产品规格书 Relay Specification Sheet

1. 品种 Type Model

1.1 种类 Kinds: 小型大功率继电器 Miniature high power relay

1.2 型号 Type: YX209H-S-112DM1 (热熔气孔，异侧结构 with vented sealed and heterolateral structure)

1.3 触点形式 Contact Arrangement: 常开型 Form A

1.4 触点材料 Contact Material: AgSnO2

2. 安全标准 Safety Standard

国际安全认证 Foreign Standard: Recognized by UL file no. E320522

Recognized by TUV file no. R50532873

Recognized by CQC file no. CQC21002320421

3. 线圈额定参数 Coil Rating (at 23℃)

3.1 额定电压 Rated Voltage: 12VDC

3.2 线圈电阻 Coil Resistance: 160±10%Ω

3.3 额定功耗 Normal Operating Power: 0.9 W

3.4 最大允许线圈电压 Max. Allowable Coil Voltage: 15.6VDC

4. 触点参数 Contact Specification

4.1触点阻性负载 Contact Rating: 30A/250VAC

4.2最大切换电流 Max. Contact Current: 30A

4.3最大切换电压 Max. Contact Voltage: 250VAC/30VDC

4.4最大切换功率 Max. Allowable Capacity: 7500VA

5. 性能 Performance

5.1 接触电阻 Contact Resistance: Max.100mΩ (at 6VDC 1A)

5.2 动作电压 Operate Voltage: ≦9VDC

5.3 释放电压 Release Voltage: ≧1.2VDC

5.4 动作时间 Operate Time: Max. 15ms

5.5 释放时间 Release Time: Max. 10ms

5.6 寿命 Life

(1)电气寿命 Electrically

结构型式 Version	触点负载 Contact Rating	环境温度 Ambient Temperature	通断比 ON：OFF	电耐久性 Electrical Endurance
常开型 Normally open type	阻性：30A/250VAC	常温 Room Temperature	接通 1S/断开 5S	开气孔 5×10^4次（ops）
				热熔气孔 3×10^4次（ops）

(2)机械寿命 Mechanically

结构型式 Version	触点负载 Contact Rating	环境温度 Ambient Temperature	通断比 ON：OFF	电耐久性 Electrical Endurance
常开型 Normally open type	无负载 Non-loaded	常温 Room Temperature	接通 0.1S/断开 0.1S	1×10^7次（ops）

5.7 介质耐压 Dielectric Strength (漏电流 Leak Current: 1mA)

(1) 断开触点间 Between Contacts: 1500VAC (50/60Hz 1min)

(2) 触点与线圈间 Between Coil To Contacts: 2500VAC (50/60Hz 1min)

5.8 绝缘电阻 Insulation Resistance

（1） 断开触点间 Between Contacts: ≧1000MΩ(500VDC)

（2） 触点与线圈间 Between Coil To Contacts: ≧1000MΩ(500VDC)

5.9 线圈温升 Coil Temperature Rise: 小于 60 K

线圈以 100%额定电压激励,触点负载 30A@250VAC

Applied voltage of coil 100% rated voltage , Carry current of contact 30A@250VAC.

5.10 振动 Vibration

强度： 1.5mm 双振幅，10~55Hz，3 小时。继电器外观、结构和性能不应有异常。

Durability: 1.5mm Double amplitude ,10 to 55Hz, 3 hours. It shall be no abnormalities in appearance, construction and performance.

5.11 冲击 Shock

稳定性： 98m/s^2(10g)，6 次（X、Y、Z 三个方向中的每个方向），闭合回路的断开或开路回路的闭合时间应不超过 100μs 。

Malfunction: 98m/s^2(10g), 6 shocks (each direction of X,Y,Z),No opening of any closed contact circuit of no closing of any opened

contact circuit shall exceed 100μs.

强度： 980m/s²(100g)，6 次（X、Y、Z 三个方向中的每个方向），继电器外观、结构和性能不应有异常。

Durability： 980m/s²(100g)，6 shocks (each direction of X,Y,Z), It shall be no abnormalities in appearance, construction and performance.

5.12 引出脚强度 Terminal Strength: 5N 1 分钟

引出脚在插入方向上施加 5N 的拉力,继电器应无异常。（引出脚微弯可以接受）

At push in direction the terminal can endure 5N force for 1 minute, It Shall be no abnormalities.(a little curving of the terminals shall be Acceptable)

5.13 耐焊接热 Soldering Heat Resistance: 260±5℃，10s.

继电器应无异常

There shall be no abnormalities.

5.14 焊接性能 Soldering Ability: 240±5℃，3±0.5s.

引出端被浸锡部分应有 90%以上连续覆上一层锡层。90% of the dipped portion shall be soldered.

5.15 耐温性 Temperature Resistance

(1) 耐热 Heat Resistance

105℃±2℃ 温度中放置 2 小时，恢复常温 2 小时后，继电器的结构及性能应无异常。Must be free from any abnormality in both the construction and characteristics after the relay is lift in a temperature of 105±2℃ for 2h and then in room temperature and humidity for 2h.

