

ESL 505 CleanMe® Module Installation Instructions



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SECURITY & LIFE SAFETY GROUP

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Description

The ESL 505 CleanMe® module serves as an interface between a 500 Series two-wire smoke detector and a UL Listed control panel. The module interprets the detector's trouble (CleanMe®) signal and provides an output to the control panel via relays. This signal allows installers to remotely receive a message when the detector needs maintenance, such as cleaning, before a false alarm occurs. The signal also indicates detector trouble such as a hardware fault.

The module can also be used to convert two-wire smoke detectors to a four-wire input on a control panel. This feature is useful when a panel does not provide inputs for a two-wire smoke detector loop. The module can accommodate up to 20 smoke detectors.

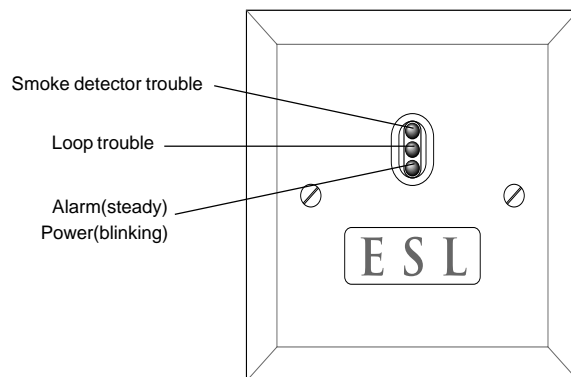


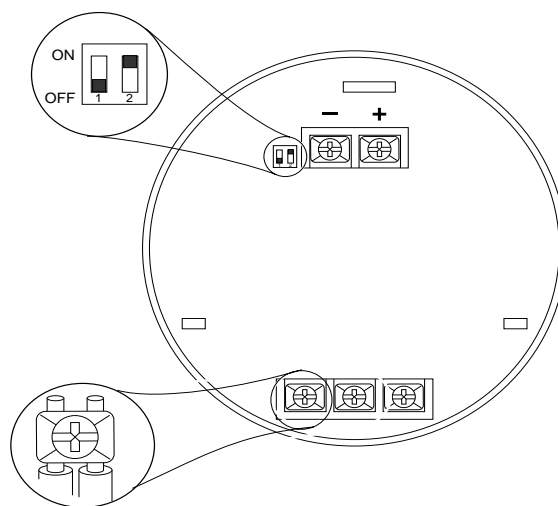
Figure 1 - 505 Module

Understanding the Diagnostic LEDs

The module provides three diagnostic LEDs. The top yellow LED indicates a smoke detector trouble (CleanMe®) condition. This condition means that one or more smoke detectors on the loop are dirty or have a hardware fault problem. The smoke detector(s) causing this condition can be identified by a rapidly (every 1.5 seconds) blinking LED on the detector. See the detector installation instructions for more information. The module provides an output to the panel through its form C trouble relay.

The middle yellow LED identifies a loop fault trouble. This condition can be the result of something such as a broken wire and could mean that some or all of the loop would be unable to signal an alarm condition during a fire. This condition should be resolved immediately. This trouble LED will reset when trouble/fault condition is resolved.

The bottom red LED indicates power and alarm conditions. Normally, the red LED blinks every 9 seconds to indicate power to the loop. The red LED will latch on during a smoke detector alarm condition and reset upon dropping power. The module provides the alarm output to the control panel through its form A alarm relay.



Switch	Description
1	ON = 6-12V OFF = 12-24V
2	ON = Enables CleanMe OFF = Disables CleanMe

Important!

You must use switch 2 on the back of the 500 Series detector to enable the CleanMe® signal. See Figure 2.

Figure 2 - 521 Detector Back

Wiring the Module so the CleanMe® Signal is Sent to a Separate Zone

The module can be wired so the smoke detector trouble (CleanMe®) signal is received by a separate zone on the control panel.

The benefit of this feature is that an installer can determine remotely if the trouble signal being received is from a dirty smoke detector or if it is a general loop fault resulting from something such as a cut wire.

The separate panel zone should be identified as smoke detector trouble. See Figure 3 for wiring information.

All detectors on the loop must have the same voltage range selected.

Important!

You must use switch 2 on the back of the 500 Series detector to enable the CleanMe® signal. See Figure 2.

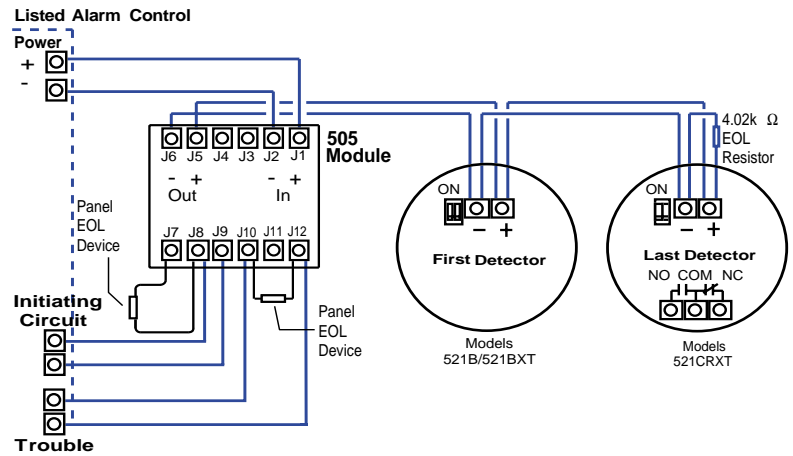


Figure 3 - Module Wiring

Wiring the Module so the CleanMe® Signal Indicates a General Trouble

The module can be wired so the smoke detector trouble (CleanMe®) signal is received by the panel as a general fire trouble signal.

