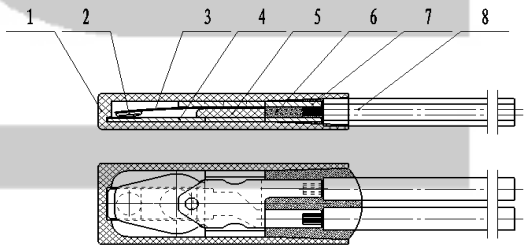
Shenzhen Rui Chi Electronics Co., Ltd.,

Technical Specification of TB02-BB8D/TB02-KA8D Thermal Protector

Product use

TB02-BB8D thermal protector has the characteristics of small size, insulated shell, sensitive action and long life. It is widely used for overheating of fractional horsepower motors, electric heating appliances, fluorescent lamp ballasts, transformers, automobile motors, integrated circuits and general electrical equipment Double protection of overcurrent.

Shape and structure:



Note: The shell material is temperature resistant to 200℃, and the combustion level is V-0

NO.	PART NAME	MATERIAL NAME	NO	PART NAME	MATERIAL NAME
1	Shell	PBT CRN7030/	5	Fixed seat	PBT CRN7030
2	Moving contacts	AgNi/BZn	6	Epoxy	9001A
3	bimetal	P30R	7	Moving contact	BZn
4	Static fontact piece	AgNi10/BZn	8	wire	3266 #22

1 Performance

1.1 Rated current

DC24V 2A, /2A AC115V, 2A/AC250V/ 3A 250V /5A 24V

Size: Length 10 Height 2.* Width 5. 15.5*2.4*5.4 13.5*2.4*5.4 Unit: MM

Rated operating temperature code and reset temperature:

ITEM	ACTION TEMP	RESET TEMP	ITEM	ACTION TEMP	RESET TEMP
30℃	30±3℃	≥20℃	80℃	80±5℃	55±15℃
35℃	35±3.5℃	≥25℃	85℃	85±5℃	60±15℃
40℃	40±4℃	≥30℃	90℃	90±5℃	65±15℃
45℃	45±4.5℃	≥33℃	95℃	95±5℃	70±15℃
50℃	50±5℃	≥35℃	100℃	100±5℃	70±15℃

RUICHI

55℃	55±5℃	42±6℃	105℃	105±5℃	75±15℃
60℃	60±5℃	45±8℃	110℃	110±5℃	75±15℃
65℃	65±5℃	48±10℃	115℃	115±5℃	80±15℃
70℃	70±5℃	50±12℃	120℃	120±5℃	85±15℃
75℃	75±5℃	53±14℃	125℃	125±5℃	95±15℃
80℃	80±5℃	55±15℃	145℃	145±5℃	100±15℃
85℃	85±5℃	60±15℃	150℃	150±5℃	105±15℃
90℃	90±5℃	65±15℃	155℃	155±5℃	110±15℃

1.2 Tensile strength test: The lead end of the product should be able to withstand a tensile force greater than or equal to 20N, and the wire should not be broken or slipped out. ,

1.3 nsulation voltage:

1.4 a The product should be able to withstand AC660V between the leads when it is disconnected for 1 min without breakdown and flashover;

1.5 b. The product lead and the insulating shell can withstand AC1800V for 1S without breakdown flashover;

1.6 Insulation resistance: Under normal conditions, the insulation resistance between the lead and the insulating shell is above 100MΩ. (The meter used is a DC500V megohmmeter)

1.7 Contact resistance: The contact resistance of the product should not be greater than 50mΩ.

1.8 High temperature resistance test: The product is placed in an air environment 50℃ higher than the rated operating temperature for 96h.

1.9 Low temperature resistance test: The product is placed in an air environment of -40℃ for 96h.

1.10 Anti-vibration test: The thermal protector should be able to withstand amplitude 1.5mm, frequency change 10～55Hz, scanning change cycle 3～5 times/min, vibration direction X, Y, Z, continuous vibration in each direction for 2h.

1.11 Drop test: The product falls freely from a height of 0.7m once.

1.12 Compression test: The product should be able to withstand 100N static pressure for 1 min.

1.13 The following conditions shall be met after the tests of:

1.14 a The disconnection temperature change should be within +7℃ of the initial value;

1.15 b The contact resistance should be below 100mΩ;

1.16 c There should be no obvious deformation in the shape;

1.17 d The wire has no cracking damage.

