

Conventional Multi-Application Smoke Detectors

500 Series with CleanMe®



Overview

FireworX brand 500 Series conventional photoelectric smoke detectors come in a variety of models from the simplest to the most complex smoke and fire alarm applications. The 500 Series offers sounders in two- and four-wire applications, specifically to meet residential code requirements. For example, the 500 Series offers choices for optional auxiliary relays and isolated heat sensors for commercial applications, such as elevator recall or hotel/dorm rooms.

The 500 Series features innovations engineered specifically for the conventional fire system market, such as CleanMe® remote maintenance reporting, sensitivity drift compensation, field replaceable optical chamber, and self-diagnostics to continually monitor critical detector operations. CleanMe® is available on the 500 Series 2-wire models and will communicate to the conventional FireworX and other compatible panels when servicing is required.

500 Series detectors work on the photoelectric light-scattering principle, a core technology pioneered by ESL in the 1960s. A pulsed infrared light-emitting diode serves as the light source, and a high-speed photo diode as the sensing element. This design has superior protection against nuisance alarms caused by dust, insects, RF interference, and ambient light, while providing the earliest warning to a non-specific fire type.

The 500 Series smoke detectors are the industry's first conventional self-diagnostic detectors specifically designed for the demands of both the commercial, industrial, and residential environments. If the detector drifts out of its UL Listed sensitivity range or fails internal diagnostics, the alarm LED flashes once a second to indicate trouble. This meets NFPA 72 field sensitivity testing requirements without the need for external meters.

Additional diagnostic information is activated by applying a magnet near the detector's integral reed switch. This initiates a self-diagnostic routine and provides visual indication of sensitivity level, or if service is required. The magnet test causes the LED to blink more rapidly and the number of blink counts corresponds to a smoke detector sensitivity range.

Models with a built-in 85dB sounders emit the temporal 3 pattern and can be easily tandemly interconnected using a polarity reversal module (405-05 for 4-wire detectors). This enables all detectors to sound when the initiating detector sounds and meets the requirement of the International Residential Building Code (IRC).

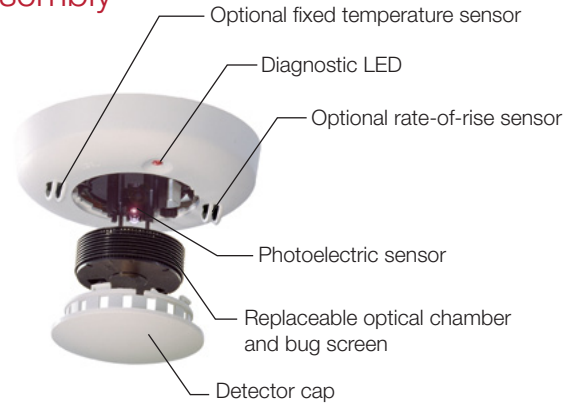
Standard Features

- Remote maintenance (**CleanMe®**) reporting (2-wire models) and built-in drift compensation reduces false alarms
- Self-diagnostics meets NFPA 72 sensitivity testing requirements without the need for external meters
- World's only replaceable optical chamber makes any required cleaning a snap
- Small, low profile design blends with any environment
- Large SEMS screw terminals accept 12-18 AWG wire
- Optional auxiliary functions include:
 - Integral sounder with optional tandem interconnection
 - Auxiliary relay Listed for applications such as elevator recall
 - Fire system isolated heat integrated with non-latching single station smoke alarm
 - Built-in power supervision relay
 - Integral fixed/ROR heat detectors
 - Adaptor plate enables replacing 500 Series with legacy ESL 400 Series smoke detectors

Application

500 Series detectors are ideal for both retrofit applications and new installations alike. They are particularly well-suited for installations where detector reliability is essential, but where typical analog/addressable devices may not be appropriate or feasible. With their replaceable optical chambers maintenance pre-alerts, these detectors are equally well-suited to dusty environments where detectors require frequent cleaning.