(2) 耐寒 Cold Resistance

-40℃±2℃温度中放置 2 小时，恢复常温 2 小时后，继电器的结构及性能应无异常。Must be free from any abnormality in both the construction and characteristics after the relay is lift in a temperature of -40±2℃ for 2h and then in room temperature and humidity for 2h.

5.16 耐湿性 Moisture Resistance

在温度 40±2℃ 相对湿度 90~95%RH 中放置 48 小时，恢复常温常湿 2 小时后，继电器的结构及性能应无异常。且绝缘电阻应不小于 50MΩ min。（500VDC）

Must be free from any abnormality in both the construction and characteristics after the relay is lift in a temperature of 40±2℃,and humidity of 90% to 95% RH for 48h and then in room temperature and humidity for 2h. Insulation resistance however must be no less than 50MΩ min.（500VDC）

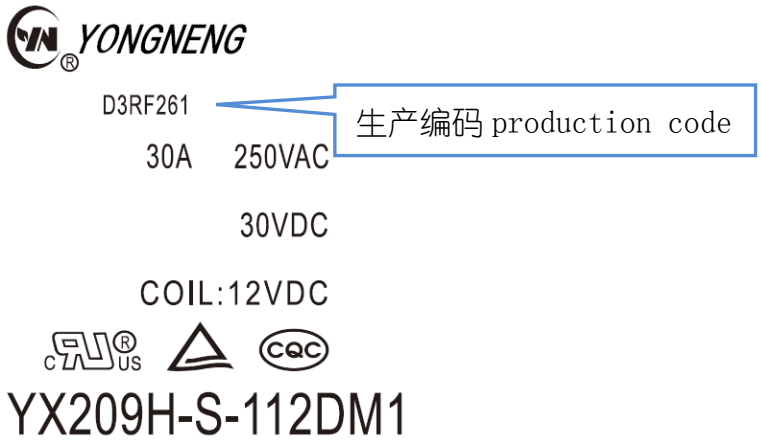
5.17 灼热丝:继电器可以通 750℃成品灼热丝要求，起燃时间＜2S

The relay pass the glow wire test under 750 ° C， Start time<2 seconds

6. 产品标识 Marking

6.1 外壳颜色 Case Color: 黑色 Black

6.2 激光打标位置 laser Marking Position: 顶部 Top



订货标记示例 ORDERING INFORMATION

YX209H	-S	-1	12	D	M	X		
							特殊参数 Specialparameters:	无-标准型，字母或数字-特殊要求
							触点形式 Contact form :	无-转换, M-常开, B-常闭 Nil-Form C , M-Form A , B-Form B
							线圈功耗 Coil power :	D-直流DC 0.9 W ,H-直流DC 1.6 W ,G-直流DC 2.25 W , A-交流AC 1.5VA
							线圈规格 Coil voltage :	03,05,06,09,12,15,18,24,36,48,60,72,110 (VDC) 06,12,24,48,110,220 (VAC)
							触点组数 Number of poles :	1-1组 1-1 Group
							封装形式 Protective construction :	S-塑封式 S-Flux proofed
							基本型号 Type designation :	YX209H

7. 标准测试条件 Standards Test Condition

7.1 温度 Temperature: 23±5℃

7.2 湿度 Humidity: 60 ± 10% RH

7.3 方向 Direction of Measurement: 引出脚向下为标准方向
Terminals down position is standard position

8.使用条件 Operating Condition

8.1 温度 Temperature: -40 ~+105 ℃

8.2 湿度 Humidity: 5% ~ 85% RH

8.3 安装方向 Mounting Direction: 引出脚向下为标准方向
Terminals down position is standard position

9.贮存条件 Storage Condition

9.1 温度 Temperature: 0~+40℃

9.2 湿度 Humidity: < 80%

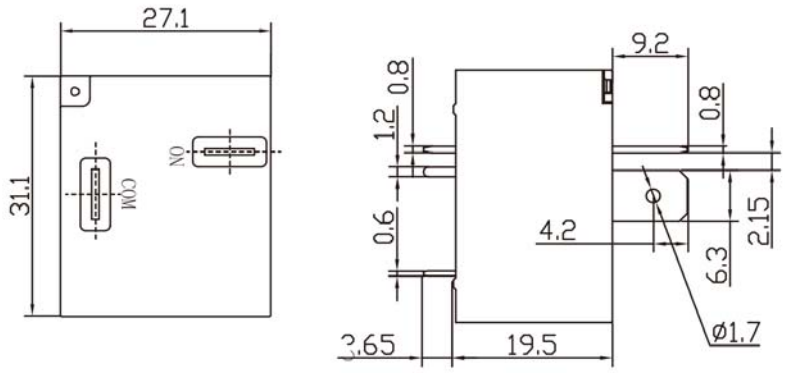
9.3 环境 Environment

(1) 产品贮存场地不能有腐蚀性气体 Store in locations where the product is not exposed to corrosive gas.

