Autonics

Solid State Relay

SRS1-B SERIES

INSTRUCTION MANUAL

Thank you for choosing our Autonics product.

Please read the following safety considerations before use.

■ Safety Considerations

※Please observe all safety considerations for safe and proper product operation to avoid hazards.
※⚠ symbol represents caution due to special circumstances in which hazards may occur.

⚠ **Warning** Failure to follow these instructions may result in serious injury or death.
⚠ **Caution** Failure to follow these instructions may result in personal injury or product damage.

⚠ Warning

1. **Fail-safe device must be installed when using the unit with machinery that may cause serious injury or substantial economic loss. (e.g. nuclear power control, medical equipment, ships, vehicles, railways, aircraft, combustion apparatus, safety equipment, crime/disaster prevention devices, etc.)**
   Failure to follow this instruction may result in fire, personal injury, or economic loss.
2. **Do not connect, repair, or inspect the unit while connected to a power source.**
   Failure to follow this instruction may result in electric shock or fire.
3. **Check 'Connections' before wiring.**
   Failure to follow this instruction may result in fire.
4. **Do not disassemble or modify the unit.**
   Failure to follow this instruction may result in electric shock or fire.

⚠ Caution

1. **Use the unit within the rated specifications.**
   Failure to follow this instruction may result in fire or product damage.
2. **Use dry cloth to clean the unit, and do not use water or organic solvent.**
   Failure to follow this instruction may result in electric shock or fire.
3. **Do not use the unit in the place where flammable/explosive/corrosive gas, humidity, direct sunlight, radiant heat, vibration, impact, or salinity may be present.**
   Failure to follow this instruction may result in fire or explosion.
4. **Keep metal chip, dust, and wire residue from flowing into the unit.**
   Failure to follow this instruction may result in fire or product damage.
5. **Since leakage current still flows right after turning off the power or in the output OFF status, do not touch the load terminal.**
   Failure to follow this instruction may result in electric shock.

■ Ordering Information

SRS 1 - B 1 2 02 R - 1

Number of output circuit	1	1
	2	2
Function	No mark	Zero cross turn-on
	R	Random turn-on
Rated load current (resistive load)	02	2A
	03	3A
	05	5A
Rated load voltage	2	90-240VAC
Rated input voltage	1	4-30VAC
Socket	B	Universal LY2 socket
Control phase	1	Single phase
Item	SRS	Solid State Relay(Socket type)

※The above specifications are subject to change and some models may be discontinued without notice.
※Be sure to follow cautions written in the instruction manual and the technical descriptions (catalog, homepage).

Model	Rated input voltage	Rated load current	Rated load voltage	Function
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		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

■ 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	Max. 0.5 cycle of load source + 1ms
	Random turn-on	Max. 1ms
Turn-off time		Max. 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		90-264VACrms～ (50/60Hz)		
Rated load current	Resistive load (AC-51)※1	2Arms	3Arms	5Arms
Min. load current		0.15Arms		
Max. 1 cycle surge current (60Hz)		126A		250A
Max. non-repetitive surge current (I^2t, t=8.3ms)		$65A^2s$		$220A^2s$
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		

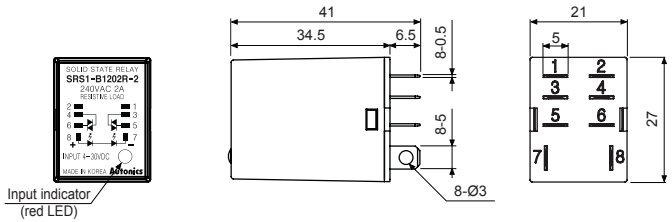
◎ General specifications

Dielectric strength (Vrms)		2,500VAC 50/60Hz 1min (input-output, input/output-case)
Insulation esistance		Over 100MΩ (at 500VDC Megger)
Indicator		Input indicator: red LED
Environment	Ambient temperature	-20 to 80°C, storage: -30 to 100°C (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		According to protection of the universal LY2 socket
Approval		CE c UL us
Weight※2		Approx. 400g (approx. 30g)

※1: AC-51 is utilization category at IEC60947-4-3.
※2: 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

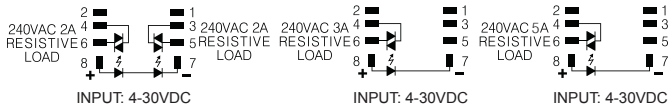
(unit: mm)



※When inatalling multiple SSRs, please keep space between SSRs for heat radiation.

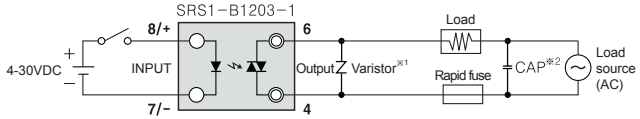
■ Connections

◎ **SRS1-B1202(R)-2** ◎ **SRS1-B1203(R)-1** ◎ **SRS1-B1205(R)-1**



※Use the universal LY2 socket.

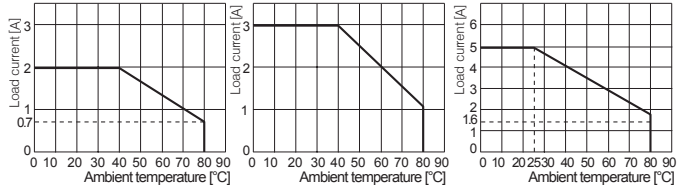
◎ **Example of connection**



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

■ SSR Derating Curve

◎ **SRS1-B1202(R)-2** ◎ **SRS1-B1203(R)-1** ◎ **SRS1-B1205(R)-1**



⚠ Since effectiveness of the heat rediation 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.

■ Cautions during Use

1. Follow instructions in 'Cautions during Use'. Otherwise, it may cause unexpected accidents.
2. 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.
   ①Indoors (in the environment condition rated in 'Specifications')
   ②Altitude max. 2,000m
   ③Pollution degree 2
   ④Installation category II

■ Major Products

- Photoelectric Sensors
- Fiber Optic Sensors
- Door Sensors
- Door Side Sensors
- Area Sensors
- Proximity Sensors
- Pressure Sensors
- Rotary Encoders
- Connector/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, CO_2, Nd: YAG)
- Laser Welding/Cutting System
- Temperature Controllers
- Temperature/Humidity Transducers
- SSRs/Power Controllers
- Counters
- Timers
- Panel Meters
- Tachometer/Pulse (Rate) Meters
- Display Units
- Sensor Controllers

Autonics Corporation
http://www.autonics.com

HEAD QUARTERS:
18, Bansong-ro 513beon-gil, Haeundae-gu, Busan, South Korea, 48002
TEL: 82-51-519-3232
E-mail: sales@autonics.com