Conventional Multi-Purpose Smoke Detectors with Auxiliary Functions

500 Series

Overview

Edwards brand 500 Series two-wire conventional photoelectric smoke detectors bring together trusted technology and a full line of features that meet the demands of every type of application. The 500 offers sounders in two-wire applications, specifically to meet residential code requirements.

Edwards is also proud to offer proven technology like CleanMe®, dust compensation, field replaceable optical chambers, and self-diagnostics. CleanMe® is only available on the 500 2-wire models and will communicate with compatible FACPs when servicing is required.

500 Series detectors work on a light-scattering principle. 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.

The proprietary optical chamber is field replaceable. In the event of a confirmed alarm the LED will light continuously. The unit indicates trouble by flashing the LED every second. This meets the NFPA 72 field sensitivity testing requirements.

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. 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 the 405-05 polarity reversal relay. 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 and built-in drift compensation reduces false alarms
- Self-diagnostics meets NFPA 72 sensitivity testing requirements without the need for external meters
- Field-replaceable optical chamber makes service fast and simple
- Large SEMS screw terminals accept 12-18 AWG wire
- Small, low profile design blends with any environment
- Optional auxiliary functions include:
  - Integral sounder with optional tandem interconnection
  - Auxiliary relay Listed for applications such as elevator recall
  - Integral fixed/ROR heat detectors

DATA SHEET S85001-0606
Not to be used for installation purposes. Issue 2

Application

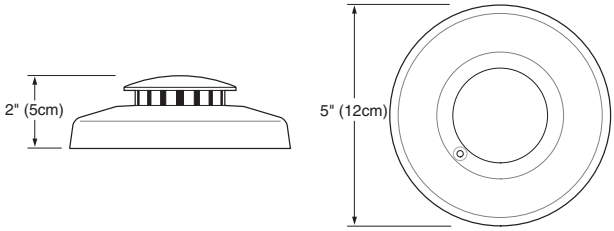
500 Series detectors are ideal for both retrofit applications and new installations alike. They are particularly well-suited for installations where detector reliability is essential, but where typical analog/addressable may not be appropriate or feasible. With their replaceable optical chambers, these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

Assembly

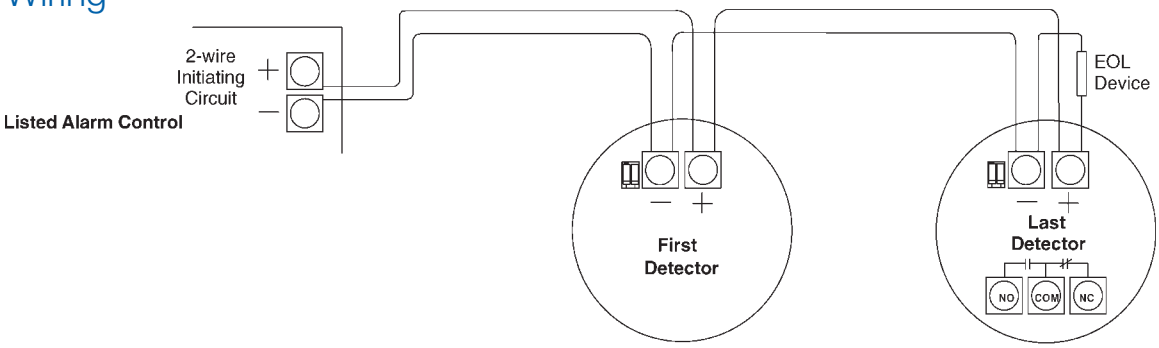
Mounting and Installation

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 24 to 12 AWG 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 µA
Typical alarm current (6/12/24V)	up to 60 mA max if not limited by control panel
Auxiliary relay contacts (521NCRXT only)	1.0 A @ 30 VDC; Form C
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
Sounder output (521NCSXT only)	85dB @ 10 feet
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: 521B, 521BXT: 528B, 528BXT:	 UL 268 cUL, CSFM UL 268, CSFM 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.	
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

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

Options (add the following suffixes as appropriate)	
B	8.5-33VDC operation
C	8.5-33VDC operation
R	Auxiliary relay; Note: can be tandem interconnected using the 405 Series polarity reversal module
S	85dBa sounder
XT	Integrated 135 degree fixed temperature/rate of rise heat sensors

Accessories	
405-05	Polarity reversal module enables sounder interconnection of all 4-wire 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)

Contact us...

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