

## 继电器产品承认书

### SPECIFICATION FOR APPROVAL

客户名称 Customer name: \_\_\_\_\_  
产品名称 Product Description: 继电器 Relay  
供方型号 Supplier Part No.: YAK-SS-212DM  
客户料号 Customer Material Code: \_\_\_\_\_  
客户型号 Customer Part No.: \_\_\_\_\_  
版 本 REV: \_\_\_\_\_  
日 期 Date: 2021-06-29

供应 厂商	制定	审核	批准
	管接仁	方君发	龙静恒
客户 确认	开发/工程 审核	品质部 审核	批准

## 一、基本特性 Basic characteristics

### 1、线圈参数 Coil specification

- |                                |   |
|--------------------------------|---|
| (1) 额定电压 Nominal voltage       | DC 12V  |
| (2) 线圈阻抗 Coil resistance       | 260 $\Omega$ $\pm$ 10% (at 23 $\pm$ 5 $^{\circ}$ C) |
| (3) 额定电流 Rated current         | DC 46mA $\pm$ 10% (at 23 $\pm$ 5 $^{\circ}$ C)      |
| (4) 动作电压 Operate voltage       | DC 9V Max ((at 23 $\pm$ 5 $^{\circ}$ C)             |
| (5) 释放电压 Release voltage       | DC 0.6V Min ((at 23 $\pm$ 5 $^{\circ}$ C)           |
| (6) 最大电压 Maximum voltage       | DC 15.6V(130% of nominal voltage)                   |
| (7) 线圈温升 Coil temperature rise | 50K Max (Coil:12V)                                  |

### 2、触点参数 Contact Specification

- |  |  |
|--|--|
| (1) 触点型式 Contact configuration         | DPST-NO (2 Form A)--双刀单掷 (两组常开)                                  |
| (2) 触点额定负载 Contact rating              | 30A 14VDC  |
| (3) 接触电阻 Contact resistance            | Initial (初始值) 100 m $\Omega$ Max (At DC6V 1A)                    |
| (4) 动作时间 Operate time                  | 10ms Max   |
| (5) 释放时间 Release time                  | 10ms Max   |
| (6) 最大动作频率 Maximum operating frequency | Mechanically 18000 cycle/h (机械)<br>Electrically 600 cycle/h (电气) |
| (7) 触点温升 Contact temperature rise      | 50K Max (Contact:30A)  |

### 3、通用参数 General Specification

- |                                  |  |
|----------------------------------|--|
| (1) 绝缘阻抗 Insulation resistance   | 100M $\Omega$ Min (at DC500V)  |
| (2) 电气强度 Dielectric strength     |  |
| 触点间 between open contacts        | 500VAC,50/60 HZ for 1Minute  |
| 线圈与触点间 between contacts and coil | 500VAC,50/60 HZ for 1 Minute   |
| (3) 环境温度 Ambient temperature     | -40 $^{\circ}$ C $\sim$ +85 $^{\circ}$ C<br>(Not freezing and condensing at low temperature) |
| (4) 相对湿度 Relative Humidity       | 45% to 85% RH  |
| (5) 电气寿命 Electrical life         | 100,000 Operations Min (at 30A 14VDC)  |
| (6) 机械寿命 Mechanical life         | 10,000,000 operations Min  |

### 4、体系、安规认证和环保 Quality System、Safety Certification and RoHS(REACH)

- |                              |                              |
|------------------------------|------------------------------|
| (1) UL certified             |                              |
| (2) TUV certified            |                              |
| (3) CQC certified            |                              |
| (4) ISO9001:2015 certified   | File No. 00117Q38063R2S/4403 |
| (5) RoHS and REACH Compliant |                              |

## 二、环境参数 Environmental Characteristics

### 1、抗振动性 Vibration resistance

#### 1.1 误动作 Error operation

在 X、Y、Z 轴三个方向施加双振幅为 1.5mm，频率为 10-55HZ 的振动，时间 5 分钟，误动作时间不超过 1ms。

At constant vibration of double amplitude 1.5mm, 10 ~ 55 HZ , in each direction of X,Y,Z for 5 minutes. No error operation more than 1 ms.

