- 输入输出光电隔离或变压器隔离；
- 输入恒流控制及LED显示，控制信号与TTL和CMOS逻辑兼容；
- 双向可控硅或单向可控反并联输出，零电流开启零电流关断；
- 功率固态更采用SCR芯片反并联输出，工作稳定可靠；
- 内置阻容吸收回路，小死区电压，小谐波干扰；
- 高于2.5KV的输入输出及底板间的安全绝缘电压；
- 体积小、输入功率小、无触点、无火花、无噪音、无机械磨损、耐振动、长寿命。



- Input and output are optically isolated or transformer isolated;
- Constant current control with LED display, compatible with TTL and CMOS logic control signals;
- Bidirectional or unidirectional SCR (Silicon Controlled Rectifier) output with zero-crossing turn-on and turn-off;
- The power solid-state relay uses an SCR chip with reverse parallel output for stable and reliable operation;
- Built-in RC snubber circuit, low dead-zone voltage, and minimal harmonic interference;
- Safety isolation voltage between input, output, and base plate is greater than 2.5kV;
- Compact size, low input power, contactless operation, no sparks, no noise, no mechanical wear, vibration-resistant, and long lifespan.

## □ 型号含义 Model Meaning

X SSR – □ D A 48 60 □ □ W6

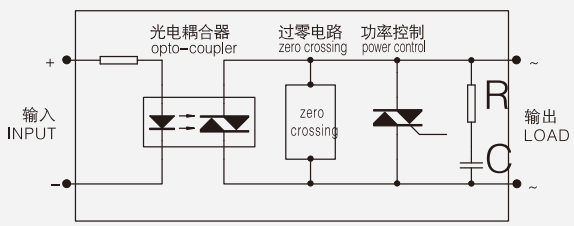
- W6 外形样式 Outline Form
- 附加功能 Additional Function
  - JK: 可监控 Monitor　F: 熔断器保护 Fuse Protection
- □ 触发类型 Trigger Type
  - 无None: 过零型 Zero crossing　R: 随机型 Random
- 60 输出电流 Output Current
  - 10: 10A　100: 100A
- 48 输出电压 Output Voltage
  - 24: 240VAC　48: 480VAC
  - 11: 110VDC　25: 250VDC
- A 输出电压类型 Output Voltage Type
  - D: 直流 DC　A: 交流 AC
- D 输入控制类型 Input Contrl Type
  - D: DC3~32V　A: AC80~250V
  - C: 4~20mA　V: 0~10VDC　R: 470~560kΩ
- □ 相数 Phase
  - 无None: 单相 Single-phase
  - 2: 双路 Dual-channel
  - 3: 三相 Three-phase
- SSR 产品类型 Product Type
  - SSR: 固态继电器 Solid State Relay
  - SSVR: 固态调压器 Solid State Voltage Regulator
- X 企业代号 Company Code

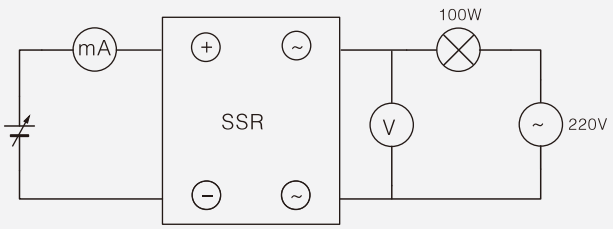
## □主要应用领域 Main Application Fields

- 工业自动化装置
- 计算机外围接口
- 照明、舞台灯光控制
- 电炉、加热、取暖控制
- 路灯、信号灯、交通灯等
- 交流电机控制
- 中间继电器、电磁阀控制
- 数控机械、遥控系统
- 彩扩、冲印设备、注塑机械
- 自动消防、保安系统

- Industrial Automation Systems
- Computer Peripheral Interfaces
- Lighting and stage lighting control
- Electric Furnace, Heating, and Climate Control
- Streetlights, Signal Lights, Traffic Lights, etc.
- AC Motor Control
- Intermediate Relays and Solenoid Valve Control
- CNC Machines and Remote Control Systems
- Color Printing, Photography Equipment, Injection Molding Machinery
- Automatic Firefighting and Security Systems

