



Thank you very much for selecting Autonics products.
For your safety, please read the following before using.

Caution for your safety

※Please keep "Caution for your safety" to avoid accidents or damages as using it correctly.

※The meaning of "Warning" and "Caution" is as follows;

Warning In case a serious injury or dead may be occurred.

Caution In case a little injury or damage of this unit may be occurred.

※The meaning of the mark on the product and manual is as follows;

△ is a caution mark for danger in special condition.

Warning

1. In case of using this unit with machineries(Ex: Nuclear power control, medical equipment, ship, vehicle, train, airplane, combustion apparatus, safety device, crime/disaster prevention equipment, etc), it is required to install fail-safe device.

It may cause a fire, human injury or damage to property.

2. Install the unit on a panel.

It may give an electric shock.

3. Do not connect, inspect or repair when power is on.

It may give an electric shock.

4. Do not disassemble the case. Please contact us if it is required.

It may cause an electric shock or a fire.

Caution

1. This unit shall not be used outdoors.

It might shorten the life cycle of the product or give an electric shock.

2. Please observe the rated specifications.

It might shorten the life cycle of the product and cause a fire.

3. In cleaning unit, do not use water or an oil-based solvent and please use dry towels.

It may cause an electric shock or a fire.

4. Do not use this unit in place where there are flammable or explosive gas, humidity, direct rays, radiant heat, vibration and impact etc.

It may cause a fire or an explosion.

5. Do not inflow dust or wire dregs into the unit.

It may cause a fire or a malfunction.

6. Do not touch SSR output terminals right after power switch OFF.

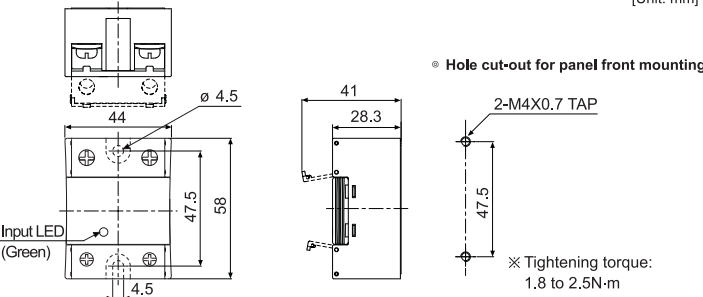
It may cause an electric shock due to an electric charge in snubber circuit.

Ordering information

SR	1	-	1	4	20	R
Function	No mark	Zero cross turn-on				
	R	Random turn-on				
Rate load current (Resistive load)	15	15A	50	50A		
	25	20A	75	75A		
	40	40A				
Load voltage(Rated)	2	24-240VAC				
	4	48-480VAC				
Input voltage(Rated)	1	4-30VDC				
	4	90-240VAC				
Control phase	1	Single phase				
Item	SR	Solid State Relay(General type)				

Dimensions

[Unit: mm]



※ The above specifications are subject to change and some models may be discontinued without notice.

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 Random turn-on Max. 1ms	Max. 1.5 cycle of load source + 1ms
Turn-off time		Max. 0.5 cycle of load source + 1ms	

Output		24-240VAC load voltage	48-480VAC load voltage
Load voltage range		24-264VACrms(50/60Hz)	48-528VACrms(50/60Hz)
Rated load current (Resistive load)		15Arms 25Arms 40Arms 50Arms 75Arms	15Arms 25Arms 40Arms 50Arms 75Arms
Rated load current (Motor load Ta=25°C (AC-53a))		-	5Arms 8Arms 15Arms
Min. load current		0.15Arms 0.2Arms 0.5Arms	0.5Arms
Max. 1 cycle surge current(60Hz)		190A 270A 330A 1000A	300A 500A 1000A
Max. non-repetitive surge current (ft.,t=8.3ms)		150A's 300A's 500A's 4000A's	350A's 1000A's 4000A's
Peak voltage (non-repetitive)		600V	1200V(Zero cross turn-on), 1000V(Random turn-on)
Leakage current(Ta=25°C)		Max. 10mA	
Output on voltage drop (Vpk)(Max. load current)		Max. 1.6V	
Static off-state dv/dt		500V/μs	

※For controlling motor load, use the product whose load voltage range is within 48-480VACrms.

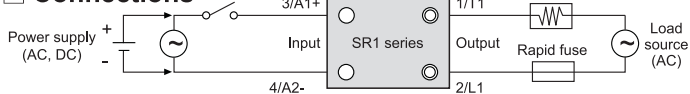
General specifications

Certification	UL508, CSA22.2 No.14 and IEC/EN 60947-4-3
Type of the coordination of conditional short-circuit current	type1
Dielectric strength(Vrms)	4000VAC 50/60Hz 1min. (Input-Output, Input/Output-Case)
Insulation resistance	Min. 100MΩ (at 500VDC megger)
Input LED	Green
Environment	Ambient temperature: -30 to 80°C, Storage: -30 to 100°C(Rated load current capacity is different based on the surrounding temperature. Refer to 'SSR Derating curve'.) Ambient humidity: 45 to 85%RH, Storage: 45 to 85%RH
Input terminal connection	Min. 1X0.5mm ² (1XAWG 20) Max. 1X1.5mm ² (1XAWG 16) or 2X1.5mm ² (2XAWG 16)
Output terminal connection	Min. 1X1.5mm ² (1XAWG 16) Max. 1X16mm ² (1XAWG 6) or 2X6mm ² (2XAWG 10)
Input terminal fixed torque	0.75 to 0.95N-m
Output terminal fixed torque	1.6 to 2.2N-m
Unit weight	Approx. 73g

※Condition for use in Environment is no freezing or condensation.

