# **Autonics**

## Solid State Relay

# ( € c**\$1**\us

**SRS1-A SERIES** 

## М

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

### Caution for your safety

XPlease 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.

XThe 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 machineries (Ex: Nuclear power control, medical equipment, ship, vehicle, train, airplane, combustion apparatus, safety device, crime/ disaster prevention equipment, etc.), it is required to install fail-safe device. It may cause a fire, human injury or damage to property.
- 2. Install the unit on panel. It may cause electric shock
- 3. Do not contact, inspect or repair this unit when the power is ON. It may cause electric shock.
- 4. Do not disassemble the case. Please contact us if it is required. It may cause electric shock or a fire.

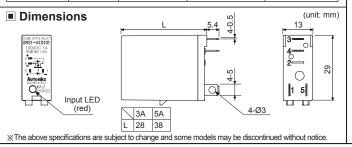
#### **∆** Caution

- 1. This unit shall not be used outdoors.
- It may shorten the life cycle of the product or cause electric shock.
- 2. Please observe the rated specifications.
- It may 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 please use dry cloth. It may cause electric shock or a fire.

  4. Do not use this unit in place where there is 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 turns OFF. It may cause electric shock due to electric charge of snubber circuit.

#### Model

Model	Input voltage	Rated load current	Load voltage	Zero cross turn-on/ Random turn-on
SRS1-A1202	4-24VDC	2A	24-240VAC	Zero cross turn-on
SRS1-A1202R				Random turn-on
SRS1-A1203		ЗА		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	-



### Connections

Specifications

Rated input voltage range

Rated load voltage range

Max. non-repetitive surge current (I²t, t=8.3ms)

Output ON voltage drop [Vpk]

Rated load current resistive load | 2Arms

Max. 1 cycle surge current(60Hz) 126A

Peak voltage(Non-repetitive) 600V

Leakage current(Ta=25°C) Max. 2mArms

ON time Random turn-on Max. 1ms

Allowable load voltage range 3-120VDC

Output(AC)

Min. load current

max\_load current

Static off-state dv/dt

Output(DC, AC/DC)

Rated load voltage range

Rated load current

Min. load current

Max. surge current(t=10ms)

Leakage current

(max. load current)

Turn-on time

Turn-off time

Input LED

Protection

Approval

Weight\*

ment

Static off-state dv/dt

Output ON voltage drop[Vpk]

O General specifications

Dielectric strength(Vrms)

Insulation resistance

resistive load

#### ©SRS1-A1202(R)/A1203(R)/A1205(R)

**INPUT** 4-24VDC

O Input

Model

Turn-

Model

Turn-off time



Allowable input voltage range 4-26.4VDC current

Allowable load voltage range 24-264VACrms(50/60Hz)

\*\*SRS1-A1202(R) : 250VAC 2A RÉSISTIVE LOAD SRS1-A1203(R) : 250VAC 3A RÉSISTIVE LOAD SRS1-A1205(R) 250VAC 5A RÉSISTIVE LOAD

4-24VDC

0.15Arms

Max. 1.6V

500V/us

5-100VDC

1 Adc

10mA

Max. 100uA

Max. 1.1V

500V/μs

Red

Environ- Ambient temperature -20 to 70°C, storage: -30 to 100°C

( £ . **51)** ...

Environment resistance is rated at no freezing or condensation

×1: This weight is per 1 unit. The weight in parentheses is per 10 units.

1ms

1ms

5A

Zero cross turn-on 0.5 cycle of load source + 1ms

65A2s

SRS1-A1202(R)

24-240VACrms(50/60Hz)

0.5 cycle of load source + 1ms

SRS1-A1D101 | SRS1-A1D102 | SRS1-A1D201

2Adc

10A

2ms

Min. 100MΩ(at 500VDC megger)

45 to 85%RH, storage: 45 to 85%RH IP10(Protection structure of socket, SK-G05)

### ©SRS1-A1D101/A1D102/A1D201



SRS1-A1205(R)

SRS1-A1X201

5-200VDC

3-220VDC

1Arme/1Ado

Max. 2mArms

Max 22V

2ms

5-240VAC 50/60Hz

3-264VAC 50/60Hz

5Arms

**INPUT** 

Max. input current | 15mA | Pick-up voltage | Min. 4vuc | Nandom tum-on | Drop-out voltage | Max. 1VDC |

5-200VDC

3-220VDC

1 Adc

4A

1ms

2.500VAC 50/60Hz for 1 min. (input-output, input/output-case)

Max. 3A: Approx. 17q(Approx. 270q), 5A: 28q(Approx. 380q)

SRS1-A1203(R)

3Arms

250A

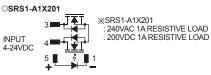
400A2s

0.2Arms

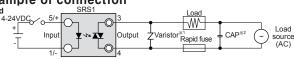
4-24VDC

\*SRS1-A1D101 100VDC 1A RESISTIVE LOAD SRS1-A1D102 100VDC 2A RESISTIVE LOAD

SRS1-A1D201 200VDC 1A RESISTIVE LOAD

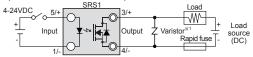


#### Example of connection AC load



\*1: Must use a Varistor. Varistor: 470V. 0.6W

#### DC load(SRS1-A1D101/A1D102/A1D201)



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

#### •AC/DC load (SRS1-A1X201) 4-24VDC Load Load Output 7 Varistor\*1 Input (~) source source (DC) Rapid fuse

×1: Must use a Varistor, Varistor, 470V, 0.6W

## 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 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 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
- 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 electric shock
- 10. Avoid following environments to install this unit.
- ①Place where temperature/humidity is over the rated specifications
- 2) Place where due condensation occurs due to temperature change
- 3) Place where inflammable or corrosive gas exists
- Place where direct rays of light exists
- ®Place where several shock, vibration or dust exists
- @Place where near facilities generating strong magnetic forces or electric noise
- 11. Allowable installation environment
- ⊕It shall be used indoor. 3 Pollution degree 2

@Altitude Max 2 000m Installation Category II

XIt may cause malfunction if above instructions are not followed.

Timers

Display units

Panel meters

Pressure sensors

Rotary encoders

■ Power controllers

### Major products Counters

- Proximity sensors Area sensors
- Photoelectric sensors Fiber optic sensors
- Door/Door side sensors Sensor controllers
- Graphic/Logic panels ■ Temperature controllers
- Tachometer/Pulse(Rate) meters ■ Temperature/Humidity transducers
- Switching mode power supplies
- Stepper motors/drivers/motion controllers Field network devices
- Laser marking system(CO₂, Nd:YAG) Laser welding/soldering system

## Autonics Corporation http://www.autonics.com

Satisfiable Partner For Factory Automation

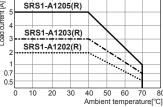
#### ■ HEAD QUARTERS:

- 18, Bansong-ro 513beon-gil, Haeundae-gu, Busan, Korea OVERSEAS SALES:
- #402-404 Bucheon Techno Park 655 Pyeongcheon-ro Wonmi-gu, Bucheon, Gyeonggi-do, Korea
- TEL: 82-32-610-2730 / FAX: 82-32-329-0728 ■ E-mail: sales@autonics.com

EP-KE-02-038A

#### SSR Derating curve

Ambient humidity



SRS1-A1D102 SRS1-A1D101 SRS1-A1D201/A1X201 0 10 20 30 Ambient temperature[°C]

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