T54B

Type E Heat Probe Detector

Features

• IP67 Ingress Protection
• Robust Stainless Steel Construction
• Proven Reliability
• Normally-open and Normally-closed versions

Description

The T54B Type E heat detector is a sealed stainless steel tubular device operating on a principle of differential coefficients of expansion. The T54B is available in either normally-open or normally-closed contact configurations. When subjected to heating, the outer stainless steel case lengthens more than the inner strut assembly. Sufficient lengthening of the outer case causes contacts mounted on the inner struts to make or break, as required. This creates a short circuit (or open circuit, as applicable) across the alarm zone circuit triggering an alarm at the control and indicating equipment.

An alarm is triggered when the temperature reaches the detector’s factory-set actuation point. However, a rapid temperature rise will magnify the difference in expansion rates and the detector will alarm faster than if the temperature rise is slow. This partially compensates for the detector’s body temperature lagging behind the ambient temperature. The T54B is non-latching and returns to its normal state when the temperature drops below the set point.

Specifications

Operating Voltage (max.) 32Vdc / 32VAC
Switching Current1 5mA to 200mA
Contact Resistance <1 ohm
Actuating Temp. Range2 60°C to 240°C
Accuracy
  - Set Point +60°C to +145°C +/- 5°C
  - Set Point +160°C to +240°C +/- 5%
Fixed Temp. only
Dimensions (dia.x D) 15 mm x 100 mm
Material
  - Stainless Steel
Weight
  - 95g
Ambient Temperature
  - Set Point +60°C to +145°C -40°C to +175°C
  - Set Point +160°C to +240°C -40°C to +280°C
Relative Humidity
  - 100%
Ingress Protection
  - IP67
ActivFire Listed
  - afp-1612
FPANZ Listed
  - VF/214
Part Number Format3 T4EnnnX/T4EnnnNC

1. Resistive loads only. 2. Actuating temperature is factory-set. 3. nnn represents temperature in degrees C.
Mounting
The T54B’s external M20 conduit thread is used to screw the device to a suitable bracket or mounting enclosure. The T54B is not certified as flameproof, but may be used as a simple device in an intrinsically safe system when used with an appropriate I.S. barrier, with the approval of the authority having jurisdiction. Note: Do not tighten by tubular body, always use the hexagon provided. Do not exceed torque of 25 Nm.

Wiring
To comply with AS 1603.1 and AS 1670.1, the flying leads must be terminated by connections within a mounting enclosure for the detector.

T54B Selection Guide
For reliable operation, it is recommended that T54B detectors have set points 20°C or 20% (whichever is higher) above the maximum anticipated ambient temperature. The nearest preferred value T54B detector above the calculated set point should be used – refer to the table below.

<table>
<thead>
<tr>
<th>AMBIENT TEMPERATURE RANGE (°C)</th>
<th>DETECTOR SET TEMPERATURE (°C)</th>
<th>AMBIENT TEMPERATURE RANGE (°C)</th>
<th>DETECTOR SET TEMPERATURE (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 40</td>
<td>60*</td>
<td>101 - 110</td>
<td>132</td>
</tr>
<tr>
<td>41 - 46</td>
<td>66*</td>
<td>111 - 120</td>
<td>145*</td>
</tr>
<tr>
<td>47 - 52</td>
<td>72</td>
<td>120 - 133</td>
<td>160</td>
</tr>
<tr>
<td>53 - 60</td>
<td>80*</td>
<td>134 - 150</td>
<td>180</td>
</tr>
<tr>
<td>61 - 70</td>
<td>90*</td>
<td>151 - 166</td>
<td>200</td>
</tr>
<tr>
<td>71 - 80</td>
<td>100*</td>
<td>167 - 183</td>
<td>220</td>
</tr>
<tr>
<td>81 - 90</td>
<td>110*†</td>
<td>184 - 200</td>
<td>240</td>
</tr>
<tr>
<td>91 - 100</td>
<td>120</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Normally-open values usually available ex-stock.
† Normally-closed value usually available ex-stock NZ.
Others available with a minimum order quantity of 20.

Please contact Customer Service to discuss your requirements.

Latching Indicators
Johnson Controls has available a range of Latching Indicators suitable for use with the T54B probe-type heat detectors. These indicators provide a visual alarm indication even after a T54B has self-reset. The Indicators are reset from the CIE during a zone reset. Note: These Latching Indicators are not suitable for use in hazardous areas and thus must not be connected to a T54B that is in a hazardous location.

The latching indicators are rated at: 30Vdc maximum, 25mA @45°C; 15mA@75°C, Maximum Ambient Temp. 75°C.