产品规格书 Product Specification Sheet

1. 品种 Type Model

1.1 种类 Kinds: 高压直流继电器 High voltage DC relay

1.2 型号 Type: YV400-B-HPS

1.3 触点形式 Contact Arrangement: 常开型 Form A

1.4 触点材料 Contact Material: 触点镀银 Contact silver plating

2. 安全标准 Safety Standard

国际安全认证 Foreign Standard:

3. 线圈额定参数 Coil Rating (at 23℃)

3.1 额定电压 Rated Voltage: 9-36VDC

3.2 线圈电阻 Coil Resistance: 3.8±10%Ω

3.3 功耗 Power: 吸合瞬间（＜100ms）约 35W；稳态约 2.0W

4. 触点参数 Contact Specification

4.1触点阻性负载 Contact Rating: 400A/750VDC

4.2最小适用负载 Min. Applicable Load: 12VDC/1A

4.3 最大切换电压 Max. Contact Voltage: 1000VDC

4.4辅助触点最大电流 Auxiliary Contact Maximum current：30VDC/2A,125VAC/3A

4.5辅助触点最小电流 Auxiliary Contact Minimum current: 8VDC 100mA

5. 性能 Performance

5.1 辅助触点接触电阻: Auxiliary Contact Resistance: Max.100mΩ

5.2 动作电压 Operate Voltage: 8~9VDC

5.3 释放电压 Release Voltage: 6~7VDC

5.4 动作时间 Operate Time: Max. 40ms

5.5 释放时间 Release Time: Max. 10ms

5.6 回跳时间 Bounce Time: Max. 5ms

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：400A/450VDC	常温 Room Temperature	接通 1S/断开 9S	6×10^3次（ops）
常开型 Normally open type	阻性：400A/750VDC	常温 Room Temperature	接通 1S/断开 9S	1×10^3次（ops）
常开型 Normally open type	阻性：400A/1000VDC	常温 Room Temperature	接通 1S/断开 9S	5×10^2次（ops）

注：本接触器为高压直流开关，在其最终的损坏模式中，它可能会失去应有的切断功能，因此不要在超过它的切换能力和寿命参数的状态下使用（请将该接触器当作一个有规定寿命的产品来对待，必要时要作替换）。

Note: This contactor is a high-voltage DC switch. In its final damage mode, it may lose its proper cut-off function, so don't use it when its switching ability and life parameters are exceeded (please treat this contactor as a product with a specified life, and replace it if necessary).

(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 No load	常温 Room Temperature	接通 1S/断开 1S	2×10^5次（ops）

(3)电流耐受 Current carrying capacity

400A	600A	800A	1000A	1500A	2000A
持续	2h	20min	30s	10s	0.6s

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

(1) 断开触点间 Between Contacts: 2500VAC (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(1000VDC)

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

5.9 振动 Vibration

强度： 1.5mm 双振幅，10~500Hz，1 小时。继电器外观、结构和性能不应有异常。

Durability: 1.5mm Double amplitude ,10 to 500Hz, 1 hours. It shall be no abnormalities in appearance, construction and performance.

5.11 冲击 Shock

稳定性： 196m/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 200μs 。

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/s^2(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/s^2(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(minute)

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

85℃±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 85±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.