2 life

2.1Under the conditions of rated voltage, current, and power factor of 0.7, the external heating source makes the product operate 10,000 times, and the following conditions should be met:

2.2a The disconnection temperature change should be within +5℃ of the initial value;

2.3b The contact resistance should be below 100mΩ;

3 Other matters:

3.1 The heating rate of the disconnection temperature detection should be controlled to 1℃ /1min;

3.2 The product cannot withstand strong impact and pressure during use;

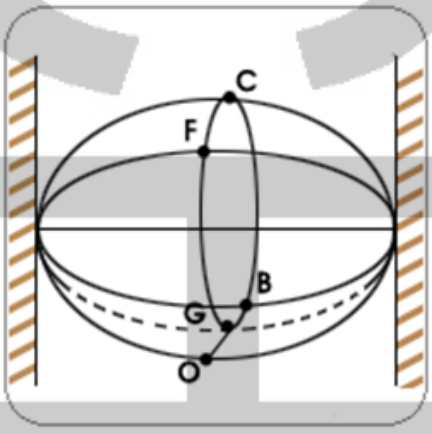
3.3 Model specification description:

TB02-BB8D/TB02-KA8D——Product Model

***℃——Rated disconnection:

3 Matters not covered by this standard or the customer has other requirements to be formulated separately

4 The working principle of the bimetallic temperature switch: The temperature switch bimetallic is combined with two alloys with different thermal expansion coefficients on both sides, and then the temperature is conducted by the surface of the aluminum cover of the temperature switch. After the bimetallic is heated, the temperature change is converted into Mechanical movement, ordinary, low expansion layer uses Ni-Fe alloy, high expansion layer uses Ni-Mn-Cu alloy, or Fe-Ni-Cr alloy. Various materials can be selected according to different expansion coefficients. The temperature switch and thermostat are made of bimetallic discs. When the temperature rises and reaches the set temperature, the center of the temperature switch bimetal can be flipped instantaneously. When the temperature drops, it can restore the original position. , Made into a component that converts temperature into mechanical motion.



5 As shown in the figure above, when the temperature rises, the center of the bimetal slowly moves from the point '0' to the point'A'. When the speed becomes faster and reaches the point'B', the center of the bimetal instantly changes from Point'B' is flipped to point'C'. At this time, if the temperature drops, the center of the bimetallic strip slowly moves from point'C' to point E'. When it reaches the point'F', the center of the bimetallic strip instantly flips to the point'G' (return to its original state). . The bimetals made into a certain shape can be repeated according to the cycle of G -> A -> B -> C -> E -> F -> G. The temperature change from B->C is the open temperature (Open Temp), and the temperature change from F -> G is the recovery temperature (Close Temp). The difference between the disconnect temperature and the recovery temperature is called the depressor.

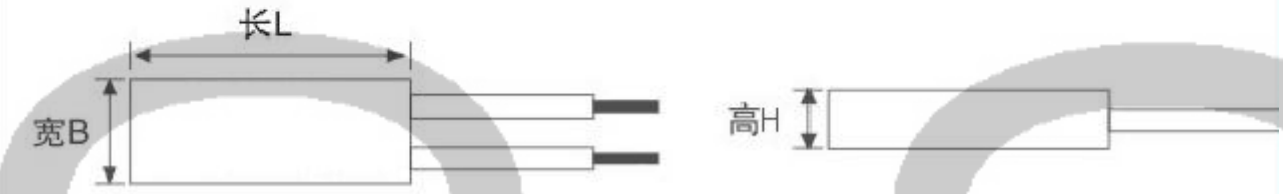
Using the above-mentioned rebound characteristics, the bimetallic temperature switch made is called Thermostat.