(2) 贮存中应避免阳光直照产品 Keep product is not exposed to the direct ray of the sun.

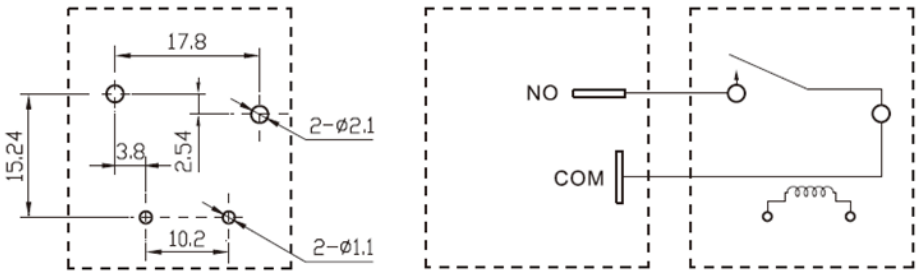
10.产品结构 Configuration

外形及结构简图 Outline And Construction Schematic



安装孔位图（底视图） 接线图（底视图）

PCB Layout (Bottom View) Wiring Diagram (Bottom View)



注 Remark：

1.未标注尺寸公差 Unmarked dimensional tolerance
≤1mm: ±0.2mm ; (1~5)mm: ±0.3mm ; ≥5mm: ±0.4mm.

2.安装孔尺寸公差: ±0.1mm.
The tolerance of PCB layout is always: ±0.1mm.

3.引出脚尺寸为预焊前尺寸.
Extended terminal dimension is dimension before soldering.

11. 主要零部件 Important Part And Components

序号 Serial No.	零部件名称 Part And Components Name	材料名称 Material Name
1	线圈骨架 Bobbin	PBT
2	外壳 Case	PET 750 度灼热丝
3	基座 Base	PBT
4	铁芯 Core	DT4C
5	衔铁 Armature	DT4E
6	动簧片 Movable spring	铜合金 Copper alloy
7	铁架 Yoke	DT4E
8	动触点 Movable contact	银合金 Silver Alloy
9	静触点 Stationary contact	银合金 Silver Alloy
10	A 脚 A terminal	铜合金 Copper alloy
11	假 B 脚 Dummy B terminal	铜合金 Copper alloy
12	线圈端子 Coil terminal	方针线 HCP wire
13	漆包线 Copper wire	3UEW
14	密封胶 Sealant	EPOXY

12. 其它 Others

12.1 规格书内的各项性能参数是基于标准测试条件下测得的初始值。All the performance data listed in the data sheet are the initial values tested under standard testing condition.

12.2 避免在强磁场条件下使用继电器，外界强磁场会造成继电器动作和释放 等参数发生变化。 To avoid using relays under strong magnetic field because it will change the parameters of relay such as pull-on and drop-out voltage.

12.3 继电器在应用过程中，线圈供电电压应满足大于额定电压的 95%，若有疑问，请与永能联系获得更多的技术支持。During the application of relays, the coil supply voltage should be greater than 95% of the rated voltage. If you have any questions,please contact Yongneng for more technical support.

12.4 继电器的电耐久性次数可能会因使用环境条件的不同而有差异，为了获得更好的电耐久次数，对于产品选型，电流负载余量应至少预留 20%。The electrical endurance frequency of relays may vary depending on the environmental conditions used. In order to achieve better electrical endurance frequency, for product selection, at least 20% of the current load margin should be reserved.

12.5 继电器在应用过程中，若电路存在冲击电流时，产品需要特殊定制，若有疑问，请与永能联系获得更多的技术支持。During the application process of relays, if there is impulse current in the circuit, the product requires special customization, If you have any questions, please contact Yongneng for more technical support.

12.6 对永能而言，不可能评定继电器在每个应用领域、应用环境的所有性能参数要求，因而，客户应根据具体的使用条件选择与之相匹配的产品，若有疑问，请与永能联系获得更多的技术支持。但产品的选型责任仅由客户负责。We could not evaluate all the performance and all the parameters for every possible application field and environment.Thus the user should be in a right position to choose the suitable produce for their own application.If there is any query,please contact Yongneng for the technical service.However,it is the user’s responsibility to determine which product should be used only.

12.7 为了保持继电器的性能，请注意不要使继电器掉落或受到强冲击。建议掉落后的继电器报废。To maintain the performances of relays, please do not make the relay drop or be shocked strongly. Suggest that the relays dropped be scrapped.

12.8 永能保留对产品更改的权利，客户在首次下单之前应确认此规格书内容，必要时可要求我司提供新的规格书。Yongneng reserves the right to make changes to the product. Customers should confirm the content of this specification before placing their first order, and may request our company to provide new specifications if necessary.