Single Phase, Separated Heatsink Type SSR

■ Features

- Increase user convenience with general and small design
- 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

SR	1	-	1	4	25	R

Function	No Mark	Zero cross turn-on
	R	Random turn-on
Rated load current (resistive load)	15	15A
	25	25A
	40	40A
	50	50A
	75	75A
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 (detachable heatsink type)

Model	Input voltage	Rated load current	Load voltage	Zero cross/Random turn-on
SR1-1215	4-30VDC	15A	24-240VAC	Zero cross turn-on
SR1-4215	90-240VAC			
SR1-1225	4-30VDC	25A		
SR1-4225	90-240VAC			
SR1-1240	4-30VDC	40A		
SR1-4240	90-240VAC			
SR1-1250	4-30VDC	50A		
SR1-4250	90-240VAC			
SR1-1275	4-30VDC	75A		
SR1-4275	90-240VAC			
SR1-1415	4-30VDC	15A	48-480VAC	Zero cross turn-on
SR1-1415R				Random turn-on
SR1-4415	90-240VAC			Zero cross turn-on
SR1-1425	4-30VDC	25A		Zero cross turn-on
SR1-1425R				Random turn-on
SR1-4425	90-240VAC			Zero cross turn-on
SR1-1440	4-30VDC	40A		Zero cross turn-on
SR1-1440R				Random turn-on
SR1-4440	90-240VAC			Zero cross turn-on
SR1-1450	4-30VDC	50A		Zero cross turn-on
SR1-1450R				Random turn-on
SR1-4450	90-240VAC			Zero cross turn-on
SR1-1475	4-30VDC	75A		Zero cross turn-on
SR1-1475R				Random turn-on
SR1-4475	90-240VAC			Zero cross 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

◎ 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	25Arms	40Arms	50Arms	75Arms	15Arms	25Arms	40Arms	50Arms	75Arms
	Motor load (AC-53a)	—					5Arms	8Arms		15Arms	
Min. load current		0.15Arms	0.2Arms		0.5Arms		0.5Arms				
Max. 1cycle surge current (60Hz)		190A	270A	330A	1000A		300A	500A		1000A	
Max. non-repetitive surge current (I^2t, t=8.3ms)		150A^2S	300A^2S	500A^2S	4000A^2S		350A^2S	1000A^2S		4000A^2S	
Peak voltage (non-repetitive)		600V					1200V (zero cross turn-on), 1000V (random turn-on)				
Leakage current (Ta=25℃)		Max. 10mArms									
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 which load voltage range is within 48-480VACrms.

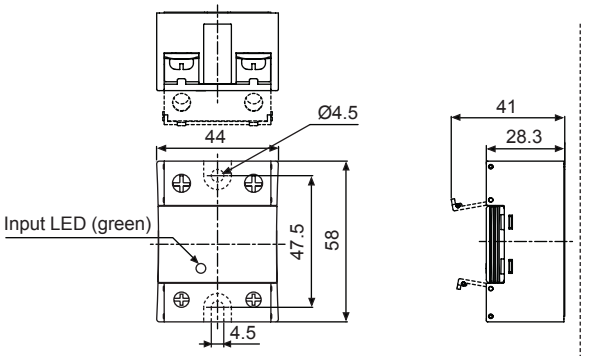
◎ General Specifications

Certification		UL508, CSA22.2 No.14 and IEC/EN 60947-4-3
Dielectric strength (Vrms)		4000VAC 50/60Hz 1min. (input-output, input/output-case)
Insulation resistance		Min. 100MΩ (at 500VDC megger)
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 Characteristic Curve'.)
	Ambient humidity	45 to 85%RH, storage: 45 to 85%RH
Input terminal connection		Min. 1×0.5mm² (1×AWG20) Max. 1×1.5mm² (1×AWG16) or 2×1.5mm² (2×AWG16)
Output terminal connection		Min. 1×1.5mm² (1×AWG16) Max. 1×16mm² (1×AWG6) or 2×6mm² (2×AWG10)
Input terminal fixed torque		0.75 to 0.95N·m
Output terminal fixed torque		1.6 to 2.2N·m
Unit weight		Approx. 73g

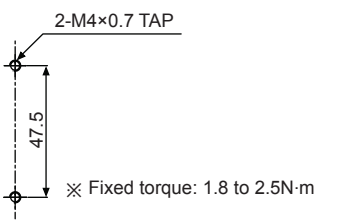
※ For wiring the terminal, an O-ring terminal must be used.
※ Environment resistance is rated at no freezing or condensation.