In this configuration, the installer cannot determine remotely whether the problem is a dirty smoke detector or a general loop fault caused by something such as a cut wire. The installer can diagnose the problem onsite using the LEDs located on the module. See Figure 4 for wiring information.

All detectors on the loop must have the same voltage range selected.

Important!

You must use switch 2 on the back of the 500 Series detector to enable the CleanMe® signal. See Figure 2.

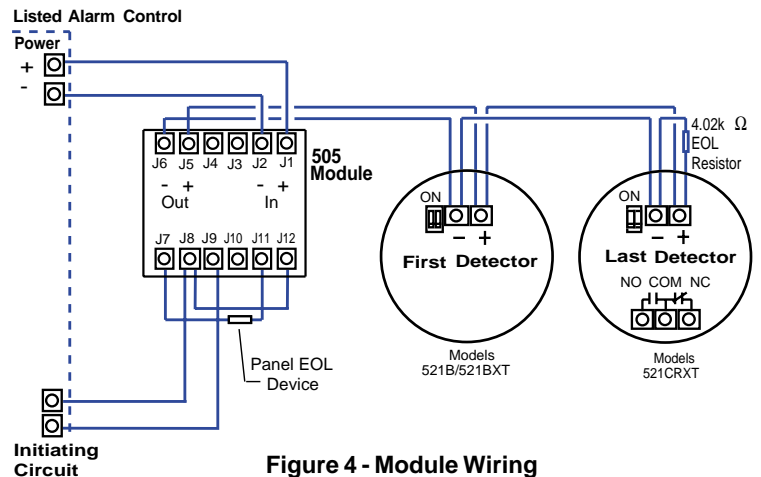


Figure 4 - Module Wiring

Using the Module to Convert 2-Wire Smoke Detectors to 4-Wire Panel Inputs

Many older combination burglar/fire panels do not have two-wire smoke detector loops. The module can be used to convert two-wire smoke detectors to four-wire inputs on these panels. See Figure 5.

All detectors on the loop must have the same voltage range selected.

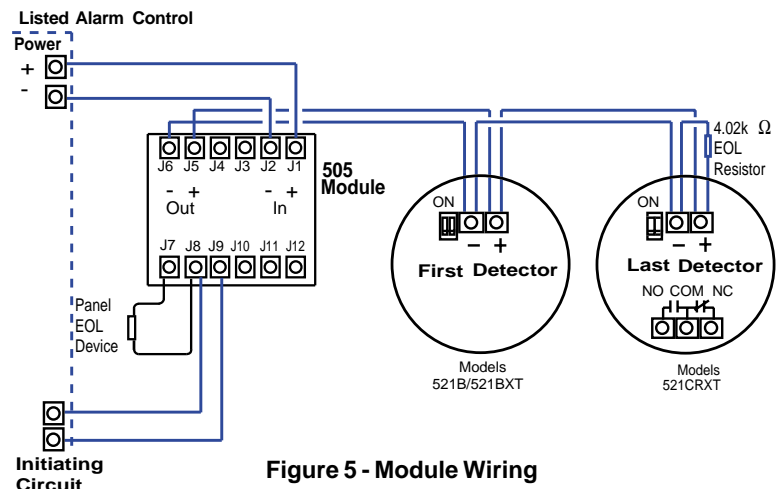


Figure 5 - Module Wiring

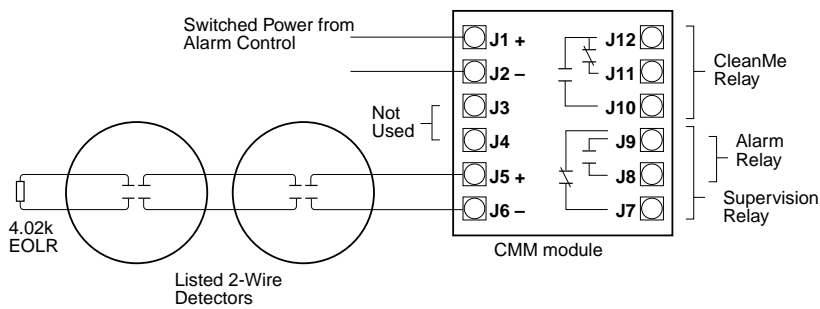


Figure 6 - Module Wiring

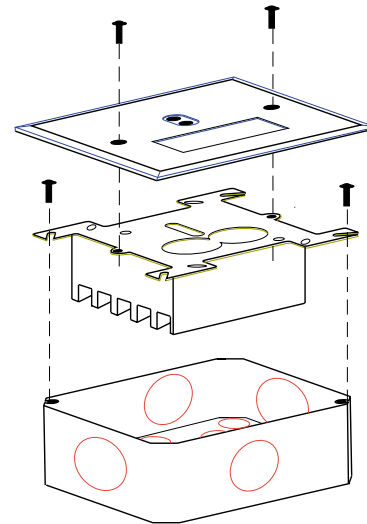


Figure 7 - Mounting the Module

Mounting the Module

The module mounts to a 4-inch square electrical box. See Figure 7. The box must have a minimum depth of 2 1/8 inches.

