1. 用途 APPLICATION

KW系列热保护器是一种过热、过载保护装置，主要用于单相电机由于过载、堵转等非正常工作状态而引起的热过载保护，也可用做电热器具、荧光灯整流器、变压器集成电路等一般电器设备的过热保护和温度控制。

KW series thermal protectors are devices for protecting against overload and over temperature. They are usually used for one phase motors to protect motor from over temperature caused by unusual state such as overload ,blocked up.They also used for protecting against over temperature & temperature control in heater, fluorescent ballast,IC etc.

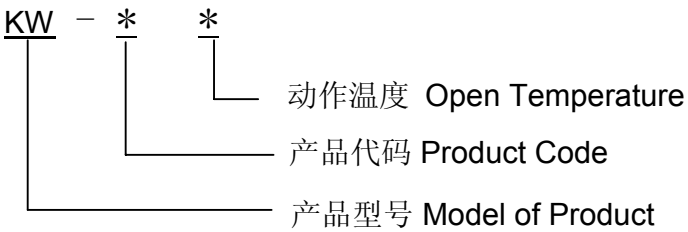
2. 结构特点 CHARACTERS

KW型热保护器是由条形高灵敏双金属元件、动触头、耐温导线等组成。工作时双金属元件固定在底板上，处于固定状态，动触头与静触片闭合，电路导通。当使用电器因故发热，温度上升到该产品额定温度值时，双金属元件受热产生内应力而迅速动作，推开动触头，使触点断开，切断电源，电器停止工作，从而起到过热保护作用。当被保护电器温度下降到该产品的额定复位温度值时，双金属元件恢复到初始原状态动触点闭合，电器恢复工作。该产品具有电阻小，无噪声，抗震动，感温快，密封牢固，安全可靠等优点。

Model KW thermal protector consists of bi-metal element with high sensitive, active contacting head, static contacting sheet, high temperature resistant wire and so on when working, the bi-metal element is fixed onto the motherboard and is at natural state. The active contacting head and the static contacting sheet are closed and the circuit is turned on. When operation, the operated clectric equipment is radiated because of certain causes and its temperatures is raised to theratde acting and temperature of the product, being heated, the bi-metal element will produce inner stress and act quickly and push the active contacting head out and make the conacting point cue off and the power supply will be turned off and the motor will be stopped. The overheat protective effect can be got. When the temperature of electricequipment tobe protected is dropped to the rated reset the temperature of the product. The bi-metal element will restore to its primary state and the active contacting point will be closed and the electric will restore its action, its advantages are small resistaances, no noise, vibration resistant,
temperature feeling fast,film seal, safe,reliable and so on.

3. 产品分类、型号及外型结构:TYPE &CONFIGURATION

3.1产品分类及型号 TYPE



3.2 外形及结构 Configuration

热保护器的外形及结构见总装图。

Configuration refers to assembly drawing.

4. 技术性能 TECHNIQUE ABILITY

4.1 触点容量 Capacity of Contact Point

触点容量见附表 Capacity of contact point refers to additional table below

4.2 外观性能 Appearance Performance

4.2.1 热保护器的外壳不得有毛刺、裂纹、变形、锈蚀等现象。

There is no burr,crack,distortion and rust on case.

4.2.2 标志应正确、端正、清晰、经久、耐磨。

Marks should be correct, clear and durability.

4.3 引线（端子）抗拉力性能 Pull Endure Ability of leads with terminal

热保护器的引线（端子）应能承受不低于30N轴向静拉力，历时5秒，应无断裂、松动、脱落现象。

Terminals & leads should endure more than 30N axes direction pull lasting for 5 seconds. And terminals should be no loose and leads have no rupture and slipping.

4.4 动作特性 Action Character

热保护器的额定动作温度见附表。

Rated open temperature refer to additional tabe below.

4.5 介电性能 Electricity Performance

4.5.1 热保护器在分断后的引出线应能承受交流50HZ，660V试验电压历时间1min而无击穿闪络现象（泄露电流整定值1mA)

After thermal protector's opening the leads should endure AC 660V/50Hz with 1mA leak current lasting for 1minute. After the trial there is no flashover.

4.5.2 热保护器端子引线与绝缘套管能承受交流50Hz，1500V/AC试验电压历时1min而无击穿闪络现象（泄露电流整定值1mA).

After thermal protector's opening , the leads and insulation sleeve should endure AC 660V/50Hz with 1mA leak current lasting for 1 minute.After the trial there is no flashover.

