

# Detection and Control Components



## LIFEalarm® Photoelectric Smoke Detectors For Two-Wire Bases (Z-10)

### Features

**LIFEalarm® Photoelectric smoke detector with on-board sensitivity drift compensation\***

#### Functional chamber enclosure:

- Louvered design enhances smoke capture by directing flow to chamber
- Entrance areas are minimally visible when ceiling mounted

**Multi-function indicator LED indicates normal and alarm conditions**

#### Magnetically operated functional test:

- Initiates alarm and verifies performance
- Identifies general sensitivity status using detector LED

#### Models available in two sensitivity settings:

- ▶ Part No. 430559, Standard Sensitivity, nominal 2.8%/ft obscuration
- Part No. 430562, Special Application Sensitivity, nominal 3.5%/ft obscuration

#### Available base options:

- Bases for 2-wire operation
- Auxiliary alarm relay output

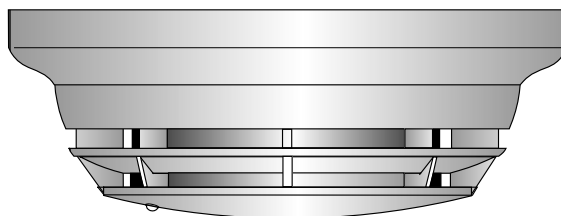
#### Optional remote alarm indicating LED

### Description

LIFEalarm photoelectric detectors provide many of the proven analog sensing features for applications where detectors are connected to conventional 2-wire initiating device circuits (IDCs). Each detector has an on-board micro-processor that evaluates its photoelectric light scattering chamber activity and makes an intelligent decision based on light obscuration history as to whether an alarm condition is present.

LIFEalarm detectors are packaged in a patented housing that minimizes the visibility of the air intake louvers from the normal viewing locations while maintaining a high performance smoke capture ability. Bases are available for remote alarm LED indicator connections and auxiliary relay outputs.

\* LIFEalarm smoke detector operation is protected by one or more of the following U.S. Patents: 5,155,468; 5,173,683; 5,400,014; 5,543,777; 5,710,541; D383,407; D388,352; D392,573.



006564

**LIFEalarm Photoelectric Detector Mounted in Base**

### Listings and Approvals

- UL Listed: S6648
- ULC Listed: S6648
- FM Approved: 3015976
- CSFM: Approved
- MEA (NYC): Approved

### Specifications

Voltage	15 to 32 VDC, from Control Panel IDC
Standby Current	100 $\mu$ A @ 24 VDC
Alarm Current, 2-Wire Operation	Up to 86 mA maximum, exact current is determined by alarm current limiting of connected IDC
Auxiliary Relay Ratings	Refer to page 2 under Product Selection
Air Velocity Range	0-2000 ft/min (0-610 m/min)
UL Listed Temp. Range	32° to 100 °F (0° to 38 °C)
Operating Temp. Range	15° to 122 °F (-9° to + 50 °C)
Humidity Range	10% to 95% RH from 32° to 122° F (0° to 50 °C) non-condensing
Color	Frost White
Dimensions	4 7/8 in. Dia. x 1 7/8 in. H, mounted in base (124 mm x 48 mm)

## Smoke Detector Features

**Intelligent Data Evaluation.** Conventional smoke detectors will typically drift toward being too sensitive due to the accumulation of dust and dirt. With analog detection, data from the photoelectric chamber is monitored and analyzed at the detector to provide a continuously shifting reference point.

**Drift Compensation.** The data evaluation and its shifting reference point provide a software filtering process that compensates for environmental factors (dust, dirt, etc.) and component aging, establishing an accurate reference for evaluating new activity. With this filtering, the resulting drift compensation provides a significant reduction in the probability of false or nuisance alarms caused by shifts in sensitivity – either up or down.

**Magnetic Test Information.** Status information is available by performing the magnetic test and observing the detector LED pulses. The LED will normally go directly into alarm with the magnetic test. If there is an off-normal condition, the LED pulses first to indicate the condition and then goes into alarm.

## Application Reference

**Detector Locations.** Locations should be determined only after careful consideration of the physical layout and contents of the area to be protected.

For further detailed installation information, refer to Detectors, Sensors, and Bases Application Manual (Part No. 431424).

**Sensitivity Selection.** The standard sensitivity detector (Part No. 430559) is recommended for most applications. When a special application for a reduced sensitivity detector is required (Part No. 430562) should be considered.

