



TB02

TECHNICAL SPECIFICATION FOR THERMAL PROTECTOR TB02

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Technical Specification of TB02 Thermal Protector

1 Usage

TB02 thermal protector possess the benefits of miniature size, shell insulation, sensitive in action, long life etc. It is widely used in battery pack, fractional horsepower motor, electric heating appliance, fluorescent lamp ballast, transformer, automobile motor, integrated circuit and general electrical equipment.

2 Appearance and structure :

Plastic Shell Sizes	15.0mm (L) *5.4mm (W) *2.4mm (H) → STANDARD 13.5mm (L) *5.4mm (W) *2.4mm (H) → only on request 12.0mm (L) *5.0mm (W) *2.0mm (H) → only on request
Metal Shell Sizes	14.0mm (L) *5.0mm (W) *2.4mm (H) → STANDARD 11.5mm (L) *5.0mm (W) *2.4mm (H) → only on request

3 Property

3.1 Voted current: 4A/DC12V 、 3A/DC24V 、 3A/AC115V 、 2A/AC250V

3.2 Opening temperatures : 60°C...155°C

Reset temperatures: 45°C...110°C

3.3 Tensile test: The leads end of the product shall be able to withstand a tension force $\geq 50N$, and the lead shall not break or slip out.

3.4 Insulation voltage:

a. It should be able to withstand AC660V between leads when the product disconnected, lasting for 30s without breakdown and flashover

b. It should be withstand AC1800V between the leads and insulation shell, lasting for 1S without breakdown and flashover;

3.5 Insulation resistance: Under normal conditions, fuses and insulation shell insulation resistance in 100M Ω above. (used for DC500V meter)

3.6 Contact resistance: Product contact resistance shall not be more than 50m Ω .

3.7 High temperature resistant test:

- a. The action temperature should keep in 96h in temperature of 20°C rated movements in air environment.
- b. The limit temperature of 5 minutes is 180 °C

3.8 Low temperature resistance test: product should keep in 96h when in air environment - 40 °C

3.9 Ant-vibration test:

thermal protectors shall withstand amplitude, frequency changing 1.5mm 10~55Hz, scanning change cycle 3-5 times/min, vibration direction X,Y,Z, in each direction, each successive 2h vibration.

3.10 Drop test: products high free fall from 0.7 m.

3.11 Compression test: products shall stand 1min in 100N static pressure.

3.11 should meet the following requirements:

- a. Disconnect temperature changes in the initial value should be within +7°C
- b. Appearance should be no obvious deformation;
- c. Wires should without cracking damage.

4. Under the condition of rated voltage, current and power factor of 0.7

(in AC circuit, the cosine of phase difference (Φ) between voltage and current is called power factor, which is expressed by the symbol $\cos \Phi$. In numerical value, power factor is the ratio of active power to apparent power, i.e. $\cos \Phi = P / S$), and the external heat source makes it operate for 6,000 times. The following conditions shall be met:

- a. Disconnect temperature changes in the initial value should be within +5K
continue experiment in 10,000 times after action.

5. Other items:

- 5.1 1°C/min; Disconnect the temperature detection
- 5.1 heating rate should be controlled for 1°C/min,
- 5.2 Use process cannot bear strong impact and stress.

5.3. Models of specifications

5.3.1 Normally closed type

Plastic Type = TB02-BB8D-XXXC (XXX = voted disconnect temperature)
Metal Type = TB02-BB1D-XXXC (XXX = voted disconnect temperature)

6. Certifications:

VDE Certificate No: 40016121

CB Certificate No: CN50847

CQC Certificate No: CQC05002013372

UL Certificate No: E305764

ISO9001 Certificate No: 00120Q34918R5M/3200

TÜV Certificate No: R50109800/R50110965

KC certification No: ZU02062- 14001B

7. Table of temperature parameters

NO	OPEN	CLOSE	NO	OPEN	CLOSE
30	30 ± 3°C	≥20°C	100	100 ± 5°C	70 ± 15°C
35	35 ± 3.5°C	≥25°C	105	105 ± 5°C	75 ± 15°C
40	40 ± 4°C	≥30°C	110	110 ± 5°C	75 ± 15°C
45	45 ± 4.5°C	≥33°C	115	115 ± 5°C	80 ± 15°C
50	50 ± 5°C	≥35°C	120	120 ± 5°C	85 ± 15°C
55	55 ± 5°C	42 ± 6°C	125	125 ± 5°C	85 ± 15°C
60	60 ± 5°C	45 ± 8°C	130	130 ± 5°C	90 ± 15°C
65	65 ± 5°C	48 ± 10°C	135	135 ± 5°C	95 ± 15°C
70	70 ± 5°C	50 ± 12°C	140	140 ± 5°C	100 ± 15°C
75	75 ± 5°C	53 ± 14°C	145	145 ± 5°C	100 ± 15°C
80	80 ± 5°C	55 ± 15°C	150	150 ± 5°C	105 ± 15°C
85	85 ± 5°C	60 ± 15°C	155	155 ± 5°C	110 ± 15°C
90	90 ± 5°C	65 ± 15°C	160	160 ± 5°C	115 ± 15°C
95	95 ± 5°C	70 ± 15°C			