

Autonics

Solid State Relay SRS1-B SERIES

M A N U A L



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

Caution for your safety

- ✖ Please keep these instructions and review them before using this unit.
- ✖ Please observe the cautions that follow;
- Warning** Serious injury may result if instructions are not followed.
- Caution** Product may be damaged, or injury may result if instructions are not followed.
- ✖ The following is an explanation of the symbols used in the operation manual.
- Caution:** Injury or danger may occur under special conditions.

Warning

- 1. In case of using this unit with machinery(Ex: nuclear power control, medical equipment, ship, vehicle, train, airplane, combustion apparatus, safety device, crime/disaster prevention equipment, etc) which may cause damages to human life or property, 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 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.
- ✖ The above specifications are subject to change and some models may be discontinued without notice.

Ordering information

SRS	1	-	B	1	2	02	R	-	1
Item	Number of output circuit	Function	Rated load current (Resistive load)	Load voltage(Rated)	Input voltage(Rated)	Socket	Control phase		
	1	No mark	02	2	1				
	2	Zero cross turn-on	03	90-240VAC	4-30VAC				
	R	Random turn-on	05	240VAC	LY2 socket general purpose				

Model	Input voltage	Rated load current	Load voltage	Zero cross turn-on/Random turn-on
SRS1-B1202-2	4-30VDC	2A(configures to 2-circuit)	90-240VAC	Zero cross turn-on
SRS1-B1202R-2				Random turn-on
SRS1-B1203-1				Zero cross turn-on
SRS1-B1203R-1				Random turn-on
SRS1-B1205-1				Zero cross turn-on
SRS1-B1205R-1				Random turn-on

Specifications

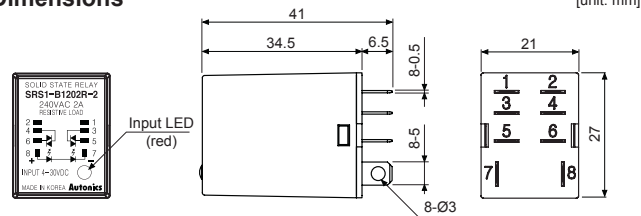
Input	
Rated input voltage range	4-30VDC
Allowable input voltage range	4-32VDC
Max. input current	13mA(Random turn-on)
Pick-up voltage	Min. 4VDC
Drop-out voltage	Max. 1VDC
Turn-on time	Zero cross turn-on: 0.5 cycle of load source + 1ms Random turn-on: Max. 1ms
Turn-off time	0.5 cycle of load source + 1ms

Output			
Model	SRS1-B1202(R)-2	SRS1-B1203(R)-1	SRS1-B1205(R)-1
Rated load voltage range	90-240VACrms(50/60Hz)		
Allowable load voltage range	90-240VACrms(50/60Hz)		
Rated load current Ta=25°C Resistive load(AC-51)	2Arms	3Arms	5Arms
Min. load current	0.15Arms		
Max. 1 cycle surge current (60Hz)	126A		250A
Max. non-repetitive surge current (I ² t, t=8.3ms)	65A ² s		220A ² s
Peak voltage (Non-repetitive)	600V		
Leakage current (Ta=25°C)	Max. 2mArms		
Output on voltage drop [Vpk] (Max. load current)	Max. 1.6V		
Static off-state dv/dt	500V/μs		

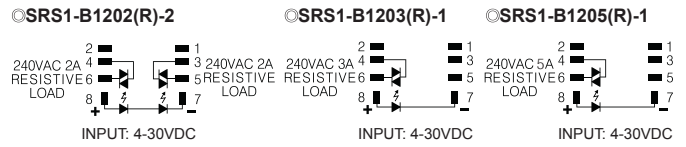
General Specifications	
Dielectric strength(Vrms)	2,500VAC 50/60Hz 1min.(Input-Output, Input/Output-Case)
Insulation resistance	Min. 100MΩ(at 500VDC Megger)
Input LED	Red
Environment	Ambient temperature: -20 to 80°C, Storage: -30 to 100°C (Rated load current capacity is different based on the surrounding temperature. Refer to «SSR Characteristic curve.») Ambient humidity: 45 to 85%RH, Storage: 45 to 85%RH
Protection	According to protection of the general LY2 socket
Approval	
Weight ^{*1}	Approx. 30g(approx. 400g)

*1: This weight is for 1EA except the packing box. The weight of parenthesis is for 10EA as packing unit.
*Condition for use in Environment is no freezing or condensation.

Dimensions

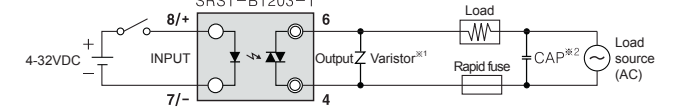


Connections



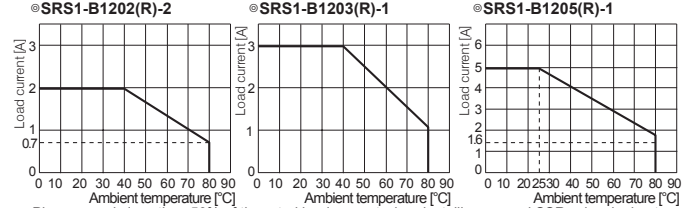
✖ Use LY2 TYPE POWER RELAY socket general purpose.

Example of connection



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

SSR Characteristic curve



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

Caution for using

1. Ventilate air for smooth convection current. If not, overheat may cause product failure or malfunction.
2. For mounting multiple SSR, please keep certain installation intervals for heat prevention.
3. Make sure do not touch 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 I²t is under 1/2 of SSR I²t.
6. 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.
7. When selecting phase control with random turn-on model, install the noise filter between load and load's source.
8. Make sure that the screw on output terminal is tightly fastened. Using the unit with loose bolt may cause product failure or malfunction.
9. Do not touch the load's terminal even if output is OFF. It may cause an electric shock.
10. Avoid following environments to install
 - ⓐ Where temperature/humidity is beyond the specification
 - ⓑ Where dew condensation occurs due to temperature change
 - ⓒ Where inflammable or corrosive gas exists
 - ⓓ Where direct rays of light exist
 - ⓔ Where severe shock, vibration or dust exists
 - ⓕ Where near facilities generating strong magnetic forces or electric noise
11. Installation environment
 - ⓐ It shall be used indoor
 - ⓑ Altitude Max. 2,000m
 - ⓒ Pollution Degree 2
 - ⓓ Installation Category II

✖ It may cause malfunction if above instructions are not followed.

Major products

- Photoelectric sensors
- Fiber optic sensors
- Door sensors
- Door side sensors
- Area sensors
- Proximity sensors
- Pressure sensors
- Rotary encoders
- Connectors/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

Autonics Corporation

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