

# 单相上下端子排列 散热板一体型 SSR [电压输入型]



## SRH1 Series 产品手册

请务必遵守说明书，手册，奥托尼克斯网页等的注意事项。

本文中所记载产品的外形及规格等因产品性能改进或资料改善而变更或停产时，恕不另行通知。

### 主要特征

- 采用陶瓷基板，散热板一体型设计，散热效果佳
- 通过输入指示灯(绿色)，可确认输入状态
- 多种安装方式(DIN rail, 面板安装)
- 过零触发/随机触发方式，可实现精密的控制

### 安全注意事项

- ‘安全注意事项’是为了安全正确地使用该产品，以防止危险事故的发生，请遵守以下内容。
- ▲特殊情况下可能会发生意外或危险。

**▲警告** 如违反此项，可能导致严重伤害或伤亡。

01. 用于对人身及财产上影响大的机器(如: 核能控制, 医疗器械, 船舶, 车辆, 铁路, 航空, 易燃装置, 防灾/防盗装置等)时, 请务必加装双重安全保护装置。  
否则可能会引起人身伤亡, 财产损失及火灾。
02. 禁止在易燃易爆腐蚀性气体, 潮湿, 阳光直射, 热辐射, 振动, 冲击, 盐性的环境下使用。  
否则有爆炸或火灾危险。
03. 请在面板或 DIN rail 安装使用。  
否则有火灾及触电危险。
04. 通电状态下请勿进行接线及检修作业。  
否则有火灾及触电危险。
05. 接线时, 请确认接线图后进行连接。  
否则有火灾危险。
06. 请勿任意改造产品。  
否则有火灾及触电危险。

**▲注意** 如违反此项，可能导致轻度伤害或产品损坏。

01. 请在额定规格范围内使用。  
否则有火灾及产品故障的危险。
02. 清洁时请勿用水或有机溶剂, 应用干毛巾擦拭。  
否则有火灾及触电危险。
03. 请勿使金属碎屑, 灰尘, 线缆残渣等异物进入产品内部。  
否则有火灾及产品故障的危险。
04. 刚断电或输出为 OFF 状态下也有漏电流存在, 请勿触摸负载端子。  
否则有触电危险。

### 使用注意事项

- 使用时请遵守注意事项中的内容。  
否则可能会发生不可预料事故。
- 4 - 30 VDC~, 24 VAC~ 型号的电源电压必须绝缘且限压限流或使用 Class 2, SELV 电源设备供电。
- 请在通风良好的地方安装使用。
- 请将散热板、面板或 DIN rail 接地使用。否则有触电的危险。
- 负载通电中或刚关闭电源后请勿触摸本体及散热板。  
否则有高温灼伤的危险。
- 为从负载短路中保护产品, 熔断器(Fuse)请使用 (fuse)  $I^2t$  值为 SSR  $I^2t$  值的 1/2 以下的快速熔断器。  
发生短路时, 请更换相同规格的快速熔断器。
- 请将假负载电阻和负载并联, 使负载和假负载电阻的电流之和大于 SSR 的最小负载电流。
- 使用随机触发型产品进行相位控制时, 负载和负载电源间请安装滤波电容。
- 请勿在发生强磁场及高频干扰的机器附近使用。
- 本产品可以在以下环境条件下使用。
  - 室内 (满足规格中的周围环境条件)
  - 海拔 2,000 m 以下
  - 污染等级 2 (Pollution Degree 2)
  - 安装等级 III (Installation Category III)

## 型号构成

仅作为参考用, 实际产品不支持所有的组合。  
有关支持型号, 请在奥托尼克斯官网进行确认。

SRH1 - ① ② ③ ④ - N

## ① 额定输入电压

1: 4 - 30 VDC=  
2: 24 VAC~  
4: 90 - 240 VAC~

## ② 额定负载电压

2: 24 - 240 VAC~  
4: 48 - 480 VAC~

## ③ 额定负载电流

数字: 额定负载电流 (单位: A)

