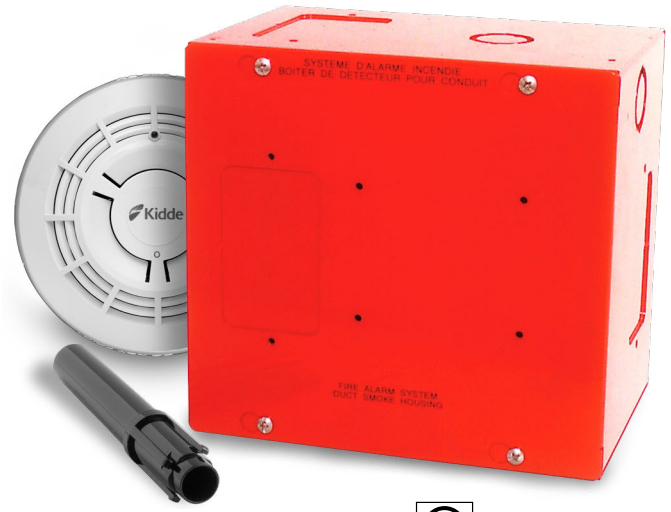
Technology that saves lives

# Intelligent Duct Smoke Detector Housing

## KI-SDH, KI-SDHR

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## Overview

The KI-SDH(R) Duct Smoke Detector Housing is specially engineered to exploit all the capabilities of Kidde Intelligent photoelectric and multisensor smoke detectors. Kidde Intelligent detectors gather analog information from each of their one or more sensing elements and converts it into digital signals. The detector's onboard microprocessor measures and analyzes these signals. It compares them to historical readings, time patterns and known characteristics to make an alarm decision. Digital filters and complex Algorithms are applied for optimum detector accuracy. Unwanted alarms are virtually eliminated.

Each duct housing is packaged with detailed installation instructions, gaskets and a self-adhesive drilling template for locating and mounting the detector. The large access door is completely removable to allow fast detector installation and field wiring connections. The 16 gauge steel housing is finished in red baked enamel for easy identification. Five knockouts on the housing provide a convenient location for mounting intelligent Kidde Intelligent modules.

The KI-SDH(R) Duct Housing comes with a 6 inch (150 mm) exhaust tube. Air sampling tubes are available in lengths from 8 inches (200 mm) to 10 feet (3048 mm) and must be ordered separately. Compatible smoke detectors and accessories are listed in the Ordering Information. Refer to individual device catalog literature pages for more detail.

## Standard Features

- Suitable for high air velocity duct applications
  Up to 4000 ft/min. (20.3 m/sec.) with Photoelectric Detector.
- Standard Kidde Intelligent detectors
  Designed for use with standard photoelectric and photoelectric/heat Kidde Intelligent smoke detectors.
  Does not require "special"duct smoke heads.
- Standard or relay detector base installed and prewired
  Detector plugs-in to base then easily installs into housing.
- Install in ducts up to 10 ft. (3.05 m) wide
- Remote LED and test station accessories

## Typical Wiring

The detector mounting bases and test station will accept #18 AWG (0.75mm$^2$), #16 (1.0mm$^2$), #14 AWG (1.50mm$^2$) and #12 AWG (2.5 mm$^2$) wire sizes. Note: #12 AWG and #14 AWG (1.5 mm$^2$) are not recommended due to difficulty of installation. See Loop Controller and Detector catalog sheets for detailed wiring requirement specifications.

## Application

The KI-SDH(R) Duct Smoke Detector Housing requires a clear, flat, accessible area on the duct of at least 7-3/8 inches (188mm) W x 7 inches (175mm) H. The duct housing must be installed on ducts at least 8 inches (200mm) wide. Duct detectors are usually installed on the supply duct after the air filters; or in the return air stream prior to being diluted by outside air.

Sample tube length must span the entire width of the air duct and the tube can be easily cut to any length. Inlet tubes longer than 3 ft.(900mm) must be supported at both ends.

