Specifications

Operating Voltage: 12/24 V non-polarized nominal; 8.5 V minimum; 35 V maximum.

Maximum Ripple Voltage: 30% of nominal (peak to peak).

Standby Current: 50 μA maximum average. Peak standby current: for two-wire models: 100 μA; not applicable for four-wire models.

Maximum Start-Up Capacitance: For two-wire models: 0.1 μF; not applicable for four-wire models.

Latching Alarm: Reset by momentary power interruption.

Maximum Initial Start-Up Time: For two-wire models: 45 seconds; for four-wire models: 15 seconds.
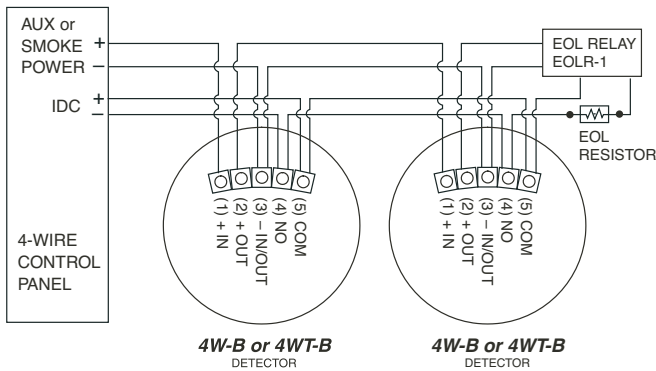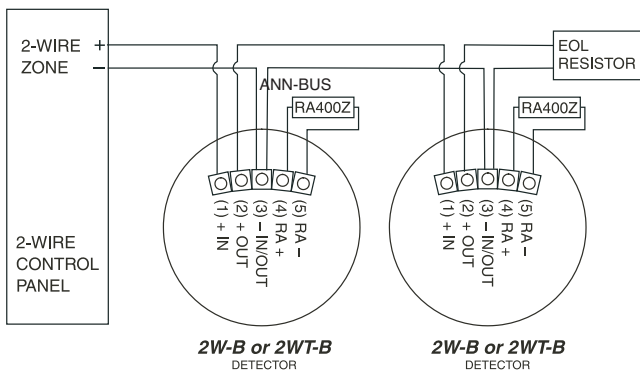
Maximum Alarm Current: For two-wire models: 130 mA limited by control panel; For four-wire models: 20 mA @ 12 V, 23 mA @ 24 V.

Alarm Contact Ratings: For four-wire models: 0.5 A @ 30 VAC/VDC; not applicable for two-wire models.

Alarm Reset Voltage: 2.5 V.

Alarm Reset Time: 0.3 seconds.

Wiring Diagrams

2W-B or 2WT-B DETECTOR

2W-B or 2WT-B DETECTOR

4W-B or 4WT-B DETECTOR

4W-B or 4WT-B DETECTOR

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LED Modes	Green LED	Red LED
Power Up	Blink every 10 seconds	Blink every 10 seconds
Normal (Standby)	Blink every 5 seconds	OFF
Out of Sensitivity	OFF	Blink every 5 seconds
Freeze Trouble	OFF	Blink every 10 seconds
Alarm	OFF	Solid ON
Power Up Sequence for LED Indication		
Condition		**Duration**
Initial LED Status Indication		80 Seconds
Initial LED Status Indication (if excessive electrical noise is present)		4 Minutes

Agency Listings and Approvals

UL Listed S911
FM . . . . Approved
CSFM 7272-1653:152
MEA 290-01-E
Maryland State Fire Marshal . . . . Permit No. 2093
ETL . . . . Approved
USCG. 161.002/A42/1

Ordering Information

Part No.	Description	Shipping Weight lb	(kg)
435893	2W-B: Two-Wire Photoelectric Smoke Detector	1.5	(0.7)
435894	2WT-B: Two-Wire Photoelectric Smoke Detector with 135 °F (57 °C) Fixed Thermal Sensor	1.5	(0.7)
435895	4W-B: Four-Wire Photoelectric Smoke Detector	1.5	(0.7)
435896	4WT-B: Four-Wire Photoelectric Smoke Detector with 135 °F (57 °C) Fixed Thermal Sensor	1.5	(0.7)

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