

## Single-Phase, Slim Detachable Heatsink Type SSR

### ■ 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 LED)



**⚠ Please read "Safety Considerations" in the instruction manual before using.**



### ■ Ordering Information

<b>SRC</b>	<b>1</b>	-	<b>1</b>	<b>2</b>	<b>15</b>		-	<b>N</b>	
Item	Control phase		Rated input voltage	Rated load voltage	Rated load current (resistive load)	Function	Version		
	1		4-30VDC	24-240VAC	15A	No Mark	N	Renewal	
	4		90-240VAC	48-480VAC	20A	R			Zero cross turn-on
					30A				Random turn-on

Model	Rated input voltage	Rated load current	Rated load voltage	Function		
SRC1-1215-N	4-30VDC=	15A	24-240VAC~	Zero cross turn-on		
SRC1-4215-N	90-240VAC~					
SRC1-1220-N	4-30VDC=	20A				
SRC1-4220-N	90-240VAC~					
SRC1-1230-N	4-30VDC=	30A	48-480VAC~	Zero cross turn-on		
SRC1-4230-N	90-240VAC~					
SRC1-1420-N	4-30VDC=	20A				Zero cross turn-on
SRC1-1420R-N						Random turn-on
SRC1-4420-N			90-240VAC~	Zero cross turn-on		

- SENSORS
- CONTROLLERS**
- MOTION DEVICES
- SOFTWARE

- (J) Temperature Controllers
- (K) SSRs**
- (L) Power Controllers
- (M) Counters
- (N) Timers
- (O) Digital Panel Meters
- (P) Indicators
- (Q) Converters
- (R) Digital Display Units
- (S) Sensor Controllers
- (T) Switching Mode Power Supplies
- (U) Recorders
- (V) HMIs
- (W) Panel PC
- (X) Field Network Devices

# SRC1 Series

## ■ Specifications

### ○ Input


Rated input voltage range	4-30VDC $\overline{\text{---}}$		90-240VACrms $\sim$ (50/60Hz)	
Allowable input voltage range	4-32VDC $\overline{\text{---}}$		85-264VACrms $\sim$ (50/60Hz)	
Max. input current	18mA		18mA <sub>rms</sub> (240VACrms $\sim$ )	
Pick-up voltage	Min. 4VDC $\overline{\text{---}}$		Min. 85VACrms $\sim$	
Drop-out voltage	Max. 1VDC $\overline{\text{---}}$		Max. 10VACrms $\sim$	
Turn-on time	Zero cross turn-on	Max. 0.5 cycle of load source + 1ms		Max. 2 cycle of load source + 1ms
	Random turn-on	Max. 1ms		—
Turn-off time	Max. 0.5 cycle of load source + 1ms		Max. 2 cycle of load source + 1ms	

### ○ Output

Rated load voltage range	24-240VACrms $\sim$ (50/60Hz)			48-480VACrms $\sim$ (50/60Hz)	
Allowable load voltage range	24-264VACrms $\sim$ (50/60Hz)			48-528VACrms $\sim$ (50/60Hz)	
Rated load current	Resistive load (AC-51) $\times 1$	15Arms	20Arms	30Arms	20Arms
Min. load current		0.15Arms	0.2Arms	0.5Arms	0.5Arms
Max. 1 cycle surge current (60Hz)		160A	250A	400A	300A
Max. non-repetitive surge current ( $I^2t$ , $t=8.3\text{ms}$ )		130A <sup>2</sup> s	300A <sup>2</sup> s	910A <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 ( $T_a=25^\circ\text{C}$ )		Max. 10mA <sub>rms</sub> (240VAC $\sim$ /60Hz)			Max. 10mA <sub>rms</sub> (480VAC $\sim$ /60Hz)
Output on voltage drop [V <sub>pk</sub> ] (max. load current)		Max. 1.6V			
Static off state dv/dt		500V/ $\mu\text{s}$			

$\times 1$ : AC-51 is utilization category at IEC60947-4-3.

