DISCOVERY SMART INDUSTRIAL HEAT DETECTOR

Part N. ADD 5000-300

Discovery Smart Industrial heat detectors have a common profile with ionization and smoke Industrial detectors but have a low air flow resistance case made of self-extinguishing white polycarbonate.

Discovery Smart Industrial heat detector uses Dual Heat sensing thermistor to accurately Analyzing the air temperature at the detector position. The thermistors are connected in a resistor network, which produces a voltage output dependent on temperature. The design of the resistor network, together with the processing algorithm in the microcontroller, gives an approximately linear characteristic from 10°C to 80°C. This linearized signal is further processed, depending on the response mode selected, and converted to an analogue output.

For the European standard version of the detector, the seven modes correspond to seven “classes” as defined in EN 54-5. The classes in this standard correspond with different response behavior, each of which is designed to be suitable for a range of application temperatures. All modes incorporate “Fixed and Changing temperature” response, which is defined in the standard by both “Static response temperature” and “Rate of raising temperature”. The application temperatures and static response temperatures for all response modes are given in Table 1.

In addition to the basic classification, a detector may be given an “R” or “S” suffix. The “R” suffix indicates that the detector has been shown to have a rate-of-rise characteristic. Such a detector will still give a rapid response even when starting from an ambient temperature well below its typical application temperature. This type of detector is therefore suitable for areas such as unheated warehouses in which the ambient temperature may be very low for long periods.

The “S” suffix on the other hand indicates that the detector will not respond below its minimum static response temperature even when exposed to high rates of rise of air temperature. This type is therefore suitable for areas such as Refineries and Boiler rooms where large, rapid temperature changes are considered normal

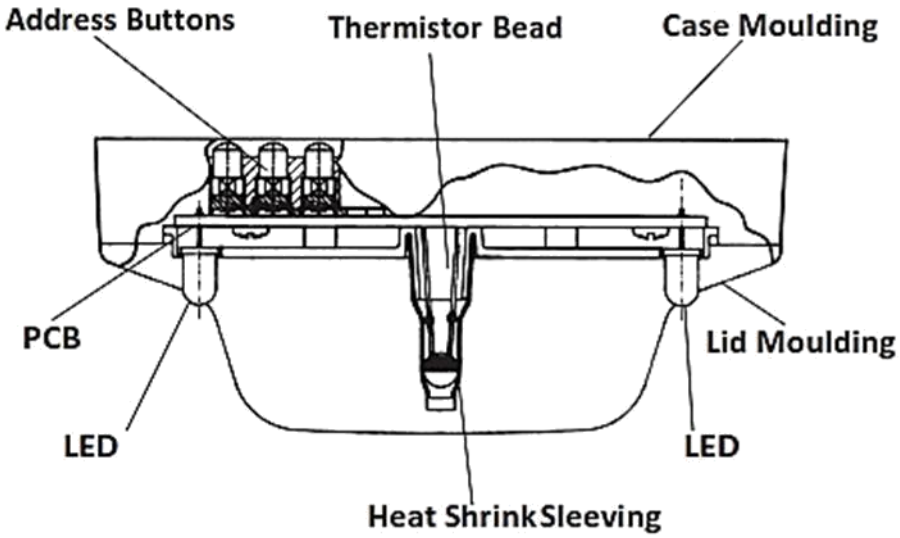

Figure 1 Discovery Smart Industrial Heat Detector sectional view

Mode	Class EN 54-5	Application Temperature		Static Response Temperature		
		Typical	Max	Min	Typ	Max
1	A1R	25°C	50°C	54°C	57°C	65°C
2	A2R	25°C	50°C	54°C	61°C	70°C
3	A2S	25°C	50°C	54°C	61°C	70°C
4	CR	55°C	80°C	84°C	90°C	100°C
5	CS	55°C	80°C	84°C	90°C	100°C
6	BR	40°C	65°C	69°C	74°C	85°C
7	BS	40°C	65°C	69°C	74°C	85°C

Table 1: For air temperatures in the range 15°C to 55°C, the analogue value for a detector in mode 1 will correspond approximately to the air temperature.