## □DA系列内部原理图及基本性能测试 Internal Circuit Diagram and Basic Performance Testing of DA Series




## □使用注意事项 Usage Precautions

- 控制电压和工作电压要求稳定，波动系数应该保证在10%之内，接线时应注意固态继电器的极性，以防接错而造成固态继电器永久性损坏。固态继电器应安装在远离热源散热条件好的地方，若环境温度过高，或者散热条件不好时，应加大工作电流余量，以保持固态继电器能均匀良好的散热。在安装固态继电器时，紧固件应扭紧，防止松动而增大接触电阻导致发热过大，底板与散热器之间也应均匀的涂上一层导热硅脂，保持固态继电器能均匀良好的散热。
- 应采用相应的过流与过压保护措施。过流保护可选用响应时间为10μS的快速熔断器，熔断器的大小可选择用实际工作电流的 1.2-1.5倍；过压保护可采用RC阻容吸收回路和压敏电阻，本系列固态继电器已全部内置RC阻容吸收回路，压敏电阻可按工作电压电流的大小来选择，220V电路电压可选用430-470V的压敏电阻，380V电路电压可选用750-820V的压敏电阻，压敏电阻的通流容量可根据电流的大小来选择。

- The control voltage and operating voltage must be stable,with a fluctuation coefficient maintained within 10%. When wiring, pay attention to the polarity of the solid-state relay to prevent permanent damage from incorrect connections.The solid-state relay should be installed in a location with good heat dissipation, away from heat sources. If the ambient temperature is too high or heat dissipation is poor, increase the current margin to ensure even and efficient heat dissipation. When installing the solid-state relay, fasteners should be tightened to prevent loosening, which could increase contact resistance and lead to excessive heating.A layer of thermal grease should be evenly applied between the base plate and the heat sink to maintain uniform and effective heat dissipation.
- Appropriate overcurrent and overvoltage protection measures should be implemented. Overcurrent protection can use a fast-blow fuse with a response time of 10μS,and the fuse size can be selected to be 1.2-1.5 times the actual working current.Overvoltage protection can include an RC snubber circuit and a varistor. This series of solid-state relays are equipped with an internal RC snubber circuit. The varistor can be selected according to the working voltage and current: for a 220V circuit, a 430-470V varistor is recommended; for a 380V circuit, a 750-820V varistor is suitable. The varistor's current handling capacity should be selected based on the current size.

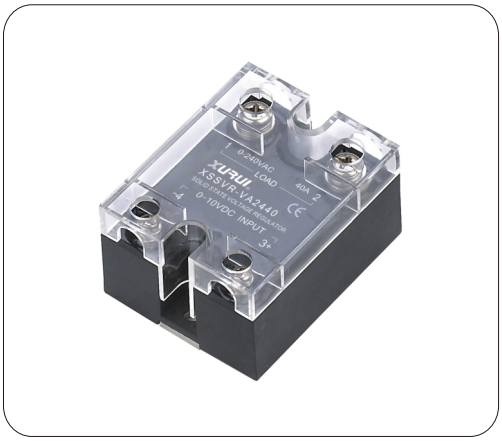
## □固态继电器的散热及散热器的选择 Heat Dissipation of Solid-State Relays and Heat Sink Selection

- 由于固态继电器内开关器件本身内阻的作用，在其导通时都会产生一定热量。因此要保证固态继电器正常工作必须要有良好的散热条件如：自然冷却、散热冷却、散热器加风冷却等。5A以下可采用自然冷却，10A以上需加散热器冷却，40A以上则要加风扇强冷。
- 散热器的效果不但跟散热器的大小有关，还跟环境温度（季节）、通风条件及安装紧密度都有关系。散热效果参考标准：使固态继电器的底板温度不超过75℃为准，实际应用过程中可在靠近固态继电器底板的散热器上安装一只70℃的温度开关（常闭型）串联在控制回路里，当散热器温度超过阀值时就会断开控制回路，从而保护固态继电器及设备，尤其是在实际电流大、安装密度大、环境温度高的情况下。除此之外还要考虑固态继电器本身是否与选用的散热器匹配，以及散热器在机柜中的安装空间，确保即使在最恶劣的情况下固态继电器底板的温度不超过75℃。
- 本公司有一系列的散热器规格可供选择，但每一型号的固态继电器不是一定要配唯一规格的散热器，两者并没有完全一致的对应关系，固态继电器的发热量只跟负载的实际电流有关，而与本身的电流等级不完全一致。(发热量计算公式：发热量=实际负载电流×1.5瓦/安)

