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ESL 500N Series

Low-profile two- and four-wire photoelectric smoke detectors

Overview

The ESL 500N series two- and four-wire conventional photoelectric smoke detectors bring together trusted technology and a full line of features to meet the demands of every type of application. The 500N offers sounder models in two- and four-wire applications, specifically to meet residential code requirements. The 521NCSXT has the additional benefit of low current draw which makes it compatible with a wide variety of control panels. The ESL 500N series also offers choices for optional auxiliary relays and isolated heat sensors, not available before in the ESL 500 series.

ESL offers CleanMe®, dust compensation, field replaceable optical chambers, multiple criteria heat algorithms, and self-diagnostics features.

Outstanding Features

The ESL 500N series detectors work on the 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 false/nuisance alarms caused by dust, insects, RF, and ambient light. The proprietary optical chamber is field replaceable.

A confirmed alarm causes the LED to light continuously. The unit indicates trouble by flashing the LED every second. This meets the NFPA 72 field sensitivity testing requirements. Units with built-in 85dBa sounders emit a temporal 3 pattern when in alarm and will emit a steady tone when the input power is reversed.

All wiring terminates in clamp-type screw terminals. The detectors mount to a standard single-gang electrical box, a 4-inch octagonal box, a 4-inch square electrical box, or WIREMOLD No. 5739 fixture box.



Standard Features

- **Built-in sounder available in two- and four-wire models**
- **Patented CleanMe® feature**
- **Built-in dust compensation**
- **Field-replaceable optical chamber**

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Specifications

Electrical

- Power supply, 6/12 V operation: 6.0 to 20 VDC polarity sensitive
- Power supply, 12/24 V operation: 8.5 to 33 VDC polarity sensitive
- Maximum ripple p-p (6/12/24 V): 10% (V p-p)
- Typical average standby current: 70 μ A
- Typical alarm current (6/12/24 V): 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)

Features

- RFI immunity: 20 V/m min.; 1 to 1000 MHz
- Field wiring size: 12 to 24 AWG; 16 to 22 recommended
- Heat detector, rate of rise: 15°F/min (8.3°C/min) and > 105°F (40.6°C)
- Heat detector, fixed threshold: 135°F (57.2°C)
- UL 2-wire compatibility identifiers: S10A, S11A
- Drift compensation adjustment: 1.0% ft. max.
- Reset time: 1 sec. min.
- Photoelectric sensitivity: 3.1% + 0.5 to 1.0%

Environmental

- Operating temperature, thermal models: 32 to 100°F (0 to 37°C)
- Operating temperature, nonthermal models: 32 to 120°F (0 to 50°C)
- Storage temperature: -4 to 158°F (-20 to 70°C)
- Operating humidity range: 0 to 95% noncondensing

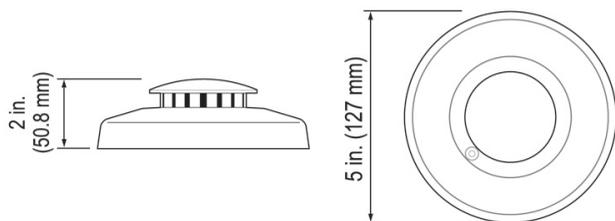
Physical

- Detector head dimensions: 5.5 in. (140 mm) dia.; 2 in. (50 mm) high
- Mounting dimensions: 5.25 in. (133 mm) dia.; 0.3 in. (8 mm) high
- Weight: 9.6 oz. (272 g)
- Construction: ABS plastic
- Color: White head and base
- Packaging: 10 detectors per carton

Regulatory

- UL, CUL, CSFM

Related Diagram



Ordering Information

521NCRXT	2-wire, CleanMe, heat sensor, aux. relay, 8.5 to 33 VDC, S11A
521NCSXT	2-wire, CleanMe, heat sensor, sounder, 8.5 to 33 VDC, S10A
521NCSRXT	2-wire, CleanMe, heat sensor, sounder, aux. relay, 8.5 to 33 VDC, S11A
541NB	4-wire, 6 to 33 VDC
541NBXT	4-wire, heat sensor, 6 to 33 VDC
541NCSRXT	4-wire, heat sensor, sounder, aux. relay, 8.5 to 33 VDC
541NCSXTE	4-wire, heat sensor, sounder, end of line relay, 8.5 to 33 VDC
541NCSRH	4-wire, isolated heat sensor, sounder, aux. relay, 8.5 to 33 VDC
541NCRXT	4-wire, heat sensor, aux. relay, 8.5 to 33 VDC
541NCXTE	4-wire, heat sensor, end of line relay, 8.5 to 33 VDC
541NCSXT	Photoelectric 4-wire smoke detector, sounder, 8.5 to 33 VDC



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