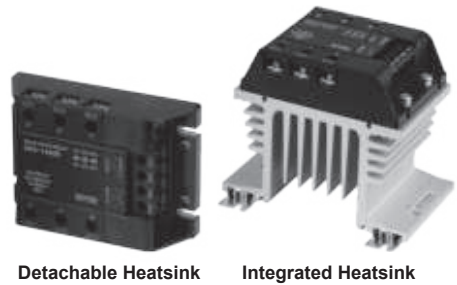


SR2/SR3 Series

3-Phase, Detachable/Integrated Heatsink Type SSR

■ Features

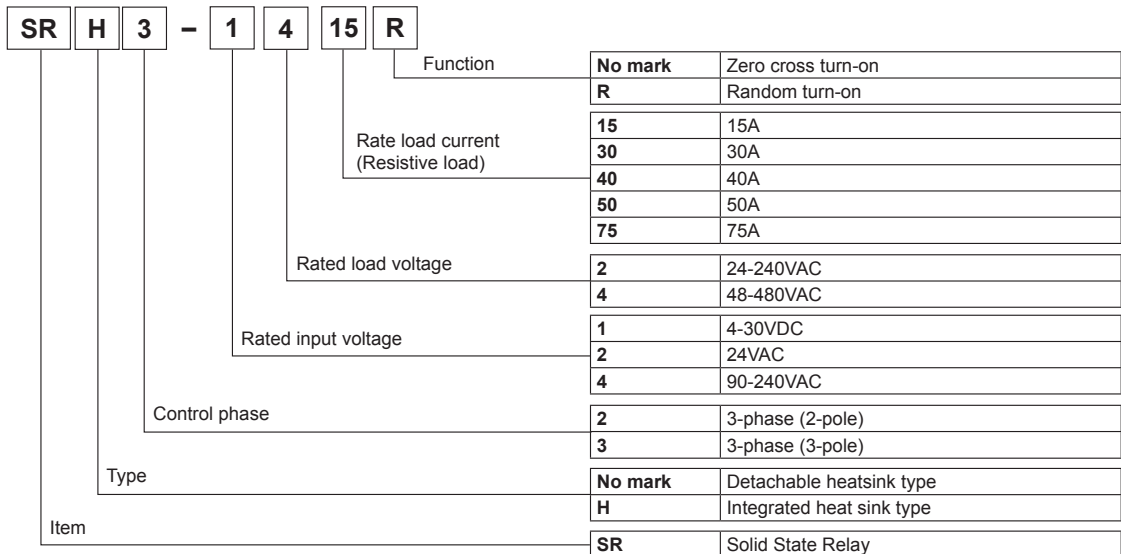
- Two mounting hole types and sizes
- Alarm function (overheat prevention)
 - : Alarm indicator (red LED), disconnect standard output, alarm output
- Dielectric strength: 4000 VAC (also 2,500VAC model)
- High heat dissipation efficiency with ceramic PCB and integrated heatsink
- Zero cross turn-on, random turn-on models available
- Input indicator (green LED)
- Various mounting methods (DIN rail, panel) - SRH2/SRH3 series
 - *DIN rail mount not available for 50 A, 75 A load current models



⚠ Please read "Safety Considerations" in operation manual before using.



■ Ordering Information



| Model | Rated input voltage | Rated load current | Rated load voltage | Function |
|-------------|---------------------|--------------------|--------------------|--------------------|
| SR(H)2-1215 | 4-30VDC | 15A | 24-240VAC | Zero cross turn-on |
| SR(H)3-1215 | | | | |
| SR(H)2-4215 | 90-240VAC | 30A | | |
| SR(H)3-4215 | | | | |
| SR(H)2-1230 | 4-30VDC | 50A | | |
| SR(H)3-1230 | | | | |
| SR(H)2-4230 | 90-240VAC | 75A | | |
| SR(H)3-4230 | | | | |
| SR(H)2-1250 | 4-30VDC | 75A | | |
| SR(H)3-1250 | | | | |
| SR(H)2-4250 | 90-240VAC | 75A | | |
| SR(H)3-4250 | | | | |
| SR(H)2-1275 | 4-30VDC | 75A | | |
| SR(H)3-1275 | | | | |
| SR(H)2-4275 | 90-240VAC | 75A | | |
| SR(H)3-4275 | | | | |

