

**小型功率继电器**  
**Miniature Power Relay**
**SMH****特点 Features**

- 16A 触点切换能力  
16A switching capability
- 介质耐压: 5000VAC  
Dielectric strength: 10,000V

**安规认证 Safety certificate**

UL、c-UL 认证号 File No: E179745  
 TUV 认证号 File No: R50148605  
 CQC 认证号 File No: CQC05001014267、CQC12002072618

**触点负载 Contact Capacity**

型号 Type	SMH
额定负载 (阻性) Rated load (Resistive load)	16A 277VAC
最大切换电流 Max. Switching Current	20A
最大切换电压 Max. Switching voltage	277VAC
最大切换功率 Max. Switching power	5,540VAC
最小切换负载 Min. Switching load	6V 1A

**性能参数 Characteristic Data**

触点材料 Contact material	银合金 Silver alloy	
接触电阻 Contact resistance	100mΩ Max. (at 1A 6VDC)	
吸合时间 (额定电压) Operate time (at rated coil voltage)	20ms Max. (不加二极管 No diode)	
释放时间 Release time	10ms Max. (不加二极管 No diode)	
绝缘电阻 Insulation resistance	1,000MΩ Min. (DC500V)	
介质耐压 Dielectric strength	触点与触点间: 1,000VAC 50/60Hz for 1min. Between open contacts: 1,000VAC 50/60Hz for 1min.	
	触点与线圈间: 5,000VAC 50/60Hz for 1min. Between coil and contact: 5,000VAC 50/60Hz for 1min.	
抗振动 Vibration Resistance	耐久 Destructive	10~55Hz, 双振幅 1.5 mm 10~55Hz, at double amplitude of 1.5mm
	误动作 Functional	10~55Hz, 双振幅 1.5 mm

		10~55Hz, at double amplitude of 1.5mm
抗冲击 Shock Resistance	耐久 Destructive	100G Min.
	误动作 Functional	10G Min.
寿命 Endurance	机械寿命(每小时 7,200 次) Mechanical endurance 7,200 ops/h	10,000,000 次 (室温) 10,000,000 (at room temperature)
	(2)电气寿命(每小时 360 次) Electrical endurance (360ops/h)	100,000 次 (室温) 100,000 (at room temperature)
环境温度 Ambient Temperature	-40°C ~ +85°C (不冷凝 No condensation )	
重量 Weight	约 15.8g Approx. 15.8g	

(1) 上述值为初始值。

The Data shown above are initial values.

(2) 以上仅列出该产品认证部分典型负载,而每个负载详细测试条件不同,因此电寿命耐久性不一样。如需了解详细信息,请与我司技术部门联络。  
Only typical loads are listed above. Other load specifications can be available upon request.

(3) 以上耐久性电寿命测试,条件均为开孔品状态。

The electrical endurance test has been carried out on flux proofed version.

### 线圈参数 Coil Data (at 20°C)

额定电压 Nominal voltage (VDC)	额定电流 Nominal operating current ±10% (mA)	线圈电阻 Coil resistance ±10% (Ω)	最大外加电压 Max allowable voltage (VDC)	吸合电压 Operate voltage (Max.)	释放电压 Release voltage (Min.)	额定功率 Nominal operating power (W)
5	100	50	额定电压的 130% 130% of Nominal Voltage	额定电压的 75% 75% of Nominal Voltage	额定电压的 5% 5% of Nominal Voltage	0.5W
6	83.33	72				
9	55.56	162				
12	41.67	288				
18	27.78	648				
24	20.83	1,152				
48	10.42	4,608				

上述值为初始值;请勿在产品上连续施加最大电压 > 10min, 以免线圈过度发热。

The data shown above are initial values. Do not apply maximum allowable voltage on coil for more than 10 minutes to avoid overheating of the coil.

## 安规认证负载 (注: 更多详细的认证负载, 参考安规证书)

Safety Certificate Ratings (Note: More details of approved ratings, please refer to the safety certificates)

认证类型 Certificates	CQC	TUV	UL/cUL
证书号 File No.	CQC05001014267	R50148605	E179745
认证负载 Approved Ratings	16A 250VAC	16A 277VAC 16A 30VDC	20A 277VAC, Resistive

(1) 上述未注明温度的负载, 均指环境温度为室温。

All values unspecified are at room temperature.

(2) 以上仅列出了该产品认证的部分负载, 每个负载的详细测试条件不同, 因此电寿命次数不一样。如需了解详细情况, 请联系三友。

Only typical ratings are listed above and the endurance differ in each load. Other specific load information are available upon request.

(3) 对于塑封式、防水式产品试验时, 应打开外壳的透气孔。

For sealed type testing, please open the ventilation hole in the case before test.

