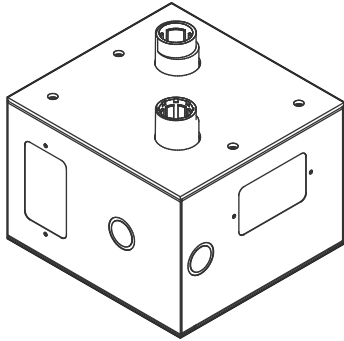




KI-SDH(R) Duct Detector Housing Installation Sheet



Description

The KI-SDH(R) duct detector housing assembly is used to install compatible Signature Series smoke detectors in HVAC air duct smoke detection applications. See the table below for a list of duct detector housing assembly models.

| Model number | Description |
|--------------|--------------------------------------|
| KI-SDH | Duct detector housing, standard base |
| KI-SDHR | Duct detector housing, relay base |

The KI-SDH(R) duct detector housing assembly includes:

- Metal box and cover
- Smoke chamber assembly (preassembled)
- Gasket (preassembled)
- Exhaust tube
- Sampling tube coupling
- Sampling tube rubber stopper
- Mounting hardware
- Drill template

KI-SDH(R) accessories are listed below and are ordered separately.

| Catalog number | Description |
|----------------|------------------------|
| SD-T8 | 8-inch sampling tube |
| SD-T18 | 18-inch sampling tube |
| SD-T24 | 24-inch sampling tube |
| SD-T36 | 36-inch sampling tube |
| SD-T42 | 42-inch sampling tube |
| SD-T60 | 60-inch sampling tube |
| SD-T78 | 78-inch sampling tube |
| SD-T120 | 120-inch sampling tube |
| GSA-LED | Remote alarm indicator |
| SD-VTK | Air velocity test kit |

Installation

Install and wire this device in accordance with applicable national and local codes, ordinances, and regulations.

In the US, install according to the Standard for Automatic Fire Detectors, NFPA 72, and the Standard for Installation of Air Conditioning and Ventilating Systems, NFPA 90A

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.

WARNING: Personal injury hazard. Only use smoke detectors listed for this product. Detectors that are not rated for the air velocities produced in air ducts will not operate properly.

Caution: Electrical supervision requires that you break the wire run at each terminal. Do not loop field wires around the terminals.

Note: Duct smoke detectors are not intended as a substitute for open area smoke detectors.

To ensure correct operation, follow these guidelines when installing the duct detector housing assembly:

- Locate the duct detector housing assembly on a flat rigid section of ductwork.

For supply air ducts, install the duct detector housing assembly downstream from the supply fan and air filters.

For return air ducts, install the duct detector housing assembly before the return air stream is diluted by outside air

- Extend sampling tubes at least two-thirds across the width of the HVAC duct. Point the sampling tube air inlet holes into the direction of air flow.
- Support sampling tubes longer than 36 inches at both ends of the sampling tube.

For air ducts greater than or equal to 36 inches wide, use the next longest sampling tube available. Extend the sampling tube through opposite side of the air duct, cut off the excess sampling tube, and then seal the opening around the tube with an approved sealant.

To install the duct housing:

1. Select the location for the duct housing assembly.
2. Verify the duct air flow direction and velocity.

Drill a small hole in the air duct.

Using the SD-VTK air velocity test kit and a suitable air velocity meter (supplied by installer), verify that the air velocity in the HVAC duct falls within the specified operating range of the detector and note which direction the air flows.

If the air velocity does not fall within the specified range, relocate the detector housing assembly and seal the hole in the air duct.

3. Apply the drill template to the air duct, drill out the sampling tube and the exhaust tube holes, and then drill the pilot holes for the mounting screws.
4. Attach the exhaust tube to the duct housing assembly. See Figure 4.
5. Assemble the sampling tube, and then attach it to the duct housing assembly. See Figure 4.

Note: You can insert the sampling tube from the open side of the duct housing assembly. If you do, reverse the orientation of the sampling tube coupling.

6. Insert the duct housing assembly into the air duct holes, and then secure the box to the air duct. Use the four #8 sheet metal screws provided in the hardware kit.



7. Connect a suitable air pressure differential meter (supplied by installer) to the sampling tube and exhaust tube openings. Verify that the air pressure differential measured between the two openings falls within the specified operating range.
8. Attach the smoke detector to the smoke chamber top, and then attach the top to the smoke chamber bottom by tightening the four captive screws. Do not overtighten the screws.
9. Connect the field wiring to the smoke chamber top. See Figure 1 and Figure 2. Do not overtighten the screws.
10. Connect the ground wire attached to the duct housing's box and cover to a suitable electrical ground.
11. Attach the duct housing cover. Use the four 8-32 × 3/8 screws provided.