3-Phase, Detachable/Integrated Heatsink Type SSR

| Model | Rated input voltage | Rated load current | Rated load voltage | Function |
|--------------|---------------------|--------------------|--------------------|--------------------|
| SR(H)2-1415 | 4-30VDC | 15A | 48-480VAC | Zero cross turn-on |
| SR(H)3-1415 | | | | Random turn-on |
| SR(H)2-1415R | | | | Zero cross turn-on |
| SR(H)3-1415R | | | | Zero cross turn-on |
| SR(H)2-2415 | 24VAC | | | Zero cross turn-on |
| SR(H)3-2415 | Zero cross turn-on | | | |
| SR(H)2-4415 | 90-240VAC | | | Zero cross turn-on |
| SR(H)3-4415 | Zero cross turn-on | | | |
| SR(H)2-1430 | 4-30VDC | 30A | | Zero cross turn-on |
| SR(H)3-1430 | | | | Random turn-on |
| SR(H)2-1430R | | | | Zero cross turn-on |
| SR(H)3-1430R | | | | Random turn-on |
| SR(H)2-2430 | 24VAC | | | Zero cross turn-on |
| SR(H)3-2430 | Zero cross turn-on | | | |
| SR(H)2-4430 | 90-240VAC | | | Zero cross turn-on |
| SR(H)3-4430 | Zero cross turn-on | | | |
| SR(H)2-1440 | 4-30VDC | 40A | | Zero cross turn-on |
| SR(H)3-1440 | | | | Random turn-on |
| SR(H)2-1440R | | | | Zero cross turn-on |
| SR(H)3-1440R | | | | Random turn-on |
| SR(H)2-2440 | 24VAC | | | Zero cross turn-on |
| SR(H)3-2440 | Zero cross turn-on | | | |
| SR(H)2-4440 | 90-240VAC | | | Zero cross turn-on |
| SR(H)3-4440 | Zero cross turn-on | | | |
| SR(H)2-1450 | 4-30VDC | 50A | Zero cross turn-on | |
| SR(H)3-1450 | | | Random turn-on | |
| SR(H)2-1450R | | | Zero cross turn-on | |
| SR(H)3-1450R | | | Random turn-on | |
| SR(H)2-2450 | 24VAC | | Zero cross turn-on | |
| SR(H)3-2450 | Zero cross turn-on | | | |
| SR(H)2-4450 | 90-240VAC | | Zero cross turn-on | |
| SR(H)3-4450 | Zero cross turn-on | | | |
| SR(H)2-1475 | 4-30VDC | 75A | Zero cross turn-on | |
| SR(H)3-1475 | | | Random turn-on | |
| SR(H)2-1475R | | | Zero cross turn-on | |
| SR(H)3-1475R | | | Random turn-on | |
| SR(H)2-2475 | 24VAC | | Zero cross turn-on | |
| SR(H)3-2475 | Zero cross turn-on | | | |
| SR(H)2-4475 | 90-240VAC | | Zero cross turn-on | |
| SR(H)3-4475 | Zero cross turn-on | | | |

- (A) Photoelectric Sensors
- (B) Fiber Optic Sensors
- (C) Door/Area Sensors
- (D) Proximity Sensors
- (E) Pressure Sensors
- (F) Rotary Encoders
- (G) Connectors/ Connector Cables/ Sensor Distribution Boxes/Sockets
- (H) Temperature Controllers
- (I) SSRs / Power Controllers
- (J) Counters
- (K) Timers
- (L) Panel Meters
- (M) Tacho / Speed / Pulse Meters
- (N) Display Units
- (O) Sensor Controllers
- (P) Switching Mode Power Supplies
- (Q) Stepper Motors & Drivers & Controllers
- (R) Graphic/ Logic Panels
- (S) Field Network Devices
- (T) Software

■ Specifications

◎ Input

| Rated input voltage range | 4-30VDC \equiv | 24VACrms \sim (50/60Hz) | 90-240VACrms \sim (50/60Hz) |
|---------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Input voltage range | 4-32VDC \equiv | 19-26.4VACrms \sim (50/60Hz) | 85-264VACrms \sim (50/60Hz) |
| Max. input current | 25mA | 15mA | 25mA |
| Pick-up voltage | Min. 4VDC \equiv | Min. 19VACrms \sim | Min. 85VACrms \sim |
| Drop-out voltage | Max. 1VDC \equiv | Max. 4VACrms \sim | Max. 10VACrms \sim |
| 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 | Max. 1.5 cycle of load source + 1ms |

