



## Model FB-7254G Heat Detector Addressable FB-AP Series®

### Overview

The FB-AP Series® Heat detector is a good choice when the environment is dirty or smoky under normal conditions.

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

The heat detector uses a single thermistor to sense the air temperature at the detector position. The thermistor is 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 50°F to 176°F (10°C to 80°C). This linearized signal is further processed, depending on the response mode selected, and converted to an analog output.

The detectors five modes of operation correspond with different response behaviors, each of which is designed to be suitable for a range of application temperatures.

All modes incorporate “fixed temperature” response, which is shown against the “static response 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 kitchens and boiler rooms where large, rapid temperature changes are considered normal.

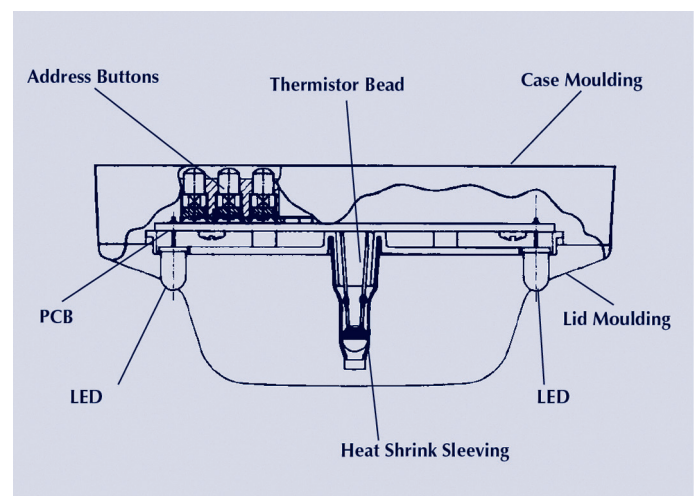


Figure 1 - Sectional view of Heat detector

<p><b>FB-AP Series® Heat Detector Part No 7254-FBD-8450</b></p> <p><b>Specifications are typical at 24V, 72°F (23°C) and 50% relative humidity unless otherwise stated.</b></p> <p><b>Detection principle:</b> Temperature sensitive resistance.</p> <p><b>Type code:</b> Bits 2 1 0 4 3 7 6 5 1 1 0 0 0 0 0 0</p> <p><b>Supply wiring:</b> Two-wire supply, polarity insensitive.</p> <p><b>Terminal functions:</b> L1 &amp; L2 supply in and out connections.</p> <p>+R Remote indicator-positive connection (internal 2.2kΩ resistance to positive)</p> <p>-R remote indicator negative connection (internal 2.2kΩ resistance to negative)</p>	<p><b>Operating voltage:</b> 17–28V DC</p> <p><b>Communication protocol:</b> FireBus-AP™ 5–9V peak to peak</p> <p><b>Quiescent current:</b> 500µA average 750µA peak</p> <p><b>Power-up surge current:</b> 1mA</p> <p><b>Maximum power-up time:</b> 10s</p> <p><b>Alarm current:</b> LED illuminated: 3.4mA</p> <p><b>Remote output characteristics:</b> Connects to positive line through 4.5kΩ (5mA maximum).</p> <p><b>Alarm level analog value:</b> 55</p>	<p><b>Alarm indicator:</b> 2 red Light Emitting Diodes (LEDs). Optional remote LED</p> <p><b>EMI/RFI compatibility:</b> CE marked, A copy of the relevant declaration is available on request.</p> <p><b>Temperature range:</b> Max. continuous operating See table 1 Min. continuous operating 32°F (0° C) Min. operating -4°F (-20°C) (no condensation/icing)</p> <p>Storage -22°F to +176°F (-30°C to +80°C)</p> <p><b>Humidity:</b> 0 to 95% relative humidity (no condensation)</p>	<p><b>Vibration, Impact and Shock:</b> To EN54–7:2000</p> <p><b>IP rating:</b> 53</p> <p><b>Dimensions:</b> 4in (100mm) diameter; 1.6in (42mm) height 2in (50mm) (in base)</p> <p><b>Weight:</b> Detector 3.7oz (105g) Detector in base 5.6oz (160g)</p> <p><b>Materials:</b> Housing: White polycarbonate V-0 rated to UL94</p> <p><b>Terminals:</b> Nickel plated stainless steel</p>
---	--	--	---

Mode	Application Temperature °F (°C)		Static Response Temperature °F (°C)		
	Typical	Maximum	Minimum	Typical	Maximum
1	77 (25)	122 (50)	130 (54)	135 (57)	149 (65)
2	77 (25)	122 (50)	130 (54)	142 (61)	158 (70)
3	77 (25)	122 (50)	130 (54)	142 (61)	158 (70)
4	131 (55)	176 (80)	183 (84)	194 (90)	212 (100)
5	131 (55)	176 (80)	183 (84)	194 (90)	212 (100)

Table 1

For air temperatures in the range 59°F (15°C) to 131°F (55°C), the analog value for a detector in mode 1 will correspond approximately to the air temperature.

### Ordering Information

**Detector:**

7254-FBD-8450 Heat Detector

**Compatible Bases**

- 7254-FBD-4210 Detector Base, 4"
- 7254-FBD-4225 Detector Base, 6"
- 7254-FBD-4234 Detector Base, Low Profile, 6"
- 7254-FBD-4242 Detector Base, Low Power Relay, 4"
- 7254-FBD-4250 Detector Base, E-Z Fit, 6"

**Accessories:**

7254-FBD-4400 Blank XPert Card.

