Single-Phase, Socket Type SSR

▣ Features

- Socket type for easier installation and maintenance
  - SRS1-A: Autonics socket SK-G05 (AC, DC, AC/DC)
  - SRS1-B: Universal LY2 sockets (AC)
  - SRS1-C: Universal MY4 sockets (AC, DC, AC/DC)
- Dielectric strength: 2500 VAC
- Zero cross turn-on, random turn-on models available
- Input indicator (red LED)

SRS1-A

SRS1-B

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

SRS1-C

▣ Ordering Information

SRS	1	–	B	1	2	02	R	–	2

Number of output circuits	1	1
	2	2
Function	No mark	Zero cross turn-on
	R	Random turn-on
Rated load current (resistive load)	01	1A
	02	2A
	03	3A
	05	5A
Rated load voltage	SRS1-A	2	24-240VAC
		D1	5-100VDC
		D2	5-200VDC
		X2	5-240VAC/5-200VDC (universal)
	SRS1-B	2	90-240VAC
	SRS1-C	2	90-240VAC
		D1	5-100VDC
		X2	5-240VAC/5-200VDC (universal)
Rated input voltage	SRS1-A	1	4-24VDC
	SRS1-B, SRS1-C	1	4-30VDC※1
Socket	A	Autonics socket (Model: SK-G05)
	B	Universal LY2 socket
	C	Universal MY4 socket
Control phase	1	Single-phase
Item	SRS	Solid State Relay (socket type)

※1: In case of SRS1-C1D102-1, SRS1-C1X201-1, rated input voltage is 4-24VDC.

Model		Rated input voltage	Rated load current	Rated load voltage	Function
SRS1-A	SRS1-A1202	4-24VDC⎓	2A	24-240VAC～	Zero cross turn-on
	SRS1-A1202R				Random turn-on
	SRS1-A1203		3A		Zero cross turn-on
	SRS1-A1203R				Random turn-on
	SRS1-A1205		5A		Zero cross turn-on
	SRS1-A1205R				Random turn-on
	SRS1-A1D101		1A	5-100VDC⎓	—
	SRS1-A1D102		2A		
	SRS1-A1D201		1A	5-200VDC⎓	
	SRS1-A1X201			5-240VAC～/5-200VDC⎓	
SRS1-B	SRS1-B1202-2	4-30VDC⎓	2A (consists of 2 circuits)	90-240VAC～	Zero cross turn-on
	SRS1-B1202R-2				Random turn-on
	SRS1-B1203-1		3A		Zero cross turn-on
	SRS1-B1203R-1				Random turn-on
	SRS1-B1205-1		5A		Zero cross turn-on
	SRS1-B1205R-1				Random turn-on
SRS1-C	SRS1-C1202-2	4-30VDC⎓	2A (consists of 2 circuits)	90-240VAC～	Zero cross turn-on
	SRS1-C1202R-2				Random turn-on
	SRS1-C1203-1		3A		Zero cross turn-on
	SRS1-C1203R-1				Random turn-on
	SRS1-C1205-1		5A		Zero cross turn-on
	SRS1-C1205R-1				Random turn-on
	SRS1-C1D102-1	4-24VDC⎓	2A	5-100VDC⎓	—
	SRS1-C1X201-1		1A	5-240VAC～/5-200VDC⎓	

■ Specifications

◎ Input

Series	SRS1-A	SRS1-B	SRS1-C1202(R)-2/ SRS1-C1203(R)-1/ SRS1-C1205(R)-1	SRS1-C1D102-1/ SRS1-C1X201-1
Rated input voltage range	4-24VDC⎓	4-30VDC⎓	4-30VDC ⎓	4-24VDC⎓
Allowable input voltage range	4-26.4VDC⎓	4-32VDC⎓	4-32VDC⎓	4-26.4VDC⎓
Max. input current	15mA (Random turn-on)	13mA (Random turn-on)	13mA (Random turn-on)	15mA
Pick-up voltage	Min. 4VDC⎓			
Drop-out voltage	Max. 1VDC⎓			

◎ Output (AC)