SR2/SR3 Series

■ Specifications

◎ Output

| | | | | | | | | | | |
|---|--------------------------------------|-----------------------------|----------------------|----------------------|-------------------------|--|----------------------|--------|----------------------|--------|
| Rated load voltage range | 24-240VACrms~ (50/60Hz) | | | | 48-480VACrms~ (50/60Hz) | | | | | |
| Load voltage range | 24-264VACrms~ (50/60Hz) | | | | 48-528VACrms~ (50/60Hz) | | | | | |
| Rated load current | Resistive load (AC-51) ^{※1} | 15Arms | 30Arms | 50Arms | 75Arms | 15Arms | 30Arms | 40Arms | 50Arms | 75Arms |
| Min. load current | | 0.15Arms | 0.2Arms | 0.5Arms | | 0.5Arms | | | | |
| Max. 1 cycle surge current (60Hz) | | 250A | 400A | 1000A | | 300A | 500A | | 1000A | |
| Max. non-repetitive surge current (I ² t, t=8.3ms) | | 340A ² S | 1000A ² S | 4000A ² S | | 350A ² S | 1000A ² S | | 4000A ² S | |
| Peak voltage (non-repetitive) | | 600V | | | | 1200V (Zero cross turn-on), 1000V (Random turn-on) | | | | |
| Leakage current (Ta=25°C) | | Max. 10mArms (240VAC~/60Hz) | | | | Max. 10mArms (480VAC~/60Hz) | | | | |
| Output on voltage drop [Vpk] (max. load current) | | Max. 1.6V | | | | | | | | |
| Static off-state dv/dt | | 500V/μs | | | | | | | | |

※1: AC-51 is utilization category at IEC 60947-4-3.


◎ Alarm output (overheat prevention)

| | | | |
|---------------------------|-------------|---------------------|-------------------------|
| Rated input voltage range | 4-30VDC≡ | 24VACrms~ (50/60Hz) | 90-240VACrms~ (50/60Hz) |
| Load input voltage | Max. 30VDC≡ | Max. 30VDC≡ | Max. 30VDC≡ |
| Load input current | Max. 100mA | Max. 50mA | Max. 50mA |
| Turn-off time | Max. 20ms | Max. 40ms | Max. 40ms |

※Overheat prevention function: When SSR internal temperature is overheated, the load output is cut off to prevent internal device damage. The alarm indicator turns ON and alarm output turns ON.

※To clear alarm, cut OFF the input signal during over alarm output return time at the rated ambient temperature.

◎ General specifications

| | | |
|---|--|---|
| Dielectric strength (Vrms) | <ul style="list-style-type: none"> ● 24-240VAC~ rated load current 15A/30A : 2500VAC 50/60Hz 1 min (input-output, input/output-case) ● 24-240VAC~ rated load current 50A/75A ● 48-480VAC~ rated load current 15A/30A/40A/50A/75A : 4000VAC 50/60Hz 1 min (input-output, input/output-case) | |
| | | |
| Insulation resistance | Over 100MΩ (at 500VDC megger) (input-output, input/output-case) | |
| Indicator | Input indicator: Green LED / Alarm indicator: Red LED | |
| Vibration | Mechanical | 0.75mm amplitude at frequency of 10 to 55Hz (for 1 min) in each X, Y, Z direction for 1 hour |
| | Malfunction | 0.5mm amplitude at frequency of 10 to 55Hz (for 1 min) in each X, Y, Z direction for 10 min |
| Shock | Mechanical | 300m/s ² (approx. 30G) in each X, Y, Z direction for 3 times |
| | Malfunction | 100m/s ² (approx. 30G) in each X, Y, Z direction for 3 times |
| Environment | Ambient temperature | -30 to 80°C (in case of the rated input voltage 90-240VAC~: -30 to 70°C), Storage: -30 to 100°C (The rated load current capacity is different depending on ambient temperature. Refer to '■ SSR Derating Curve'.) |
| | Ambient humidity | 45 to 85%RH, Storage: 45 to 85%RH |
| Input terminal connection, alarm output terminal connection | Min. 1×0.5mm ² (1×AWG 20), max. 1×1.5mm ² (1×AWG 16) or 2×1.5mm ² (2×AWG 16) | |
| Output terminal connection | Min. 1×1.5mm ² (1×AWG 16), max. 1×16mm ² (1×AWG 6) or 2×6mm ² (2×AWG 10) ※Use wires compliant with load current capacity to connect to the terminal. | |
| Input terminal fixed torque | 0.75 to 0.95N·m | |
| Output terminal fixed torque | 1.6 to 2.2N·m | |
| Approval |  | |
| Weight ^{※1} | <ul style="list-style-type: none"> ● Detachable heatsink type: approx. 365g (approx. 275g) ● Integrated heat sink type - Rated load current 15A/30A/40A: approx. 896g (approx. 686g) Rated load current 50A: approx. 1508g (approx. 1268g) Rated load current 75A: approx. 2354g (approx. 2064g) | |

※1: The weight includes packaging. The weight in parenthesis is for unit only.