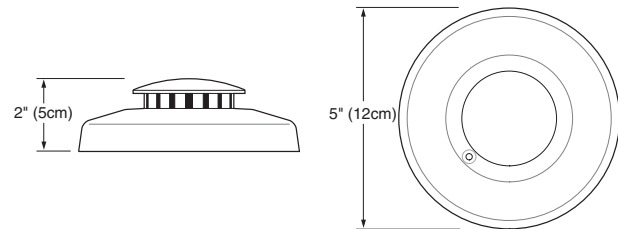
Assembly



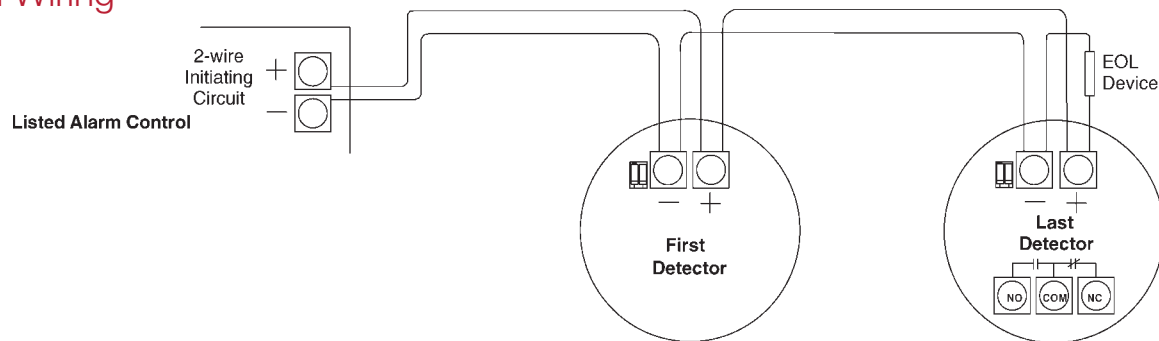
Mounting and Installation

500 Series detector bases mount directly to standard single-gang electrical boxes, three-inch round, or four-inch octagonal boxes. Detector heads simply twist onto the base. Heads are equipped with a break-away locking tab, which prevents unauthorized removal. SEMS terminals accept 12 to 24 AWC field wiring.

Dimensions



Typical Wiring



Specifications

Electrical

Power Supply	8.5-33VDC (12/24 V operation) polarity sensitive
Maximum ripple pk-pk (6/12/24V)	10% (Vpk-pk)
Typical average standby current	70 μ A
Typical alarm current (6/12/24V)	up to 60 mA max if not limited by control panel
Auxiliary relay contacts	1.0 A @ 30 VDC; Form C
Alarm contacts	500 mA @ 36 VDC (resistive)
Photoelectric sensitivity	3.1% + 0.5 - 1.0%

Environment

Operating temperature	32° to 100° F (0° to 37° C)
Operating humidity range	0 to 95% non-condensing
RFI immunity	20 V/m min; 0-1000 MHz

Physical

Color	White
Field wiring size	12-18 AWG (16-22 recommended)
Heat detector specifications	Rate-of-Rise: 15° F/min and >105° F (8.3° C/min and >40.6° C) Fixed Threshold: 135° F (57.2° C)
UL 2-wire compatibility identifiers	S09A, S10A, S11A
Drift compensation adjustment	1.0% ft. max
Detector head dimensions	5.5 D x 2" H (14.0 x 5 cm)
Mounting dimensions	5.25" (13.3 cm) diameter; 0.3" (0.8 cm) height

Regulations

Reset time	1 second min
Listings	
500N Series:	UL 268 cUL, CSFM
521B, 521BXT, 541C, 541CXT:	UL 268, CSFM
528B, 528BXT, 548C, 548CXT:	ULC