## ④ 功能

无标识: 过零触发  
R: 随机触发

## 产品构成

- 产品
- 使用说明书

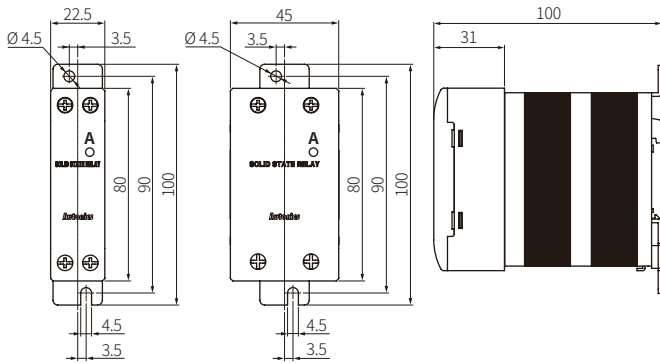
## 外形尺寸图

- 单位: mm, 请参考奥托尼克斯网页中提供的图纸。

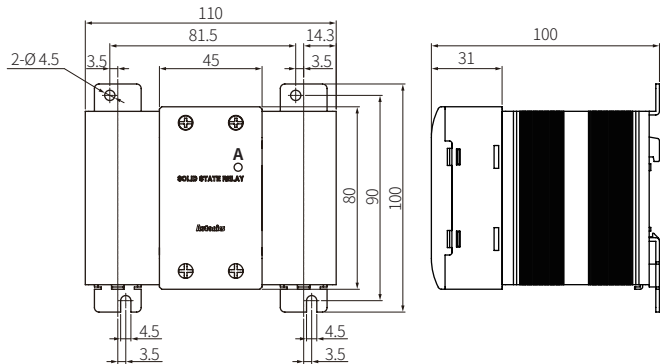
## A 输入指示灯 (绿色)

- 面板安装时, 安装螺丝请用 1.8~2.5 N·m 以下的扭矩拧紧。

■ 额定负载电流 10/15/20 A

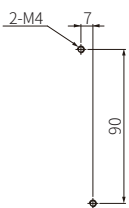


## ■ 额定负载电流 60 A

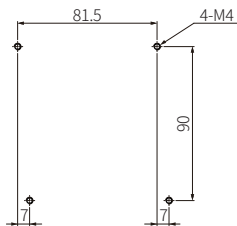


## ■ 面板加工尺寸图

- 额定负载电流 10/15/20/30/40 A



- 额定负载电流 60 A



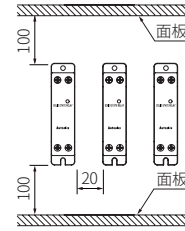
## 安装注意事项

## 注意烫伤

请勿在通电中或刚切断负载电源后, 触摸散热板或本体, 以免烫伤。

## ■ 安装间隔

- 安装多个 SSR 时, 请保持一定的间隔。
- SSR 水平方向(输入端和输出端相同高度)安装时, 请按额定负载电流的 50% 以下使用。

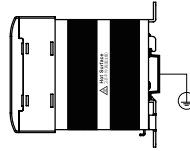


## ■ DIN rail 安装方法

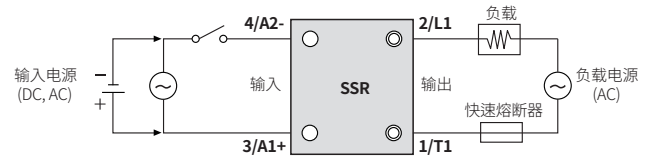
- 安装时, 将产品后面的 Rail lock 上端挂在 DIN rail 上, 向下按压并推入。
- 分离时, 向下按压产品的状态下向前推即可。

## ■ 接地

- 请将 DIN rail 进行接地。

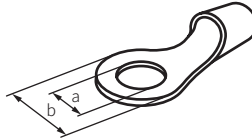


## 接线图



## 接线注意事项

- 单位: mm, 端子台接线时, 请使用 O 型压接端子。



区分	输入	输出	
额定负载电流	10/15/20/30/40/60 A	10/15/20 A	30/40/60 A
a	≥ 3.5 mm	≥ 4.0 mm	≥ 5.0 mm
b	≤ 7.0 mm	≤ 9.0 mm	≤ 12.0 mm

