

KIDDE

# SERIES 60 FIRE DETECTORS

The Kidde Series 60 range of fire detectors comprises ionisation and optical smoke detectors and five grades of heat detector, all with enhanced performance, high reliability and aesthetically pleasing appearance. Each type incorporates an application-specific chip, using technology originally developed for analogue addressable detectors.

#### Benefits

- Designed to meet world wide approvals
- ASICS for increased reliability
- Polarity insensitive
- High environmental performance
- Ease of installation
- Positive, one-way fit base
- Aesthetically pleasing design

#### Series 60 ionisation smoke detector

The sensing part of the detector consists of two chambers - an open, outer chamber and a semi-sealed reference chamber within.

As smoke enters the detector, it causes a reduction of the current flow in the outer chamber and hence an increase in the voltage measured at the junction between the two chambers. The voltage increase is monitored by the electronic circuitry which triggers the detector into the alarm state at a preset threshold. An



externally visible LED will light up when the detector changes to alarm state.

**Part No: 23900-K031**

An integrating ionisation detector, suitable for use in areas where transient high levels of smoke may be expected, is also available.

**Part No: 23900-K032**

#### Series 60 optical smoke detector

Optical smoke detectors incorporate a pulsing LED located in a labyrinth within the housing of the detector. The labyrinth is designed to exclude light from any external source. At an angle to the LED is a photo-diode which normally does not register the

column of light emitted by the LED.

In the event of smoke from a fire entering the labyrinth the light pulse from the LED will be scattered and hence registered by the photo-diode. If the photo-diode "sees" smoke on the two following pulses, the detector changes to the alarm state. The indicator LED which is clear in quiescent state, changes to red light in alarm.

**Part No: 23900-K034**

#### Series 60 heat detector

Series 60 heat detectors are resettable and operate by using a matched pair of thermistors to sense heat. One thermistor is

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exposed to the ambient temperature, the other is sealed. In normal conditions the two thermistors register similar temperature. On the development of a fire, the temperature recorded by the exposed thermistor will increase rapidly, resulting in an imbalance of the thermistors and causing the detector to change to the alarm state.

Rate of rise detectors are designed to detect a fire as the temperature increases. They also have a fixed upper limit at which the detector will go into alarm if the rate of temperature increase has been too slow to trigger the detector earlier.

Fixed heat detectors only change to the alarm state at a preset temperature.

<b>Part nos:</b>	<b>23900-K035 Grade 1</b>
	<b>23900-K036 Grade 2</b>
	<b>23900-K037 Grade 3</b>
<b>Part nos:</b>	<b>23900-K038 Range 1</b>
	<b>23900 K039 Range 2</b>

### Series 60 intrinsically safe detector range

The Series 60 Intrinsically Safe Detector Range incorporates all the benefits of the standard range, but has been developed specifically for use in hazardous areas. The detectors must be used in a system which includes suitable safety barriers.

<b>Part nos:</b>	
<b>IS Ionisation</b>	<b>23900-K076</b>
<b>IS Integrating Ionisation</b>	<b>23900-K077</b>
<b>IS Heat Detector Grade 1</b>	<b>23900-K078</b>
<b>IS Heat Detector Grade 2</b>	<b>23900-K079</b>
<b>IS Heat Detector Grade 3</b>	<b>23900-K051</b>

<b>IS Heat Detector Range 1</b>	<b>23900-K080</b>
<b>IS Heat Detector Range 2</b>	<b>23900-K081</b>
<b>IS Detector base</b>	<b>23900-K052</b>

### Series 60A combination detector

In addition to providing rapid detection of smoke-producing fires, the Series 60A combination detector responds quickly to flaming fires that produce little or no smoke. As the smoke and heat detection circuits operate independently, their outputs being 'OR' connected, the combination detector provides fire detection performance equivalent to a smoke detector and a 58°C heat detector sited at the same location.

**Part No: 23900-K033**

### Series 60 bases

The base is designed to enable detectors to be plugged in without need for force – particularly useful when fitting to suspended ceilings. The base also incorporates a "one way only" fit. All series 60 bases are lockable. The detectors are polarity insensitive and bases are easy to wire with an earth connector. The standard base contains no electronic parts which could be damaged during installation.

**Standard Series 60 base**  
**Part no: 23902-H03**

For conventional systems that are designed to operate correctly when one or more detector heads have been removed, a base fitted with a diode on Line 1 is available.

**Diode Base**  
**Part no: 23902 H09**

The relay base allows operation of auxiliary item(s) via a relay contact in the detector base which operates for the individual detector alarm condition.

**Relay Base**

**Part no: 23902-H10**

**Zener Base**

**Part no: 23900-K066**

**Low Profile Relay Base**

**Part no: 23900-K068**

### Ancillary items

The air sampling unit allows the Series 60 detector to be used to monitor ventilation ducts.

**Air Sampling Unit**

**Part no: 23902-H11**

The remote indicator unit allows repeat indication of the alarm LED on a detector in a hidden location, eg ceiling void.

**Remote Indicator**

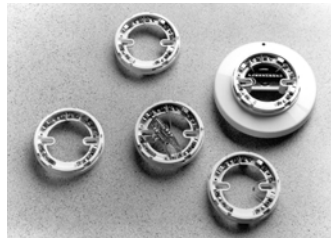
**Part no: 23902-K011**

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## S E R I E S 6 0 S P E C I F I C A T I O N S U M M A R Y

Typical at 23°C and 24 VDC unless otherwise stated	Ionisation (Std)	Ionisation (Integrating)	Optical	Gd.1 Heat 60°C	Gd.2 Heat 65°C	Gd.3 Heat 75°C	Range 1 80°C	Range 2 100°C
Detector Part No.	23900-K031	23900-K032	23900-K034	23900-K035	23900-K036	23900-K037	23900-K08	23900-K039
Base Part No.	23902-H08	23902-H08	23902-H08	23902-H08	23902-H08	23902-H08	23902-H08	23902-H08
Size of Detector (Height x Diameter (mm))	42x100	42x100	42x100	42x100	42x100	42x100	42x100	42x100
Size of Detector in Base (Height x Diameter (mm))	50x100	50x100	50x100	50x100	50x100	50x100	50x100	50x100
Supply Voltage	17-28VDC	17-28VDC	17-28VDC	17-28VDC	17-28VDC	17-28VDC	17-28VDC	17-28VDC
Maximum Quiescent current at 24v	45µA	45µA	45µA	53µA	53µA	53µA	53µA	53µA
Alarm Current at 24v	52mA	52mA	52mA	52mA	52mA	52mA	52mA	52mA
Alarm Indication	Red LED	Red LED	Clear LED	Red LED	Red LED	Red LED	Red LED	Red LED
Normal Operating Temperature (no icing)	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C	-20°C to +105°C	-20°C to +105°C	-20°C to +105°C	-20°C to +105°C	-20°C to +105°C
Humidity (no condensation)	0-95%	0-95%	0-95%	0-95%	0-95%	0-95%	0-95%	0-95%
Max wind (continuous)	10m/s	10m/s	not affected	not affected	not affected	not affected	not affected	not affected
Remote Output Characteristics	900 ohms in series with a 3V drop (suitable for connecting one LED)							

Series 60 smoke and heat detectors have been designed to comply with EN54 (BS5445), which is the European standard for fire protection systems components. The range holds approvals worldwide, including LPC in the UK and VdS in Germany.



**Kidde Fire Protection**

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