- Due to the internal resistance of the switching devices in the solid-state relay, heat is generated when it is conducting.Therefore, to ensure the normal operation of the solid-state relay, proper heat dissipation conditions must be provided, such as natural cooling, heat sink cooling,or forced air cooling. For loads under 5A, natural cooling can be used; for loads over 10A, a heat sink is required; and for loads over 40A, a fan-assisted cooling system is necessary. The effectiveness of heat dissipation depends not only on the size of the heat sink but also on factors such as ambient temperature, ventilation conditions, and installation density.
- Heat Dissipation Standard: Ensure that the base temperature of the solid-state relay does not exceed 75℃. In practical applications, a 70℃ temperature switch(normally closed type)can be installed on the heat sink near the solid-state relay base,and wired in series with the control circuit. When the temperature of the heat sink exceeds the threshold, the temperature switch will disconnect the control circuit, thereby protecting the solid-state relay and its equipment, especially in cases of high current, dense installations, or high ambient temperatures. Additionally, it is important to ensure that the selected heat sink matches the solid-state relay and to consider the installation space within the cabinet. Even under the most extreme operating conditions, the temperature of the solid-state relay base should not exceed 75℃.
- Our company offers a range of heat sink specifications for selection, but each model of solid-state relay does not necessarily require a unique heat sink specification. The heat dissipation of the solid-state relay depends on the actual load current and is not fully aligned with its rated current. (The heat dissipation formula is as follows:Heat dissipation = Actual load current × 1.5 watts/amp)

## □特点 Features

- 螺栓安装–卧式 调压型单相交流固态调压器
- 双向可控硅/单向可控硅芯片反并联 移相输出
- 光电器件隔离
- SMD贴装工艺
- 内置RC吸收回路
- LED 指示工作状态
- Bolt installation–horizontal Type Voltage regulating single–phase AC solid–state voltage regulator
- Bidirectional thyristor/unidirectional thyristor anti–parallel normally open output
- Opto–electronic isolation
- SMD (Surface Mount Device) assembly process
- Built–in RC snubber circuit
- LED indicator for working status

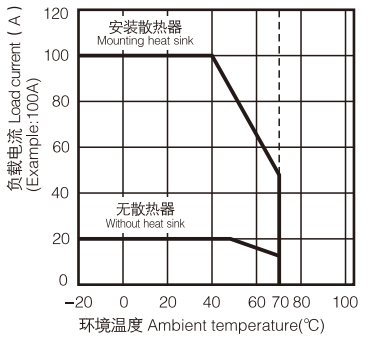


## □技术参数 Technical Specification

| | | |
|---|---|---|
| 产品型号 | Product model | XSSVR–VA□□W2 |
| 输入控制 | Input control | 0-10VDC; 0-5VDC |
| 负载电压 | Load voltage | 0–240VAC |
| 负载最大电流 | Load max current | 10A–120A |
| 负载最小电流 | Load mini current | 0.05A |
| 通态压降 | Breakover voltage | ≤2VAC |
| 输出漏电流 | Output leakage current | ≤5mA |
| 介质耐压 | Medium withstand voltage | ≥2500VAC |
| 绝缘电阻 | Insulating resistance | ≥100MΩ |
| 频率范围 | Frequency range | 47–63Hz |
| 工作温度 | Operating temperature | –20–70℃ |
| 负载电流安全系数 load current safety factor | | 阻性负载取(resistive load)50–60% |
| | | 感性负载取(inductive load)30–40% |

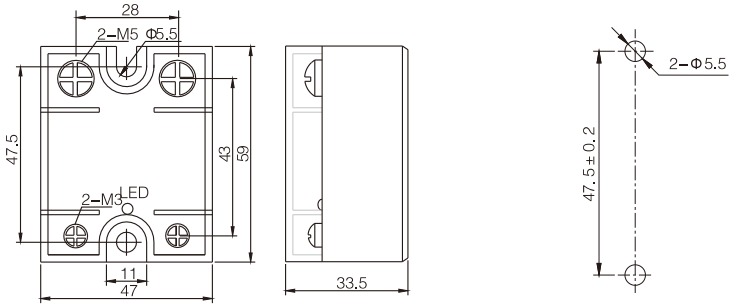
## □特性曲线 Characteristic curve

负载电流–环境温度
Load current– Ambient temperature

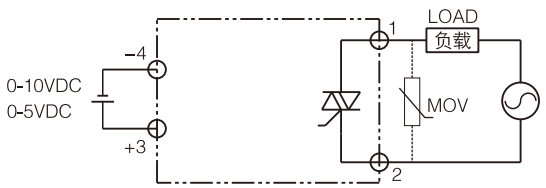



## □外形尺寸及接线图 Dimensions and Wiring Diagram

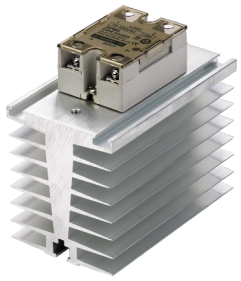
- 外形及安装尺寸图(单位: mm)
  Dimensions diagram of the Outshape and mount