### ○ General specifications

Dielectric strength (Vrms)	2500VAC 50/60Hz 1 min (input-output, input/output-case)				
Insulation resistance	Over 100M $\Omega$ (at 500VDC megger) (input-output, input/output-case)				
Indicator	Input indicator: green 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 <sup>2</sup> (approx. 30G) in each X, Y, Z direction for 3 times			
	Malfunction	100m/s <sup>2</sup> (approx. 30G) in each X, Y, Z direction for 3 times			
Environment	Ambient temp.	-30 to 80 $^\circ\text{C}$ (in case of the rated input voltage 90-240VAC $\sim$ : -20 to 70 $^\circ\text{C}$ ), storage: -30 to 100 $^\circ\text{C}$ (The rated load current capacity is different depending on ambient temperature. Refer to '■ SSR Derating Curve'.)			
	Ambient humi.	45 to 85%RH, storage: 45 to 85%RH			
Input terminal connection	Min. 1 $\times$ 0.5mm <sup>2</sup> (1 $\times$ AWG20), max. 1 $\times$ 1.5mm <sup>2</sup> (1 $\times$ AWG16) or 2 $\times$ 1.5mm <sup>2</sup> (2 $\times$ AWG16)				
Output terminal connection	Min. 1 $\times$ 0.75mm <sup>2</sup> (1 $\times$ AWG18), max. 1 $\times$ 4mm <sup>2</sup> (1 $\times$ AWG12) or 2 $\times$ 2.5mm <sup>2</sup> (2 $\times$ AWG14) $\times$ Use wires compliant with load current capacity to connect to the terminal.				
Input terminal fixed torque	0.75 to 0.95N $\cdot$ m				
Output terminal fixed torque	1.0 to 1.35N $\cdot$ m				
Approval	CE  us				
Weight $\times 1$	Approx. 119g (approx. 85g)				

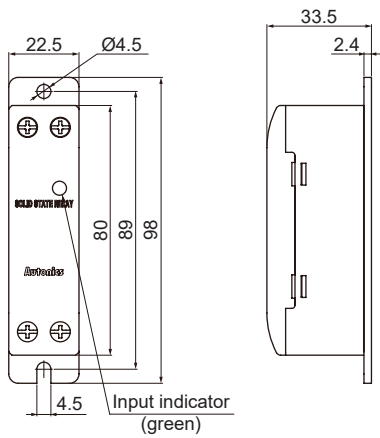
$\times 1$ : The weight includes packaging. The weight in parenthesis is for unit only.

$\times$ Environment resistance is rated at no freezing or condensation.

$\times$ For wiring the terminal, round terminal must be used.

# Single-Phase, Slim Detachable Heatsink Type SSR

## ■ Dimensions



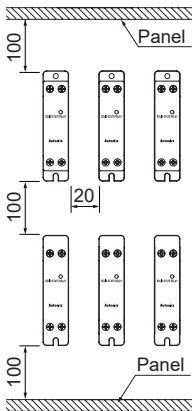
## ○ Panel cut-out



(unit: mm)

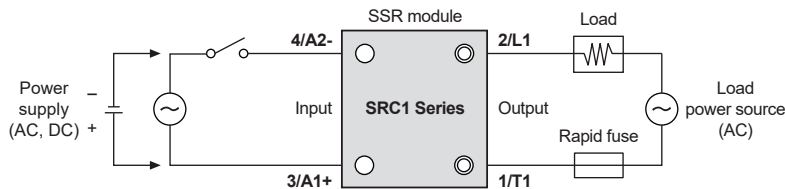
※Screw tightening torque for mounting: 1.8 to 2.5N·m

## ○ Spacing



※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.

## ■ Connections



※Use terminals of size specified below.