## 订货标记 Ordering Information

## 型号命名规则 Nomenclature

<b>SMH</b>	<b>- 1</b>	<b>12</b>	<b>D</b>	<b>M</b>	<b>P</b>	<b>- F</b>	<b>-XX</b>	特殊参数: 无-标准型, 01-吸合时间为 7.2ms , 02-吸合时间为 7.2ms 特殊型脚位 Special Parameter: Nil-Standard, 01- operate time :7.2ms; 02- operate time :7.2ms pinning on drawing 绝缘等级: 无-普通型, B-Class B, F-Class F Insulation System: Nil-Standard, B-Class B, F-Class F 端子形式: 无-标准型, P-PCB 型, 数字或字母-特殊要求 Contact material: Nil-Standard, P-PCB, Letter or number-Special requirement 触点形式: M-Form A Contact Arrangement: M-Form A 线圈功耗: D-0.5W Coil power: D-0.5W 线圈电压: 05, 06, 09, 12, 18, 24, 48 (VDC) Rated coil voltage(VDC): 05,06,09,12,18,24, 48 触点组数: 1-1 组 Number of poles : 1-1Pole 基本型号 Type: SMH
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(1) 塑封式不能在污染环境 (含有 H<sub>2</sub>S、SO<sub>2</sub>、NO<sub>2</sub>、粉尘等污染物) 中使用。

Flux-proofed relays can not be used in the environment with pollutants like H<sub>2</sub>S, SO<sub>2</sub>, NO<sub>2</sub>, dust, etc.

(2) 塑封式装入 PCB 焊接后, 不能进行整体清洗或表面处理。

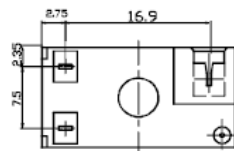
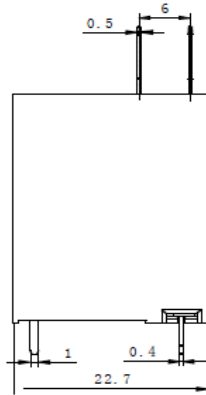
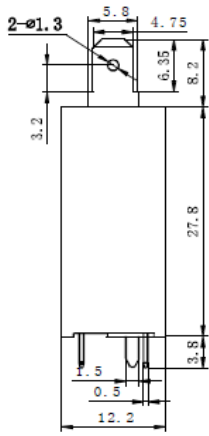
Water cleaning or surface process is not suggested after the flux-proofed relays are assembled on PCB.

(3) 客户特殊要求 (XX), 由我司评估后, 按特性符号标识。

Special requirements of customers (XX) shall be evaluated by our company and marked by characteristic symbols.

外形尺寸图、接线图、安装孔位图 (单位: mm)  
Outline dimension, wiring diagram, PCB layout (Unit: mm)

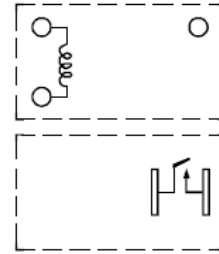
标准型  
Standard type



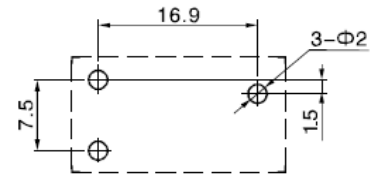
(底视图)  
(bottom view)

(底视图)  
(bottom view)

(顶视图)  
(Top view)

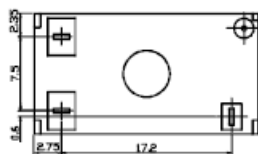
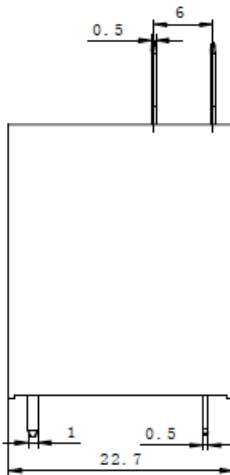
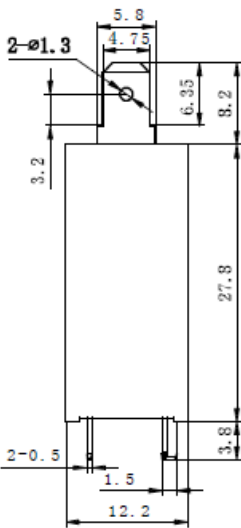


接线图 (底视图)  
Wiring Diagram (bottom)



安装孔位图 (底视图)  
PCB Layout (bottom view)

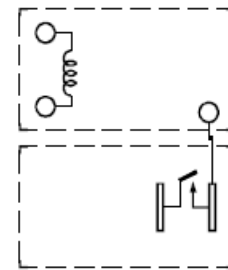
P 型  
PCB type



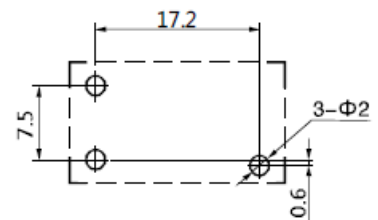
(底视图)  
(bottom view)

(底视图)  
(bottom view)

(顶视图)  
(Top view)

