



SAFTTY  
ELECTRONIC TECHNOLOGY  
安的電子

## 产品承认书

兹经本公司确定

We hereby confirm

生产者/Manufactory 广州安的电子技术有限公司

产品/品名/Products : 热保护器

型号/料号/Part No : BW-CCP

客户名称/Customer : \_\_\_\_\_

承认书生效日期 : \_\_\_\_\_

广州安的电子  
技术有限公司  
工程部章

适用于本公司产品

It is applicable to your products

产品品名/Products : \_\_\_\_\_

型号/料号/Part No : \_\_\_\_\_

确认者 / Confirmed by : \_\_\_\_\_

确认公司 /Company : \_\_\_\_\_

确认日期 /Date : \_\_\_\_\_

## 1 产品用途 Usage

BW-CCP 系列热保护器是一种单刀单掷开关。通常其动作温度范围为 40 -145 ， BW-CCP 系列热保护器具有超小体积、感温速度快、动作灵敏、安全可靠、交直流特性好、寿命长等特点，产品广泛应用于镍氢、镍铬、锂离子、锂聚合物等可充电电池组、电动工具、吸尘器、电加热器具（电热毯、电磁炉、直发器、电加热棒等）、分马力电机、水泵、镇流器、变压器、开关电源等产品....

BW-CCP series thermal protector is kind of single-pole and single-throw switch. Normally, its operating temperature range is from 40 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 产品特点与效益 Features

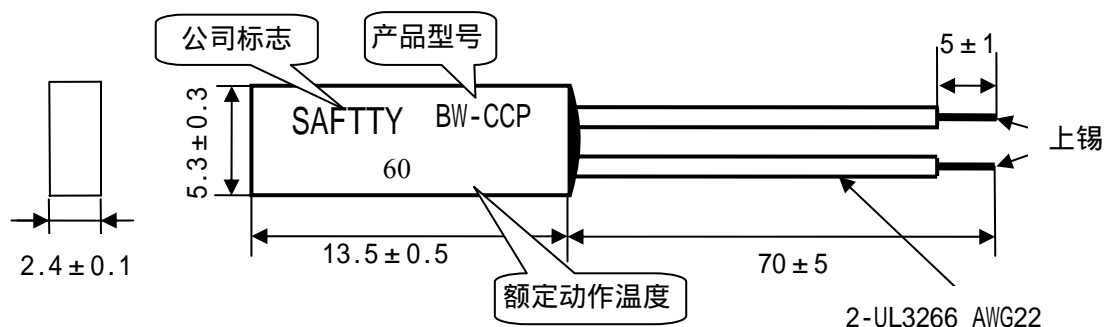
广州安的电子(SAFTTY)提供符合中国及国际产品检测机构要求的产品，BW-CCP 系列热保护器的每一种脱跳温度都经过严格检查，保证双金属片的快速脱跳性能，同时采用先进的制造工艺，每只产品在出厂前都经过温度校准和质量测试，使产品性能持久不变，同时多种连接方式配合不断改进的速动双片的接通/断开结构，可以满足客户个性化的需求。

SAFTTY provides products complying with the requirements of Chinese and International product testing organizations. BW-CCP 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 结构及安装尺寸 Structure and dimension

3.1 如图（特殊温度规格及导线根据客户需求制订）（单位：mm）

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



## 4 型号规格说明 Model specification explanation

BW-CCP 60 : C-常闭型 P-塑料外壳 60 -动作温度规格

BW-CCP 60 : C- normally close P- plastic case 60 -open temperature

## 5 性能 capabilities

产品性能符合标准：DIN EN60730-1、DIN EN60730-2-9、UL873：2001、

GB/T14536.1-2008、GB/T14536.10-2008；

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

注：以下测试应在室温（ $20 \pm 5$ ）环境下进行。

Note: the following test should be done at room temperature ( $20 \pm 5$ ).

5.1 产品额定电气参数及触点形式：Rating parameters and contact form:

产品可用于 4A/DC12V、3A/DC24V、3A/AC115V、2A/AC250V 电路工作,并有常闭和常开两种触点形式配置。

It could be used in the circuit of 4A/DC12V、3A/DC24V、3A/AC115V、2A/AC250V and has normally close and normally open types.

