KY11 series thermostat/thermal protector

1 Usage

KY11 series thermal protector is kind of single-pole and single-throw switch. Normally, its operating temperature range is from 45℃ to 145℃. It has the following features: miniature size, temperature sensitive, quick response, secure and reliable, good AC and DC characteristics, long lifetime, etc. It is widely used in battery packs of nickel metal hydride, nickel chromium, lithium ion, lithium polymer, power tools, vacuum cleaners, heating appliance (like electric blanket, electric stove, hair straightener, electric heating rods, etc.), permanent split capacitor motors, pumps, ballasts, transformers, switching Power Supply, etc.

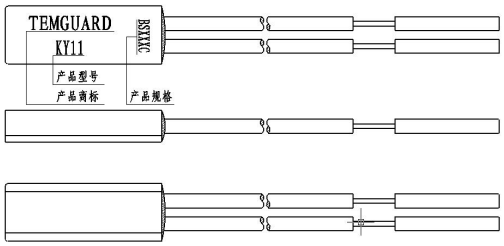
2 Features

TEMGUARD provides products complying with the requirements of Chinese and International product testing organizations. KY11 series thermal protectors' each operating temperature has been strictly inspected to ensure snap-action performance of the bimetal disc and advanced manufacturing technology is used. Before delivered to customers, every thermal protector would be made temperature calibration and quality testing to keep the product performance lasting unchanged. At the same time, a variety of connection modes along with the continuous improvement of the snap-action bimetal disc's on / off structure could meet the needs of individual customers.

3 Structure and dimension

3. 1

Please refer to attached file (special temperature and lead wire spec. could be made according to customers' requirement)



Size:15.8 X 5.2 X 3.0 mm

Standard UL3398 AWG 22 white lead wire **:60mm**

4 Model specification explanation

KY11 series products are divided into four categories:

1. KY11-BS XXXC：B- normally close S-plastic case XXXC-open temperature
2. KY11-KS XXXC：K- normally open S-plastic case XXXC-open temperature
3. KY11-BT XXXC：B- normally close T-metal case XXXC-open temperature
4. KY11-KT XXXC：K- normally open T-metal case XXXC-open temperature

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5 capabilities

Product capability complies with the standard: DIN EN60730-1、DIN EN60730-2-9、UL873：2001、GB/T14536.1-2008、GB/T14536.10-2008；

5. 1

It could be used in the circuit of 6A/AC250V and6A/DC24V and has normally close and normally open types.

5. 2

The standard action temperature and tolerance should be accord with the action temperature specifications in Table one unless customers have special requirements.

Table one: KY11 series thermal protector action/reset temperature and tolerance table:

	action temp.（℃）	reset temp.(℃)		action temp.（℃）	reset temp.（℃）
1	35±4	≥25	13	95±5	70±15
2	40±5	≥27	14	100±5	70±15
3	45±5	≥30	15	105±5	75±15
4	50±5	≥33	16	110±5	75±15
5	55±5	40±7	17	115±5	80±15
6	60±5	43±9	18	120±5	85±15
7	65±5	46±11	19	125±5	90±15
8	70±5	49±12	20	130±5	95±15
9	75±5	52±14	21	135±5	100±15
10	80±5	55±15	22	140±5	105±15
11	85±5	60±15	23	145±5	105±15
12	90±5	65±15	24	150±5	110±15

5. 3 Reset temperature

The reset temperature and tolerance should be accord with the reset temperature specifications in Table one unless customers have special requirements.

5. 4 Dielectric strength

5. 4. 1. When the product is in the breaking state, the contacts should be able to withstand AC500V lasting for 1min without breakdown flashover;

5. 4. 2. It should be able to withstand AC1500V between the lead wire (terminal) and the case, and keep 1min without breakdown flashover;

5.5 Insulation resistance

5.5.1. Under normal condition, the insulation resistance between leads (terminal) and case should be more than 100MΩ by ohmmeter of DC500V.

5.5.2. In breaking state, the insulation resistance between the contacts should be more than 2MΩ.

5.6 Contact resistance

In contacted state, the contact resistance should be lower than 50mΩ.

5.7 Pull endure testing of leads with terminal

Terminal & leads should endure more than 30N axes direction pull lasting for 1 minute without break or loose.

5.8 low temperature endurance test

Keep the thermal protector in a -40℃ incubator for two hours, and test it two hours later after taking out from the incubator, at that time, the rated action temperature and reset temperature should be within the nominal tolerance.

5.9 High temperature endurance test

Keep the thermal protector in a 30℃ incubator for sixteen hours, and test it two hours later after taking out from the incubator, at that time, the rated action temperature and reset temperature should be within the nominal tolerance.

5.10 Limit short-circuit test

When the thermal protector is in series with RL1-15A fuse in the circuit to withstand short circuit current limit of 200A, it should not cause the cotton burned which is wrapped in it.

5.11 Moisture endurance test

Keep the thermal protector in a 40℃±3℃ and relative humidity 90% ~ 95% incubator for 48 hours, the insulation resistance between the terminal and case should be more than 10MΩ.

5.12 Drop test

Let the thermal protector fall free in the cement or other solid surface from a height of 700mm, its temperature performance should not exceed the initial value of ± 5 ℃ or ± 5% ℃ (take the larger from the two values).

5.13 Durability

5.13.1. First installing the thermal protector into the motor, and after 18 days of blocking, the motor can still run without risk of injury and no accessories fault.

5.13.2. Under the condition of rated voltage and current, the thermal protector operate 10,000 cycles by plus heat, it should be still able to operate properly.

6 Certificate

UL file NO.:E340464

VDE file NO.:40032175

CB file NO.:CN42206

CQC file NO.: CQC10002045796

7 Other matters

7.1 Temperature test

Testing is done by using hot air detection. During the action temperature testing, temperature rising rate should be controlled at 1℃/1min; using light to show the on/off state; the testing current should be no more than 0.1A.

7.2

In installation, the thermal protectors could not afford a big impact.

7.3

If customers have special requests for the open and reset temperature and lead wire, we could consult accordingly.