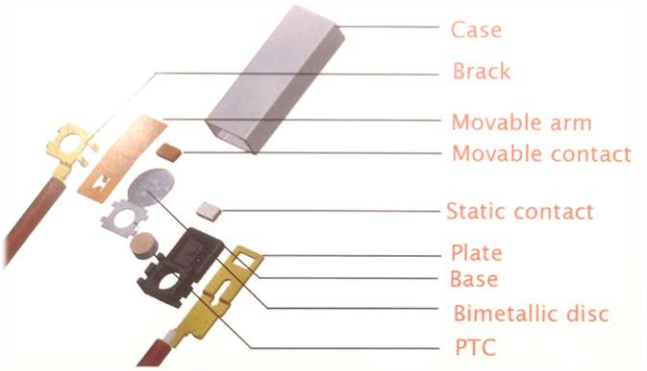
Thermal Protector TB11 Series

- **Normally Close or Normally Open**
- **Available with PTC self-hold**
- **Small, compact design**
- **Snap action bimetal**
- **Plastic or Metal Case**
- **Suitable for vacuum impregnation**
- **Customization**

Applications

Over temperature protection in small electrical appliances, as winding protection, in transformers, electric motors, electromagnetic coils, and thermal protection in small electrical appliances.



Function

The temperature switches of the TB11 series are sensitive to temperature and overload current.
If the overload current through the TB11 is very high, it heats itself and trip to cut-off the application.
The detection of the temperature carried out by means of a bimetal disc. The TB11 can designed as normally closed (NC) or normally open (NO). After cooling down and reaching the switchback temperature of the bimetal disc, the temperature switch automatically switches back to its original position. If PTC self-hold is specified, the power must shout down, so the bimetallic disc cools and the bimetal reset the circuit.
The TB11 series is suitable for common vacuum impregnation processes.

Technical Data

Function	Normally closed (NC) / Normally open (NO)	Normally closed (NC) with PTC self-hold
Switching temperature in 5K steps	35°C ... 160°C (TÜV)	35°C ... 160°C
Tolerance (Standard)	± 5K	± 5K
Reset temperature	Dependent on specification	Dependent on specification
Cycles at AC 250V / 11.0A cos φ 1.0	10.000	10.000
Cycles at AC 115V / 13.0A cos φ 1.0	10.000	10.000
Cycles at DC 24V / 15.0A	10.000	10.000
Cycles at DC 16V / 16.0A	10.000	10.000
Contact resistance	< 50mΩ	< 50mΩ
Insulation voltage	> AC 2.0 kV / 1min	> AC 2.0 kV / 1min
Lead wire length (Standard)	75 ± 2mm	75 ± 2mm
recognized standards	TÜV EN 60730-1:2011; TÜV EN 60730-2-9:2010; UL 60730-1; UL 60730-2-9; CQC GB 14536.1-2008; CQC GB 14536.3-2008	TÜV EN 60730-1:2011; TÜV EN 60730-2-9:2010; UL 60730-1; UL 60730-2-9

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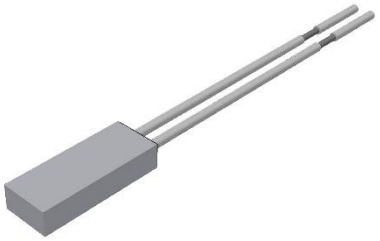
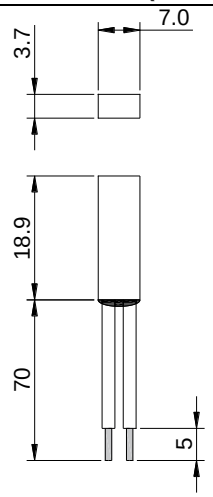
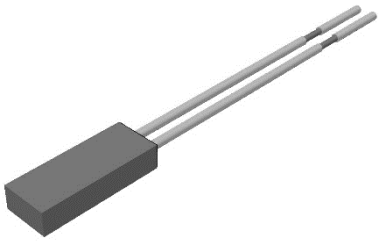
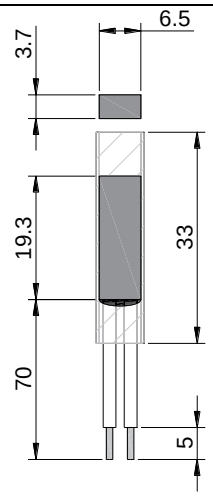
Available designs

Type	Model	Illustration	Dimensions (mm)	Description
TB11	**5**			Plastic case >100 N pressure resistance
TB11	**1**			Metal case with isolation sleeve >200 N pressure resistance

Available switching & reset temperatures

Switching temp.	Reset temp.	Reset with PTC
30°C ± 4K	≥ 20°C	≥ 20°C
35°C ± 4K	≥ 25°C	≥ 25°C
40°C ± 4K	≥ 30°C	≥ 30°C
45°C ± 4.5K	≥ 33°C	≥ 33°C
50°C ± 5K	≥ 35°C	≥ 35°C
55°C ± 5K	42°C ± 6K	42°C ± 8K
60°C ± 5K	45°C ± 8K	45°C ± 8K
65°C ± 5K	48°C ± 10K	45°C ± 10K
70°C ± 5K	50°C ± 12K	45°C ± 12K
75°C ± 5K	53°C ± 14K	45°C ± 14K
80°C ± 5K	55°C ± 15K	45°C ± 15K
85°C ± 5K	60°C ± 15K	45°C ± 15K
90°C ± 5K	65°C ± 15K	45°C ± 15K
95°C ± 5K	70°C ± 15K	45°C ± 15K

Switching temp.	Reset temp.	Reset with PTC
100°C ± 5K	70°C ± 15K	45°C ± 15K
105°C ± 5K	75°C ± 15K	45°C ± 15K
110°C ± 5K	75°C ± 15K	45°C ± 15K
115°C ± 5K	80°C ± 15K	45°C ± 15K
120°C ± 5K	85°C ± 15K	45°C ± 15K
125°C ± 5K	85°C ± 15K	45°C ± 15K
130°C ± 5K	90°C ± 15K	45°C ± 15K
135°C ± 5K	95°C ± 15K	45°C ± 15K
140°C ± 5K	100°C ± 15K	45°C ± 15K
145°C ± 5K	100°C ± 15K	50°C ± 20K
150°C ± 5K	105°C ± 15K	50°C ± 20K
155°C ± 5K	110°C ± 15K	55°C ± 20K
160°C ± 5K	115°C ± 15K	55°C ± 20K

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Order Code

TB11 - B Y 1 D . 130 . 05 . 75-5/75-5

Type:
TB11

Function:
B = Normally Close (NC)
K = Normally Open (NO) (no PTC)

Model:
B = Temperature & overload sensitive
Y = Temperature sensitive with PTC self-hold

Case material:
1 = Metal
5 = Plastic

Voltage type:
D = High voltage AC 110V ... 250V
L = Low voltage DC 9V ... 24V

Switching temperature:
35°C ... 160°C
in 5K steps

Tolerance:
05 (± 5K)

Lead wire length:
L1 & L2 = 75mm (Standard)
Stripped = 5mm

Example: TB11-BY1D.130.05.75-5/75-5

Available wire / lead wire specifications

Insulation material	Temperature max.	Size	UL-Style
Silicone	200°C	AWG 18	3135

The standard lead wire length is 75mm, 5mm are stripped.
Customized lead wires are available on request.

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