Model		SRS1-A1202(R)	SRS1-A1203(R)	SRS1-A1205(R)	SRS1-B1202(R)-2/ SRS1-C1202(R)-2	SRS1-B1203(R)-1/ SRS1-C1203(R)-1	SRS1-B1205(R)-1/ SRS1-C1205(R)-1
Rated load voltage range		24-240VACrms～ (50/60Hz)			90-240VACrms～ (50/60Hz)		
Allowable load voltage range		24-264VACrms～ (50/60Hz)			90-264VACrms～ (50/60Hz)		
Rated load current	Resistive load (AC-51)※1	2Arms	3Arms	5Arms	2Arms	3Arms	5Arms
Min. load current		0.15Arms	0.2Arms		0.15Arms		
Max. 1cycle surge current (60Hz)		126A	250A		126A		250A
Max. non-repetitive surge current (I^2t, t=8.3ms)		$65A^2s$	$400A^2s$		$65A^2s$		$220A^2s$
Peak voltage (non-repetitive)		600V					
Leakage current (Ta=25℃)		Max. 2mArms (240VAC～/60Hz)					
Output on voltage drop[Vpk] (max. load current)		Max. 1.6V					
Static off-state dv/dt		500V/μs					
Turn-on time	Zero cross turn-on	Max. 0.5 cycle of load source + 1ms					
	Random turn-on	Max. 1ms					
Turn-off time		Max. 0.5 cycle of load source + 1ms					

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

▣ Specifications

◎ Output (DC, AC/DC)

Model		SRS1-A1D101	SRS1-A1D102	SRS1-A1D201	SRS1-C1D102-1	SRS1-A1X201	SRS1-C1X201-1
Rated load voltage range		5-100VDC⎓		5-200VDC⎓	5-100VDC⎓	5-240VACrms～ (50/60Hz) / 5-200VDC⎓	
Allowable load voltage range		3-120VDC⎓		3-220VDC⎓	3-120VDC⎓	3-264VACrms～ (50/60Hz) / 3-220VDC⎓	
Rated load current	Resistive load (AC-51)※1	1Adc	2Adc	1Adc	2Adc	1Arms/1Adc	
Min. load current		10mA				10mA	
Max. surge current (t=10ms)		5A	10A	4A	10A	4A	
Leakage current		Max. 100μA				Max. 2mArms	Max. 2mArms (240VAC～/60Hz)
Output on voltage drop[Vpk] (max. load current)		Max. 1.1V				Max. 2.2V	
Static off-state dv/dt		500V/μs			—	500V/μs	—
Turn-on time		Max. 1ms	Max. 2ms	Max. 1ms	Max. 1ms	Max. 2ms	Max. 1ms
Turn-off time		Max. 1ms					

※1: AC-51 is utilization category at IEC60947-4-3.

◎ General specifications

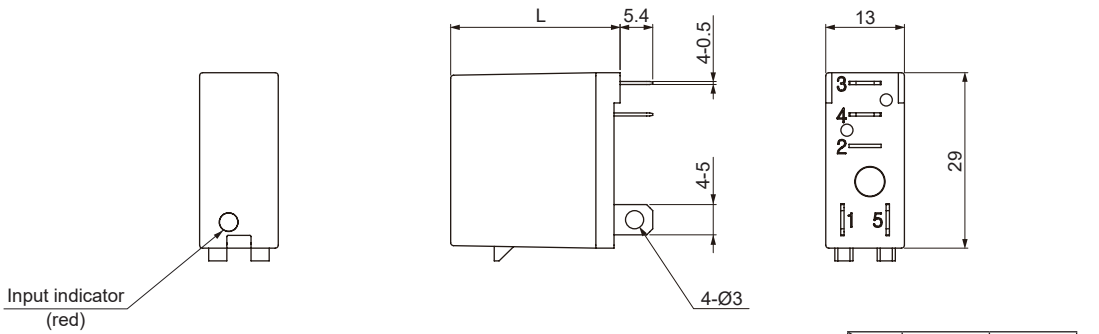
Series		SRS1-A	SRS1-B	SRS1-C
Dielectric strength (Vrms)		2,500VAC 50/60Hz 1 min (input-output, input/output-case)		
Insulation resistance		Over 100MΩ (at 500VDC megger)		
Indicator		Input indicator: red LED		
Environ -ment	Ambient temperature	-20 to 70℃, storage: -30 to 100℃	-20 to 80℃, storage: -30 to 100℃	
		(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		
Protection		IP10 (Protection structure of socket, SK-G05)	According to protection of the universal LY2 socket	According to protection of the universal MY4 socket
Approval		CE c UL us		—
Weight※1		Max. 3A: approx. 270g (approx. 17g) 5A: approx. 380g (approx. 28g)	Approx. 400g (approx. 30g)	Approx. 400g (approx. 30g)

※1: The weight is per 10 units with packing and the weight of parenthesis is per 1 unit.
※Environment resistance is rated at no freezing or condensation.

