650 Series   Smoke and Heat Detectors Conventional

ARITECH

- Ionisation smoke detector
- Optical smoke detector
- 4 heat detectors
- Polarity insensitive
- Common base
- Elegant slim-line design
- EN 54 approved

➔ Ionisation Smoke Detector

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

Mounted in the reference chamber is a low activity radioactive foil of Americium 241 (0.9 microcurie) which enables current to flow between the inner and outer chambers when the detector is powered up.

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.

➔ 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 photovoltaic cell 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 photocell. If the photocell «sees» smoke on two successive pulses, the detector changes to the alarm state and the LED lights up.

➔ Heat Detectors

The heat detectors are resettable and operate by using a matched pair of thermistors to sense heat. One thermistor is exposed to the ambient temperature, the other is sealed. In normal conditions, the two thermistors register similar temperatures, but, 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, but they also have 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.

➔ Standard Base

The base has been designed to enable detectors to be plugged in without any need for force - particularly useful when fitting to suspended ceilings. To make it even easier, the base has a «one way only» fit.

The detectors are polarity insensitive and bases are easy to wire with an earth connector.

The base contains no electronic parts that could be damaged during installation. All bases are lockable.
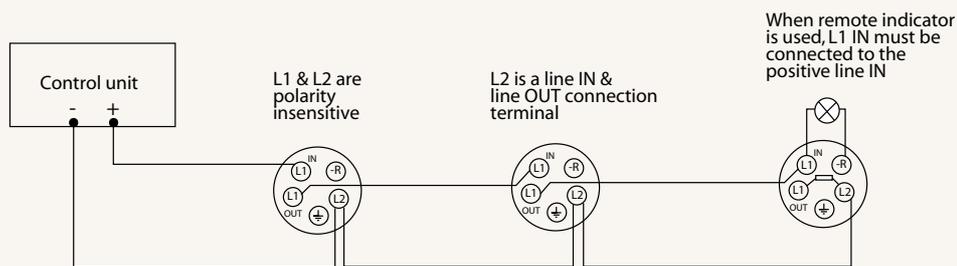
*The **650 Series** smoke and heat detectors are designed for the highest effectiveness by utilising the latest technology.*

an interlogix company

650 Series

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→ Technical data

	DI 650/651 Ionisation	DP 652 Optical	DT 654 Rate of Rise 57°C	DT 655 Heat 75° C	DT 656/657 High temp. 95° C, 90°C
Size of detector (mm)					
Height	42	42	42	42	42
Diameter	100	100	100	100	100
Size of detector + base (mm)					
Height	50	50	50	50	50
Diameter	100	100	100	100	100
Supply voltage	9 - 33 V dc	9 - 33 V dc	9 - 33 V dc	9 - 33 V dc	9 - 33 V dc
Quiescent Current at 24 V (typical)	28 μ A	40 μ A	45 μ A	45 μ A	45 μ A
Alarm indication	LED	LED	LED	LED	LED
Normal operating temperature range (No condensation - No icing)	-20 to + 60°C	-20 to + 60°C	-20 to + 90°C	-20 to + 90°C	-20 to + 90°C
Humidity	0-95% RH	0-95% RH	0-95% RH	0-95% RH	0-95% RH
Max. wind	10m/s	Not affected	Not affected	Not affected	Not affected
Remote alarm output current	17 mA	17 mA	17 mA	17 mA	17 mA
IP Rating	43	43	54	54	54

→ Wiring diagram

Control unit
- +

L1 & L2 are polarity insensitive

L2 is a line IN & line OUT connection terminal

When remote indicator is used, L1 IN must be connected to the positive line IN

→ How to order

DI 650	Ionisation smoke detector	DB 863	Module base
DI 651	Integrating ionisation smoke dectector	DB 650	650 series relay base
DP 652	Optical smoke detector	DB 866	860/950 series deck head mounting base
DT 654	Heat detector, R.O.R., 57° C AIR	DB 860U	As DB 860, Ø 15 cm
DT 655	Heat detector, 75° C BR	TA 865	Link head
DT 656	Heat detector, 95° C CR	TA 870	Test box
DT 657	Heat detector, 90° C CS	AI 671	Mini disc remote indicator
DB 860	Standard base, also locking base	AI 672	Optical remote indicator
DB 861	Backplate for ingress protection 860-950	AI 673	Optical and accoustical remote indicator

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