PSA

PHOTOELECTRIC SMO SENSOR

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 12/07/16

S24776 7165-0328:0194

Product includes a 5 year warranty

Features

- Low profile, less than 2 inches with the base
- Wide selectable sensitivity range of 1.05 to 3.82%/foot
- Sensor communicates sensitivity to control panel
- UL listed smoke calibration and sensitivity
- Optional locking tab to prevent unwanted removal
- Simple and accurate address setting without mechanical switches
- LEDs for 360° viewing

Description

The Photoelectric Smoke Sensor is a listed Analog Addressable smoke sensor compatible with any fire alarm control panel that has the Potter/Nohmi protocol. The PSA is a low profile smoke sensor with a wide sensitivity range. The sensor and base (not included) are made of a durable plastic in an eggshell white to blend in with the ceiling.

The PSA has a sensitivity range of 1.05 to 3.82% per foot and is UL and cUL listed. The PSA may be configured for drift compensation and has built in dirty detector warning as well as. The PSA and the control panel communicate over a proven and robust digital communication path and the system analyzes the level of alarm at the particular device. The total polling speed is less than five (5) seconds, well under the UL requirements.

The PSA has two LEDs that allow for 360° viewing. The sensor is compatible with any of the Potter/Nohmi bases and simply twists on. The PSA is addressed using the hand held programmer or the control panel addressing function.

Air Velocity Ratings

The PSA has an Open Area of Protection air velocity rating of 0 to 300 feet per minute.

The system has a maximum of 13 LEDs that can be turned on simultaneously. If the system already has 13 LEDs on, the PSA will operate even though the LED will not illuminate.

Setting the Address

Each addressable module, smoke sensor, heat detector and combination sensor/detector must have the address set before connecting the device to the SLC loop. The address is set using the hand held device programmer or the addressing feature on the control panel.

Before connecting a device to the SLC loop, take the following precautions to prevent potential damage to SLC or device. Verify the following:

1. Power to the device is removed
2. Field wiring is correctly installed.
3. Field wiring has no open or short circuits.

Document discrepancies and notify appropriate personnel.

Specifications

Item	PSA
Working voltage range	22.0 to 24.0 V
Standby current	250 µA
Alarm indicator	2 LEDs
Alarm indicator current	1.2 mA D.C.
Alarm set-point range	1.05 to 3.82 %/ft / 3.4 to 12.0 %/m
Installation temperature range	32 to 120 ° F / 0 to 49 ° C
Operating relative humidity range	0% to 93% (Non-condensing)
Start-up time	Max. 1 sec.
Maximum number of addresses per loop	127
Maximum number of lighted indicators in alarm per zone.	13
Color	Eggshell White
Weight (without base)	84g (2.96oz)
Dimensions (without base)	Height: 1.33 in (34mm)
	Diameter: 4.0 inches (99mm)
Approvals / Listings	UL, cUL, CSFM

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Operation

The PSA is an analog addressable sensor that uses one address on the Signaling Line Circuit (SLC) of a compatible fire alarm control panel. The unit communicates with the control panel as it is polled. The LEDs flash every time the unit is polled and they will latch steady if the unit is in an active status.

The PSA is a proven design being in service throughout the world. The PSA with the AB-4 or AB-6 base has a low profile of less than two (2) inches to blend into the surrounding environment. The sensor includes an insect screen to prevent foreign objects from reaching the chamber and the entire unit can be cleaned with a simple vacuum.

Sensor Sensitivity

The PSA and the compatible control panel work in tandem to keep the sensitivity consistent. As the sensor is installed over time, the sensor compensates for the dirt in the unit until it is out of range. At that time, the panel will indicate a dirty sensor. The sensor will then have to be cleaned or replaced.

Anytime the PSA is being polled, the sensitivity may be viewed or printed from the control panel.

Note: As required by NFPA, do not install the sensors until all construction is complete and the work area has been thoroughly cleaned. If the sensors have been installed in a construction environment, they should be cleaned or replaced before the system is placed into service.

Spacing

The PSA is UL/ULC listed with a recommended maximum spacing of 30 feet. Refer to NFPA 72 for specific information regarding detector spacing, placement and special applications.

Compatible Bases

All bases will mount on a single gang, double gang, octagon, 4” square or mud ring electrical box.

Device	Description
AB-4	4” Standard Base
AB-6	6” Standard Base
AIB	6” base with an isolator module included. The base is pre-wired with a pluggable jumper to the module.
ARB-6	6” base with a dual relay module included. One relay is rated for 8 amps at 240 VAC/30 VDC and the second is rated for 2 amps at 240 VAC/30 VDC. The base is pre-wired with a pluggable jumper to the module.
ASB-6	6" base with sounder module included. Sound pattern is provided from external source. The base is pre-wired with a pluggable jumper into the module.