PRODUCT DOCUMENT

KI-OSD — User Manual

Kidde Optica Series Intelligent Optical Smoke Detector • Operating, testing & maintenance reference

1. Product identification

The KI-OSD is an intelligent optical smoke detector in the Kidde Intelligent Optica Series. It uses multiple optical measurements and onboard digital processing to distinguish smoke from nuisance particulate patterns.

2. Detection and nuisance rejection

The sensing chamber uses dual optical wavelengths and multiple detection angles. Particle data is processed through digital filters and ratio algorithms before the alarm decision is made. This architecture is intended to reduce unwanted alarms from common nuisance sources such as cooking particulates.

3. Addressing and communication

The detector uses electronic addressing and supports up to 250 total Kidde Intelligent addresses per loop. It is intended for control panels using a Kidde Intelligent Loop controller.

4. Sensitivity and compensation

Function	Documented capability
Sensitivity	Five programmable sensitivity settings
Pre-alarm	Twenty selectable pre-alarm settings
Environmental compensation	Two levels; automatic compensation
Day/night adjustment	Automatic day/night sensitivity adjustment
Dirty detector warning	Two levels
Memory	Non-volatile memory

5. Installation testing

The manufacturer's installation procedure calls for notification that the fire alarm system is temporarily out of service before testing. Verify the correct address, trouble signals and panel messages. For Class A systems, verify that the detector continues to operate with SLC_IN disconnected and then with SLC_OUT disconnected. A momentary ground fault test is also specified for the system ground-fault detection circuitry.

6. Sensor function testing

The installation documentation describes using the control panel to place the detector/zone into a service group when desired, followed by the manufacturer's specified sensor function test. Follow the exact current installation sheet for the approved test method.

7. Maintenance

The detector performs continuous self-diagnostics and provides dirty-detector warning levels. Sensitivity measurements can be transmitted to the loop controller for reporting. Follow the fire-alarm system's scheduled

inspection and cleaning requirements.

8. Troubleshooting reference

No communication: verify base seating, SLC wiring, address and panel compatibility.
Detector trouble: inspect the detector, base and reported panel condition; review the sensitivity/dirty warning information.
Unexpected alarm: review environmental conditions and nuisance sources, then follow the approved alarm investigation procedure.
LED behavior: compare the green/red indication with the control panel's documented operating states.

9. Safety

Fire alarm equipment is life-safety equipment. Installation, testing, inspection and servicing must be performed by qualified personnel in accordance with the manufacturer's documentation, approved drawings and applicable authority requirements.

Source note

Research basis: Kidde/Carrier-published KI-OSD product documentation, including Data Sheet K85001-1001 (Issue 1), plus the KI-OSD installation sheet. The manufacturer data identifies KI-OSD as an intelligent optical smoke detector and lists UL 268-7, UL 268A, CAN/ULC-S529, CSFM and FM agency listings. Some features can depend on the installed control system.