## 规格

## ■ 输入

额定输入电压范围	4 - 30 VDC $\equiv$	24 VACrms~ (50 / 60 Hz)	90 - 240 VACrms~ (50 / 60 Hz)
允许输入电压范围	4 - 32 VDC $\equiv$	19 - 30 VACrms~ (50 / 60 Hz)	85 - 264 VACrms~ (50 / 60 Hz)
最大输入电流	18 mA	15 mArms (24 VACrms~)	18 mArms (240 VACrms~)
动作电压	$\geq 4$ VDC $\equiv$	$\geq 19$ VACrms~	$\geq 85$ VACrms~
复位电压	$\leq 1$ VDC $\equiv$	$\leq 4$ VACrms~	$\leq 10$ VACrms~
动作时间	过零触发	$\leq$ 负载电源的 0.5 周期 + 1ms	$\leq$ 负载电源的 2 周期 + 1ms
	随机触发	$\leq 1$ ms	-
复位时间	$\leq$ 负载电源的 0.5 周期 + 1ms	$\leq$ 负载电源的 2 周期 + 1ms	$\leq$ 负载电源的 2 周期 + 1ms

## ■ 输出

额定负载电压范围	24 - 240 VACrms~(50 / 60 Hz)						
允许负载电压范围	24 - 264 VACrms~(50 / 60 Hz)						
额定负载电流	阻性负载 (AC-51) <sup>01)</sup>	10 Arms	15 Arms	20 Arms	30 Arms	40 Arms	60 Arms
最小负载电流	0.15 Arms	0.15 Arms	0.2 Arms	0.5 Arms	0.5 Arms	0.5 Arms	0.5 Arms
最大 1 周期 突波电流 (60 Hz)	160 A	160 A	250 A	400 A	500 A	1000 A	1000 A
非反复突波电流最大值 (I <sub>t</sub> , t=8.3 ms)	130 A <sup>2</sup> s	130 A <sup>2</sup> s	300 A <sup>2</sup> s	910 A <sup>2</sup> s	1000 A <sup>2</sup> s	4000 A <sup>2</sup> s	4000 A <sup>2</sup> s
峰值电压 (非反复)	600 V						
漏电流 (Ta=25 °C)	$\leq 10$ mArms (240 VAC~/60 Hz)						
输出 ON 电压下降 [Vpk] (最大负载电流)	$\leq 1.6$ V						
关断状态 dv/dt	500 V/ $\mu$ s						
额定负载电压范围	48 - 480 VACrms~(50 / 60 Hz)						
允许负载电压范围	48 - 528 VACrms~(50 / 60 Hz)						
额定负载电流	阻性负载 (AC-51) <sup>01)</sup>	10 Arms	15 Arms	20 Arms	30 Arms	40 Arms	60 Arms
最小负载电流	0.5 Arms	0.5 Arms	0.5 Arms	0.5 Arms	0.5 Arms	0.5 Arms	0.5 Arms
最大 1 周期 突波电流 (60 Hz)	300 A	300 A	300 A	500 A	500 A	1000 A	1000 A
非反复突波电流最大值 (I <sub>t</sub> , t=8.3 ms)	350 A <sup>2</sup> s	350 A <sup>2</sup> s	350 A <sup>2</sup> s	1000 A <sup>2</sup> s	1000 A <sup>2</sup> s	4000 A <sup>2</sup> s	4000 A <sup>2</sup> s
峰值电压 (非反复)	1200 V (过零触发), 1000 V (随机触发)						
漏电流 (Ta=25 °C)	$\leq 10$ mArms (480 VAC~/60 Hz)						
输出 ON 电压下降 [Vpk] (最大负载电流)	$\leq 1.6$ V						
关断状态 dv/dt	500 V/ $\mu$ s						