※Environment resistance is rated at no freezing or condensation.

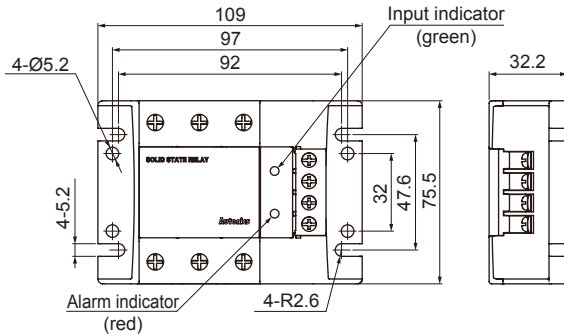
※For wiring the terminal, round terminal must be used.

3-Phase, Detachable/Integrated Heatsink Type SSR

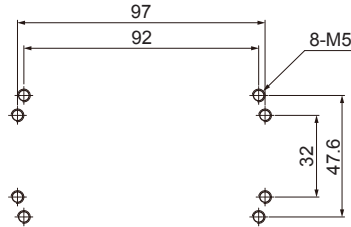
■ Dimensions

(unit: mm)

◎ Detachable heatsink type

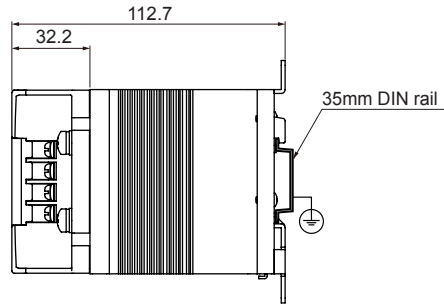
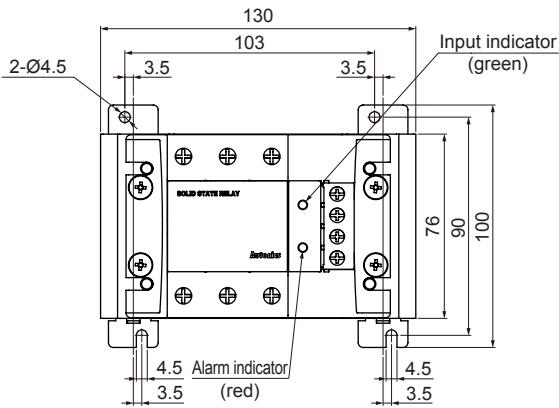


• Panel cut-out



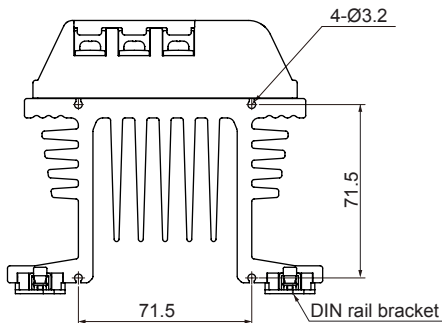
※Detachable heatsink type screw tightening torque for mounting : 2.5N·m to 3N·m

◎ Integrated heat sink (rated load current 15A/30A/40A)

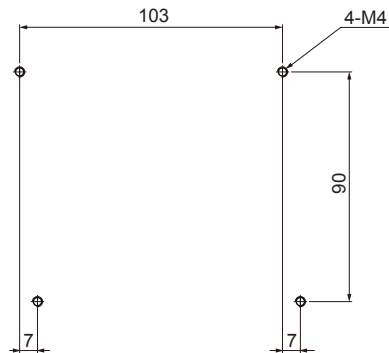


※DIN rail must be grounded.