▣ Dimensions

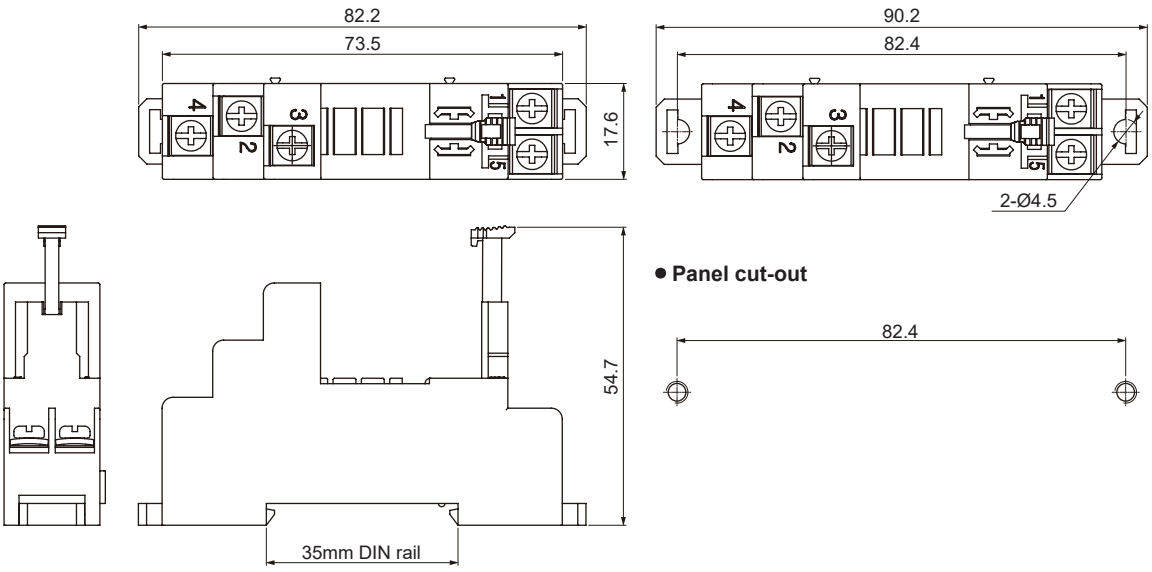
(unit: mm)