Ordering Information

Model	Description	Compatibility	Alarm Current (mA)	Reverse polarity (mA)
521B	2-wire, photoelectric, 8.5-33VDC; UL 268, CSFM Listed	S09A/S10A	5 min. - 60 max.	
521BXT	2-wire, photoelectric, 8.5-33VDC, fixed temp and rate-of-rise heat; UL 268, CSFM Listed	S09A/S10A	5 min. - 60 max.	
528B	2-wire, photoelectric, 8.5-33VDC; ULC Listed	S09A/S10A	5 min. - 60 max.	
528BXT	2-wire, photoelectric, 8.5-33VDC, fixed temp and rate-of-rise heat; ULC Listed	S09A/S10A	5 min. - 60 max.	
521NCRXT	2-wire, photoelectric, 8.5-33VDC, fixed temp and rate-of-rise heat, aux. relay; UL 268, cUL, CSFM Listed	S11A	15 min. - 60 max.	
521NCSXT	2-wire, photoelectric, 8.5-33VDC, fixed temp and rate-of-rise heat, temporal 3 sounder; UL 268, cUL, CSFM Listed	S10A	10 min. - 60 max	10
521NCSRXT	2-wire, photoelectric, 8.5-33VDC, fixed temp and rate-of-rise heat, aux. relay, temporal 3 sounder; UL 268, cUL, CSFM Listed	S11A	15 min. - 60 max	10
541C	4-wire, photoelectric, 8.5-33VDC; UL 268, CSFM Listed	N/A	20	
541CXT	4-wire, photoelectric, 8.5-33VDC, fixed temp and rate-of-rise heat; UL 268, CSFM Listed	N/A	20	
548C	4-wire, photoelectric, 8.5-33VDC; ULC Listed	N/A	20	
548CXT	4-wire, photoelectric, heat, 8.5-33VDC; ULC Listed	N/A	20	
541NCSRXT	4-wire, photoelectric, 8.5-33VDC, fixed temp and rate-of-rise heat, aux. relay, temporal 3 sounder; UL, cUL, CSFM Listed	N/A	35	13
541NCSXTE	4-wire, photoelectric, 8.5-33VDC, fixed temp and rate-of-rise heat, built-in end of line relay, temporal 3 sounder; UL, cUL, CSFM Listed	N/A	45	28
541NCSRH	4-wire, photoelectric, 8.5-33VDC, isolated fixed temp and rate-of-rise system heat, aux. relay, temporal 3 sounder, single station smoke alarm and LED with auto reset; UL, cUL, CSFM Listed	N/A	35	13
541NCRXT	4-wire, photoelectric, 8.5-33VDC, fixed temp and rate-of-rise heat, aux. relay; UL, cUL, CSFM Listed	N/A	25	
541NCXTE	4-wire, photoelectric, 8.5-33VDC, fixed temp and rate-of-rise heat, end-of-line power supv. relay; UL, cUL, CSFM Listed	N/A	35	
541NCSXT	4-wire, photoelectric, 8.5-33VDC, fixed temp and rate-of-rise heat, temporal 3 sounder; UL, cUL, CSFM Listed	N/A	30	13

Note: Only 500 Series 2-wire smoke detectors are CleanMe compatible.

Some models available in packs of 10 by adding -10PKG to the end of model number.

Options (add the following suffixes as appropriate)

B	8.5-33VDC operation
C	8.5-33VDC operation
E	End-of-Line Power Supervision Relay
H	Isolated 135 degree fixed temperature/rate-of-rise heat detectors
R	Auxiliary relay
S	85dBa sounder Note: can be tandem interconnected using the 405 Series polarity reversal module
XT	Integrated 135 degree fixed temperature/rate of rise heat sensors

Accessories

405-05	Polarity reversal module enables sounder interconnection of all 4-wire integral sounder smoke detectors, when initiating detector sounds all smokes sound.
SM200-12PKG	Smoke! in a Can® canned smoke for functional testing
SM-EXT1	Smoke! in a Can® extension tube
211-10PKG	Replacement optical chambers (set of 10)
500PLT-5PKG	Plate adapts 500 Series footprint to larger 400 series footprint, Package of 5

North America

T 885-286-8889

Asia

T 852-2907-8108

F 852-2142-5063

Australia

T 61-3-9239-1200

F 61-3-9239-1299

Europe

T 32-2-725-11-20

F 32-2-721-40-47

Latin America

T 561-998-6100

F 561-994-6572



interlogix.com

Specifications subject to change without notice.

© 2012 Interlogix.
All rights reserved.