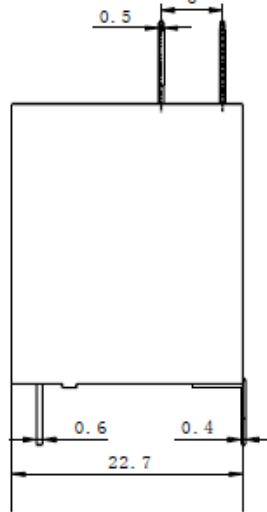
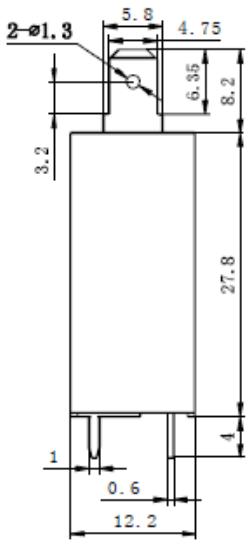


接线图  
Wiring Diagram



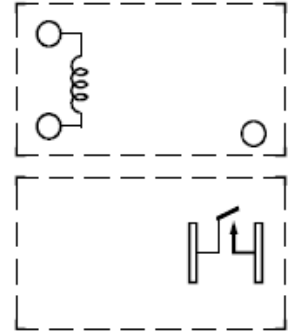
安装孔位图 (底视图)  
PCB Layout (bottom view)

特殊型  
Special type

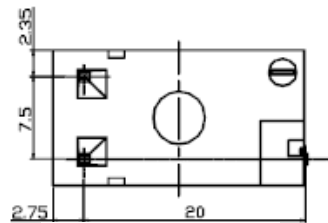


(底视图)  
(bottom view)

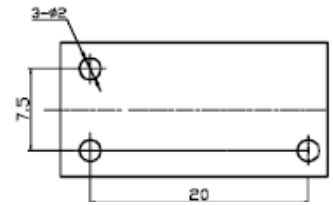
(顶视图)  
(Top view)



接线图  
Wiring Diagram



(底视图)  
(bottom view)



安装孔位图 (底视图)  
PCB Layout (bottom view)

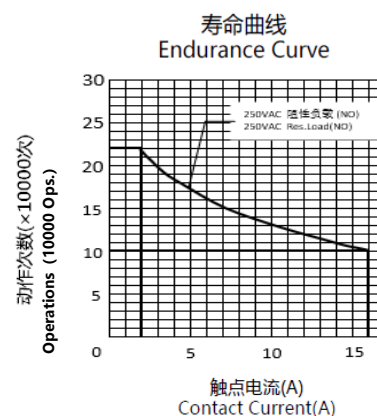
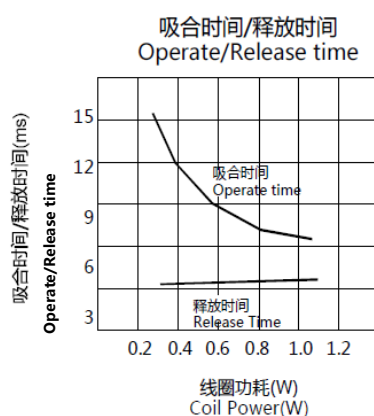
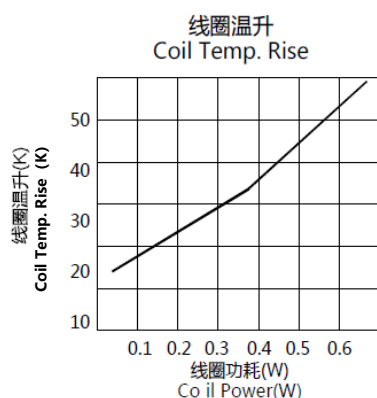
未标注尺寸公差 In case of no tolerance shown on outline dimension:  
< 1mm: ±0.2mm    1~5mm: ±0.3mm    > 5mm: ±0.4mm

注: 1、引出脚尺寸为预焊前尺 The dimension of pin is the size before tinning  
2、安装孔尺寸公差 Tolerance of PCB layout: ±0.1 mm.

典型用途 Typical Applications

- 家用设备
- 办公设备
- 音响设备
- 空调
- Household appliance
- Office equipment
- Sound equipment
- Air conditioner

## 性能曲线图 Characteristic Curves



## 备注 Note:

(1)测试条件: 常温环境, 开孔品, 阻性负载, 1s通 9s断

Test conditions: room temperature, flux-proof product, resistive load, 1s on, 9s off.

(2)以上曲线图仅供参考, 最终结果以实验测试为准

The above curves are for reference only, and the final result is subject to the experiment.

声明: 本产品规格书仅供客户使用时参考, 若有更改, 恕不另行通知。

对三友而言, 不可能评定继电器在每个具体应用领域的所有性能参数要求, 因而客户应该根据具体的使用条件选择与之相匹配的产品。对于密封继电器在安装清洗后, 使用前请打开外壳上的透气孔。若有疑问, 请与三友联系获取更多的技术支持。但产品选型责任仅由客户负责。

Disclaimer: The specification is for reference only. Specifications are subject to change without prior notice.

We could not evaluate all the performance and all the parameters for every possible applications. Thus the users should in a right position to choose suitable product for their own application. For sealed relays, after installation and cleaning, please open the ventilation hole in the case before use. If there is any query, please contact Sanyou for technical services. However it is the user's responsibility to determine which product should be used.