◎ SRS1-A



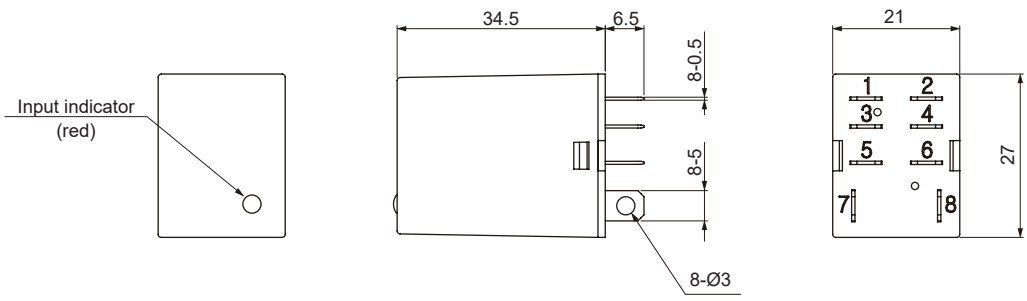
	Max. 3A	5A
L	28	38

● **Dedicated socket for SRS1-A: SK-G05 (sold separately)**

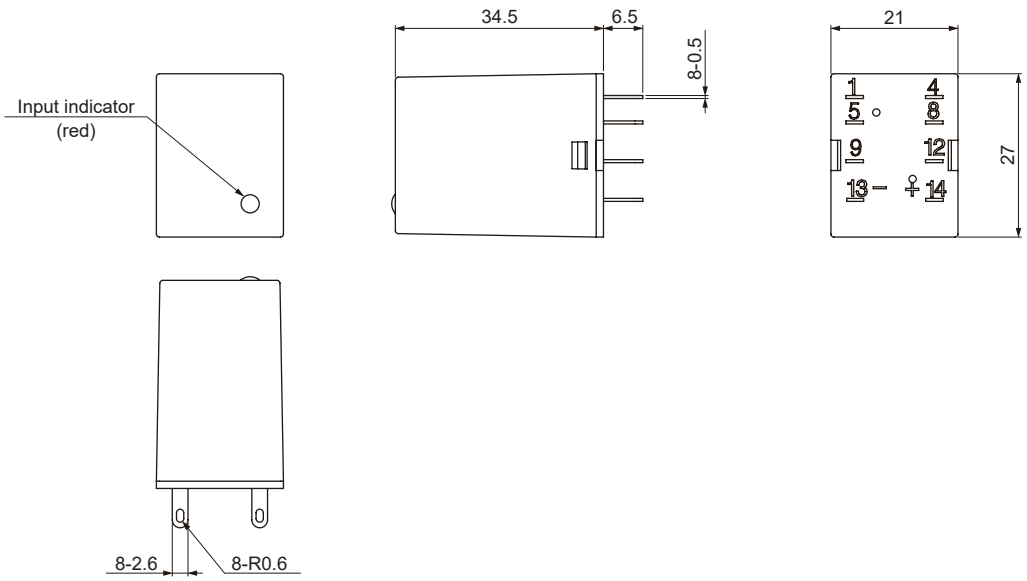


● **Panel cut-out**

◎ **SRS1-B**



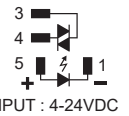
◎ **SRS1-C**



▣ Connections

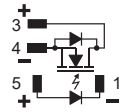
◎ SRS1-A

● **SRS1-A1202(R)/SRS1-A1203(R)/ SRS1-A1205(R)**



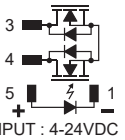
※SRS1-A1202(R)
: 240VAC 2A RESISTIVE LOAD
SRS1-A1203(R)
: 240VAC 3A RESISTIVE LOAD
SRS1-A1205(R)
: 240VAC 5A RESISTIVE LOAD

● **SRS1-A1D101/SRS1-A1D102/ SRS1-A1D201**



※SRS1-A1D101
: 100VDC 1A RESISTIVE LOAD
SRS1-A1D102
: 100VDC 2A RESISTIVE LOAD
SRS1-A1D201
: 200VDC 1A RESISTIVE LOAD

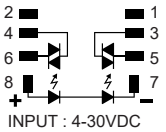
● **SRS1-A1X201**



※SRS1-A1X201
: 200VDC 1A RESISTIVE LOAD
: 240VAC 1A RESISTIVE LOAD

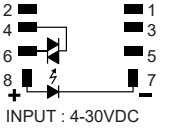
◎ SRS1-B

● **SRS1-B1202(R)-2**



※SRS1-B1202(R)-2
: 240VAC 2A RESISTIVE LOAD

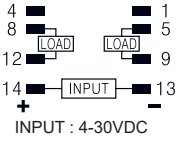
● **SRS1-B1203(R)-1/SRS1-B1205(R)-1**



※SRS1-B1203(R)-1
: 240VAC 3A RESISTIVE LOAD
SRS1-B1205(R)-1
: 240VAC 5A RESISTIVE LOAD

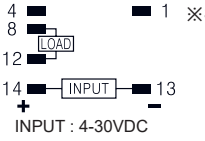
◎ SRS1-C

● **SRS1-C1202(R)-2**



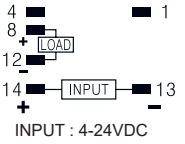
※SRS1-C1202(R)-2
: 240VAC 2A RESISTIVE LOAD