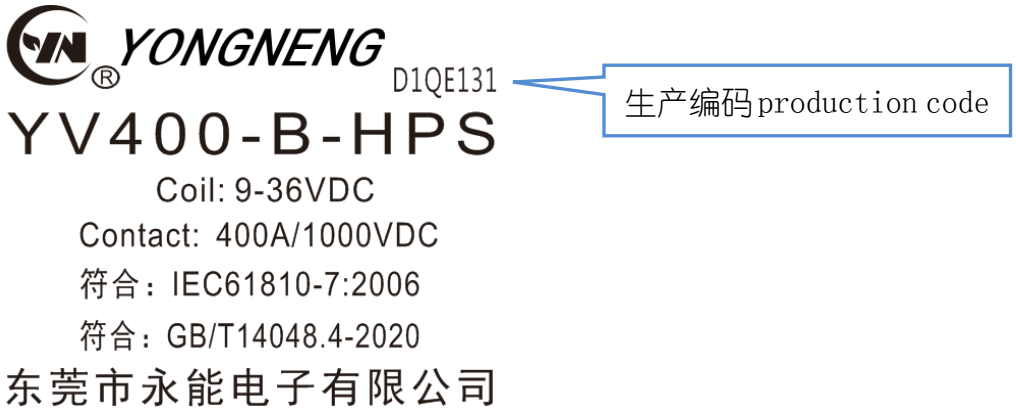
5.16 耐湿性 Moisture Resistance

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）

6. 产品标识 Marking

6.1. 激光打标位置 Laser Marking Position: 节能板 Energy-saving board



订货标记示例 ORDERING INFORMATION

YV	400	-B	-H	P	S	X			
							特殊参数	Special parameters:	无-标准型,字母或数字-特殊要求
							节能板	Energy saving board :	无-无节能板，S-有节能板 Nil-No energy-saving board，S-Have energy-saving board
							负载极性	Load the polarity :	P-无极性 P-Nonpolarity
							触点形式	Contact form :	A-无辅助触点，H-带辅助触点 A-Without auxiliary contact，H-With auxiliary contacts
							线圈规格	Coil voltage :	12-12(VDC),24-24(VDC),,48-48(VDC),B-节能型:9-36(VDC)
							触点电流	Contact Current :	400-400A
							基本型号	Type designation :	YV

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 安装方向 Mounting Direction: 任意 Free

8.使用条件 Operating Condition

8.1 温度 Temperature: -40 ~+85 ℃

8.2 湿度 Humidity: 5% ~ 85% RH

8.3 安装方向 Mounting Direction: 任意 Free

9.贮存条件 Storage Condition

9.1 温度 Temperature: 0~+40℃

9.2 湿度 Humidity: < 80% RH

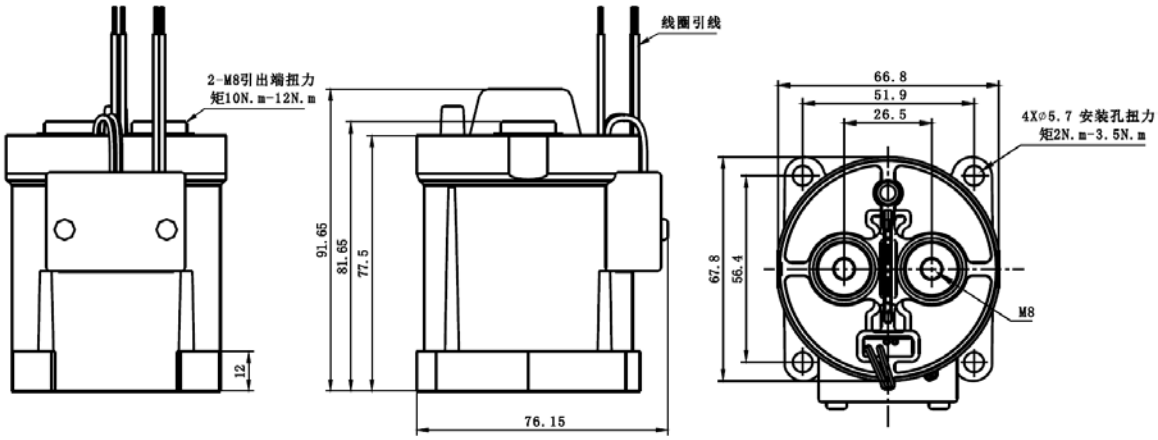
9.3 环境 Environment

(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.

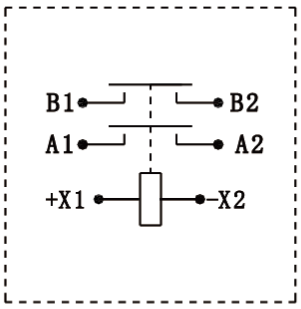
(2) 贮存中应避免阳光直照产品 Keep product is not exposed to the direct ray of the sun.