01) AC-51 是 IEC60947-4-3 中规定的各负载的应用分类(Utilization category)。

## ■ 一般规格

耐电压 (Vrms)	2500 VAC ~ 50 / 60 Hz 1分钟 (输入-输出, 输入/输出-外壳)
绝缘阻抗	$\geq 100$ M $\Omega$ (500 VDC $\equiv$ megger) (输入-输出, 输入/输出-外壳)
指示灯	输入指示灯(绿色)
耐振动	10 ~ 55 Hz (周期1分钟) 振幅 0.75 mm X, Y, Z 各方向 1 小时
耐振动 (误动作)	10 ~ 55 Hz (周期1分钟) 振幅 0.5 mm X, Y, Z 各方向 10 分钟
抗冲击	300 m/s <sup>2</sup> ( $\approx 30$ G) X, Y, Z 各方向 3 次
抗冲击 (误动作)	100 m/s <sup>2</sup> ( $\approx 10$ G) X, Y, Z 各方向 3 次
使用周围温度 <sup>01)</sup>	-30 ~ 80 °C (额定输入电压 90 - 240 VAC ~ 时: -20 ~ 70 °C), 存储时: -30 ~ 100 °C (未结冰, 未结露状态)
使用周围湿度	45 ~ 85 %RH, 存储时: 45 ~ 85 %RH (未结冰, 未结露状态)
输入端子电线	$\geq 1 \times 0.5$ mm <sup>2</sup> (1 $\times$ AWG 20), $\leq 1 \times 1.5$ mm <sup>2</sup> (1 $\times$ AWG 16) 或 $\leq 2 \times 1.5$ mm <sup>2</sup> (2 $\times$ AWG 16)
输出端子电线 <sup>02)</sup>	额定负载电流 10 / 15 / 20 A : $\geq 1 \times 0.75$ mm <sup>2</sup> (1 $\times$ AWG 18), $\leq 1 \times 4$ mm <sup>2</sup> (1 $\times$ AWG 12) 或 $\leq 2 \times 2.5$ mm <sup>2</sup> (2 $\times$ AWG 14) 额定负载电流 30 / 40 / 60 A : $\geq 1 \times 1.5$ mm <sup>2</sup> (1 $\times$ AWG 16), $\leq 1 \times 16$ mm <sup>2</sup> (1 $\times$ AWG 6) 或 $\leq 2 \times 6$ mm <sup>2</sup> (2 $\times$ AWG 10)
输入端子固定扭矩	0.75 ~ 0.95 N m
输出端子固定扭矩	额定负载电流 10 / 15 / 20 A: 1.0 ~ 1.35 N·m 额定负载电流 30 / 40 / 60 A: 1.6 ~ 2.2 N·m
认证	CE, RoHS, ENEC
产品重量(含包装)	额定负载电流 10 / 15 / 20 A: $\approx 225$ g ( $\approx 298$ g) 额定负载电流 30 / 40 A: $\approx 410$ g ( $\approx 500$ g) 额定负载电流 60 A: $\approx 680$ g ( $\approx 770$ g)

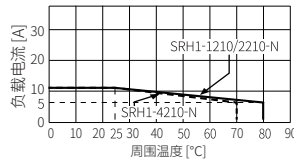
01) 根据周围温度的不同, 额定负载电流的容量将不同, 请参考产品手册的 'SSR 特性曲线'。

02) 连接输出端子时, 需使用符合负载电流容量的电线。

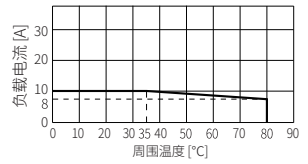
## SSR 特性曲线

- 使用周围温度及特性曲线, 根据额定输入电压不同而有差异, 使用时需注意。
- $\Delta$  近距离安装产品时, 散热效果将减弱, 请按额定负载电流的 50% 以下使用。
- SSR 特性曲线已获得 UL 认证机关的承认。