※For wiring the terminal, an O-ring terminal must be used.

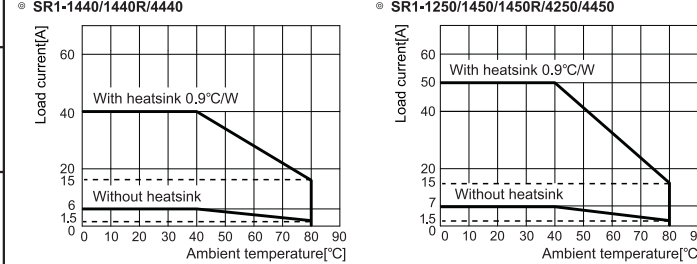
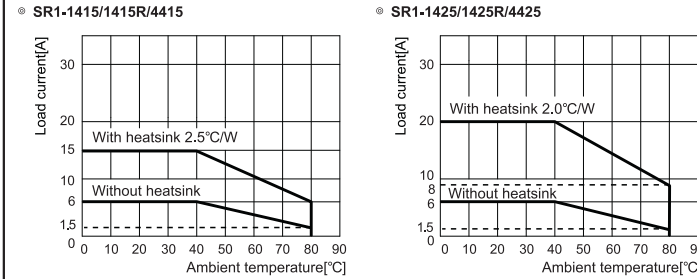
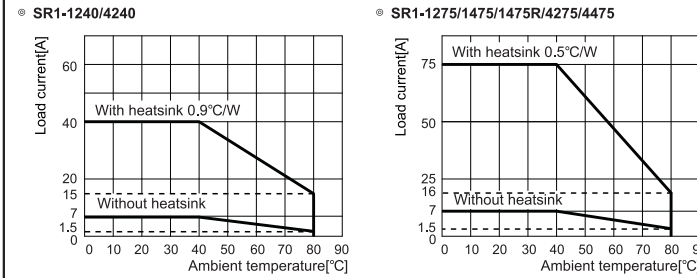
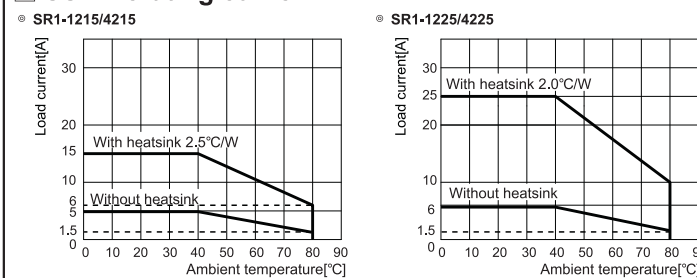
Connections



Caution for using

- Attach a heatsink and ventilate for smooth convection current. If not, congested heat transfer may cause product failure or malfunction.
- 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.
- 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.
- Connect the proper cable for the rated load current with output terminal.
- Use rapid fuse of which I_t is under 1/2 of SSR I_t in order to protect the unit from load's short-circuit current.
- In case of a short-circuit please replace the fuse with a 1/2 of SSR I_t value specified semiconductor protective type.
- 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.
- When selecting phase control with random turn-on model, install the noise filter between load and load's source.
- Make sure that the screw on output terminal is tightly fastened. Using the unit with loose bolt may cause product failure or malfunction.
- Do not touch the load's terminal even if output is OFF. It may cause an electric shock.
- The signal input of the 4-30VDC model should be supplied by the insulated and limited voltage/current or by Class 2 power supply.
- 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 application environment (Avoid following environments to install)
①Where temperature/humidity is beyond the specification
②Where dew condensation occurs due to temperature change
③Where inflammable or corrosive gas exists ④Where direct rays of light exist
⑤Where severe shock, vibration or dust exists
⑥Where near facilities generating strong magnetic forces or electric noise
- Installation environment
①It shall be used indoor ②Altitude Max. 2,000m ③Pollution Degree 2 ④Installation Category III

SSR Derating curve



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

Major products

- Photoelectric sensors
- Fiber optic sensors
- Door sensors
- Door side sensors
- Area sensors
- Proximity sensors
- Pressure sensors
- Rotary encoders
- Connector/Sockets
- Switching mode power supplies
- Control switches/Lamps/Buzzers
- I/O Terminal Blocks & Cables
- Stepper motors/drivers/motion controllers
- Graphic/Logic panels
- Field network devices
- Laser marking system(Fiber, CO₂, Nd:YAG)
- Laser welding/soldering system
- Temperature controllers
- Temperature/Humidity transducers
- SSR/Power controllers
- Counters
- Timers
- Panel meters
- Tachometer/Pulse(Rate)meters
- Display units
- Sensor controllers

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