• Cooling fan mounting hole (rated load current 30A/40A)



• Panel cut-out



※Integrated heatsink type screw tightening torque for mounting: 1.35N·m

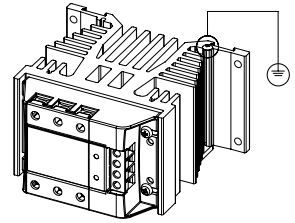
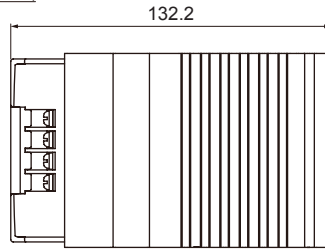
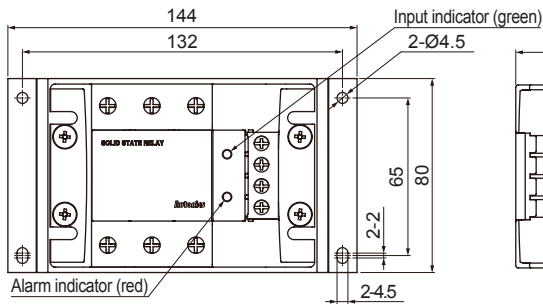
※When installing multiple SSRs, please keep space between SSRs for heat radiation.

When installing SSRs horizontally (input part and output part on the same height), please supply less than 50% of the rated load current.

| | |
|-----|--|
| (A) | Photoelectric Sensors |
| (B) | Fiber Optic Sensors |
| (C) | Door/Area Sensors |
| (D) | Proximity Sensors |
| (E) | Pressure Sensors |
| (F) | Rotary Encoders |
| (G) | Connectors/ Connector Cables/ Sensor Distribution Boxes/Sockets |
| (H) | Temperature Controllers |
| (I) | SSRs / Power Controllers |
| (J) | Counters |
| (K) | Timers |
| (L) | Panel Meters |
| (M) | Tacho / Speed / Pulse Meters |
| (N) | Display Units |
| (O) | Sensor Controllers |
| (P) | Switching Mode Power Supplies |
| (Q) | Stepper Motors & Drivers & Controllers |
| (R) | Graphic/ Logic Panels |
| (S) | Field Network Devices |
| (T) | Software |

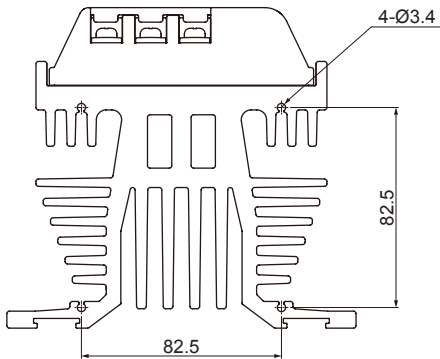
SR2/SR3 Series

◎ Integrated heat sink (rated load current 50A)

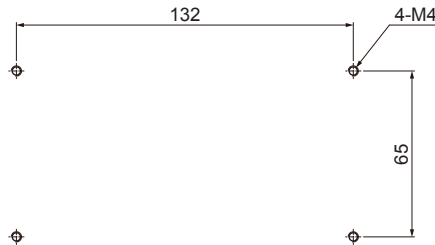


※Bolts for grounding must be grounded.

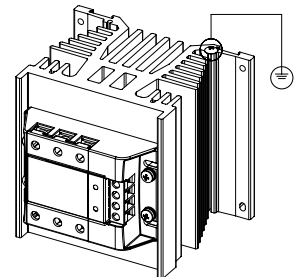
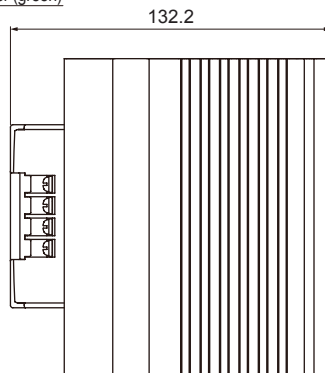
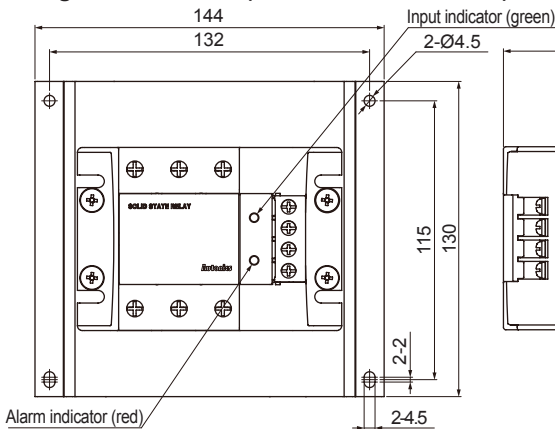
• Cooling fan mounting hole



