



521 SERIES

Low Profile, Self-Diagnostic, Two- Wire, Photoelectric Smoke Detector with CleanMe™

UL Model numbers: 521B, 521BXT, 521CRXT
ULC Model numbers: 528B, 528BXT



California State Fire Marshal Approved

- CleanMe™ remote maintenance reporting reduces false alarms
- Smart dual fixed/rate of rise heats work with photo chamber to catch fires faster
- Built-in drift compensation reduces false alarms
- Field replaceable optical chamber makes servicing a snap
- Small, low profile design blends in with any environment



The ESL 521 Series self-diagnostic, two-wire smoke detectors are the industry's first conventional direct-wire smoke detectors with analog features such as remote maintenance/trouble reporting (CleanMe™), drift compensation, and multi-criteria detection.

The 521 Series continually monitor their own sensitivity and operational status, and provide a visual and remote trouble condition if they drift out of the sensitivity range or fail internal diagnostics. This meets NFPA 72 field sensitivity testing requirements without the need for external meters. The 521 has a unique feature enabling it to send a signal (CleanMe) to the ESL 505 module (sold separately) when it has drifted outside of its UL Listed sensitivity range or has failed its internal diagnostics test. The 505 is an interface module that will signal any panel via relays when the 521 is dirty. Several control panels have the CleanMe software built in, eliminating the need for the 505 module. When CleanMe is not desired, simply leave the switch on the 521 off and it will work as a normal two wire detector. CleanMe allows the installer time to schedule a service call and avoid a false alarm.

Time between cleaning detectors is dramatically increased because of the 521's built-in drift compensation. This feature, usually only available in analog systems, allows the detector to automatically adjust its sensitivity over time as it becomes dirty, increasing dust life.

And when the 521 has told you that cleaning is necessary, it's literally a snap with ESL's patented field replaceable optical chamber.

521 Series ESL Photoelectric Smoke Detectors

The multi-criteria model 521XT photoelectric smoke detector/ fixed rate of rise heat detector includes fast response algorithms for a quick response to both flaming and smoldering fires. Fast response algorithms allow the heat detectors to work intelligently together with the photoelectric smoke detector. As soon as the heat sensor detects a rapid rise in temperature, the sensitivity of the photoelectric sensor increases allowing it to detect smaller particles of combustion faster.

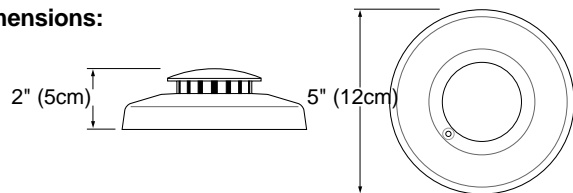
Architectural and Engineering Specifications

The ESL 521 Series photoelectric smoke detector is a low-profile, self-diagnostic, two-wire detector that monitors its own sensitivity and operational status. This detector meets NFPA 72 field sensitivity requirements without the need for external meters. Built-in drift compensation automatically adjusts the sensitivity as the detector gets dirty. Normal sensing occurs every 9 seconds. This rate doubles when a signal exceeding the alarm threshold value is sensed. Two additional successive signals above the threshold level will initiate an alarm.

See installation instructions for information about correct installation and maintenance.

The proprietary optical sensing chamber is field replaceable, allowing quick and easy cleaning and maintenance.

Dimensions:



Specifications:

Product Data

Voltage Dip switch 1 "on" 6.5 – 33 VDC, polarity sensitive
 Dip switch 1 "off" 8.5 – 33 VDC, polarity sensitive
 Maximum ripple (pk to pk) 10% (V_{pp})
 Typical average standby current (24V) 70µA
 Typical alarm current (24V) up to 60mA max, if not limited by control panel
 Alarm Contacts 500mA @ 36 VDC (resistive)
 Aux. Relay contacts 2A @ 30 VDC, 1 A @ 120 VAC
 Sensitivity — photoelectric 3.1% + 0.50 – 1.00%
 Operating temperature 32°F to 100°F (0° to 37°C)
 Operating humidity range 0 to 95% Non-condensing
 RFI Immunity 20 V/m minimum; 0-1000MHz
 Color White head and base
 Field wiring size 12-24 AWG
 Detector packaging 10 detectors per carton
 Heat detector specifications .. Rate of rise — 15°F/min and > 105°F (8.3°C/min and > 40.6°C)
 Fixed — 135°F (57°C)
 UL two-wire compatibility identifier....Dip switch 1 "on" S09A
 Dip switch 1 "off" S10A, S11A
 Drift compensation adjustment 1.0%/ft. max
 Detector head dimensions 5" (12 cm) diameter
 2" (5 cm) height
 Mounting dimensions 4.75" (12.5 cm) diameter;
 0.3" (0.8 cm) height
 Reset time 1 second minimum
 Listings UL, ULC, CSFM

Model No.	Description
521B	2-wire, photoelectric, 6-24 VDC, UL listed
521BXT	2-wire, photoelectric, 6-24 VDC, multi-criteria algorithms, fixed/rate of rise heat, UL listed
521B-10PK	10 pack of 2-wire, photoelectric smoke detectors, 6-24 VDC with CleanMe™ not individually boxed
521BXT-10PK	10 pack of 2-wire, photoelectric smoke detectors, 6-24 VDC with fixed/rate of rise smart dual heat and CleanMe not individually boxed
521CRXT	2-wire, photoelectric, 12-24 VDC, aux. relay, multi-criteria algorithms, fixed/rate of rise heat, UL listed
528B	2-wire, photoelectric, 6-24 VDC, ULC listed
528BXT	2-wire, photoelectric, 6-24 VDC, multi-criteria algorithms, fixed/rate of rise heat, ULC listed
Accessories	
505	Module that interprets the 521's CleanMe signal for panel and can convert 2-wire 521 Series to 4-wire inputs on panel
401	Test magnet in plastic shell for pole mounting
SM-200	Smoke! in a Can® (canned smoke) for functional testing of smoke detectors
211	Replacement optical chambers (set of 10)

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