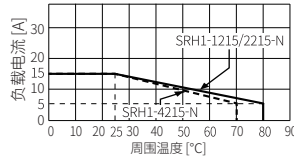
## ■ SRH1-1210/2210/4210-N



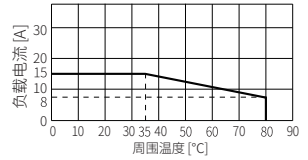
## ■ SRH1-1410/1410R/2410-N



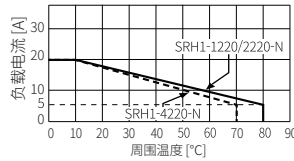
## ■ SRH1-1215/2215/4215-N



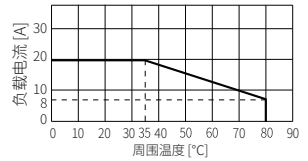
## ■ SRH1-1415/1415R/2415-N



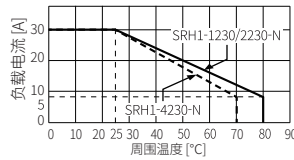
## ■ SRH1-1220/2220/4220-N



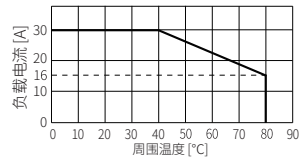
## ■ SRH1-1420/1420R/2420-N



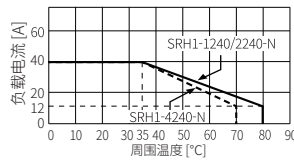
## ■ SRH1-1230/2230/4230-N



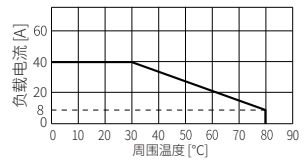
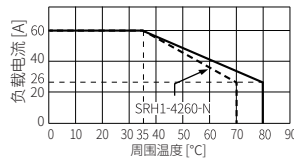
## ■ SRH1-1430/1430R/2430-N



## ■ SRH1-1240/2240/4240-N



## ■ SRH1-1440/1440R/2440-N

■ SRH1-1260/1460/1460R-N  
SRH1-2260/2460/4260-N

# Single-phase SSR with Detachable Heatsink



## SR1 Series PRODUCT MANUAL

For your safety, read and follow the considerations written in the instruction manual, other manuals and Autonics website.

The specifications, dimensions, etc. are subject to change without notice for product improvement. Some models may be discontinued without notice.

### Features

- Compact, universal design for flexible installation
- High heat dissipation efficiency with ceramic PCB
- Zero cross turn-on, random turn-on models available
- Input Indicator (green)

### Safety Considerations

- Observe all 'Safety Considerations' for safe and proper operation to avoid hazards.
- ⚠ symbol indicates caution due to special circumstances in which hazards may occur.

**⚠ Warning** Failure to follow instructions may result in serious injury or death.

- 01. Fail-safe device must be installed when using the unit with machinery that may cause serious injury or substantial economic loss.** (e.g., nuclear power control, medical equipment, ships, vehicles, railways, aircraft, combustion apparatus, safety equipment, crime/disaster prevention devices, etc.)  
Failure to follow this instruction may result in personal injury, economic loss or fire.
- 02. Do not use the unit in the place where flammable/explosive/corrosive gas, high humidity, direct sunlight, radiant heat, vibration, impact or salinity may be present.**  
Failure to follow this instruction may result in explosion or fire.
- 03. Install on a device panel to use.**  
Failure to follow this instruction may result in fire or electric shock.
- 04. Do not connect, repair, or inspect the unit while connected to a power source.**  
Failure to follow this instruction may result in fire or electric shock.
- 05. Check 'Connections' before wiring.**  
Failure to follow this instruction may result in fire.
- 06. Do not disassemble or modify the unit.**  
Failure to follow this instruction may result in fire or electric shock.

**⚠ Caution** Failure to follow instructions may result in injury or product damage.

- 01. Use the unit within the rated specifications.**  
Failure to follow this instruction may result in fire or product damage.
- 02. Use a dry cloth to clean the unit, and do not use water or organic solvent.**  
Failure to follow this instruction may result in fire or electric shock.
- 03. Keep the product away from metal chip, dust, and wire residue which flow into the unit.**  
Failure to follow this instruction may result in fire or product damage.
- 04. Since leakage current still flows right after turning off the power or in the output OFF status, do not touch the load terminal.**  
Failure to follow this instruction may result in electric shock.

### Cautions during Use

- Follow instructions in 'Cautions during Use'.  
Otherwise, it may cause unexpected accidents.
- 4 - 30 VDC≒ model power supply should be insulated and limited voltage/current or Class 2, SELV power supply device.
- Attach a heat sink or install the unit in the well ventilated place.  
To attach the heat sink, use Thermal Grease as below or that of equal specification.  
- Thermal Grease  
: GE TOSHIBA (YG6111), KANTO-KASEI (FLOIL G-600), SHINETSU (G746)
- Ground to the panel. Failure to follow this instruction may result in electric shock.
- While supplying power to the load or right after turning off the power of the load, do not touch the body and heat sink. Failure to follow this instruction may result in burn due to high temperature of the surface.
- In order to protect the product from the short-circuit current of the load, use rapid fuse of which  $I^2t$  is under the 1/2 of SSR  $I^2t$ . When short-circuited, replace the fuse to those of same specification with the used rapid fuse.
- Install dummy resistance in parallel with the load, to keep the sum of current flowing in the load and dummy resistance being over SSR minimum load current.
- When using random turn-on model for phase control, install noise filter between the load and the power of the load.
- Do not use near the equipment which generates strong magnetic force or high frequency noise.
- This unit may be used in the following environments.
  - Indoors (in the environment condition rated in 'Specifications')
  - Altitude max. 2,000 m
  - Pollution degree 2
  - Installation category III