5.2 额定动作温度 Rated open temperature

产品的标准动作温度和允许公差应符合表 1 中的动作温度规格的要求 ;客户有特殊要求的除外。

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

表 1:BW-CCP 系列热保护器动作/复位温度及允许公差对照表:

Table one: BW-CCP series thermal protector action/reset temperature and tolerance table:

序号 NO.	动作温度 Open temp.	复位温度 Reset temp.	序号 NO.	动作温度 Open temp.	复位温度 Reset temp.
1	$30 \pm 5$	$18 \pm 4$	14	$95 \pm 5$	$70 \pm 15$
2	$35 \pm 5$	$22 \pm 4$	15	$100 \pm 5$	$70 \pm 15$
3	$40 \pm 5$	$26 \pm 5$	16	$105 \pm 5$	$75 \pm 15$
4	$45 \pm 5$	$30 \pm 6$	17	$110 \pm 5$	$75 \pm 15$
5	$50 \pm 5$	$30 \pm 8$	18	$115 \pm 5$	$80 \pm 15$
6	$55 \pm 5$	$35 \pm 9$	19	$120 \pm 5$	$85 \pm 15$
7	$60 \pm 5$	$40 \pm 9$	20	$125 \pm 5$	$85 \pm 15$
8	$65 \pm 5$	$45 \pm 9$	21	$130 \pm 5$	$90 \pm 15$
9	$70 \pm 5$	$45 \pm 13$	22	$135 \pm 5$	$95 \pm 15$
10	$75 \pm 5$	$50 \pm 13$	23	$140 \pm 5$	$100 \pm 15$
11	$80 \pm 5$	$55 \pm 15$	24	$145 \pm 5$	$100 \pm 15$
12	$85 \pm 5$	$60 \pm 15$	25	$150 \pm 5$	$105 \pm 15$
13	$90 \pm 5$	$65 \pm 15$	26	$155 \pm 5$	$110 \pm 15$

5.3 复位温度 Reset temperature

产品的复位温度和允许公差应符合表 1 中的复位温度的要求 (客户有特殊要求的除外);

The reset temperature and tolerance should be accord with the reset temperature

specifications in Table one unless customers have special requirements.

#### 5.4 电气强度 Dielectric strength

5.4.1. 产品在分断状态时触点之间应能承受 AC500V, 历时 1min 而无击穿闪络现象;

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. 产品引线(端子)与外壳之间能承受 AC1500V, 历时 1min 而无击穿闪络现象;

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 绝缘电阻 Insulation resistance

5.5.1. 在正常条件下, 引线(端子)与外壳之间的绝缘电阻在 100M 以上。(所用表计为 DC500V 兆欧表)

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

5.5.2. 热分断后的触点之间的绝缘电阻在 2M 以上。

5.5.2. In breaking state, the insulation resistance between the contacts should be more than 2M $\Omega$ .

#### 5.6 接触电阻 Contact resistance

产品初始接触电阻应小于 50m $\Omega$  .

The initial contact resistance of the product should be less than 50m $\Omega$ .

#### 5.7 引线(端子)拉力测试 Pull endure testing of leads with terminal

产品的两引线(端子)应能承受 30N 的静拉力并保持 1 分钟, 而不断裂或松动.

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

#### 5.8 耐低温试验 low temperature endurance test

产品在 -40 的恒温箱中放置 2 小时, 取出放置 2 小时后测温, 产品的额定动作温度和复位温度值应在标称允差内。

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 耐高温试验 High temperature endurance test

产品在比最大工作温度高 30 的恒温箱中放置 16 小时, 取出放置 2 小时后测温, 产品的额定动作温度和复位温度值应在标称允差内。

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 耐潮湿试验 Moisture endurance test

产品在 40  $\pm$ 3 、相对湿度 90% ~ 95% 的恒温箱中放置 48 小时, 端子与外罩之间的绝缘电阻在 10M 以上。

Keep the thermal protector in a 40  $\pm$ 3 and relative humidity 90% ~ 95% incubator for 48 hours, the insulation resistance between the terminal and case should be more than 10M $\Omega$ .

#### 5.11 跌落试验 Drop test

将产品从 700mm 的高度, 自由跌落在水泥平面或其它坚固的水平面上, 产品的温度性能不应超过初始值的  $\pm$ 5 或  $\pm$ 5% (两者值取最大值)。

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  $\pm 5$  or  $\pm 5\%$  (take the larger from the two values).

#### 5.12 耐久性 Durability

5.12.1. 产品在额定电压、电流条件下,外加热源使其动作 6,000 次后,保护器应能正常通断。

5.12.1. Under the condition of rated voltage and current, the thermal protector operate 6,000 cycles by plus heat, it should be still able to operate properly.

### 6 其它事项 Other matters

#### 6.1 温度检测 Temperature test

温度检测用热空气检测法,动作温度检测的升温速率应控制为  $1$  /1min;用指示灯显示通断状态,通过产品的电流不得超过 0.1A。

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.

#### 6.2 产品在安装使用时不能承受大的冲击.

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

#### 6.3. 如客户对动作、复位温度及导线规格有特殊要求,可以另行协商。 .

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