Wiring

Connect the field wiring as shown in Figure 1 or Figure 2.

Figure 1: KI-SDH wiring

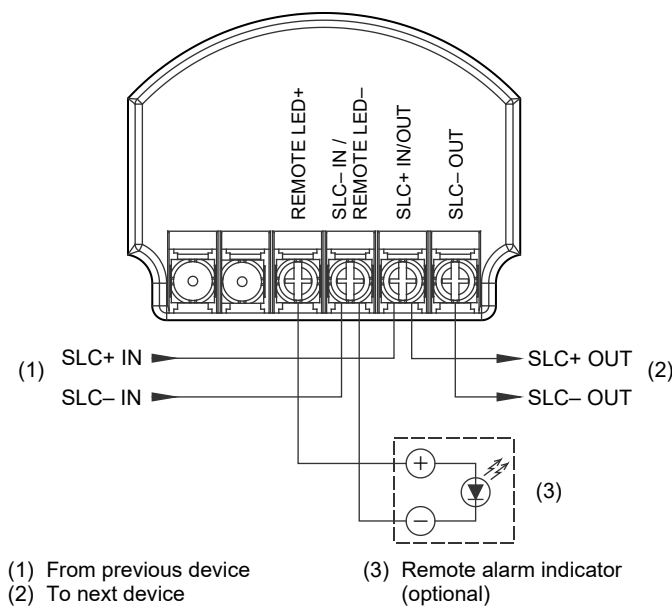
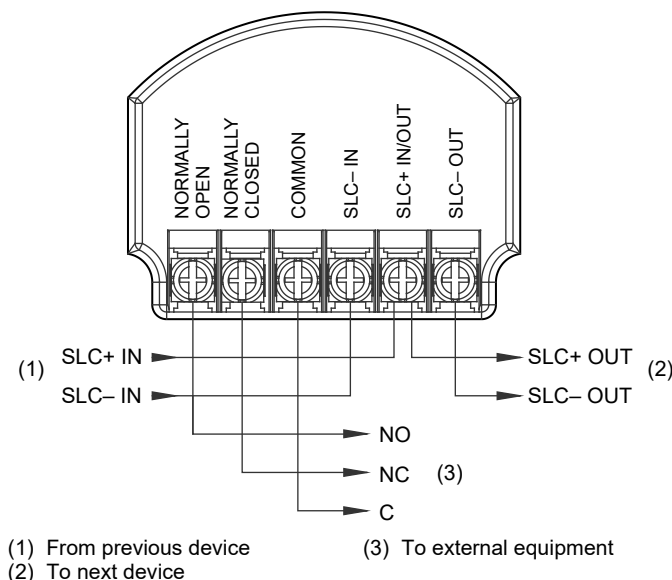


Figure 2: KI-SDHR wiring



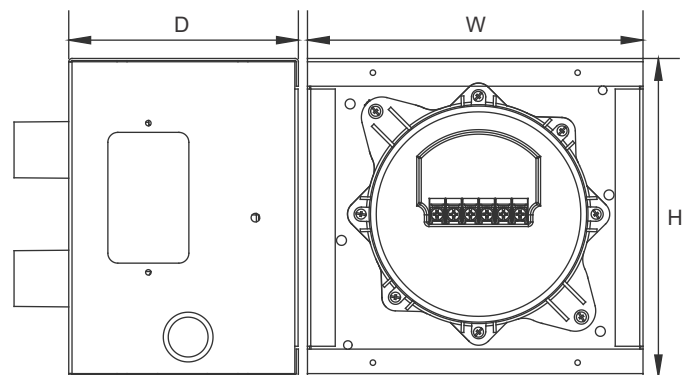
Maintenance and testing

For maintenance and testing, refer to the smoke detector's installation instructions.

Specifications

| | |
|-------------------------------------|--|
| Air velocity | 300 to 4,000 ft/min. |
| Air pressure differential | 0.005 to 1.00 inches of water |
| Compatible smoke detectors | KI-PD, KI-PHD(B), KI-OSD, KI-OSHD(B) |
| Compatible bases | KI-SB, KI-RB |
| Relay contact rating (KI-SDHR only) | 1.0 A at 30 VDC, pilot duty |
| Wire size | 12 to 18 AWG (0.75 to 2.50 mm ²) |
| Screw torque | |
| Housing cover | 6 lbf-in (0.7 N m) max. |
| Terminal screws | 12 lbf-in (1.4 N m) max. |
| Smoke chamber top | 3 lbf-in (0.35 N m) max. |
| Dimensions (W × H × D) | 7-3/8 × 7 × 5 in. (18.73 × 17.78 × 12.7 cm) See Figure 3. |
| Knockouts | 4, combination 0.5/0.75 in. rectangular knockouts not used. |
| Material and finish | 18 gauge galvanized steel Red baked enamel |
| Operating environment | |
| Temperature | 32 to 122°F (0 to 50°C) |
| Relative humidity | 0 to 93% noncondensing |

