FIRE CONTROL INSTRUMENTS

by Honeywell

ASD-LS

ANALOG ADDRESSABLE LASER
SMOKE SENSOR

DESCRIPTION

The FCI Model ASD-LS low profile laser smoke sensor adds another new dimension to analog addressable fire detection. It incorporates laser smoke detection technology that provides unsurpassed sensitivity and response to maximize detection. This makes the sensor ultra-sensitive to smoke, as much as 100 times more sensitive than conventional photoelectric smoke detection technology.

An innovative laser diode and precision optics design combine with an array of integral software tools to make the quickest possible decision in the event of a genuine fire. The sensor can swiftly sense smoldering fires, but yet can sense the smallest particles of combustion, providing a faster response to flaming fires.

The early warning capability of the ASD-LS is comparable to that of aspiration technology, while unlike aspirating systems, the ASD-LS can pin-point the location of the fire.

The sensor is continually monitored to measure any change in its sensitivity due to the environment (dirt, temperature, transient smoke, humidity, etc.). Patented algorithms distinguish between particles of dust and smoke. The focused beam of the laser light source minimizes reflection from accumulated dust in the optical chamber, effectively minimizing problems caused by dust build-up. The software performs its own independent analyses of the sensor signal. These analyses include dust spike rejection, drift compensation, smoothing, multi-sensor, pre-alarm decision and alarm decision. In the event of spikes in the signal, the sensor will check the output of adjacent sensors for any appreciable signal to determine if the spike is caused by a fast flaming fire.

The sensor is of plug-in construction and is directly interchangeable in the same base with the FCI ASD/ATD/Acclimate Series low-profile sensors. A wide variety of bases, with sounder, relay, etc. is available. Remote LED annunciator capability is also available as an optional accessory.

The ASD-LS sensor is Listed for use inside ducts up to a velocity of 4,000 FPM.

An optional isolator base, Model B224BI, is also available. Installation of two of these isolator bases allows Style 7 operation for sensors located electrically between the bases.

FEATURES

- **Compatible with FCI Analog Addressable Control Panels**
- **High Sensitivity for Both Smoldering and Fast Flaming Fires**
- **Patented Algorithms Ignore Transient Smoke and Dust Particles**
- **Low Profile Construction**
- **Easy Plug-in of the Head to Base**
- **Built-in Signal Processing**
- **Built-in Tamper-Resistant Feature**
- **Remote Test Feature (From the Panel)**
- **Built-in Test Switch**
- **360^{o} View Angle of Dual Alarm LEDs**
- **Optional Bases for Auxiliary Functions**
- **Maximum Air Velocity 4,000 FPM**

TECHNICAL SPECIFICATIONS

Sensitivity	.02 - 0.8%/ft.
Operating voltage	15-32 VDC
Standby current	.00033 amp.
Alarm current (max.)	.0065 amp.
Operating/Installation Temperature	32 to 100^{o} F (0 to 38^{o} C)
Operating humidity	10% to 93% relative humidity (non condensing)
Dimensions	1.7" H x 6.2" Dia. (4.3 x 15 cm) (In standard base)
Weight	5 oz. (142 gm.)

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INSTALLATION

Place the sensor into the sensor base. Turn the sensor clockwise until the sensor locks into place.

To use the tamper-proof feature, break the smaller tab on the base as shown in the installation instructions. Install the sensor. To remove the sensor from the base when using the tamper-proof feature, insert the blade of a small screwdriver into the hole on the side of the base and push the plastic lever away from the detector head. This will allow the sensor to be rotated counterclockwise for removal. **NOTE:** The decorative ring must be removed in order to remove the head when using the tamper-proof feature.

Refer to NFPA 72, Chapter 5-3 "Smoke Sensing Fire Detectors" for spacing, location of sensors and other guidelines.

TESTING

Sensors may be tested locally in the following ways:

- A. Place a test magnet against the sensor housing per the instructions. The sensor should go into alarm within 30 seconds.

- B. Aerosol Generator - The Gemini Model 501 aerosol generator may be used to perform a functional test. This test should be performed immediately following the magnet test. Magnet test initiates an approximately ten minute period when the detector's signal processing software routines are not active. Failure to first perform the magnet test will introduce a time delay before the detector alarms. Follow instructions in the generator instruction manual.

AGENCY APPROVALS

UL (Std 268)	S1913
Factory Mutual	Pending

MAINTENANCE

Cleaning programs should be adapted to the individual environment in conformance with the National Fire Alarm Code, NFPA 72. We recommend, at the least, an annual cleaning of the unit. The sensor screen and cover assembly can be removed, revealing the sensing chamber. A vacuum cleaner can be used to remove dust from the screen, cover and sensing chamber. For the complete procedure, refer to the Installation and Maintenance Instructions furnished with each sensor.

ORDERING INFORMATION

Part No.	Model	Description
110-90039	ASD-LS	Low Profile Analog Laser Sensor
110-90005	ADB-FL	Standard plug-in sensor base with flange and decorative ring
110-90004	B224RB	Plug-in sensor base with auxiliary relay, SPDT, rated 2 amps. @ 30 VDC (resistive)
110-90006	B224BI	Plug-in sensor isolator base for Style 7 operation
130-90037	B501BHT	Plug-in sensor base with temporal pattern sounder
110-31A60	B501	Plug-in sensor base w/o flange
138-01005	RA-400Z	Remote alarm indicator
119-9010N		Detector sensitivity test kit.