FIRE SYSTEMS PRODUCTS

T54B
Probe Type Heat Detector

INFORMATION SHEET

DESCRIPTION

The T54B Type E heat detector is a sealed stainless steel tubular device operating on a principal of differential coefficients of expansion. The T54B is available in either normally open or normally closed contact configurations. When subject to heat, the outer stainless steel lengthens more than the inner strut assembly. Sufficient lengthening of the outer tube 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 and triggers an alarm at the control and indicating equipment. An alarm is normally triggered when the temperature reaches the detector's factory set, actuation set point. However, a rapid temperature rise will magnify the difference in expansion rates and the detector will alarm earlier, that is, at a lower body temperature 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.

INSTALLATION

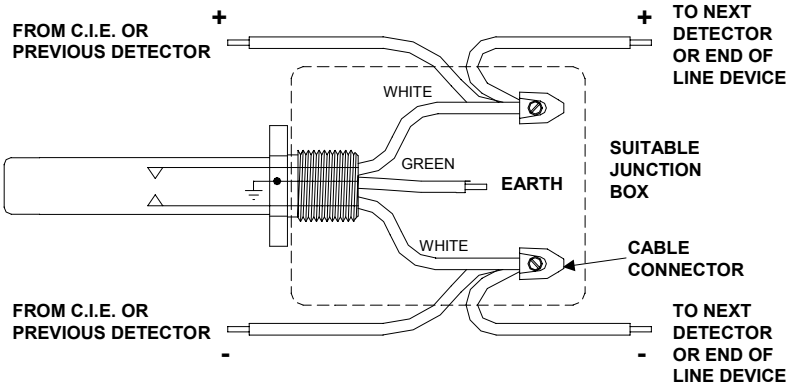
Mounting

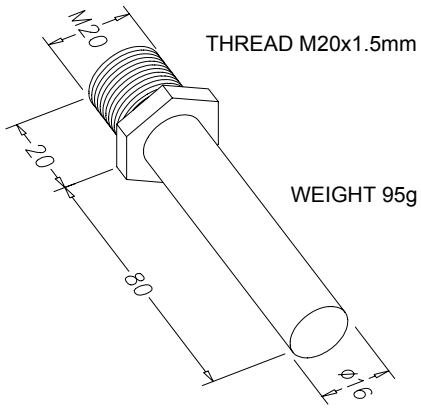
The T54B's external M20 conduit thread is used to screw the device to a suitable bracket or enclosure. The T54B is not currently certified as flameproof, but may be used as a simple device in an intrinsically safe system when used with an appropriate intrinsically safe barrier, with the approval of the 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 AS1670.1, the flying leads must be terminated by connections within a mounting enclosure for the detector.





T54B Heat Detector

SPECIFICATIONS

Electrical

Operating Voltage (max.)	32VDC/32VAC
Alarm Current *	5mA to 200mA

* Resistive loads only

Environmental

Actuating Temp. Range#	60°C to 240°C
Accuracy	
Set Point 60°C - 100°C	±5°C
Set Point 110°C - 240°C	±5%
Ambient Temperature:	
Set Point 60°C - 145°C	-40 to 175°C
Set Point 160°C - 240°C	-40 to 280°C
Relative Humidity (non condensing)	100%
Protection Category	IP67
Contact Resistance (max.)	1 Ohm
SSL ActivFire registered	afp-1612

\# Factory Set

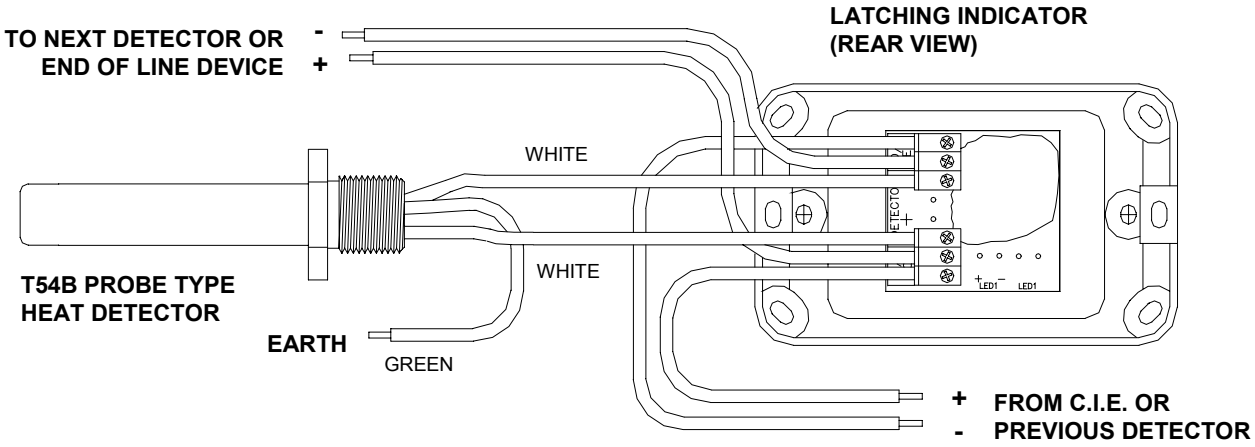
Part Numbers (Normally Open contacts†)

T54B heat detector 60°C	T4E60X
likewise for temperatures 66, 72, 80, 90, 100,110, 120, 132, 145, 160, 180, 200, 220, 240 to	
T54B heat detector 250°C	T4E250X

† For T54Bs with Normally Closed contacts, refer to Customer Service

Latching Indicators with legend	
Fire Alarm in Room	E573
Fire Alarm Above	E574
Fire Alarm in Duct	E575

Wiring (continued)



LATCHING INDICATORS

Tyco Safety Products 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 normal zone reset.

Note: These Latching Indicators are not approved 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 temperature 75°C

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 ambient temperature.

The T54B heat detector is produced with a fixed range of set temperatures, the nearest preferred value T54B detector above the calculated set point should be used.

For ambient temperatures up to and including 100°C, add 20°C to the ambient temperature to find the T54B set temperature. E.g. if the maximum ambient temperature is 65°C, add 20°C to 65, - i.e. 65 + 20 = 85 - then select the next highest preferred value T54B detector - i.e. 90°C.

For ambient temperatures above 100°C, add 20% to the ambient temperature to find the T54B set temperature. E.g. if the maximum ambient temperature is 160°C, add 20% to 160 - i.e. 160 + (160 x 0.2) = 192 - then select the next highest preferred value T54B detector - i.e. 200°C.

Ambient Temperature Range For Preferred Value T54B Detectors

AMBIENT TEMPERATURE RANGE (°C)	DETECTOR SET TEMPERATURE (°C)
0 - 40	60
41 - 46	66
47 - 52	72
53 - 60	80
61 - 70	90
71 - 80	100
81 - 90	110
91 - 100	120

AMBIENT TEMPERATURE RANGE (°C)	DETECTOR SET TEMPERATURE (°C)
101 - 110	132
111 - 120	145
121 - 133	160
134 - 150	180
151 - 166	200
167 - 183	220
184 - 200	240