Terminal type	Input	Output
a	Min. 3.5mm	Min. 4.0mm
b	Max. 7.0mm	Max. 9.0mm

SENSORS

CONTROLLERS

MOTION DEVICES

SOFTWARE

(J)  
Temperature  
Controllers

(K)  
SSRs

(L)  
Power  
Controllers

(M)  
Counters

(N)  
Timers

(O)  
Digital  
Panel Meters

(P)  
Indicators

(Q)  
Converters

(R)  
Digital  
Display Units

(S)  
Sensor  
Controllers

(T)  
Switching  
Mode Power  
Supplies

(U)  
Recorders

(V)  
HMIs

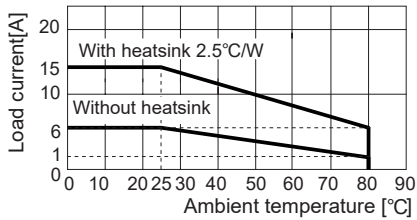
(W)  
Panel PC

(X)  
Field Network  
Devices

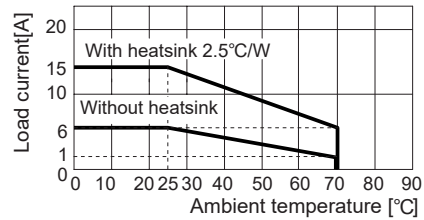
# SRC1 Series

## ■ SSR Derating Curve

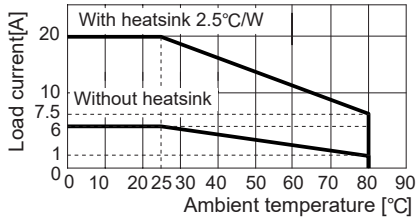
### ◎ SRC1-1215-N



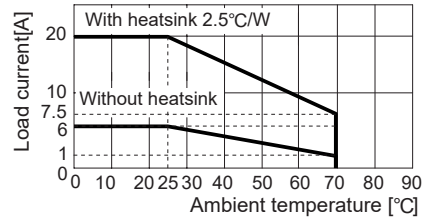
### ◎ SRC1-4215-N



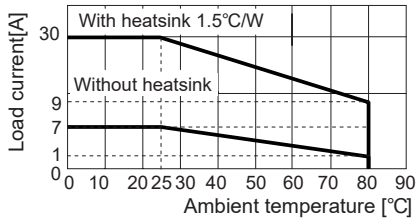
### ◎ SRC1-1220-N



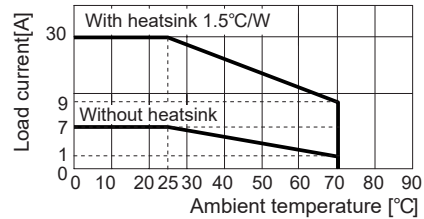
### ◎ SRC1-4220-N



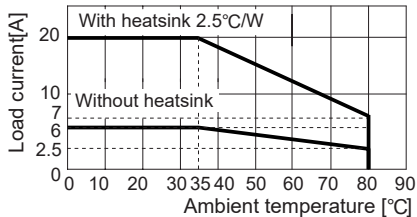
### ◎ SRC1-1230-N



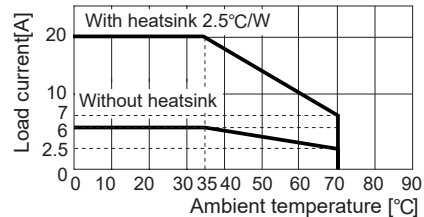
### ◎ SRC1-4230-N



### ◎ SRC1-1420/1420R-N



### ◎ SRC1-4420-N



⚠ 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.

## ■ Proper Usage

### ⚠ Cautions during use

- Follow instructions in 'Cautions during Use'. Otherwise, it may cause unexpected accidents.
- 4-30VDC signal input should be insulated and limited voltage/current or Class 2, SELV power supply device.
- 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)
- Ground to the heat sink, panel, or DIN rail. Failure to follow this instruction may result in electric shock.
- 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.
- 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.
- 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.
- When using random turn-on model for phase control, install noise filter between the load and the power of the load.
- Do not use near the equipment which generates strong magnetic force or high frequency noise.
- 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