1. Install module wiring in accordance with the appropriate installation application. See Figures 3, 4, and 5.
2. Secure the module to a 4-inch electrical box (not included). See Figure 7.

Important!

All wiring must conform to applicable local codes, ordinances and regulations. The module is powered by the auxiliary power supply in the control panel.

Each module accommodates up to 20 smoke detectors.

Reversing Polarity With the Module

When using the module as a two to four-wire converter module, it is possible to also reverse polarity on the two-wire sounder smoke detectors (429 series) such that when one goes into alarm, all will sound in alarm. This is accomplished using an ESL 405-01 (24VDC) polarity reversal relay as shown in Figure 8.

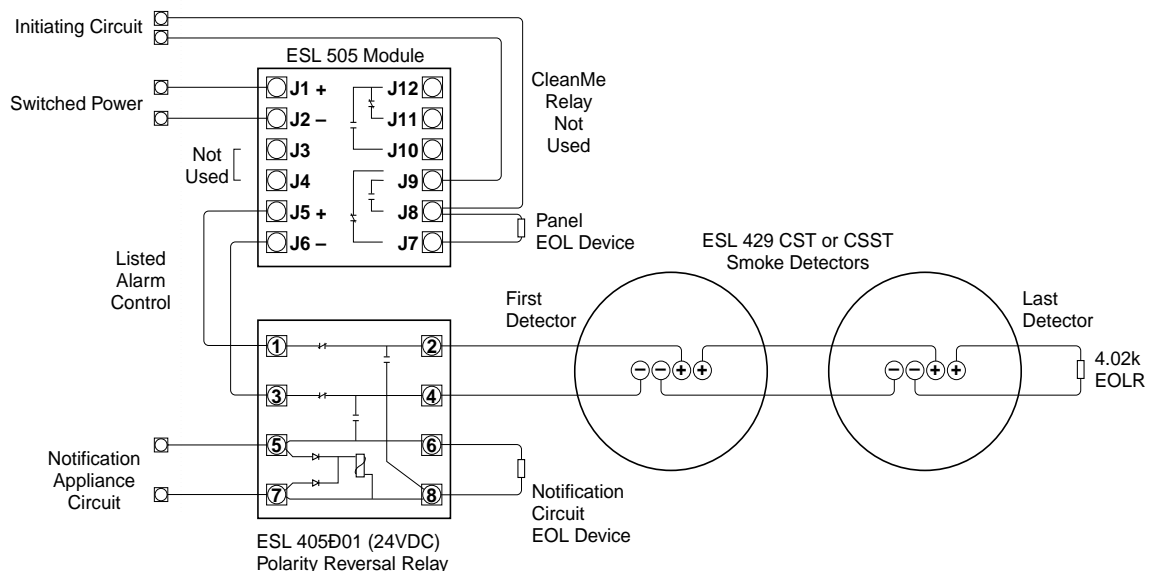


Figure 8 - Polarity Reversal Wiring

Compatibility

Compatability Identifier	Model Number
S09A	429AT, 521B(sw on), 521BXT(sw on)
S10A	429C, 429CT, 521B(sw off), 521BXT(sw off), 711U, 711UT, 721U, 721UT, 722U
S11A	429CRT, 429CST, 429CSST, 521CRXT, 731U, 732U

Product Specifications

Powered from panel's auxiliary power supply

*Operation Voltage12-33V DC
Typical Standby Current.....< 20mA
Alarm Current.....50mA +/-10%
Form A contacts.....500mA@36V DC (resistive)
Form C contacts.....2 A@28V DC or 30V AC (resistive)
Maximum reset time.....3 sec.
Line resistance (total).....30 ohms(max)
Number of detectors per module.....20
Operating Temperature...-4° F (-20° C) to 131° F (55° C)
Humidity.....0-95% non-condensing
RFI immunity.....20V/M@0-1ghz

Static immunity.....25,000 V
Transient Immunity.....2500V@1.5J
Dimensions:
Back box.....2.75"H X 2.5"W X 1.25"D
Plate.....5" X 5"
Weight.....5 lbs (232 gm)
Color.....white/white
Mounting.....Mounts to 4" square, double gang boxes
Material.....Flame retardant plastic cover (UL-94V-O)
Field wiring size.....12-24 AWG
Compatibility identifier.....C02
Type.....Class B
Listing.....UL 864

* If panel power drops below 12V, the 505 module may not operate properly.

Ordering

Model Number	Description
ESL505	CleanMe [®] module



SECURITY & LIFE SAFETY GROUP

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