## Single phase, Slim heatsink separated type SSR

NEW

### ▣ Features

- Compact size(width 22.5mm)
- Superior dielectric strength : 4,000VAC
- Improved reliability by maximizing heat protection efficiency with ceramic board
- Supports Zero cross turn-on/Random turn-on type
- Checks input status by Input LED(green)

⚠ **Please read "Caution for your safety" in operation manual before using.**

### ▣ Ordering information

| SRC | 1 | – | 1 | 4 | 20 | R |
|---|---|---|---|---|---|---|

| | | |
|---|---|---|
| Function | No Mark | Zero cross turn-on |
| | R | Random turn-on |
| Rated load current (resistive load) | 15 | 15A |
| | 20 | 20A |
| | 30 | 30A |
| Load voltage(rated) | 2 | 24-240VAC |
| | 4 | 48-480VAC |
| Input voltage(rated) | 1 | 4-30VDC |
| | 4 | 90-240VAC |
| Control phase | 1 | Single phase |
| Item | SRC | Solid State Relay(compact size) |

| Model | Input voltage | Rated load current | Load voltage | Zero cross turn-on/Random turn-on |
|---|---|---|---|---|
| SRC1-1215 | 4-30VDC | 15A | 24-240VAC | Zero cross turn-on |
| SRC1-4215 | 90-240VAC | | | |
| SRC1-1220 | 4-30VDC | 20A | | |
| SRC1-4220 | 90-240VAC | | | |
| SRC1-1230 | 4-30VDC | 30A | | |
| SRC1-4230 | 90-240VAC | | | |
| SRC1-1420 | 4-30VDC | 20A | 48-480VAC | |
| SRC1-4420 | 90-240VAC | | | |
| SRC1-1420R | 4-30VDC | | | Random turn-on |

### ▣ Specifications

#### ◎ Input

| | | 4-30VDC input voltage | 90-240VAC input voltage |
|---|---|---|---|
| Input voltage range | | 4-32VDC | 85-264VACrms(50/60Hz) |
| Max. input current | | 9mA(Zero cross turn-on), 13mA(Random turn-on) | 7mArms(240VACrms) |
| Pick-up voltage | | 4VDC | 85VACrms |
| Drop-out voltage | | 1VDC | 10VACrms |
| Turn-on time | Zero cross turn-on | Max. 0.5 cycle of load source + 1ms | Max. 1.5 cycle of load source + 1ms |
| | Random turn-on | Max. 1ms | — |
| Turn-off time | | Max. 0.5 cycle of load source + 1ms | Max. 1.5 cycle of load source + 1ms |

## ▣ Specifications

### ◎ Output

| | | 24-240VAC load voltage | | | 48-480VAC load voltage |
|---|---|---|---|---|---|
| Load voltage range(50/60Hz) | | 24-264VACrms | | | 48-528VACrms |
| Rated load current Ta=25℃ | Resistive load (AC-51) | 15Arms | 20Arms | 30Arms | 20Arms |
| | Motor load (AC-53a) | — | | | 5Arms |
| Min. load current | | 0.15Arms | 0.2Arms | 0.2Arms | 0.5Arms |
| Max. 1cycle surge current (60Hz) | | 190A | 270A | 330A | 300A |
| Max. non-repetitive surge current($I^2t$, t=8.3ms) | | 150$A^2S$ | 300$A^2S$ | 500$A^2S$ | 350$A^2S$ |
| Peak voltage(Non-repetitive) | | 600V | | | 1200V(zero cross turn-on),1000V(random turn-on) |
| Leakage current (240VAC/60Hz, Ta=25℃) | | Max. 10mArms | | | |
| Output on voltage drop[Vpk] (Max. load current) | | Max. 1.6V | | | |
| Static off-state dv/dt | | 500V/μs | | | |