Hot Model		
2A	**3A**	**5A**
TB02-BB8D/TB02-KA8D 10*C 2A	TB02-BB8D/TB02-KA8D 10*C 3A	TB02-BB8D/TB02-KA8D 10*C 5A
TB02-BB8D/TB02-KA8D 15*C 2A	TB02-BB8D/TB02-KA8D 15*C 3A	TB02-BB8D/TB02-KA8D 15*C 5A
TB02-BB8D/TB02-KA8D 20*C 2A	TB02-BB8D/TB02-KA8D 20*C 3A	TB02-BB8D/TB02-KA8D 20*C 5A
TB02-BB8D/TB02-KA8D 25*C 2A	TB02-BB8D/TB02-KA8D 25*C 3A	TB02-BB8D/TB02-KA8D 25*C 5A
TB02-BB8D/TB02-KA8D 30*C 2A	TB02-BB8D/TB02-KA8D 30*C 3A	TB02-BB8D/TB02-KA8D 30*C 5A
TB02-BB8D/TB02-KA8D 35*C 2A	TB02-BB8D/TB02-KA8D 35*C 3A	TB02-BB8D/TB02-KA8D 35*C 5A
TB02-BB8D/TB02-KA8D 40*C 2A	TB02-BB8D/TB02-KA8D 40*C 3A	TB02-BB8D/TB02-KA8D 40*C 5A
TB02-BB8D/TB02-KA8D 45*C 2A	TB02-BB8D/TB02-KA8D 45*C 3A	TB02-BB8D/TB02-KA8D 45*C 5A
TB02-BB8D/TB02-KA8D 50*C 2A	TB02-BB8D/TB02-KA8D 50*C 3A	TB02-BB8D/TB02-KA8D 50*C 5A
TB02-BB8D/TB02-KA8D 55*C 2A	TB02-BB8D/TB02-KA8D 55*C 3A	TB02-BB8D/TB02-KA8D 55*C 5A
TB02-BB8D/TB02-KA8D 60*C 2A	TB02-BB8D/TB02-KA8D 60*C 3A	TB02-BB8D/TB02-KA8D 60*C 5A
TB02-BB8D/TB02-KA8D 65*C 2A	TB02-BB8D/TB02-KA8D 65*C 3A	TB02-BB8D/TB02-KA8D 65*C 5A
TB02-BB8D/TB02-KA8D 70*C 2A	TB02-BB8D/TB02-KA8D 70*C 3A	TB02-BB8D/TB02-KA8D 70*C 5A
TB02-BB8D/TB02-KA8D 75*C 2A	TB02-BB8D/TB02-KA8D 75*C 3A	TB02-BB8D/TB02-KA8D 75*C 5A
TB02-BB8D/TB02-KA8D 85*C 2A	TB02-BB8D/TB02-KA8D 85*C 3A	TB02-BB8D/TB02-KA8D 85*C 5A
TB02-BB8D/TB02-KA8D 80*C 2A	TB02-BB8D/TB02-KA8D 80*C 3A	TB02-BB8D/TB02-KA8D 80*C 5A
TB02-BB8D/TB02-KA8D 90*C 2A	TB02-BB8D/TB02-KA8D 90*C 3A	TB02-BB8D/TB02-KA8D 90*C 5A
TB02-BB8D/TB02-KA8D 95*C 2A	TB02-BB8D/TB02-KA8D 95*C 3A	TB02-BB8D/TB02-KA8D 95*C 5A
TB02-BB8D/TB02-KA8D 100*C 2A	TB02-BB8D/TB02-KA8D 100*C 3A	TB02-BB8D/TB02-KA8D 100*C 5A
TB02-BB8D/TB02-KA8D 105*C 2A	TB02-BB8D/TB02-KA8D 105*C 3A	TB02-BB8D/TB02-KA8D 105*C 5A
TB02-BB8D/TB02-KA8D 100*C 2A	TB02-BB8D/TB02-KA8D 100*C 3A	TB02-BB8D/TB02-KA8D 100*C 5A
TB02-BB8D/TB02-KA8D 110*C 2A	TB02-BB8D/TB02-KA8D 110*C 3A	TB02-BB8D/TB02-KA8D 110*C 5A
TB02-BB8D/TB02-KA8D 115*C 2A	TB02-BB8D/TB02-KA8D 115*C 3A	TB02-BB8D/TB02-KA8D 115*C 5A
TB02-BB8D/TB02-KA8D 120*C 2A	TB02-BB8D/TB02-KA8D 120*C 3A	TB02-BB8D/TB02-KA8D 120*C 5A
TB02-BB8D/TB02-KA8D 125*C 2A	TB02-BB8D/TB02-KA8D 125*C 3A	TB02-BB8D/TB02-KA8D 125*C 5A
TB02-BB8D/TB02-KA8D 135*C 2A	TB02-BB8D/TB02-KA8D 135*C 3A	TB02-BB8D/TB02-KA8D 135*C 5A

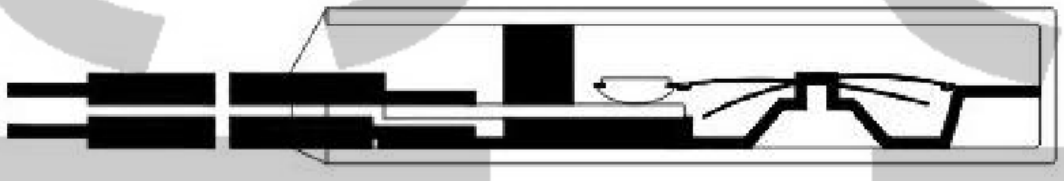
Shenzhen Rui Chi Electronics Co., Ltd.,

Lead length can be customized

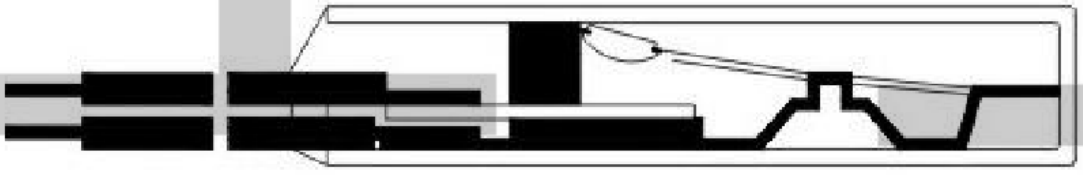
15.5	2.4	5.4
10	2	5



Temperature control switch before work



Temperature control switch after work



RUICHI