• Panel cut-out

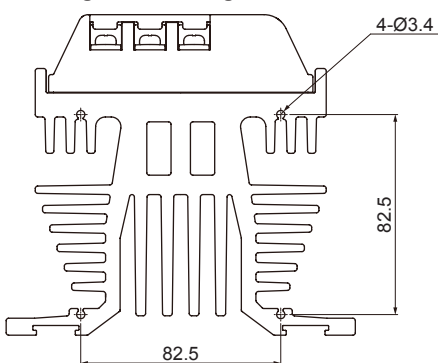


◎ Integrated heat sink (rated load current 75A)

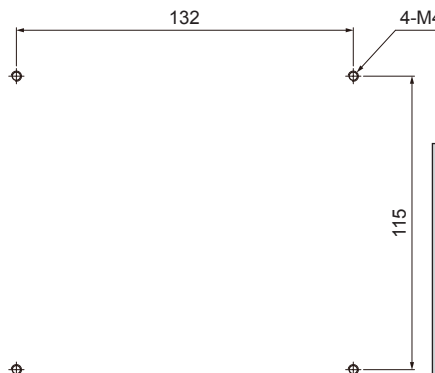


※Bolts for grounding must be grounded.

• Cooling fan mounting hole



• Panel cut-out



⚠ High temperature caution

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 a burn due to the high temperature.

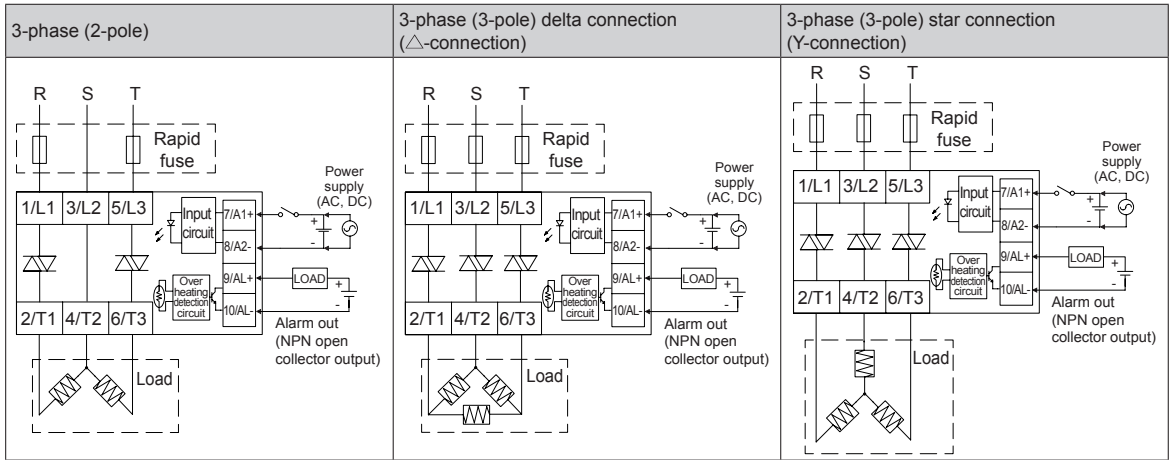
※Integrated heatsink type screw tightening torque for mounting: 1.35N·m

※When installing multiple SSRs, please keep space between SSRs for heat radiation.

When installing SSRs horizontally (input part and output part on the same height), please supply less than 50% of the rated load current.

3-Phase, Detachable/Integrated Heatsink Type SSR

Connections

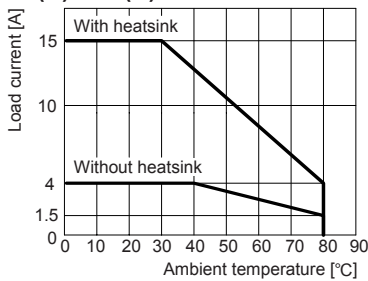


※For DC signal input models, 8 and 10 terminals are connected inside.
 ※For AC signal input models, 8 and 10 terminals are insulated inside.
 ※Use terminals of size specified below.