#### 1.2 耐久性 Endurance

在三个方向施加振动 2 小时，无结构损坏。

No construction trouble when vibrate it from 3 directions for 2 hours.( Amplitude 1.5mm, 10~55 HZ)

### 2、抗冲击性 Shock resistance

#### 2.1 误动作 Error operation

在三个方向施加三次加速度为  $100\text{m/s}^2$  持续时间 11ms，误动作不超过 1ms。

At peak acceleration  $100\text{m/s}^2$  duration 11ms, 3 shocks is given in each direction of X, Y, Z. No error operation more than 1 ms.

#### 2.2 耐久性 Endurance

三个方向三次加速度为  $1000\text{m/s}^2$  持续时间 6ms，无结构损坏。

No construction trouble when shock it from 3 directions 3 times at peak acceleration  $1000\text{m/s}^2$  duration 6ms.

### 3、耐寒性 Cold resistance

#### 3.1 耐寒性 Cold resistance

放置于  $-40^\circ\text{C} \pm 2^\circ\text{C}$  环境温度下 240 小时，然后在标准条件下放置 2 小时，结构和性能无异常。

No any trouble on construction or characteristic when leave relay in  $-40^\circ\text{C} \pm 2^\circ\text{C}$  for 240h. After that, leave it in standard condition for 2 hours.

### 4、耐热性 Heat resistance

#### 4.1 耐热性 Heat resistance

放置于  $+85^\circ\text{C} \pm 2^\circ\text{C}$  环境温度下 240 小时，然后在标准条件下放置 2 小时，结构和性能无异常。

No any trouble on construction or characteristic when leave relay in  $+85^\circ\text{C} \pm 2^\circ\text{C}$  for 240h. After that, leave it in standard condition for 2 hours.

### 5、耐湿性 Moisture resistance

#### 5.1 放置于 $40^\circ\text{C}$ ，湿度 90% 环境下 240 小时，然后在标准条件下放置 2 小时，绝缘电阻最小 $10\text{M}\Omega$ ，结构和性能无异常。

After keeping relay for 240h in  $40^\circ\text{C}$ , 90%, then leave it in standard condition for 2 hours。Insulation resistance  $10\text{M}\Omega$  Min. No any trouble on construction or characteristic.

### 三、端子性能 Terminal characteristics

#### 1、端子强度 Terminal strength

在端子上施加 10N 压力 10 秒钟，无变形现象。

10N pushed into any terminals for 10 s. There shall be no abnormalities.

(The curving of the terminals shall be acceptable)

#### 2、端子可焊性 Terminal solderability

端子浸入  $260 \pm 5^\circ\text{C}$  焊锡槽中，时间  $5 \pm 0.5\text{ s}$ ，90% 部位应该上锡。

In case of lead free solder  $260 \pm 5^\circ\text{C}$ ,  $5 \pm 0.5\text{ s}$ , 90% of the dipped portion shall be soldered.

#### 3、耐焊接热 Soldering thermal

端子浸入  $260 \pm 5^\circ\text{C}$  焊锡槽中，时间  $10 \pm 1\text{ s}$ ，结构和性能无异常。

No any trouble on construction or characteristic. When dipped into solder bath  $260 \pm 5^\circ\text{C}$ ,  $10 \pm 1\text{ s}$ .

### 四、标准测试条件 Standard test condition

#### 1、环境温度 Ambient temperature

$23 \pm 5^\circ\text{C}$

#### 2、相对湿度 Relative humidity

25%~75%

#### 3、气压 Air pressure

86kPa~106kPa

#### 4、测试位置 Direction of Test

端子朝下位置 Terminals down position

### 五、储存条件 Storage condition

#### 1、环境温度 Ambient temperature

$+15^\circ\text{C} \sim +35^\circ\text{C}$

#### 2、相对湿度 Relative humidity

25%~85%

#### 3、环境 Environment

3.1、不要储存在诸如硫化氢和盐雾气体等有腐蚀性的环境中。

Store in locations where the product or container is not expose to corrosive gas such as hydrogen sulfide or salty air.

3.2、储存在没有可视尘埃的环境中。

Store in locations where no visible dust exists.