Duct detectors continually sample air flow in a HVAC duct and initiate an alarm condition whenever smoke is detected. An alarm is activated when the quantity (percent obscuration) of combustion products in that air sample exceeds the detector's sensitivity setting.

Air velocity in the duct maintains the air flow that enters the detector housing through perforations in the air sampling inlet tube and discharges through the outlet exhaust tube. The detector housing must be installed with its INLET air sampling tube upstream of the EXHAUST tube. Before installing the duct detector housing, test the duct air velocity to verify it is within the limits of the Signature smoke detector that is being installed. Also verify that duct air relative humidity is within 0% and 93%.

WARNING: Duct detectors have specific limitations. Duct detectors ARE NOT a substitute for an open area smoke detector. Duct detectors ARE NOT a substitute for early warning detection. Duct detectors ARE NOT a replacement for a building's regular fire detection system. Smoke detectors ARE NOT designed to detect toxic gases which can build up to hazardous levels in some fires. These devices WILL NOT operate without electrical power. As fires frequently cause power interruptions, ~~EDWARDS~~ suggests you discuss further safeguards with your local fire protection specialist.

## Installation and Mounting

Kidde recommends duct detectors always be installed in accordance with the latest recognized editions of local and national fire alarm codes.

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## Accessories

### Duct Detector Air Sampling Tubes

One air sampling inlet tube must be ordered for each duct smoke detector housing. Refer to Ordering Information for available lengths.

### Detector Mounting Bases

Each KI-SDH(R) contains a detector mounting base. The KI-SDH includes a standard base and the KI-SDHR contains a relay base. Removing a detector from its base does not affect other devices operating on the same data loop. Two duct housings are available as follows:

***KI-SDH (standard base) -*** This is the basic duct housing with a standard base for the detector. The GSA-LED Remote LED is supported by the Standard Base.

***KI-SDHR (relay base) -*** This is the duct housing with the relay base for the detector. Normally open or closed operation is selected during installation. The dry contact is rated for 1 amp @ 30 Vdc (pilot duty). The relay's position is supervised to avoid accidentally jarring it out of position. The KI-RB can be operated as a control relay if programmed to do so at the control panel. The Relay Base does not support the GSA-LED Remote LED. Relay bases are not automatically affected or activated by the GSA-DTS Duct Test Station but the panel may be programmed to do so if required for the application.


### Alarm LED Indicator

The GSA-LED Alarm Indicator is suitable for use with the KI-SDH duct detector housing only. A maximum of one can be operated for each detector. It features a red LED on a one-gang plastic plate and can be installed remote or directly on the KI-SDH Duct Housing.


### Duct Test Station

The GSA-DTS Duct Test Station uses a key switch along with an integral intelligent input module mounted on a two-gang plastic plate. It is supplied with two keys and features a red alarm LED.

When the key is turned to the "TEST" position, the LED lights and the integral module remotely inputs a duct detector test alarm. The actions and sequences programmed at the control panel to activate dampers and other smoke control measures, are easily tested. Detector relay bases are not affected or activated. Resetting the control panel clears the test and returns the system to normal. The key cannot be removed when in the "TEST" position.

The Duct Test Station mounts to standard 2-inch deep North American two-gang and 4-inch square electric boxes and European 100 mm square boxes.

### Air Velocity Test Kit

The SD-VTK Air Velocity Test Kit is specially designed to interface to the KI-SDH(R) Duct Housing. It is used to test or confirm the air velocity in HVAC ducts where the duct housing is installed.