● **SRS1-C1203(R)-1/SRS1-C1205(R)-1**



※SRS1-C1203(R)-1
: 240VAC 3A RESISTIVE LOAD
SRS1-C1205(R)-1
: 240VAC 5A RESISTIVE LOAD

● **SRS1-C1D102-1/SRS1-C1X201-1**

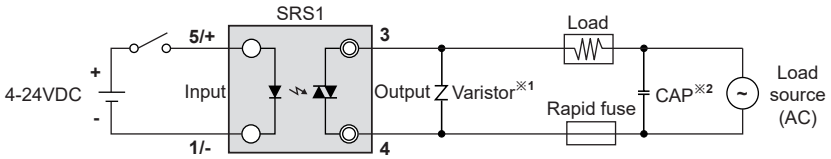


※SRS1-C1D102-1
: 100VDC 2A RESISTIVE LOAD
SRS1-C1X201-1
: 200VDC 1A RESISTIVE LOAD
: 240VAC 1A RESISTIVE LOAD

▣ Example of Connection

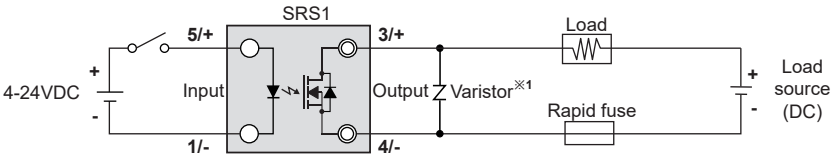
◎ SRS1-A

● **AC Load (SRS1-A1202(R)/SRS1-A1203(R)/SRS1-A1205(R))**



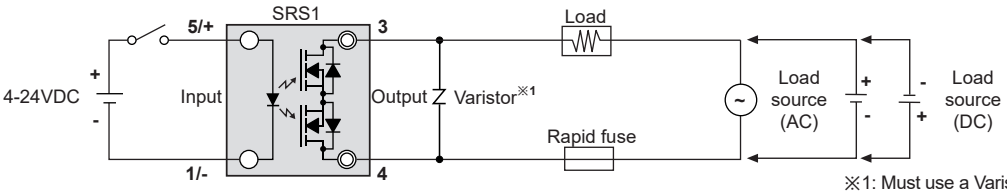
※1: Must use a Varistor (470V, 0.6W)
※2: When connecting capacitor as above, it is appropriate for EMC. CAP: 1μF/250VAC

● **DC Load (SRS1-A1D101/SRS1-A1D102/SRS1-A1D201)**



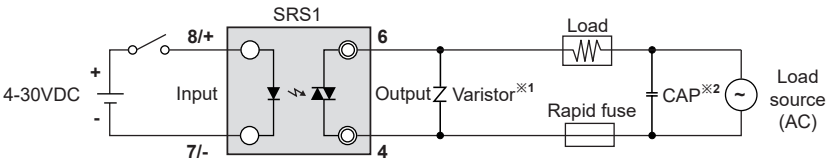
※1: Must use a Varistor (SRS1-A1D101/SRS1-A1D102: 270V, 0.6W) (SRS1-A1D201: 470V, 0.6W)

● **AC/DC Load (SRS1-A1X201)**



※1: Must use a Varistor (470V, 0.6W)

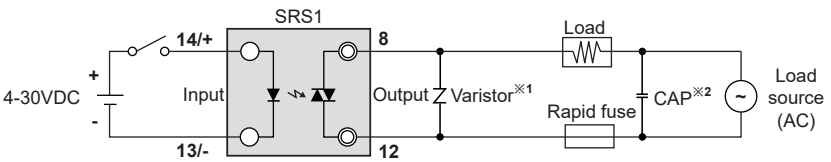
◎ SRS1-B



※1: Must use a Varistor (470V, 0.6W)
※2: When connecting capacitor as above, it is appropriate for EMC. CAP: 1uF/250VAC

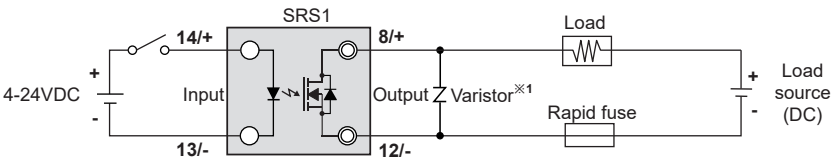
◎ SRS1-C

● **AC Load (SRS1-C1202(R)-2/SRS1-C1203(R)-1/SRS1-C1205(R)-1**



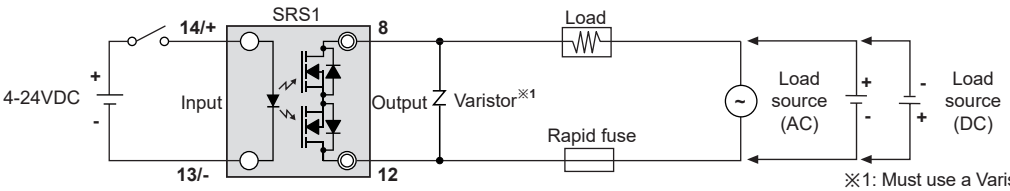
※1: Must use a Varistor (470V, 0.6W)
※2: When connecting capacitor as above, it is appropriate for EMC. CAP: 1μF/250VAC