10.产品结构 Configuration

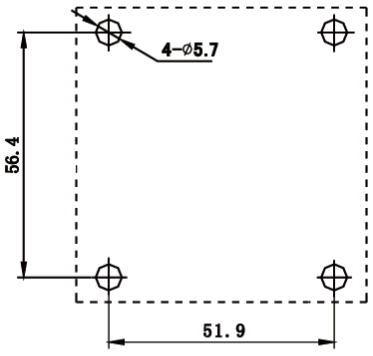
外形及结构简图 Outline And Construction Schematic



接线图 Wiring Diagram



安装孔位图 PCB Layout



说明：
节能型:A1、A2为负载端，+X1（红色线）、-X2（黑色线）为线圈端，B1（灰色线）、B2（灰色线）为辅助触点，负载无极性，线圈有极性，辅助触点无极性。
普通型：A1、A2为负载端，+X1（红色线）、-X2（黑色线）为线圈端，B1、B2（灰色线）为辅助触点,负载无极性，线圈无极性，辅助触点无极性。

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. 其他说明 Other instructions

11.1 凡安装接触器时均要使用垫圈以防螺丝松脱，客户端所有接线端子或铜排必须直接与接线柱接触 When installing contactors, washers should be used to prevent the screws from loosening. All terminals or copper bars of the client must be in direct contact with the terminals.

11.2 拧紧螺丝的扭力范围见以下规定，超出扭力最大值可导致产品破裂。The torque range for tightening the screws is as specified below. Exceeding the maximum torque may cause the product to break.

11.3 触头的力距（M5 螺栓)： 2-3N.m The force distance of the contact (M5 bolt): 2-3N.m

11.4 安装处的扭力：3.5 N.m Max。Torque at installation: 3.5 N.m Max

11.5 不要使用跌落过的产品。Do not use dropped products.

11.6 避免把产品安装在强磁场的地方（靠近变压器或磁铁处)，或靠近有热辐射的物体。Avoid installing the product in places with strong magnetic fields (near transformers or magnets), or close to objects with thermal radiation.

11.7 本接触器为高压直流开关，在其最终的击穿模式中，它可能会失去应有的切断功能，因此不要在超过它的切换能力和寿命参数的状态下使用（请将该接触器当作一个有规定寿命的产品来对待，必要时要作替换)。接触器一旦失去断开切断能力，则有可能会引起其周围零件燃烧，所以要设计好线路图，确保电源可在 1 秒钟内被切断。This contactor is a high-voltage DC switch. In its final breakdown mode, it may lose its proper cut-off function, so do not use it in a state that exceeds its switching capacity and life parameters (please use this contactor as a A product with a specified lifespan is treated and replaced if necessary). Once the contactor loses the ability to cut off, it may cause the surrounding parts to burn, so the circuit diagram should be designed to ensure that the power supply can be cut off within 1 second.

11.8 内部气体的扩散寿命 Diffusion Life of Internal Gas

本接触器采用密封仓触点，仓内充有气体，气体的扩散寿命由触点仓内的温度（即环境温度＋触点通电产生的温升)所决定，因此应确保环境温度为-40 至+85℃。This contactor adopts sealed chamber contacts, the chamber is filled with gas, and the diffusion life of the gas is determined by the temperature in the contact chamber (that is, the ambient temperature + the temperature rise generated by the contact energization), so it should be ensured that the ambient temperature is -40 to +85° C.

11.9 产品线圈的驱动电路功率必须大于产品线圈功率，否则会降低产品的切断能力。The power of the drive circuit of the product coil must be greater than the power of the product coil, otherwise it will reduce the cut-off capability of the product.

11.10 不要让杂物和油污沾到主引出端上，且外接线端子应与产品的主引出端可靠接触，否则有可能会造成引出端发热厉害。Do not let sundries and oil stains on the main terminal, and the external terminal should be in reliable contact with the main terminal of the product, otherwise it may cause the terminal to heat up.