# Specifications

| Compatible Smoke Detectors | KI-PD, KI-PHD, KI-OSD, KI-OSHD |
|---|---|
| Smoke Sensing Element(s) | Photoelectric - Light Scattering Principle |
| Air Velocity Range | 300 to 4000 ft/min. (1.5 to 20.3 m/sec) |
| Operating Environment | Temperature: 32 - 100º F (0 to 38º C) Humidity: 0 to 93% RH, non-condensing |
| Storage Environment | Temperature: -4 to 140º F (-20 to 60º C); Humidity: 0 to 93% RH, non-condensing |
| ULI/ULC Sensitivity Range | 0.5% to 4.36% obscuration/foot (for Optica) |
| Dimensions | 7-3/8 inches (188mm) W x 7 inches (178mm) H x 5 inches (127mm) D |
| Material and Finish | 18 Gauge Galvanized Steel, Red - Baked Enamel |
| Conduit Knockouts | 4, Combination 1/2 inch & 3/4 inch |
| Agency Approvals | UL, ULC, CSFM |
| User Selected Sensitivity Settings | Least Sensitive: 3.5%; Less Sensitive: 3.0%; Normal: 2.5%; More Sensitive: 2.0%; Most Sensitive: 1.0% |
| Electrical, Physical Characteristics | Refer to individual detector catalog sheets |
| Compatible Mounting Bases | KI-SDH - standard base included, KI-SDHR - relay base included |
| Compatible Remote LED | GSA-LED (KI-SDH only) |
| Controller Compatibility | Kidde Intelligent Loop Controller |
| Addressing Restrictions | Uses one Input Device Address |

*Note: The KI-SDH(R) Duct Housing is not weatherproof or dust tight.)*

| GSA-DTS Duct Test Housing | |
|---|---|
| Operating Current | Standby = 250µA; Activated = 400µA |
| Operating Voltage | 15.2 to 19.95 Vdc (19 Vdc nominal) |
| Replacement Key | p/n - P-037449 |
| Storage and Operating Temperature | 32 to 120ºF (0 to 49ºC) |
| Onboard LED Operation | Red LED - flashes when in alarm or test state |
| Mounting | North American electric box: 2 inch deep 2-gang or 4 inch square ; European electric box: 100 mm square |
| Construction & Finish | High Impact Engineered Plastic 2-gang front plate - White |
| Addressing Restrictions | Uses one Module Address |

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**Contact us**

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# Ordering Information

| Catalog Number | Description | Ship Wt lb. (kg) |
|---|---|---|
| KI-SDH | Duct Detector Housing with Standard Base | 6.5 (3.0) |
| KI-SDHR | Duct Detector Housing with Relay Base | 6.5 (3.0) |
| **Sampling Tubes** | | |
| SD-T8 | 8 inch (200mm) Air Sampling Inlet Tube | 0.25 (0.1) |
| SD-T18 | 18 inch (455 mm) Air Sampling inlet tube | 1.5 (0.7) |
| SD-T24 | 24 inch (600mm) Air Sampling Inlet Tube | 0.5 (0.2) |
| SD-T36 | 36 inch (915mm) Air Sampling inlet tube | 3.0 (1.4) |
| SD-T42 | 42 inch (1060mm) Air Sampling Inlet Tube | 1.6 (0.8) |
| SD-T60 | 60 inch (1525mm) Air Sampling inlet tube | 5.8 (2.6) |
| SD-T78 | 78 inch (1980mm) Air Sampling Inlet Tube | 2.2 (1.0) |
| SD-T120 | 120 inch (3048mm) Air Sampling Inlet Tube | 4.4 (2.0) |
| **Compatible Detectors (Ordered Separately)** | | |
| KI-OSD | Intelligent optical (photoelectric) smoke detector | 0.5 (0.23) |
| KI-OSHD | Intelligent multisensor optical smoke and heat detector | 0.5 (0.23) |
| KI-PD | Intelligent photoelectric smoke detector | 0.5 (0.23) |
| KI-PHD | Intelligent multisensor smoke and heat detector | 0.5 (0.23) |
| **Annunciation and Testing** | | |
| GSA-LED | Alarm LED Indicator | 0.2 (.09) |
| GSA-DTS | Duct Test Station | 0.4 (.18) |
| SD-VTK | Duct Air Velocity Test Kit | 1.0 (0.5) |
| P-037449 | Replacement Key | 0.2 (.09) |