▣ Dimensions

(unit: mm)

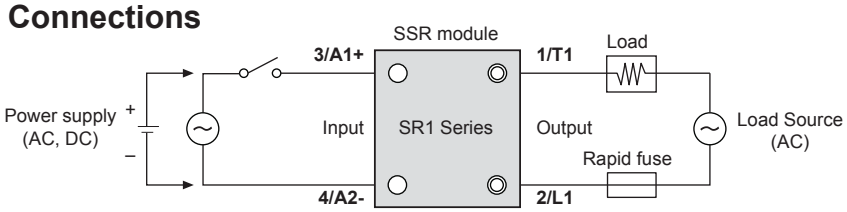


◎ Hole cut-out for panel front mounting



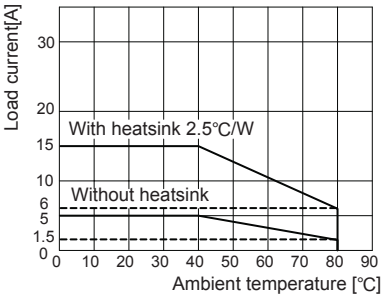
※ Fixed torque: 1.8 to 2.5N·m

▣ Connections

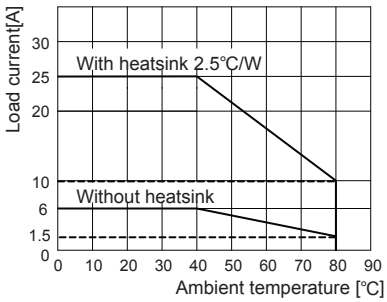


▣ SSR Characteristic Curve

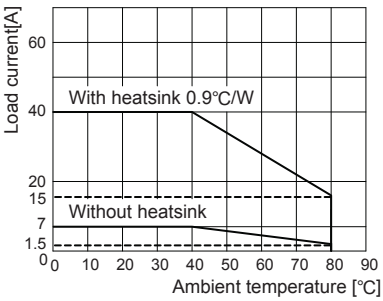
◎ SR1-1215/4215



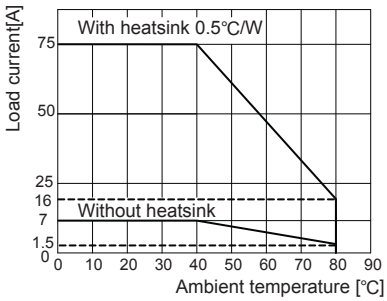
◎ SR1-1225/4225



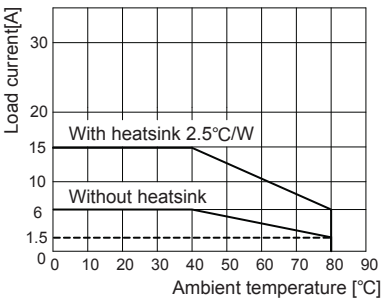
◎ SR1-1240/4240



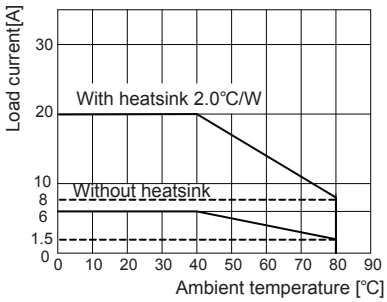
◎ SR1-1275/1475/1475R/4275/4475



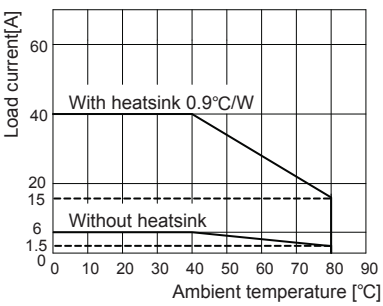
◎ SR1-1415/1415R/4415



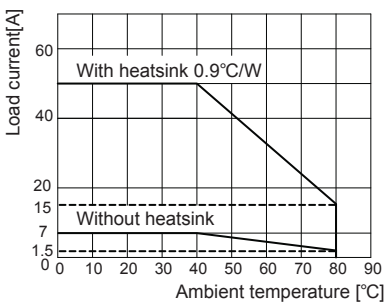
◎ SR1-1425/1425R/4425



◎ SR1-1440/1440R/4440



◎ SR1-1250/1450/1450R/4250/4450



▣ 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 during use

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)
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. This unit may be used in the following environments.

① Indoor
② Altitude: Under 2,000m
③ Pollution degree 2
④ Installation category III