### ◎ General Specifications

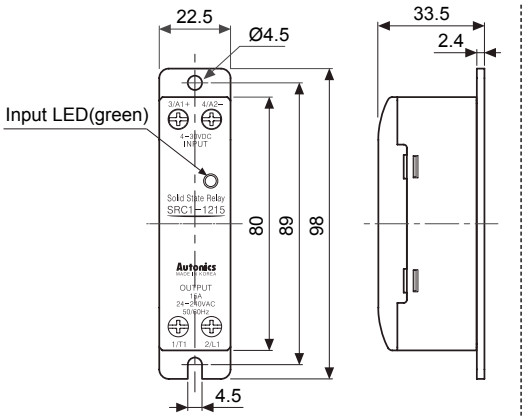
| | | |
|---|---|---|
| Certification | | UL508, CSA22.2 No.14, IEC/EN 60947-4-3 |
| Dielectric strength(Vrms) | | 4000VAC 50/60Hz 1min.(Input-Output, Input/Output-Case) |
| Insulation resistance | | Min. 100MΩ(at 500VDC Megger) |
| Vibration | | 10 to 55Hz double amplitude 0.75mm in each of X, Y, Z directions for 1 hour |
| Input LED | | Green |
| Environ -ment | Ambient temperature | -30 to 80℃, storage: -30 to 100℃(Rated load current capacity is different based on the surrounding temperature. Refer to '▣SSR Derating curve'.) |
| | Ambient humidity | 45 to 85%RH |
| Input terminal connection | | Min. 1×0.5$mm^2$(1×AWG20), Max. 1×1.5$mm^2$(1×AWG16) or 2×1.5$mm^2$(2×AWG16) |
| Output terminal connection | | Min. 1×0.75$mm^2$(1×AWG18), Max. 1×4$mm^2$(1×AWG12) or 2×2.5$mm^2$(2×AWG14) |
| Input terminal fixed torque | | 0.75 to 0.95N·m |
| Output terminal fixed torque | | 1 to 1.35N·m |
| Unit weight | | Approx. 85g |

※For wiring the terminal, an O-ring terminal must be used.
※Environment resistance is rated at no freezing or condensation.

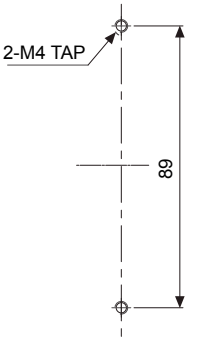
## ▣ Dimensions & Mounting

(unit: mm)

### ◎ Dimensions

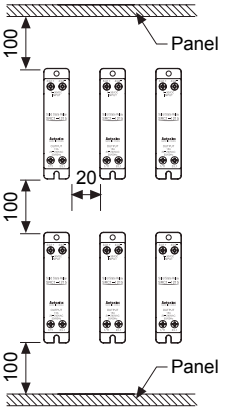



### ◎ Hole cut-out for panel front mounting




Screw tightening torque for mounting: 1.8 to 2.5N·m

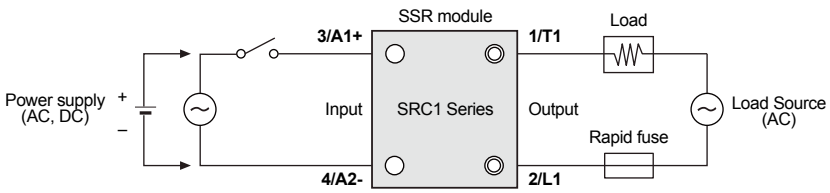
### ◎ Installation interval




**High temperature caution**
Make sure do not touch the heat sink or the unit body while power is supplied or right after load power is turned off. If not, it may cause a burn.

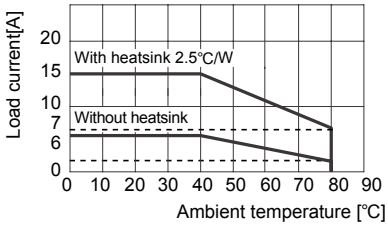
※For mounting multiple SSR, please keep certain installation intervals for heat prevention.
For horizontal installation(when the heights of input part and output part are equal), it is recommended to apply 50% of rated load current.

