

# SRC1 Series Single Phase, Slim Separated Heatsink Type SSR

## Single Phase, Slim Separated Heatsink Type SSR

### ■ 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

<b>SRC</b>	<b>1</b>	<b>-</b>	<b>1</b>	<b>4</b>	<b>20</b>	<b>R</b>	
Item	Control phase		Input voltage (rated)	Load voltage (rated)	Rated load current (resistive load)	Function	
						No Mark	Zero cross turn-on
						R	Random turn-on
					15		15A
					20		20A
					30		30A
				2			24-240VAC
				4			48-480VAC
			1				4-30VDC
			4				90-240VAC
						1	Single phase
						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			
SRC1-4220	90-240VAC	20A	48-480VAC	
SRC1-1230	4-30VDC			
SRC1-4230	90-240VAC			
SRC1-1420	4-30VDC	20A	48-480VAC	Random turn-on
SRC1-4420	90-240VAC			
SRC1-1420R	4-30VDC			

### ■ 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)	7mA <sub>rms</sub> (240VACrms)
Pick-up voltage	4VDC	85VACrms
Drop-out voltage	1VDC	10VACrms
Turn-on time	Zero cross turn-on	Max. 1.5 cycle of load source + 1ms
	Random turn-on	—
Turn-off time	Max. 0.5 cycle of load source + 1ms	Max. 1.5 cycle of load source + 1ms

(A)	Photoelectric Sensors
(B)	Fiber Optic Sensors
(C)	Door/Area Sensors
(D)	Proximity Sensors
(E)	Pressure Sensors
(F)	Rotary Encoders
(G)	Connectors/ 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

# SRC1 Series

## ■ Specifications

### ○ Output

		24-240VAC load voltage			48-480VAC load voltage
Load voltage range (50/60Hz)		24-264VACrms			48-528VACrms
Rated load current Ta=25°C	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. 1 cycle surge current (60Hz)		190A	270A	330A	300A
Max. non-repetitive surge current (I <sup>2</sup> t, t=8.3ms)		150A <sup>2</sup> S	300A <sup>2</sup> S	500A <sup>2</sup> S	350A <sup>2</sup> S
Peak voltage (Non-repetitive)		600V			1200V (zero cross turn-on), 1000V (random turn-on)
Leakage current (240VAC/60Hz, Ta=25°C)		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 X, Y, Z direction for 1 hour	
Input LED	Green	
Environ-ment	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 Characteristic Curve'.)
	Ambient humidity	45 to 85%RH
Input terminal connection	Min. 1×0.5mm <sup>2</sup> (1×AWG20), Max. 1×1.5mm <sup>2</sup> (1×AWG16) or 2×1.5mm <sup>2</sup> (2×AWG16)	
Output terminal connection	Min. 1×0.75mm <sup>2</sup> (1×AWG18), Max. 1×4mm <sup>2</sup> (1×AWG12) or 2×2.5mm <sup>2</sup> (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	

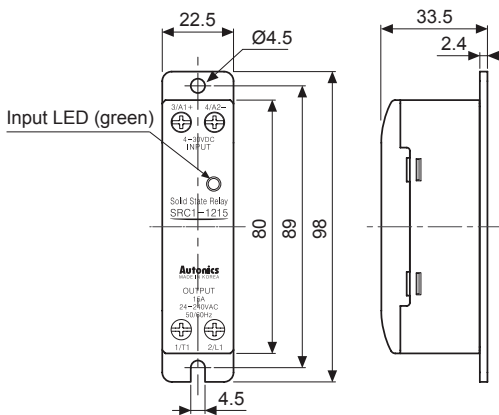
※For wiring the terminal, an O-ring terminal must be used.

※Environment resistance is rated at no freezing or condensation.

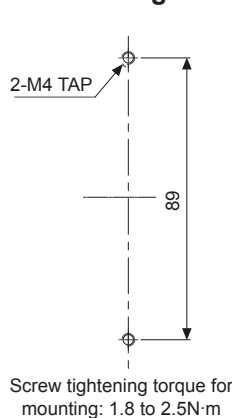
## ■ Dimensions & Mounting

(unit: mm)

### ○ Dimensions

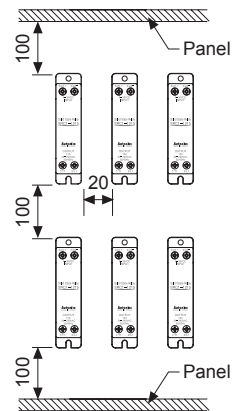


### ○ Hole cut-out for panel front mounting



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

### ○ Installation interval



#### High temperature caution

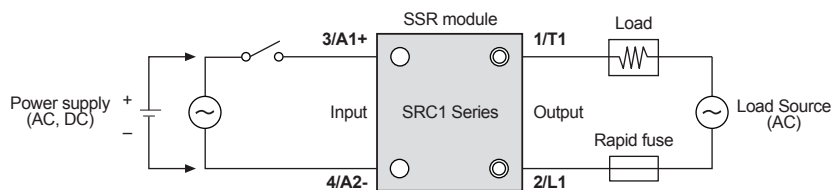
Make sure do not touch the heat sink or the unit body while power is supplied or right after load power is turned off. If not, it may cause a burn.

※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.

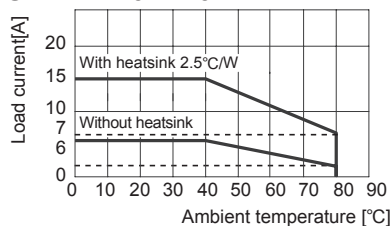
# Single Phase, Slim Separated Heatsink Type SSR

## ■ Connections

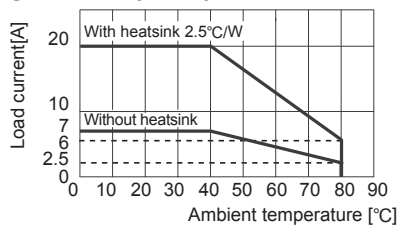


## ■ SSR Characteristic Curve

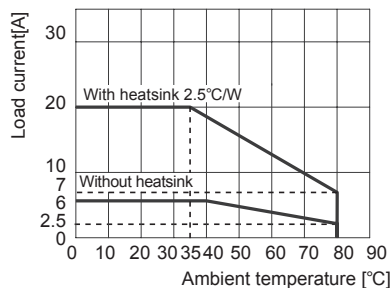
### ◎ SRC1-1215/4215



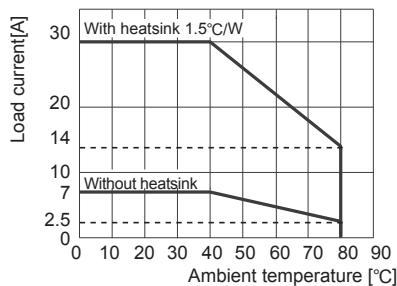
### ◎ SRC1-1220/4220



### ◎ 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 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)

(A) Photoelectric Sensors

(B) Fiber Optic Sensors

(C) Door/Area Sensors

(D) Proximity Sensors

(E) Pressure Sensors

(F) Rotary Encoders

(G) Connectors/ Sockets

(H) Temperature Controllers

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(T) Software

## ■ 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. This unit may be used in the following environments.

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