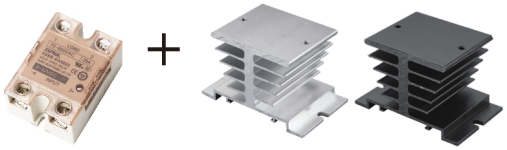


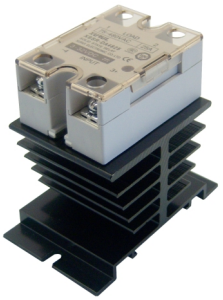

- 端子接线图 Connection Diagram

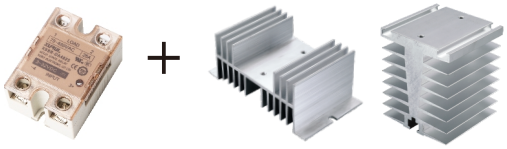


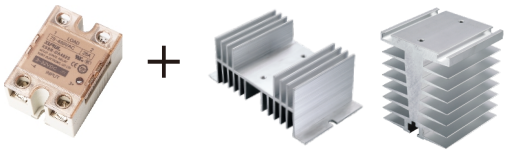
## · 单相固态接触器
Single–phase Solid State Contactor

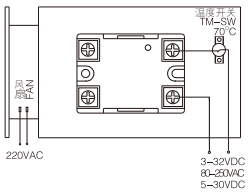


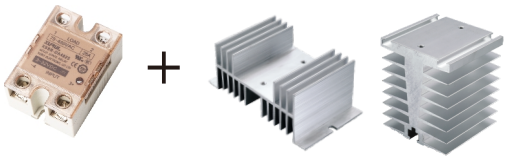


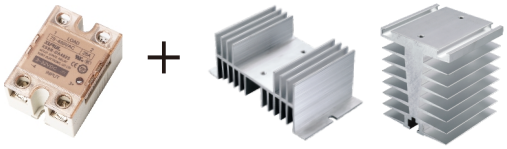


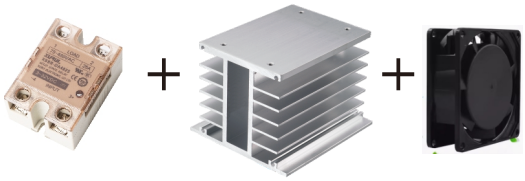










### 10A

| | | |
|---|---|---|
| 固态继电器 | SSR | XSSR–DA4810<br>XSSR–AA4810<br>XSSR–DD2510 |
| 散热器 | Heat Sink | XI–50 |
| 控制电压 | Control voltage | 3–32VDC/80–250VAC/5–30VDC |
| 负载电压 | Load voltage | 75–480VAC/12–250VDC |

### 10A~25A

| | | |
|---|---|---|
| 固态继电器 | SSR | XSSR–DA4810~25<br>XSSR–AA4810~25<br>XSSR–DD2510~25 |
| 散热器 | Heat Sink | XW–60/XT–66 |
| 控制电压 | Control voltage | 3–32VDC/80–250VAC/5–30VDC |
| 负载电压 | Load voltage | 75–480VAC/12–250VDC |

### 25A~40A

| | | |
|---|---|---|
| 固态继电器 | SSR | XSSR–DA4825~40<br>XSSR–AA4825~40<br>XSSR–DD2525~40 |
| 散热器 | Heat Sink | XW–70/XT–66 |
| 控制电压 | Control voltage | 3–32VDC/80–250VAC/5–30VDC |
| 负载电压 | Load voltage | 75–480VAC/12–250VDC |

### 40A~60A

| | | |
|---|---|---|
| 固态继电器 | SSR | XSSR–DA4840~60<br>XSSR–AA4840~60<br>XSSR–DD2540~60 |
| 散热器 | Heat Sink | XW–110/XT–110 |
| 控制电压 | Control voltage | 3–32VDC/80–250VAC/5–30VDC |
| 负载电压 | Load voltage | 75–480VAC/12–250VDC |

### 80A~100A

| | | |
|---|---|---|
| 固态继电器 | SSR | XSSR–DA4880~100<br>XSSR–AA4880~100<br>XSSR–DD2580~100 |
| 散热器 | Heat Sink | XW–150/XT–132 |
| 控制电压 | Control voltage | 3–32VDC/80–250VAC/5–30VDC |
| 负载电压 | Load voltage | 75–480VAC/12–250VDC |

### 100A~150A

| | | |
|---|---|---|
| 固态继电器 | SSR | XSSR–DA48100~150<br>XSSR–AA48100~150<br>XSSR–DD25100~120 |
| 散热器 | Heat Sink | XH–150 (风机FAN:8025) |
| 控制电压 | Control voltage | 3–32VDC/80–250VAC/5–30VDC |
| 负载电压 | Load voltage | 75–480VAC/12–250VDC |

注：XT / XH型散热器需要导轨卡扣时请说明
Please specify when the XT / XH type radiator requires a rail buckle



## ·可搭配固态继电器
Can be paired with solid-state relays


W1


W2


W6


W12


W15


M1 M2


M8