

## Specification For Approval

**Customer name :** \_\_\_\_\_

**Product name :** **Thermal Protector**

**Customer PN :** \_\_\_\_\_

**MFG PN :** **BW-DOP Series**

MFG			Customer Confirmation		
Make	Check	Approval	Test	Check	Approval

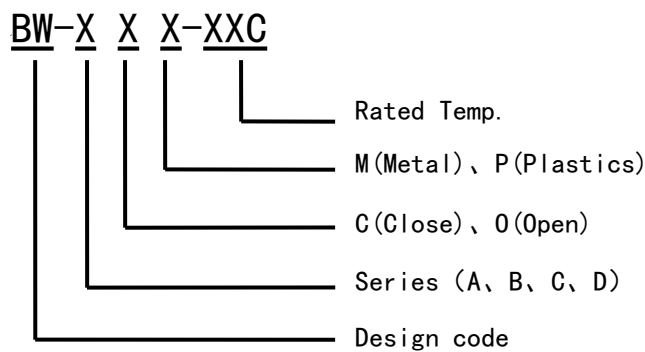
### 1. Application scope:

BW Series thermal protector has small, nimble, long life and other characteristics, widely used in a variety of tubular motor, induction cooker, vacuum cleaners, coils, transformers, electric heaters, ballast, electric appliances, fluorescent lamp ballasts, auto motor, IC and general electrical equipment overheating over current double protection.

### 2. Product Features:

BW series thermal protector is to adopt a certain geometry of bimetallic strip, without auxiliary mechanism, only by the bimetallic strip themselves feeling gentle heating current, rapid changes in the state of the bimetallic element, direct drive contact automatic cutting and processing circuit, overheat and overload protection

### 3. Product category & Part Number:



Example:

BW-DOP-120C

BW ——Model Number.

D ——Series NO.

O ——Normal Open

P ——Plastic shell

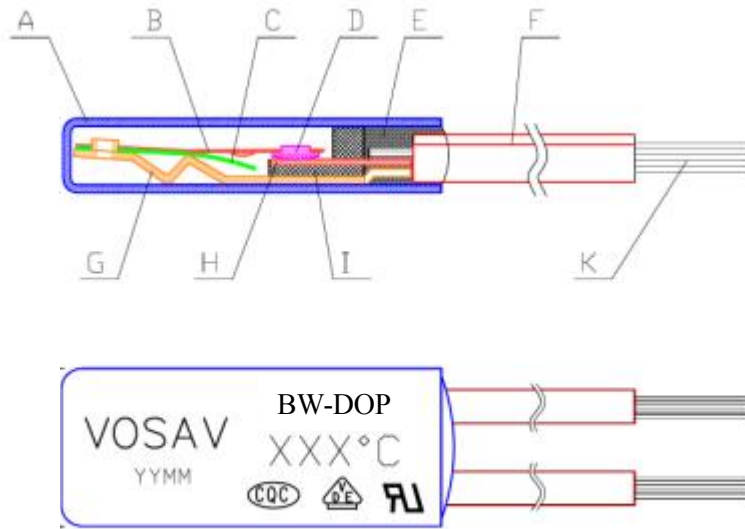
120C ——Rated temp.

### 4. Product dimension:

4.1 Plastic shell: 3.5mm×7.0mm×15.0mm

4.2 Metal shell: 3.8mm×7.4mm×20.0mm

4.3 Dimension: mm



#### 4.4 Material list

Code	Name	Material	Code	Name	Material
A	Plastic case	PBT	G	Base	Cu H62
B	Shrapnel	Bronze	H	Static contact	AgNi10/Cu
C	Bimetal	BR-1	I	Insulator	PBT-VG30
D	Action contact	AgNi10/Cu	K	Immersion Tin	Environmental tin
E	Sealants	Epoxy resin			
F	Cable	22#-70mm			

#### 5. Appearance:

- ✓ Thermal protector of shell can not have burrs, the phenomenon such as corrosion, crack, deformation;
- ✓ Logo should be correct, correct, clear, durable resistance to wipe;

#### 4.1 Performance: Electrical rating:

- ✓ Rated current: **10A/DC24V、10A/AC115V、5A/AC250V**
- ✓ Maximum short circuit current: DC 12V 100A
- ✓ Minimum use of electric current: DC 5V 10mA

#### 4.2 Operating temperature:

- ✓ Operating temperature (OFF): 50±5C
- ✓ Reset Temperature (ON): 30±8C
- ✓ ON—OFF Error : more than 8C
- ✓ Temperature characteristics (regular) table (See table below):

