KIDDE COMMERCIAL
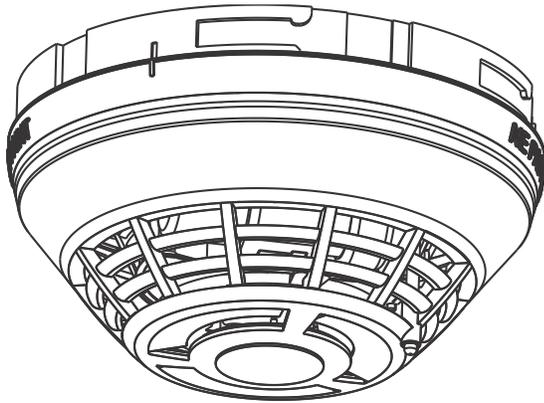
# KI-OSD Intelligent Optical Smoke Detector Installation Sheet

Description

The Signature Series model KI-OSD Intelligent Optical Smoke Detector is an intelligent device that uses an advanced optical sensing chamber to detect smoke. The detector analyzes data from the sensing chamber to recognize smoke from a fire while ignoring nuisance non-fire sources and whether to initiate an alarm to the Fire Alarm Control Panel.

LED indicator. The LED indicator (see Figure 1 below) displays the following states:

- Normal: Green LED indicator flashes, no action.

- Alarm/active: Red LED indicator flashes, evacuate the area.

Figure 1: KI-OSD features
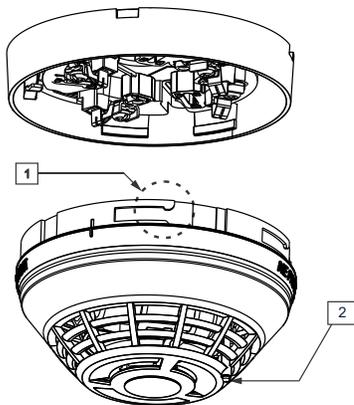
(1) Self-locking tab
(2) LED indicator

Installation

Notes

- This detector does not operate without electrical power. As fires frequently cause power interruption, discuss further safeguards with the local fire protection specialist.

- This detector does not sense fires in areas where smoke cannot reach the detector. Smoke from fires in walls, roofs, or on the opposite side of closed doors may not reach the detector.

- To ensure proper operation, store the detector within the recommended ranges. Allow the detector to stabilize to room temperature before applying power.

- The dust cover (supplied) must remain on the detector during installation and be removed prior to commissioning and service. The dust cover is not a substitute for removing the detector during new construction or heavy remodeling.

- Do not use smoke detectors with detector guards unless the combination has been evaluated and found suitable.

- In Canada, install according to CAN/ULC-S524 *Standard for the Installation of Fire Alarm Systems,* CSA C22.1 *Canadian Electrical Code*, and the local authority having jurisdiction.

- Upon completion of the original installation and following any modifications or additions to the system, perform a calibrated sensitivity test per NFPA code. The Signature Series devices can perform this test and the panel can generate a system sensitivity report.

To install the detector:

1. Install and wire the base, as described on the installation sheet supplied with the base.

2. Remove the serial number label from the detector and attach it to the project documentation.

3. Attach the detector to the base by rotating the detector clockwise until it snaps into the locked position.

Testing

Before testing, notify the proper authorities that the fire alarm system is undergoing maintenance and will be temporarily out of service.

To perform an initial installation test:

1. Remove the detector from its base and verify that the proper detector address, trouble signals, and messages are reported.

2. For KI-OSD detectors placed in the air ducts, verify that the airflow is within specifications. See "Specifications" on page 2.

3. If wired for Class A operation, verify that the detector continues to operate first with SLC_IN disconnected, and then with SLC_OUT disconnected. (Refer to the installation sheet for the base.)

4. Place a momentary ground fault on the SLC circuit to verify operation of ground fault detection circuitry.

5. Run a system detector sensitivity report on all detectors and verify that the readings fall within acceptable limits.

6. Perform a sensor function test, as described below.

To perform a sensor function test:

1. If desired, use the fire alarm control panel to put the detector or zone into a service group for testing. (Refer to the panel technical reference manual for instructions.)

2. Activate the smoke sensor using No Climb Products model Smoke Centurion/M8, FireTech Smoke or Smoke Sabre smoke aerosol spray, a smoke generator, or the Testifire detector tester per the manufacturer's instructions.

Maintenance

To ensure proper operation, plan maintenance (regular or selected) of the detector in accordance with the AHJ and all applicable governing laws, codes, or standards. Refer to CAN/ULC-S536 *Standard for the Inspection and Testing of Fire Alarm Systems* and NFPA *72 National Fire Alarm and Signaling Code.*

Refer to application bulletin P/N 3102650-EN for additional information and cleaning instructions.

Specifications

Operating voltage	15.20 to 19.95 VDC
Current	
Normal operating	32 uA
Alarm	45 uA
Vibration level	10 to 35 Hz, with an amplitude of 0.01 in.
Air velocity [1]	0 to 4,000 ft./min (0 to 20.32 m/s)
Wall mounting: distance from ceiling	12 in. (305 mm) max.
Compatible bases	
Standard	KI-SB, KI-SB4
Relay	KI-RB, KI-RB4
Isolator	KI-IB, KI-IB4
Audible	KI-ABDT, KI-ABLT, KI-ABST
Compatible detector testers	Testifire 1000, Testifire 2000
Operating environment	
Temperature	32 to 120°F (0 to 49°C)
Relative humidity	0 to 93% noncondensing
Storage temperature	−4 to 140°F (−20 to 60°C)
Environmental compensation	Automatic

[1] For duct installation, use a KI-DMP duct detector mounting plate and install per P/N 3102482-EN.

Regulatory Information

North American standards	CAN/ULC-S529, UL 268-7, UL 268A
UL/ULC smoke sensitivity range	0.5 to 4.36 %/ft. (1.63 to 13.62 %/m) obscuration
FCC compliance	This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
Industry Canada compliance	This Class A digital apparatus complies with Canadian ICES-003.

Contact information

For contact information, see www.kidde-esfire.com.