## Product Selection

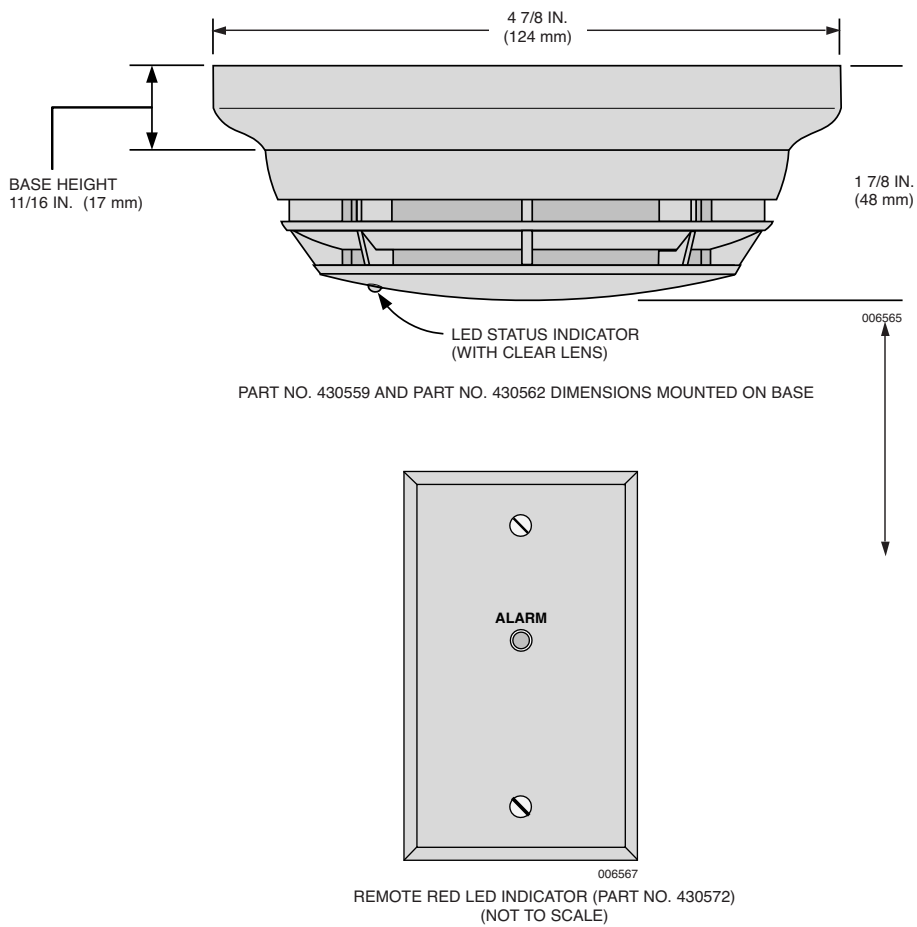
Smoke Detectors			
Part No.	Description	Nominal Sensitivity	Compatibility
430559	LIFEalarm Photoelectric Detector	2.8%/ft (standard)	Compatible with detector bases: Part Nos. 430567 and 430569
430562		3.5%/ft	
Compatible Bases			
Part No.	Description	Details	
430567	<b>2-Wire Base</b> with connections for Remote Alarm LED Indicator	<ul style="list-style-type: none"> <li>• IDC and LED connections are screw terminals for in/out wiring, 18 to 14 AWG</li> </ul>	
430569	<b>2-Wire Base with Auxiliary Alarm Relay</b> & connections for Remote LED Indicator <b>Note:</b> Must be connected as the only device on the IDC to ensure relay operation.	<b>Relay Ratings, Dual Form "C", For Suppressed Loads:</b> <ul style="list-style-type: none"> <li>• Power limited, 1 A @ 28 VDC</li> <li>• Non-power limited, 1/2 A @ 120 VAC</li> </ul>	
430570	<b>2-Wire Base with Remote LED Indicator</b>	<b>Wiring Connections (In/Out where required):</b> <ul style="list-style-type: none"> <li>• Relay contacts and IDC (–), color coded 18 AWG leads</li> <li>• IDC (+) and LED wiring, screw terminals for 18 to 14 AWG</li> </ul>	
Detector Accessories			
Part No.	Description	Details	
430572	Remote LED Indicator	<ul style="list-style-type: none"> <li>• Mounted on single gang stainless steel plate</li> </ul>	

### Detector Status LED Indications

LED Indication	Status		
Pulses approximately every 4 seconds	Normal		
Steady On	Alarm		
LED Response to Magnetic Test *			
LED Indication	Followed By	Status	Action
LED turns ON	Alarm is initiated	<b>Normal</b> , sensitivity is within compensation range	None
LED pulses <i>quickly</i> , 6 times in 3 seconds, then turns ON	Alarm is initiated	<b>More sensitive</b> , out of normal compensation range	Cleaning or other <b>service is required</b>
LED pulses <i>slowly</i> , 4 times in 8 seconds, then turns ON	Alarm is initiated	<b>Less sensitive</b> , out of normal compensation range	
	Does not initiate Alarm	<b>Detector is malfunctioning</b>	<b>Service is required</b>

\* Testing requires placing a magnet at the designated location on the detector cover for 4 seconds.

### Dimensions and Reference Information



## Mounting Information

### ELECTRICAL BOX REQUIREMENTS:

#### WITHOUT RELAY (BASE, PART NO. 430567):

4 IN. (102 mm) OCTAGONAL OR 4 IN. (102 mm) SQUARE, 1 1/2 IN. (38 mm) DEEP  
SINGLE GANG, 2 IN. (51 mm) DEEP

#### WITH RELAY (BASE, PART NO. 430569):

4 IN. (102 mm) OCTAGONAL, 1 1/2 IN. (38 mm) DEEP, WITH 1 1/2 IN. (38 mm) EXTENSION RING  
4 IN. (102 mm) SQUARE, 1 1/2 IN. (38 mm) DEEP, WITH 1 1/2 IN. (38 mm) EXTENSION RING