**Ordering Information**

This is only for reference, the actual product does not support all combinations. For selecting the specified model, follow the Autonics website.

**SR1 - ① ② ③ ④ - N**

**① Rated input voltage**

- 1: 4 - 30 VDC==
- 4: 90 - 240 VAC~

**③ Rated load current**

Number: Rated load current (unit: A)

**② Rated load voltage**

- 2: 24 - 240 VAC~
- 4: 48 - 480 VAC~

**④ Function**

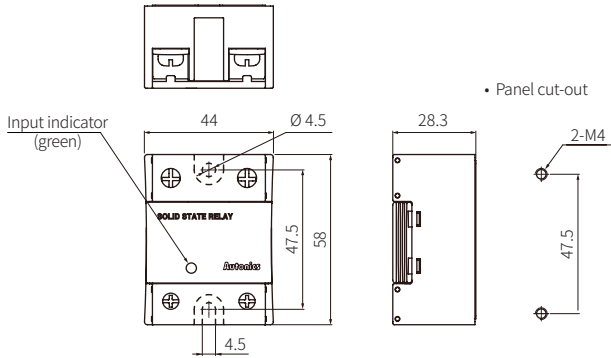
No-mark: Zero cross turn-on  
R: Random turn-on

**Product Components**

- Product
- Instruction manual

**Dimensions**

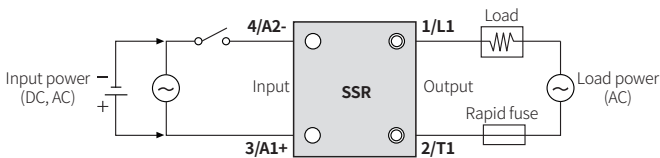
- Unit: mm, For the detailed drawings, follow the Autonics website.
- When installing to the panel, tightening the screw with a torque of 1.8 to 2.5 N.m.



**Cautions during Installation**

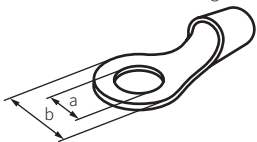
- When installing multiple SSRs, be sure to keep space between SSRs for heat radiation.
- When installing SSRs horizontally (input part and output part on the same height), be sure to supply less than 50 % of the rated load current.

**Connections**



**Cautions for Wiring**

- Unit: mm, When connecting the wire to the terminal, use the round crimp terminal.



Size	Input	Output
a	≥ 3.5 mm	≥ 5.0 mm
b	≤ 7.0 mm	≤ 12.0 mm

**Specifications**

**Input**

Rated input voltage range	4 - 30 VDC==	90 - 240 VACrms~ (50 / 60 Hz)
Allowable input voltage range	4 - 32 VDC==	85 - 264 VACrms~ (50 / 60 Hz)
Max. input current	18 mA	18 mA Arms (240 VACrms~)
Operating voltage	≥ 4 VDC==	≥ 85 VACrms~
Releasing voltage	≤ 1 VDC==	≤ 10 VACrms~
Operate time	Zero cross turn-on	≤ 0.5 cycle of load power + 1 ms
	Random turn-on	≤ 1 ms
Release time	≤ 0.5 cycle of load power + 1 ms	≤ 2 cycle of load power + 1 ms