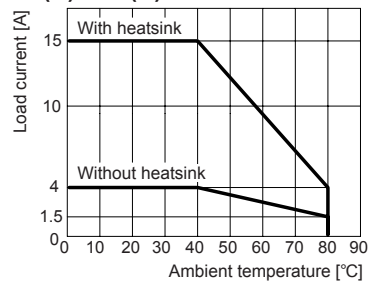
| Terminal type | Input | Output |
|---------------|-------|-------------|
| <Round> | a | Min. 3.5mm |
| | b | Max. 7.0mm |
| | | Min. 5.0mm |
| | | Max. 12.0mm |

SSR Derating Curve

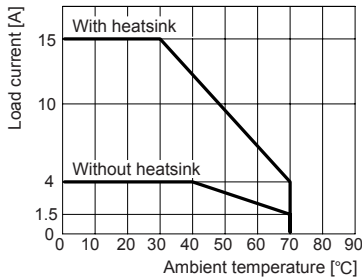
◎ SR(H)2/SR(H)3-1215



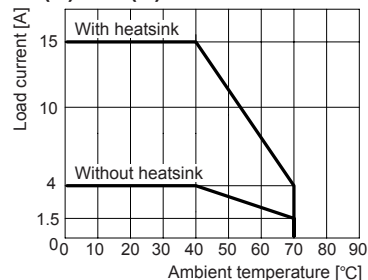
◎ SR(H)2/SR(H)3-1415/1415R/2415



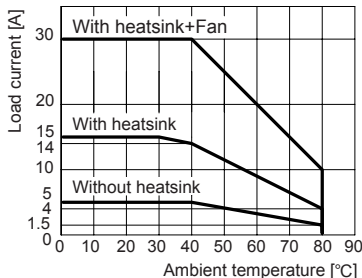
◎ SR(H)2/SR(H)3-4215



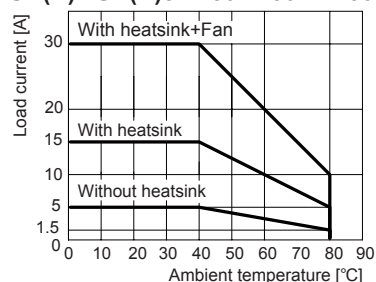
◎ SR(H)2/SR(H)3-4415



◎ SR(H)2/SR(H)3-1230



◎ SR(H)2/SR(H)3-1430/1430R/2430

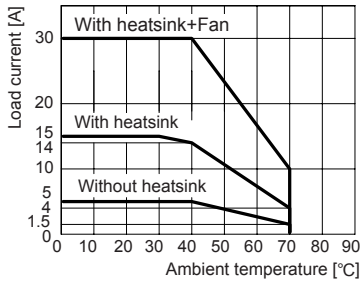


- (A) Photoelectric Sensors
- (B) Fiber Optic Sensors
- (C) Door/Area Sensors
- (D) Proximity Sensors
- (E) Pressure Sensors
- (F) Rotary Encoders
- (G) Connectors/ Connector Cables/ Sensor Distribution Boxes/Sockets
- (H) Temperature Controllers
- (I) SSRs / Power Controllers
- (J) Counters
- (K) Timers
- (L) Panel Meters
- (M) Tacho / Speed / Pulse Meters
- (N) Display Units
- (O) Sensor Controllers
- (P) Switching Mode Power Supplies
- (Q) Stepper Motors & Drivers & Controllers
- (R) Graphic/ Logic Panels
- (S) Field Network Devices
- (T) Software