## ▣ Connections

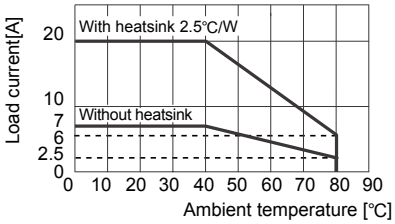



## ▣ SSR Characteristic curve

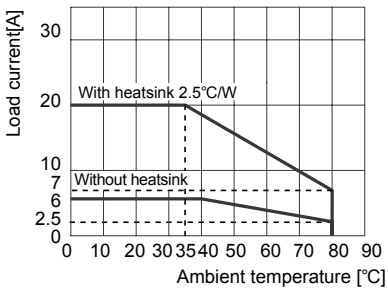
### ◎ SRC1-1215/4215



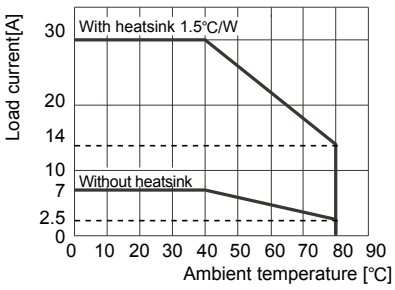

### ◎ SRC1-1220/4220




### ◎ SRC1-1420/4420/1420R




### ◎ SRC1-1230/4230




⚠Please supply less than 50% of the rated load current when installing several SSRs closely due to decreasing effectiveness of protection against heat.

## ▣ Proper usage

**High temperature caution**

**Make sure do not touch the heat sink or the unit body while power is supplied or right after load power is turned off. If not, it may cause a burn.**

**⚠ Caution for using**

1. Attach a heatsink and ventilate for smooth convection current. If not, congested heat transfer may cause product failure or malfunction.
2. For mounting multiple SSR, please keep certain installation intervals for heat prevention. For horizontal installation(when the heights of input part and output part are equal), it is recommended to apply less than 50% of the rated load current.
3. Make sure do not touch the heatsink or the unit body while power is supplied or right after load power is turned OFF. If not, it may cause a burn.
4. Connect the proper cable for the rated load current with output terminal.
5. Use rapid fuse of which $I^2t$ is under 1/2 of SSR $I^2t$ in order to protect the unit from load's short- circuit current.
6. In case of a short-circuit please replace the fuse with a 1/2 of SSR $I^2t$ value specified semiconductor protective type.
7. In case that load's current is lower than SSR min. load current, connect dummy resistance to the load in parallel so as to make load's current higher than SSR min. load current.
8. When selecting phase control with random turn-on model, install the noise filter between load and load's source
9. Make sure that the screw on output terminal is tightly fastened. Using the unit with loose bolt may cause product failure or malfunction.
10. Do not touch the load's terminal even if output is OFF. It may cause electric shock.
11. The signal input of the 4-30VDC model should be supplied by the insulated and limited voltage/current or by Class 2 power supply.
12. To attach the heatsink, use Thermal Grease as below or that of equal specification.
    ※Thermal Grease: GE TOSHIBA(YG6111), KANTO-KASEI(FLOIL G-600), SHINETSU(G746)

## ▣ Proper usage

13. Proper application environment (Avoid following environments to install)
① Where temperature/humidity is beyond the specification
② Where dew condensation occurs due to temperature change
③ Where inflammable or corrosive gas exists
④ Where direct rays of light exist
⑤ Where severe shock, vibration or dust exists
⑥ Where near facilities generating strong magnetic forces or electric noise
14. Installation environment
① It shall be used indoor
② Altitude Max. 2,000m
③ Pollution Degree 2
④ Installation CategoryIII