4.6 绝缘性能 Insulation performance

在正常条件下，引出线（端子）与绝缘套管之间绝缘电阻大于100MΩ。

Under normal condition ,resistance between leads and insulation sleeve should be more than 100MΩ。

4.7 耐久性能 Endurance Capacity

4.7.1 电寿命 Electric service life

在常温下,热保护器在接额定电流、电压、功率因数COS ϕ =0.7的额定负载条件下试验2000次后,额定动作温度应在初始值的±5℃或±5%(两者取最大者)以内,且触点不发生熔焊,继续试验4000次后热保护器仍应可靠工作。

The trail condition is under rated current and voltage with rated load that its power factor is 0.7. Under the trail condition and 2000 cycles , the opening temperature should be in ±5℃ or ±5%(the larger is the best choice) of its own rated temperature and there is no melt in product . Under same condition and after 4000 cycles the product should be dependable in its function.

4.7.2 耐湿性能 Damp endurance

热保护器应能承受恒定湿热试验方法（GB2423.3Ca)的考核，其严酷等级为48h,湿热试验后的绝缘电阻应不低于2MΩ，试验后性能应满足下列要求：

The thermal protector shall endure constant heat and humidity test (GB2432.3Ca)of grade 48h,after which the insulation resistance shall be to less than 2MΩ.The perfor-mance of the protector after test shall meet the following requirements:

a.试品应无变形破损。
b.额定动作温度变化应在初始值的±5℃或±5%（两者取最大者）以内。
c.介电强度应符合4.5.1条，试验电压为原试验电压的75%。

a.No distortion or damage to the tested product.
b.The change of rated temperature should be in ±5℃ or ±5%(the larger is the best choice) of its own rated temperature and there is no melt in product.
c.The electricity performance should be to 4.5.1. The testing voltage shall be 75% of the original testing voltage .

4.7.3 耐高温性能 High temperature endurance

将热保护器置于150℃的空气环境中保持2h，试验后性能应满足下列要求：

Keep the thermal protector in the temperature of 150℃ for 2 hours ,and after the test the temperature of the thermal protector shall meet the following requirements:

a.试品应无变形破损。
b.额定动作温度变化应在初始值的±5℃或±5%（两者取最大者）以内。
c.介电强度应符合4.5.1条，试验电压为原试验电压的75%。

a.No distortion or damage to the tested product.
b.The change of rated temperature should be in ±5℃ or ±5%(the larger is the best choice) of its own rated temperature and there is no melt in product.
c.The electricity performance should be to 4.5.1. The testing voltage shall be 75% of the original testing voltage .

4.7.4 耐低温性能 Low temperature endurance

将热保护器置于-20℃的空气环境中保持2小时，试验后性能应满足下列要求

Keep the thermal protector i n the temperature of -20℃ for 2 hours, and after the the test, the performance of the thermal protector shall meet the following requirements.

a.试品应无变形破损。
b.额定动作温度变化应在初始值的±5℃或±5%（两者取最大者）以内。
c.介电强度应符合4.5.1条，试验电压为原试验电压的75%。

a.No distortion or damage to the tested product.
b.The change of rated temperature should be in ±5℃ or ±5%(the larger is the best choice) of its own rated temperature and there is no melt in product.
c.The electricity performance should be to 4.5.1. The testing voltage shall be 75% of the original testing voltage .

4.7.5 耐热冲击性能 Heat & shocking endurance

将热保护器置于150℃,历时30分钟，-20℃，历时30分钟，交变放置5个周期，试验后性能应满足下列要求

Put the thermal protector in the 150℃ constant temperature box for 30min ,and transfer it into the -20℃ constant temperature box for 30min, and then put it again into the 150℃ constant temperature box for 30min .After five consecutive cycles,the per-formance of the protector shall meet the following requirements:

a.试品应无变形破损。
b.额定动作温度变化应在初始值的±5℃或±5%（两者取最大者）以内。
c.介电强度应符合4.5.1条，试验电压为原试验电压的75%。

a.No distortion or damage to the tested product.
b.The change of rated temperature should be in ±5℃ or ±5%(the larger is the best choice) of its own rated temperature and there is no melt in product.
c.The electricity performance should be to 4.5.1. The testing voltage shall be 75% of the original testing voltage .

4.7.6 耐振动性能 Anti-vibration endurance

热保护器应能承受振幅0.35mm，频率变化20-50Hz，变化周期3-5次/分钟，方向X、Y、Z各试验1小时后，性能应满足下列要求：

After the 1h test with vibration amplitude of 0.35mm , frequency change of 20-50Hz change period of 3-5times/min , installation directions of X,Y and Z ,the performance ofthe thermal protector shall meet the following requirements:

a.试验品应无变形破损，端子不应松动脱落。
b. 额定动作温度变化应在初始值的±5℃或±5%（两者取最大者）以内。

a.No distortion or damage to the tested product and no loose or desquamation to terminal
b.The change of rated temperature should be in ±5℃ or ±5%(the larger is the best choice) of its own rated temperature and there is no melt in product.