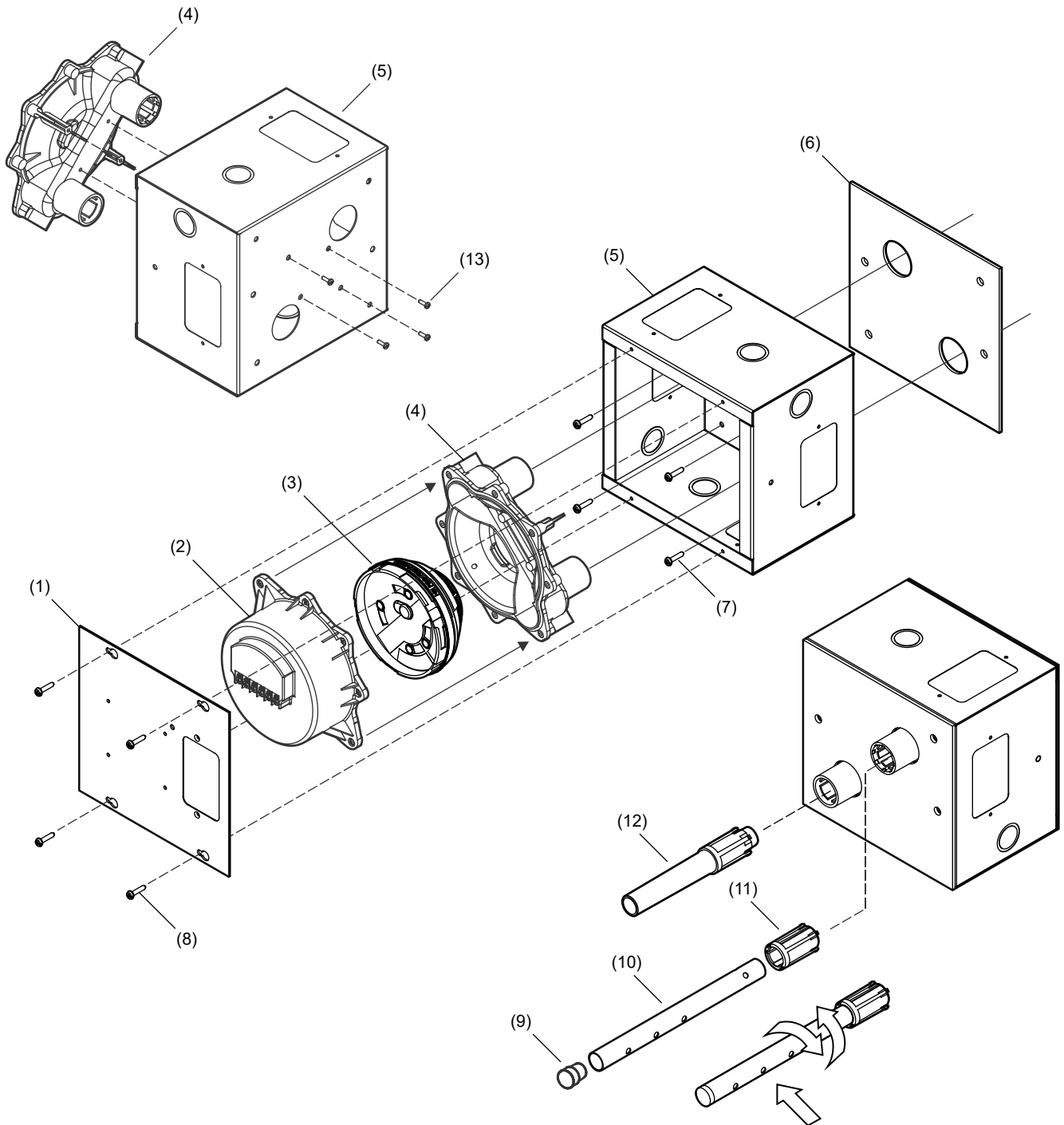
Figure 3: Dimensions



Contact information

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

Figure 4: Assembly diagram



- (1) Duct housing cover
- (2) Smoke chamber top
- (3) Compatible smoke detector (preassembled)
- (4) Smoke chamber bottom (preassembled)
- (5) Duct housing box

- (6) Gasket (preassembled)
- (7) #8 sheet metal screws (4X)
- (8) 8-32 x 3/8 screw (4X)
- (9) Rubber stopper
- (10) Sampling tube (ordered separately)

- (11) Coupling
- (12) Exhaust tube
- (13) #4 x 3/8 screw (4X)