![Kidde - United Technologies logo]

ROTARY
Compatible with FX Series control panels
ADDRESSING

Technology that saves lives

Intelligent Heat Detector
KIR-HD

S853

Overview

The KIR Series smoke detectors bring advanced sensing technology to a practical design that increases efficiency, saves installation time, cuts costs, and extends property protection capabilities. Continuous self-diagnostics ensure reliability over the long-haul, while the latest thermister technology makes these detectors ideal wherever dependable heat detection is required.

The KIR-HD is an intelligent fixed temperature fire detector that may also be programmed as a rate-of-rise detector. The KIR-HD monitors the temperature of the surrounding air and analyzes the data from the sensor to determine whether to initiate an alarm.

The fixed-temperature heat function detects fire when the air temperature near the detector exceeds the alarm point. When programmed as a rate-of-rise heat detector, the KIR-HD quickly detects a fast, flaming fire.

Standard Features

Note: Some features described here may not be supported by all control systems. Check your control panel's Installation and Operation Guide for details.

- Next generation heat sensing technology
- 135 °F (57 °C) fixed temperature alarm point
- Programmable 15 °F (8.3 °C) per minute rate-of-rise alarm point
- Uses existing wiring
- Up to 250 total devices per loop
- Non-volatile memory
- Convenient rotary addressing
- Bicolor (green/red) status LED
- Standard, relay, fault isolator, and audible mounting bases
- 50 foot (15.2 meter) spacing

Application

This intelligent digital device provides a 135°F (57°C) fixed-temperature heat sensor for the detection of heat due to fire. The heat sensor monitors the temperature of the air and determines whether an alarm should be initiated. The FX-HD also can be programmed as a rate-of-rise heat detector.
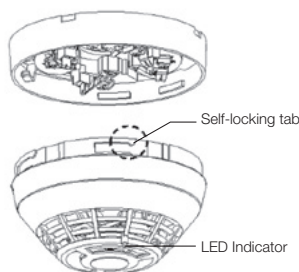
Thanks to its advanced thermistor technology, the KIR-HD detector is ideal for sensing fast, flaming fires and for applications where smoke detection is inappropriate. The KIR-HD is capable of performing comprehensive self-diagnostics and storing the results. It is particularly well-suited to areas such as laundries and industries where fluctuations in ambient temperature is expected.

Compatibility

The KIR-HD is compatible with FX Series intelligent panels.

Installation

KIR Series detector bases mount to North American 1-gang boxes, 3-1/2 inch or 4 inch octagon boxes, and to 4 inch square electrical boxes 1-1/2 inches (38 mm) deep. They mount to European BESA and 1-gang boxes with 60.3 mm fixing centers. See mounting base installation and wiring for more information.

Self-locking tab

LED Indicator
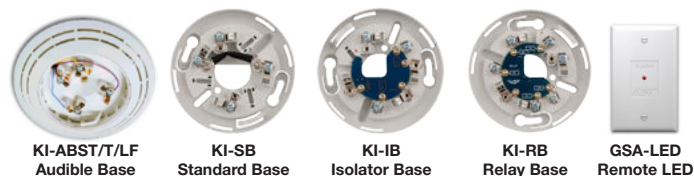
Sensing and reporting technology

The microprocessor in each detector provides additional benefits - Self-diagnostics and History Log, and Fast, Stable Communication.

Self-diagnostics and History Log - Each KIR Series detector constantly runs self-checks to provide important maintenance information. The results of the self-check are automatically updated and permanently stored in the detector's non-volatile memory.

Fast Stable Communication - On-board intelligence means less information needs to be sent between the detector and the loop controller. Other than regular supervisory polling response, the detector only needs to communicate with the loop controller when it has something new to report.

Accessories

Detector mounting bases have wiring terminals that are accessible from the "room-side" after mounting the base to the electrical box. The bases mount to North American 1-gang boxes and to 3½ inch or 4 inch octagon boxes, 1½ inches (38 mm) deep. They also mount to European BESA and 1-gang boxes with 60.3 mm fixing centers. The KI-SB4, KI-RB4, and KI-IB4 mount to North American 4 inch sq. electrical boxes in addition to the above boxes. They include the GSA-TS4 Trim Skirt, which is used to cover the "mounting ears" on the base. The KI-ABST mounts to a 4 inch square box only.

| KI-ABST/T/LF Audible Base | KI-SB Standard Base | KI-IB Isolator Base | KI-RB Relay Base | GSA-LED Remote LED |

Remote LED - The remote LED connects to the KI-SB or KI-SB4 Standard Base only. It features a North American size 1-gang plastic faceplate with a white finish and red alarm LED.
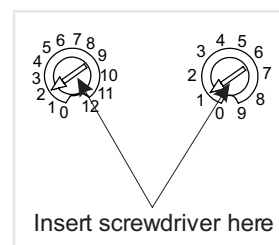
Trim Skirt - Supplied with 4 inch bases, it can also be ordered separately to use with the other bases to help hide surface imperfections not covered by the smaller bases.