● **DC Load (SRS1-C1D102-1)**



※1: Must use a Varistor (270V, 0.6W)

● **AC/DC Load (SRS1-C1X201-1)**

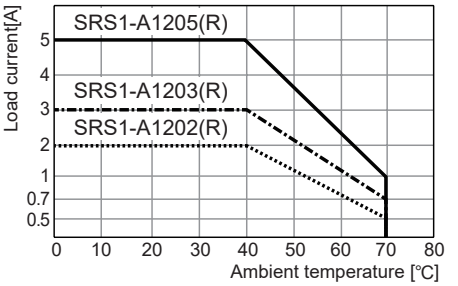


※1: Must use a Varistor (470V, 0.6W)

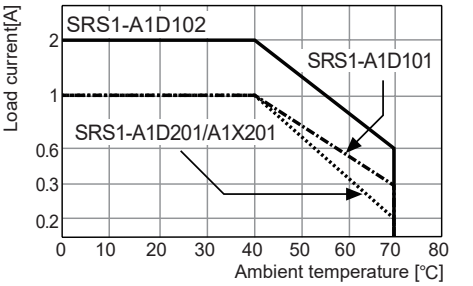
▣ SSR Derating Curve

◎ SRS1-A

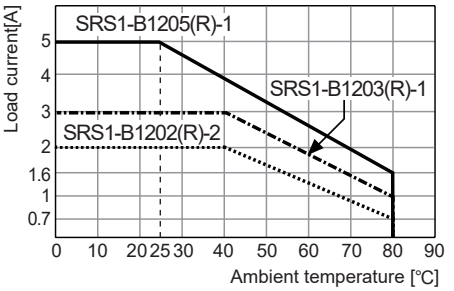
● **SRS1-A1202(R)/SRS1-A1203(R)/ SRS1-A1205(R)**



● **SRS1-A1D102/SRS1-A1D101/ SRS1-A1D201/SRS1-A1X201**

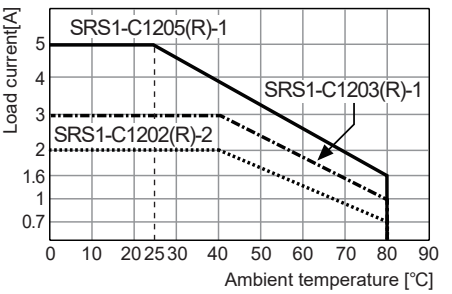


◎ SRS1-B

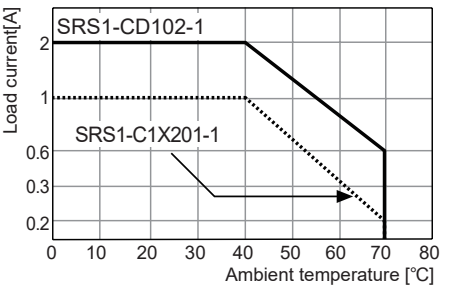


◎ SRS1-C

● **SRS1-C1202(R)-2/SRS1-C1203(R)-1/ SRS1-C1205(R)-1**



● **SRS1-C1D102-1/SRS1-C1X201-1**



⚠ 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

1. Follow instructions in 'Cautions during Use'. Otherwise, it may cause unexpected accidents.
2. 4-24VDC, 4-30VDC signal input should be insulated and limited voltage/current or Class 2, SELV power supply device.
3. Install the unit in the well ventilated place.
4. While supplying power to the load or right after turning off the power of the load, do not touch the body.
   Failure to follow this instruction may result in a burn due to the high temperature.
5. 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.
6. 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.
7. When using random turn-on model for phase control, install noise filter between the load and the power of the load.
8. Do not use near the equipment which generates strong magnetic force or high frequency noise.
9. 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 II