**Output**

Rated load voltage range	24 - 240 VACrms~ (50 / 60 Hz)									
Allowable load voltage range	24 - 264 VACrms~ (50 / 60 Hz)									
Rated load current	Resistive load (AC-51) <sup>(01)</sup>		10 Arms	15 Arms	20 Arms	25 Arms	30 Arms	40 Arms	50 Arms	75 Arms
Min. load current			0.15 Arms	0.2 Arms	0.2 Arms	0.2 Arms	0.5 Arms			
Max. 1 cycle surge current (60 Hz)			160 A	250 A	400 A	1000 A				
Max. non-repetitive surge current (I <sup>2</sup> t, t = 8.3 ms)			130 A <sup>2</sup> s	300 A <sup>2</sup> s	910 A <sup>2</sup> s	4000 A <sup>2</sup> s				
Peak voltage (non-repetitive)	600 V									
Leakage current (Ta = 25 °C)	≤ 10 mA Arms (240 VAC~/60 Hz)									
Output ON voltage drop [Vpk] (max. load current)	≤ 1.6 V									
Static off state dv/dt	500 V/μs									

Rated load voltage range	48 - 480 VACrms~ (50 / 60 Hz)									
Allowable load voltage range	48 - 528 VACrms~ (50 / 60 Hz)									
Rated load current	Resistive load (AC-51) <sup>(01)</sup>		10 Arms	15 Arms	20 Arms	25 Arms	30 Arms	40 Arms	50 Arms	75 Arms
Min. load current			0.5 Arms	0.5 Arms	0.5 Arms	0.5 Arms	0.5 Arms			
Max. 1 cycle surge current (60 Hz)			300 A	500 A	500 A	1000 A				
Max. non-repetitive surge current (I <sup>2</sup> t, t = 8.3 ms)			350 A <sup>2</sup> s	1000 A <sup>2</sup> s	1000 A <sup>2</sup> s	4000 A <sup>2</sup> s				
Peak voltage (non-repetitive)	1200 V (zero cross turn-on), 1000 V (random turn-on)									
Leakage current (Ta = 25 °C)	≤ 10 mA Arms (480 VAC~/60 Hz)									
Output ON voltage drop [Vpk] (max. load current)	≤ 1.6 V									
Static off state dv / dt	500 V/μs									

(01) AC-51 is utilization category at IEC60947-4-3.

**General specifications**

Dielectric strength (Vrms)	Input-output, input / output-case : 2500 VAC~ 50 / 60 Hz for 1 min
Insulation resistance	Input-output, input / output-case : ≥ 100 MΩ (500 VDC== megger)
Indicator	Input indicator (green)
Vibration	0.75 mm double amplitude at frequency of 10 to 55 Hz (for 1 min) in each X, Y, Z direction for 1 hour
Vibration (malfunction)	0.5 mm double amplitude at frequency of 10 to 55 Hz (for 1 min) in each X, Y, Z direction for 10 min
Shock	300 m/s <sup>2</sup> (≈ 30 G) in each X, Y, Z direction for 3 times
Shock (malfunction)	100 m/s <sup>2</sup> (≈ 10 G) in each X, Y, Z direction for 3 times
Ambient temperature <sup>(01)</sup>	-30 to 80 °C (in case of the rated input voltage 90 - 240 VAC~: -20 to 70 °C), storage: -30 to 100 °C (no freezing or condensation)
Ambient humidity	45 to 85 %RH, storage: 45 to 85 %RH (no freezing or condensation)
Input terminal connection	≥ 1 × 0.5 mm <sup>2</sup> (1 × AWG 20), ≤ 1 × 1.5 mm <sup>2</sup> (1 × AWG 16) or ≤ 2 × 1.5 mm <sup>2</sup> (2 × AWG 16)
Output terminal connection <sup>(02)</sup>	≥ 1 × 1.5 mm <sup>2</sup> (1 × AWG 16), ≤ 1 × 16 mm <sup>2</sup> (1 × AWG 6) or ≤ 2 × 6 mm <sup>2</sup> (2 × AWG 10)
Input terminal fixed torque	0.75 to 0.95 N m
Output terminal fixed torque	1.6 to 2.2 N m
Approval	CE, RoHS, ENEC
Weight (packaged)	≈ 73 g (≈ 111g)

(01) See the 'SSR Derating Curve' because the capacity of the rated load current is differ depending on the ambient temperature.  
(02) Connect the wire met the capacity of the load current to the output terminal.