Sounder Bases - KIR Series sounder bases are designed for use where localized or group alarm signaling is required.

- **KI-ABST** bases provide sounder capability to KIR Series to heat and smoke detectors.
- **KI-ABLT** bases provide 520 Hz low frequency sounder capability to KIR Series smoke and heat detectors. The KI-ABLT is suitable for applications requiring low frequency audible tones.

Device Addressing

Programming is made easy through the rotary dials located on the back of the detector head. Use a screwdriver to adjust the TENS rotary switch (0 through 12) to set the 10s digit and the ONES rotary switch to set the digit 0 through 9. The control panel will identify any duplicate addresses.
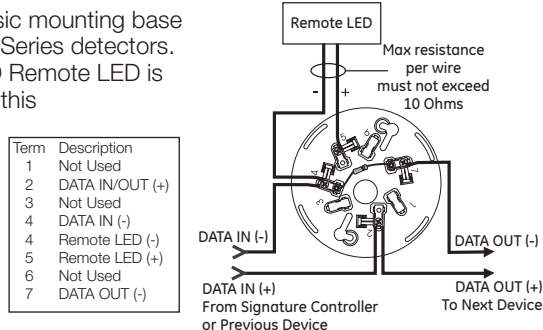

Insert screwdriver here

Example: device address 21, set TENS rotary switch to 2 and set the ONES rotary switch to 1.

Typical Wiring

The detector mounting bases accept #18 AWG (0.75mm²), #16 (1.0mm²), #14 AWG (1.5mm²), and #12 AWG (2.5mm²) wire sizes. Sizes #16 AWG (1.0mm²) and #18 AWG (0.75mm²) are preferred for ease of installation.

Standard Detector Base, KI-SB, KI-SB4

This is the basic mounting base for Kidde KIR Series detectors. The GSA-LED Remote LED is supported by this Base.

Remote LED

Max resistance per wire must not exceed 10 Ohms

DATA IN (-)

DATA OUT (-)

DATA IN (+)
From Signature Controller or Previous Device

DATA OUT (+)
To Next Device

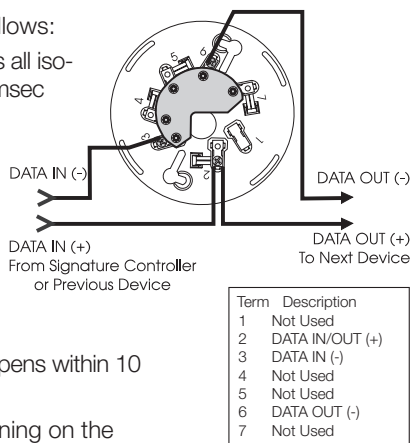| Term	Description
1	Not Used
2	DATA IN/OUT (+)
3	Not Used
4	DATA IN (-)
4	Remote LED (-)
5	Remote LED (+)
6	Not Used
7	DATA OUT (-)

Isolator Detector Base, KI-IB, KI-IB4

This base includes a built-in line fault isolator for use on Class A circuits. A detector must be installed for it to operate. The isolator base does not support the GSA-LED Remote LED.
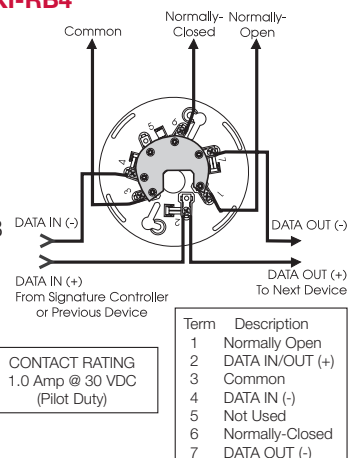
The isolator operates as follows:

- a short on the line causes all isolators to open within 23 msec
- at 10 msec intervals, beginning on one side of the Class A circuit nearest the loop controller, the isolators close to provide the next isolator down the line with power
- when the isolator next to the short closes, it reopens within 10 msec.

The process repeats beginning on the other side of the loop controller.

DATA IN (-)

DATA OUT (-)

DATA IN (+)
From Signature Controller or Previous Device

DATA OUT (+)
To Next Device

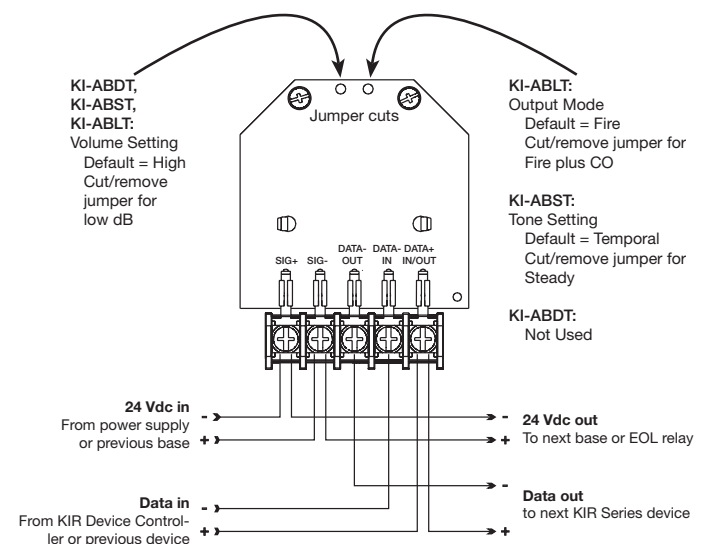| Term	Description
1	Not Used
2	DATA IN/OUT (+)
3	DATA IN (-)
4	Not Used
5	Not Used
6	DATA OUT (-)
7	Not Used