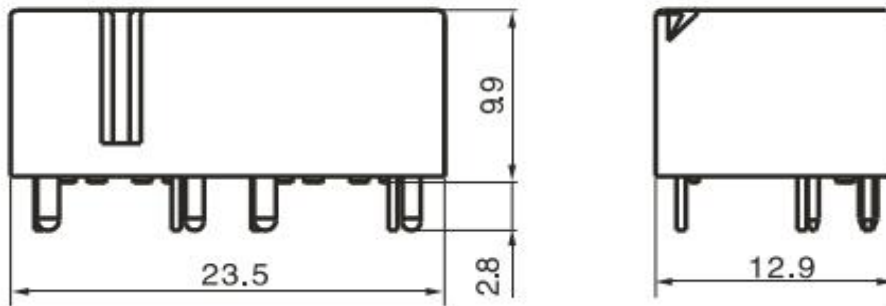
3.3、储存在没有直射阳光的环境中。

Store in locations not subject to direct sunlight.

六、外型图、线路板孔位图和线路图 Outline、PCB Layout and Wiring diagram(unit:mm)

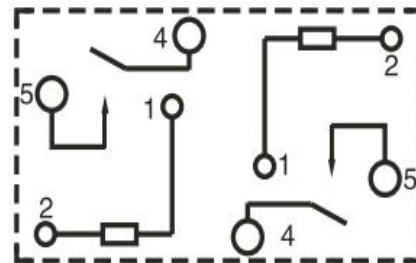
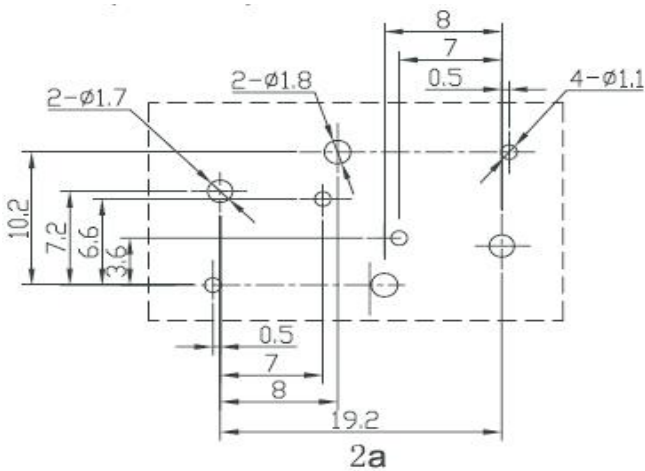
外型图

双继电器



PCB 安装图

线路图（底视图）



未标注尺寸公差:

< 1mm:  $\pm 0.2\text{mm}$

1~5mm:  $\pm 0.3\text{mm}$

> 5mm:  $\pm 0.4\text{mm}$

注: 1、引出脚尺寸为预焊前尺寸

2、安装孔尺寸公差:  $\pm 0.1\text{mm}$

## 七、包装信息 Packing Information

P/N	Inner packing	Carton Dimensions L×W×H (cm)	QTY (PCS) /carton	Net weight (Kg)	Gross weight (Kg)
YAK	100pcs/box	40 x 28.0 x 23.0	2000	10.0	12.0

## 八、命名规则 Encoding Information

YAK — X — X X X X X

1      2      3      4      5      6      7

1. 产品型号 Product type: YAK
2. 封装方式 Enclosure  
 SS---Flux-tight 防焊剂型      SH---Sealed case(Washable)完全密封型
3. 触点组数 Contact Pole  
 1—1 pole      2—2 pole
4. 线圈额定电压 Coil Nominal Voltage  
 05—5VDC      12—12VDC      24—24VDC
5. 线圈额定功率 Coil Nominal Power  
 D—Standard coil power 标准功率
6. 触点型式 Contact arrangement  
 Blank—1 Form C （转换型）      M—1 Form A （常开型）
7. 特殊代码 Special code(not necessary to be shown on product)  
 Numbers or letters, do not represent electrical changes, these codes denote customer's requirements.

## 九、特别提醒 Reminds

- 1、如有任何特殊要求，请联系元则电器公司。Any special requirements, please contact us.
- 2、在诸如 H<sub>2</sub>S、SO<sub>2</sub> 或 NO<sub>2</sub> 有害气体的环境中，推荐选用完全密封型产品。Under the Environment with dangerous gas such as H<sub>2</sub>S, SO<sub>2</sub> or NO<sub>2</sub>, fully sealed type is recommended.
- 3、如果环境允许，优先选用防焊剂型产品。If the ambience allows, flux proof type is preferentially recommended.
- 4、如果客户需要用超声波设备清洗 PCB 和继电器，则必须选用完全密封型产品。If the user washes the PCB and relay in the ultrasonic cleaner, fully sealed type must be selected.