

Single-phase Slim SSR with Detachable Heatsink



SRC1 Series CATALOG

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

- Slim, compact size (22.5 mm width)
- High heat dissipation efficiency with ceramic PCB
- Zero cross turn-on, random turn-on models available
- Input Indicator (green)

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

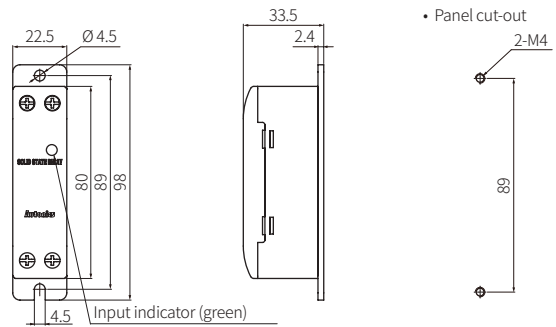
- No-mark: Zero cross turn-on
- R: Random turn-on

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.



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~ |
| Operating time | Zero cross turn-on | ≤ 0.5 cycle of load power + 1 ms |
| | Random turn-on | ≤ 1 ms |
| Releasing 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) ⁰¹⁾ | 10 Arms | 15 Arms | 20 Arms |
| Min. load current | | 0.15 Arms | 0.2 Arms | 0.5 Arms |
| Max. 1 cycle surge current (60 Hz) | | 160 A | 250 A | 300 A |
| Max. non-repetitive surge current (I²t, t = 8.3 ms) | | 130 A ² s | 300 A ² s | 350 A ² 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) ⁰¹⁾ | 20 Arms | |
| Min. load current | 0.5 Arms | | |
| Max. 1 cycle surge current (60 Hz) | 300 A | | |
| Max. non-repetitive surge current (I²t, t = 8.3 ms) | 350 A ² 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 | 500V/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 ² (≈ 30 G) in each X, Y, Z direction for 3 times |
| Shock (malfunction) | 100 m/s ² (≈ 10 G) in each X, Y, Z direction for 3 times |
| Ambient temperature⁰¹⁾ | -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 ² (1 × AWG 20), ≤ 1 × 1.5 mm ² (1 × AWG 16) or ≤ 2 × 1.5 mm ² (2 × AWG 16) |
| Output terminal connection⁰²⁾ | ≥ 1 × 0.75 mm ² (1 × AWG 16), ≤ 1 × 4 mm ² (1 × AWG 12) or ≤ 2 × 2.5 mm ² (2 × AWG 14) |
| Input terminal fixed torque | 0.75 to 0.95 N m |
| Output terminal fixed torque | 1.0 to 1.35 N m |
| Approval | CE, RoHS, ENEC |
| Weight (packaged) | ≈ 85 g (≈ 119 g) |

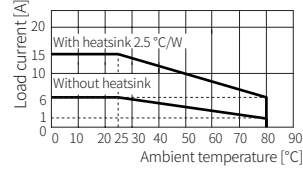
01) See the 'SSR Derating Curve' because the capacity of the rated load current is differ depending on the ambient temperature.

02) Connect the wire met the capacity of the load current to the output terminal.

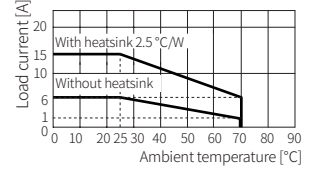
SSR Derating Curve

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

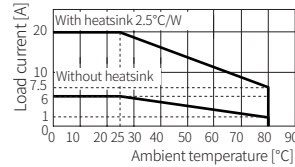
SRC1-1215-N



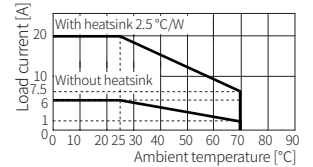
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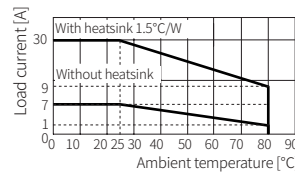
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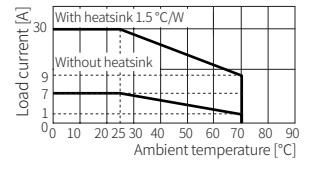
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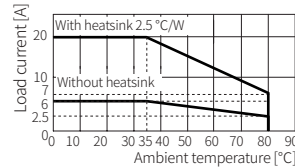
SRC1-1230-N



SRC1-4230-N



SRC1-1420/1420R-N



SRC1-4420-N