Relay Detector Base, KI-RB, KI-RB4

This base includes a relay. Normally Open or Normally Closed operation is selected during installation. The dry contact is rated for 1 amp (pilot duty) @ 30 Vdc. 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.

Common

Normally-Closed

Normally-Open

DATA IN (-)

DATA OUT (-)

DATA IN (+)
From Signature Controller or Previous Device

DATA OUT (+)
To Next Device

CONTACT RATING
1.0 Amp @ 30 VDC
(Pilot Duty)

Term	Description
1	Normally Open
2	DATA IN/OUT (+)
3	Common
4	DATA IN (-)
5	Not Used
6	Normally-Closed
7	DATA OUT (-)

Audible Sounder Bases, Fire Mode

AB4G and AB4G-LF sounder bases

KI-ABDT, KI-ABST, KI-ABLT:
Volume Setting
Default = High
Cut/remove jumper for low dB

Jumper cuts

KI-ABLT:
Output Mode
Default = Fire
Cut/remove jumper for Fire plus CO

KI-ABST:
Tone Setting
Default = Temporal
Cut/remove jumper for Steady

KI-ABDT:
Not Used

SIG+   SIG-   DATA- OUT   DATA- IN   DATA+ IN/OUT

24 Vdc in
From power supply or previous base

24 Vdc out
To next base or EOL relay

Data in
From KIR Device Controller or previous device

Data out
to next KIR Series device

Warnings & Cautions

- 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 heat cannot reach the detector. Heat from fires in walls, roofs, or on the opposite side of closed doors may not reach the detector.

- This heat detector by itself does not provide life safety protection Use this detector with ionization and/or photoelectric smoke detectors.

- This detector does not detect oxygen levels, smoke, toxic gases, or flames. Use this device as part of a broad-based life safety program which includes a variety of information sources pertaining to heat and smoke levels, extinguishment systems, visual and audible devices, and other safety measures.

- Independent studies indicate that heat detectors should only be used when property protection alone is involved. Never rely on heat detectors as the sole means of fire protection.
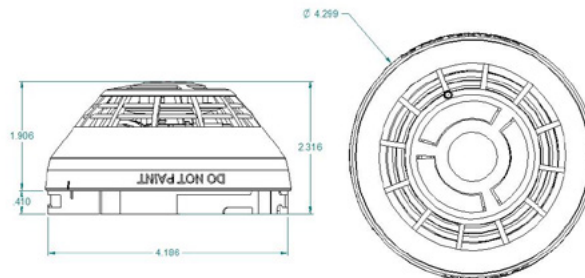
Dimensions

Specifications

ULI fixed-temp alarm rating	135 °F (57 °C)
ULC fixed-temp alarm rating	140 °F (60 °C)
UL rate of rise rating	15 °F(8.3 °C)
Maximum Spacing	50 ft (15 m) centers
Operating voltage	15.2 to 19.95 VDC
Normal operating current	51 µA, average
Alarm current	68 µA, average
Environmental compensation	Automatic
Compatible bases	See Ordering Information Table
Maximum distance from ceiling wall-mounted	12 in (305 mm)
Storage temperature	-4 to 140°F (-20 to 60°C)
Operating environment	Temperature: 32 to 120°F (0 to 49°C); Humidity: 0 to 93% RH, noncondensing at 90°F (32°C)
Agency listings	Meets UL 521, ULC-S530-M91, and CAN/ULC S524-01. Manufactured to ISO 9001 standards.

Ordering Information

Catalog Number	Description	Ship Wt. lbs (kg)
KIR-HD	Intelligent fixed temperature/Rate-of-rise heat detector	0.4 (0.16)

Compatible Bases		
KI-SB	Detector Mounting Base - Standard	
KI-SB4	4-inch Detector Mounting Base c/w Trim Skirt	
KI-RB	Detector Mounting Base w/Relay	0.2 (.09)
KI-RB4	4-inch Detector Mounting Base w/Relay, c/w Trim Skirt	
KI-IB	Detector Mounting Base w/Fault Isolator	
KI-IB4	4-inch Detector Mounting Base w/ Fault Isolator, c/w Trim Skirt	
KI-ABST	Audible (Sounder) Base for Fire Detectors	0.3 (0.15)
KI-ABLT	Low Frequency Audible (Sounder) Base for CO and Fire Detectors	
GSA-LED	Remote Alarm LED (not for EN54 applications)	
KI-RTA	Detector Removal Tool	