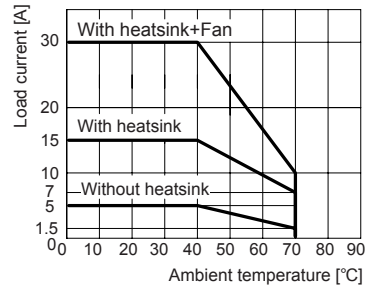
SR2/SR3 Series

■ SSR Derating Curve

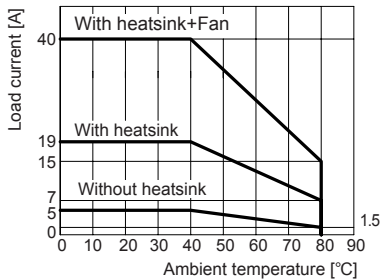
◎ SR(H)2/SR(H)3-4230



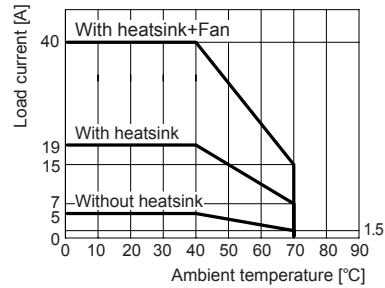
◎ SR(H)2/SR(H)3-4430



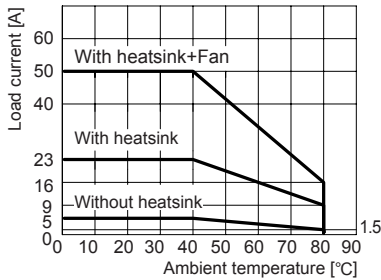
◎ SR(H)2/SR(H)3-1440/1440R/2440



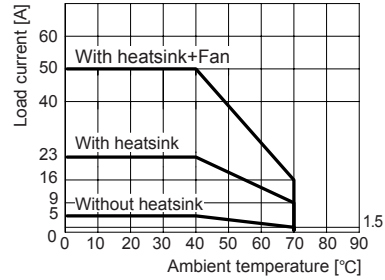
◎ SR(H)2/SR(H)3-4440



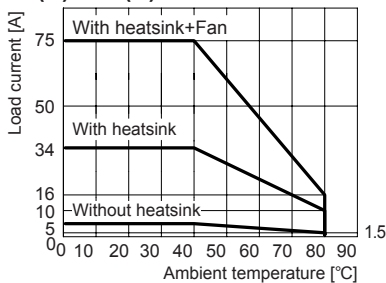
◎ SR(H)2/SR(H)3-1250/1450/1450R/2450



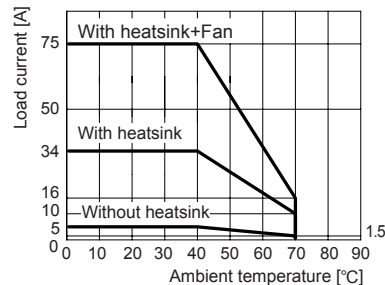
◎ SR(H)2/SR(H)3-4250/4450



◎ SR(H)2/SR(H)3-1275/1475/1475R/2475



◎ SR(H)2/SR(H)3-4275/4475



※ The heatsink of the curves is dedicated for the SRH2/SRH3.

※ Install SR2/SR3 Series on the metal plate (min. 130mm×120mm).

△ Since effectiveness of the heat radiation is decreased when multiple SSRs are installed closely, please supply less than 50% of the rated load current.

※ Above SSR derating curves obtained approval from the UL certification authority.

◎ Specification of cooling fan

| Load capacity | Cooling fan type | Size (mm) | Rated air flow ^{※1} | |
|---------------|------------------|-----------|------------------------------|------|
| | | | m ³ /min | CFM |
| 30A/40A | AC Fan | 80×80 | 0.68 | 24.0 |
| | DC Fan | | 1.25 | 44.0 |
| 50A/75A | AC Fan | 92×92 | 1.13 | 40.0 |
| | DC Fan | | 1.80 | 63.5 |

※1: The cooling fan should be over the rated air flow value.

※ Autonics does not provide or sell a cooling fan. (Please buy a cooling fan separately.)

3-Phase, Detachable/Integrated Heatsink Type SSR

■ Proper Usage

⚠ Cautions during use

1. Follow instructions in 'Cautions during Use'. Otherwise, it may cause unexpected accidents.
2. 4-30VDC, 24VAC signal input should be insulated and limited voltage/current or Class 2, SELV power supply device.
3. 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)
4. Ground to the heat sink, panel, or DIN rail. Failure to follow this instruction may result in electric shock.
5. 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 a burn due to the high temperature.
6. 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.
7. 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.
8. When using random turn-on model for phase control, install noise filter between the load and the power of the load.
9. Do not use near the equipment which generates strong magnetic force or high frequency noise.
10. This unit may be used in the following environments.
 - ① Indoors (in the environment condition rated in 'Specifications')
 - ② Altitude max. 2,000m
 - ③ Pollution degree 2
 - ④ Installation category III

(A)
Photoelectric
Sensors

(B)
Fiber
Optic
Sensors

(C)
Door/Area
Sensors

(D)
Proximity
Sensors

(E)
Pressure
Sensors

(F)
Rotary
Encoders

(G)
Connectors/
Connector Cables/
Sensor Distribution
Boxes/Sockets

(H)
Temperature
Controllers

(I)
SSRs / Power
Controllers

(J)
Counters

(K)
Timers

(L)
Panel
Meters

(M)
Tacho /
Speed / Pulse
Meters

(N)
Display
Units

(O)
Sensor
Controllers

(P)
Switching
Mode Power
Supplies

(Q)
Stepper Motors
& Drivers
& Controllers

(R)
Graphic/
Logic
Panels

(S)
Field
Network
Devices

(T)
Software