5. 使用注意事项 ATTENTION

5.1 温度测试 Temperature test

将热保护器置于恒温精度为±1℃的试验箱内进行试验。测温方法采用热电偶或温度计，热电偶或温度计应置于热保护器试样上或尽可能靠近试样，在试验升温过程中，从低于额定动作温度10℃开始，温度变化速率不超过0.5℃/min。通过热保护器的测试电流不应超过0.1A。

Testing be done in the oven that the precision of constant temp is ±1℃.When testing the thermocouple or thermometer should be place nearest to samples. During temperature rising, when the temperature reaches 10℃ less than rated temperature, the temperature rising rated should be less than 0.5℃ per minute and the testing cur-rent should be no more than 0.1A.

5.2 使用环境 Employed Conditions

5.2.1 保护器不得长期用于180℃以上的高温环境,以防止造成塑料的变形使得保护器失效。

Do not place thermal protector in the condition of 180℃ for long time, it would damage the plastic case and make the product unuseful.

5.2.2 不得在强酸、强碱及其他强腐蚀环境下长期使用。

Do not place thermal protector under condition of alkali and acid for a long time.

6. 储藏条件 STORAGE CONDITION

包装箱及部品在运输、贮存过程中均不得遭受雨雪侵袭，挤压与破损，空气相对湿度不大于90％。

During the transport and storage, the packing cases shall not be invaded by snows or rains,extuded or damaged, and the relative humidity of air shall be no more than 90％.

附表(选型) Additional Tabe(Choice Model)

1.触点最大电容量 Contact Capacity

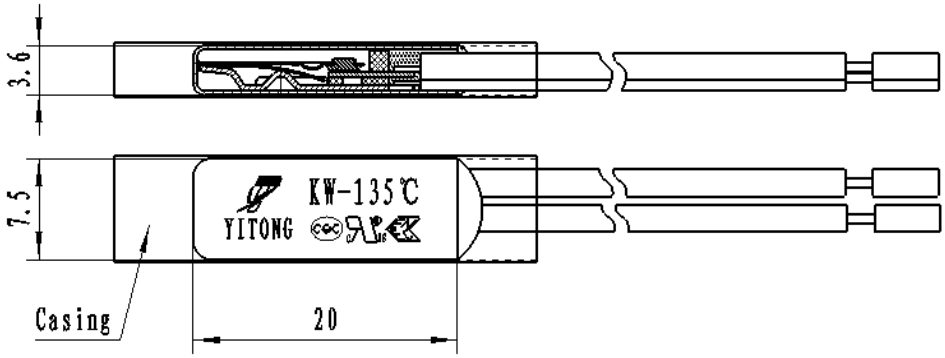
No.	24VDC	125VAC	250VAC
I		15A	8A

2.额定动作温度 Rated action temperature

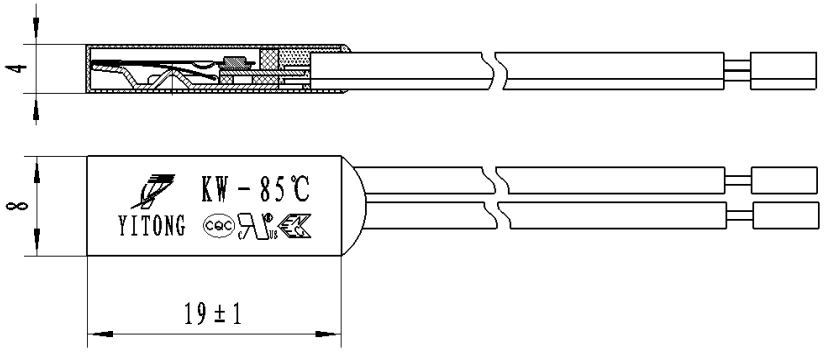
动作温度 Action temperature	复位温度 Reset temperature	动作温度 Action temperature	复位温度 Reset temperature
50±5℃	≥25℃	110±5℃	70±15℃
55±5℃	≥30℃	115±5℃	75±15℃
60±5℃	≥35℃	120±5℃	80±15℃
65±5℃	40±15℃	125±5℃	85±15℃
70±5℃	45±15℃	130±5℃	90±15℃
75±5℃	50±15℃	135±5℃	95±15℃
80±5℃	55±15℃	140±5℃	100±15℃
85±5℃	55±15℃	145±5℃	105±15℃
90±5℃	60±15℃	150±5℃	110±15℃
95±5℃	65±15℃	155±5℃	115±15℃
100±5℃	65±15℃	160±5℃	120±15℃
105±5℃	70±15℃	特殊规格按客户要求制定	

3.外型尺寸(mm)　Overall dimensions(mm)

金属外壳 Metal outer case



塑料外壳 Plastic outer case



No.	零件名称 Part name
1	外壳 Shell
2	弹簧片 Leaf spring
3	触点 Contact
4	双金属片 Bimetallic element
5	底座 Base
6	底板 Baseplate
7	导线 Wireway