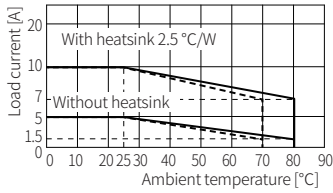
**SSR Derating Curve**

• Be aware that the ambient temperature and the derating curve is different by the rated input voltage when using the product.

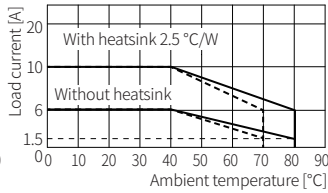
————	Rated input voltage 4 - 30 VDC ~ (SR1-1□□□-N)
-----	Rated input voltage 90 - 240 VAC ~ (SR1-4□□□-N)

•  $\Delta$  Since the effectiveness of the heat radiation is decreased when multiple SSRs are installed closely, be sure to supply less than 50 % of the rated load current.  
 • SSR derating curves obtained approval from the UL certification authority.

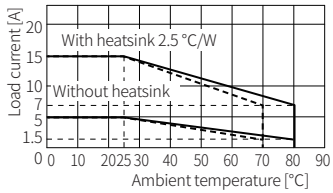
■ **SR1-1210 / 4210-N**



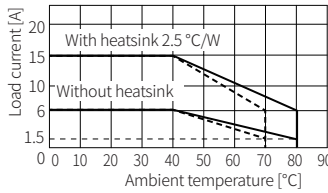
■ **SR1-1410 / 1410R / 4410-N**



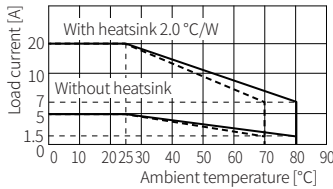
■ **SR1-1215 / 4215-N**



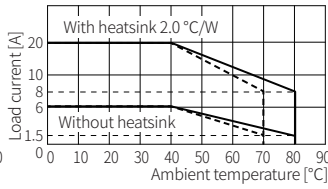
■ **SR1-1415 / 1415R / 4415-N**



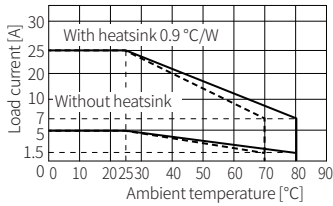
■ **SR1-1220 / 4220-N**



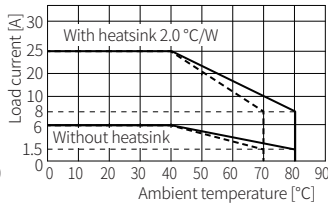
■ **SR1-1420 / 1420R / 4420-N**



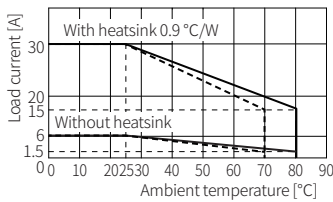
■ **SR1-1225 / 4225-N**



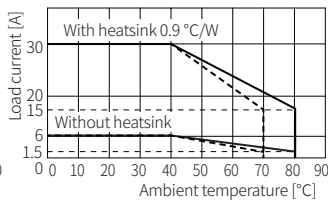
■ **SR1-1425 / 1425R / 4425-N**



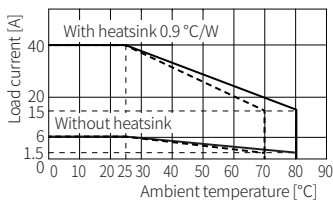
■ **SR1-1230 / 4230-N**



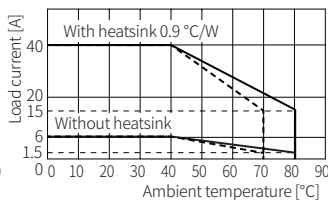
■ **SR1-1430 / 1430R / 4430-N**



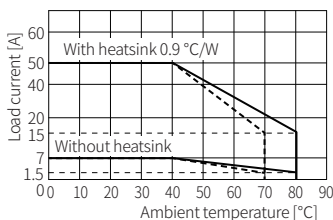
■ **SR1-1240 / 4240-N**



■ **SR1-1440 / 1440R / 4440-N**



■ **SR1-1250 / 1450 / 1450R-N  
SR1-4250 / 4450-N**



■ **SR1-1275 / 1475 / 1475R-N  
SR1-4275 / 4475-N**