Applications:

Fire detectors should always be installed in accordance with all local and national laws and codes of practice. Discovery Smart Industrial Heat Detectors are recommended for Industrial facilities, Restaurants, Parking lots and Warehouses where ambient temperature may be very low for long periods or where large rapid temperature changes are considered normal.

Discovery Smart Industrial Series have been designed by Syncoln's industry-leading engineers using the latest simulation technology and in-house development and testing facilities. They reflect our ambition to deliver a real focus on innovation and are just the start of our journey, with more exciting products in the pipeline.

Discovery Smart Industrial Heat Detector New Features includes:

Improved Environmental Control: Discovery Smart Industrial series provides highly accurate reading e.g. ambient temperature and CO levels. And can forward these to a Fire panel or any building management system – Providing temperature information to within a degree centigrade. This enables the accurate adjustment of air Conditioning and give Air Circulation systems to adjust heating and ventilation.

Faster Status Reporting: Discovery Smart Industrial series flags any events triggered on the system to create fast status alerts. Any devices tampered with are instantly identified and temper flag created. If system is triggered more detailed information is available to help identify why a particular detector was activated Discovery Smart Industrial series.

Intelligent Industrial Addressing: Discovery Smart Industrial devices incorporate a smart industrial isolator which allows the device to be addressed with automatic addressing and soft addressing options via XPERT card in the device. This smart isolator effectively becomes an electronic switch that can isolate sections on the loop making fault finding and diagnostics simpler. Additionally, devices can be grouped and triggered independently. For example, to isolate a single floor of a building for maintenance.

DUAL Heat Sensors: Dual exposed heat sensing thermistors is a advanced and unique feature in Discovery Smart Industrial Heat series which enables the device to run 3 different modes simultaneously and increase stability and reliability that is expected in Industrial or sensitive facilities. The Rising Mode indicates that the detector has been designed to have a rate-of-rise characteristic in which detectors will produce an alarm signal when exposed to a rapid temperature increase. The Static Mode indicates that the detector will not produce an alarm signal below its minimum static response temperature even when exposed to high rates of rise of air temperature. The Dual Mode indicates that both rapid increase in temperature and reaching a specified degree of heat will signal the alarm.

Increased Dust and Humidity resistance: Our new Industrial design with IP54 standards means that less dust and humidity penetrate the outer casing. We have also designed Industrial smart detectors to be less sensitive to any dust that accumulate over long periods of time which highly reduce the chance of False Alarms.

Better Protection from Insects: Our Improved Industrial design which includes a new mesh barrier inside that makes it harder for insects to enter the device and gives them fewer places to hide.

TECHNICAL DATA

Discovery Heat Detector

Part No. 5000-300

Specifications are typical at 24V, 23°C and 50% relative humidity unless otherwise stated.

Detector principle:	Heat sensitive resistance with Dual sensors	
Supply wiring:	Two-wire supply, polarity insensitive	
Terminal functions:	L1 & L2 supply in and out connections	
	+R remote indicator positive connection (internal 2.2kΩ resistance to positive)	
	–R remote indicator negative connection (internal 2.2kΩ resistance to negative)	
Operating voltage:	17–28V DC	
Communication protocol:	Discovery, XP95 & Core Protocol compatible	
	5-9V peak to peak	
Quiescent current:	350µA	
Power-up surge current:	1mA	
Maximum power-up time:	8s	
Alarm current, LED illuminated:	3.4mA	
Remote output characteristics:	Connects to positive line through 4.5kΩ (5mA maximum)	
Alarm level analogue value:	55	
Alarm indicator:	2 red Light Emitting Diodes (LEDs). Optional remote LED	
Temperature range:	Minimum operating temperature	–40°C
	Maximum operating temperature	see Table 1
	Storage	–40°C to 80°C
Humidity:	0% to 95% RH (no condensation or icing)	
Vibration, impact & shock:	EN 54-5	
Designed to IP Rating:	IP54 in accordance with BS EN 60529	
Standards & approvals:	EN 54-5, LPCB	
Dimensions:	100mm diameter x 42mm height	
	(50mm height with XPERT 7 Mounting Base)	
Weight:	Detector	110g
	Detector with Smart Industrial Mounting Base	165g
Materials:	Housing	White polycarbonate UL94-V0
	Terminals	Nickel plated stainless steel

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