Part number	Operating temperature (C)	Reset Temperature (C)	Part number	Operating temperature (C)	Reset Temperature (C)
BW-DOP-50C	50±5	30±8	BW-DOP-105C	105±5	70±15
BW-DOP-55C	55±5	35±10	BW-DOP-110C	110±5	75±15
BW-DOP-60C	60±5	40±10	BW-DOP-115C	115±5	75±15
BW-DOP-65C	65±5	45±10	BW-DOP-120C	120±5	80±15
BW-DOP-70C	70±5	45±15	BW-DOP-125C	125±5	85±15
BW-DOP-75C	75±5	50±15	BW-DOP-130C	130±5	90±15
BW-DOP-80C	80±5	55±15	BW-DOP-135C	135±5	95±15
BW-DOP-85C	85±5	55±15	BW-DOP-140C	140±5	100±15
BW-DOP-90C	90±5	60±15	BW-DOP-145C	145±5	105±15
BW-DOP-95C	95±5	65±15	BW-DOP-150C	150±5	110±15
BW-DOP-100C	100±5	65±15	Customized available		

#### 4.3 Contact Resistance:

Contact in the closed state, thermal protector the contact resistance between the two touch points should be not greater than 50 mΩ.

#### 4.4 Insulation Resistance:

Insulation resistance should be more than 100 mΩ.

#### 4.5 Electric Strength

For thermal protector applied between the following parts of the basic frequency is 50 hz sine wave test voltage (RMS), lasted 1 s shall be no flashover or breakdown phenomenon

In the condition of thermal breaking contact, between the lead wire: 500V

In contact normally closed conditions, between lead and shell surface of the insulating layer: 1500V

#### 4.6 Moisture-proof

Place it in the ambient temperature is 25 C, relative humidity is 95% for 10 hours later, meet requirements 6.4 and 6.5, and no abnormal change in appearance structure.

#### 4.7 Heat Cycling

Place at 20 C and + 90 C temperature every 2 hours, cycle over 10 times, comply with requirement 6.4, 6.5, and no abnormal change in appearance structure.

#### 4.8 Heat Resistance

Placed 10 hours later in 140 C temperature, meet requirements 6.4 and 6.5, no abnormal change in structure and appearance.

#### 4.9 Cold endurance

Placed in - 20 C temperature for over 10 hours, satisfies requirement 6.4 and 6.5, no abnormal change in structure and appearance.

Action the change in temperature is less than 5 C

#### 4.10 Repeated opening and closing the durability

In room temperature, connected to AC 50HZ&220V&power factor  $\text{COS } \phi = 0.7$  under the condition of rated load test after 2000 times, rated operating temperature should be within  $\pm 5$  C of initial value, and contact no welding, after 8000 times thermal protector should still can continue to work.

#### 4.11 Viratility

Vibration frequency 50HZ、amplitude 0.35 mm、last 90S of fixed frequency test、test after the rated breaking temperature shall satisfy the requirements of 6.2.

#### 4.12 Drop impact resistance

Any coagulation from 1200 mm height fell to the ground after 3 times, its appearance structure without changes. Operating temperature is within 5C

#### 4.13 Wire pull strength performance:

With not less than 30 n axial static tension, lasted for 5 seconds, fuses without fracture, loose, falls off phenomenon.

### 5 **Caution:**

#### 5.1 Temperature Test

Thermal protector at the test accuracy of  $\pm 1$  C constant temperature box experiment. Temperature measurement method using thermocouples or thermometer, thermocouple thermometer should be placed in a thermal protector sample on or close to the sample as soon as possible, in the process of temperature rise test, starting below the rated operating temperature 10 C, temperature change rate is less than 0.5 C / min. Through the test current protector should be not more than 0.1 A.

#### 5.2 Operational Environment

✓ Shall not be under the strong acid, strong alkali and other corrosion environment for long-term use

#### 5.3 Install and connect

- ✓ Protector shall be installed in the protected object of temperature sensitive point, the heat surface should be protected with components effectively close contact or directly to protected area.
- ✓ Protector in the installation process, in order to prevent damage to casing deformation or change and improves the performance of the protector, the following points should be paid attention to:
  - A. Shall not use sharp tools for protector against pressure;
  - B. Shall not use gravity mauling protector;
- ✓ Connections by using electric arc welding process, welding current must not through the thermal protector, or a strong current directly through the thermal protector contact can cause damage.

### 6. **Storage conditions:**

Packing and the product during transportation and storage shall be suffered from rain and snow, extrusion and damaged, the air relative humidity is not more than 90%

7 Matters not covered or client has other requirement shall be separately concluded.