

Single-Phase Non-Contact Relay
SSR-2DA



Address: Iran , Qazvin , Imam Khomeini
 Science and Technology Park



Single-Phase Non-Contact Relay (For Low Voltage)

We appreciate you for purchasing Shayegan Electronic Co., Ltd product. Before using the product you have purchased, check to make sure that it is exactly what you ordered. Then, please use it following the instructions below.

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Shayegan Electronic Co., Ltd. Certification Status

Warning

Since this product is not designed as a safety devise, the user must install double safety equipment when this product is used for equipments with possible fatal accident or large property damages

① Safety Precautions

Danger

Do not touch or contact the input/output terminals because they may cause electric shock.

Warning

1. Before you use, read safety precautions carefully, and use this product properly.
2. Do not touch or contact the input/output terminals because they may cause electric shock.
3. The user must install the external safety equipment when there are possible defect of this product or serious accidents.
4. To prevent defection or malfunction of this product, supply proper power voltage in accordance with the rating.
5. To prevent electric shock or devise malfunction of this product, do not supply the power until the wiring is completed
6. Reassemble this product while the power is off. Otherwise, it may cause malfunction or electric shock.
7. If the user use tire product with methods other than specified by the manufacturer, there may be bodily injuries or property damages
8. Due to the danger of electric shock, use this product installed onto a panel while an electric current is applied.

Caution

1. Before using the product you have purchased, check to make sure that it is exactly what you ordered.
2. Do not use this product at any place with corrosive (especially noxious gas or ammonia) or flammable gas
3. Do not use this product at any place with liquid, oil, medical substances, dust, salt or iron contents.
4. Do not use this product at any place with excessive induction trouble, static electricity or magnetic noise.
5. Do not use this product at any place with possible thermal accumulation due to direct sunlight or heat radiation
6. When the product gets wet, the inspection is essential because there is danger of an electric leakage or fire
7. Do not connect anything to the unused terminals
8. For DC types, connect wires at the correct position after checking polarity of terminal.
9. The rated heat sink must be used: otherwise, the product may be destroyed
10. When product is disposed, treat as a industrial waste.

② Ordering Information

SSR- 2 D A 40	Rated Load Current	10 : 10 A 15 : 15 A 25 : 25 A 40 : 40 A
	Output Load Voltage	D : Dc 5-60 V A : Ac 24-350 V
	Input Control Voltage	D : Dc 4-32V A : Ac 90-264 V
	Control Phase	2 : Single Phase 3 : Three Phase

③ Rated Specifications

■ Direct Current (DC) Input Type

Model Name	SSR-2DA 10	SSR-2DA 15	SSR-2DA 25	SSR-2DA 40	
I N P U T	Rated Voltage	5-24 V DC			
	Applicable Voltage Rsnge	4-32 V DC			
	Impedance	Below 4kΩ			
	Control Method	Zero Crossing			
	Return Voltage	Below 1.5 V DC			
O U T P U T	Input Current	Contant Current method 10mA			
	Load Voltage Range	24-380 VAC			
	Peak Voltage(non-repetition)	600 V			
	Rated Load Current	10A	15A	25A	40A
	Frequency	25-65 Hz			
	Leakage Current	<3 mA			
	Voltage drop	1.6 V			
	Minimum Operation Current	1A			
	Response Time	on<10ms , off<10ms			
	insulating Resistance	500 V DC , 50 MΩ (input/ou tpul and between Cases)			
Dielectric Strength	2500 V AC (50 Hz for one minute)				
Vibration	10-55 Hz, Double amplitude :1.5mm,Each Z,Y,Z axis for 3 times				
Impact	100 ^m / _s ² (about 100 G),Each X,Y,Z axis for 3 times				
Storage Temperature	-30-90 C				
Ambient Temperature	-20-80 C				
Ambient Humidity	45-85%RH				
Weight	About 130g				

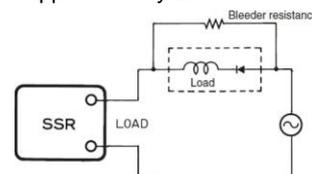
■ Selecting an SSR for Different Loads

1. Motor Load

When a motor is started, an inrush current of 5 to 10 times the rated current flows and the inrush current flows for a longer time than for a lamp or transformer. In addition to measuring the startup time of the motor or the inrush current during use, ensure that the peak value of the inrush current is less than half the inrush current resistance when selecting an SSR. The SSR may be damaged by counterelectromotive force from the motor. Be sure to install overcurrent protection for when the SSR is turned OFF.

2. Half-wave Rectifying Circuit

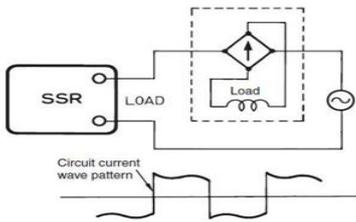
AC electromagnetic counters or solenoids have built-in diodes, which act as half-wave rectifiers. For these types of loads, a halfwave AC voltage does not reach the SSR output. For SSRs with the zero cross function, this can cause them not to turn ON. Two methods for counteracting this problem are described below. 1. Connect a bleeder resistance with approximately 20% of the SSR load current



2. Use SSRs without the zero cross function.

3. Full-wave Rectified Loads

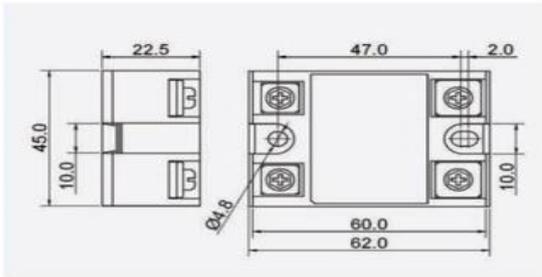
AC electromagnetic counters and solenoids have built-in diodes, which act as full-wave rectifiers. The load current for these types of loads has a rectangular wave pattern, as shown in the following diagram.



Accordingly, AC SSRs use a triac (which turns OFF the element only when the circuit current is 0 A) in the output element. If the load current waveform is rectangular, it will result in an SSR release error. When switching ON and OFF a load whose waves are all rectified, use Power MOS FET Relay. -V-model SSRs: G3F-203SL-V, G3H-203SL-V Power MOS FET Relay : G3DZ, G3RZ, G3FM

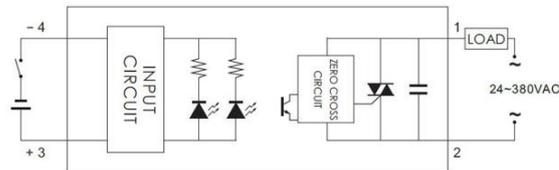
Note: Refer to "Control Component Catalogue" (Catalogue number: SAOO-206) for detailed specification of G3FM models.

④ External Dimension



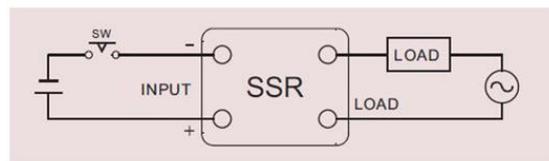
⑤ Circuit

■ DC Input Type



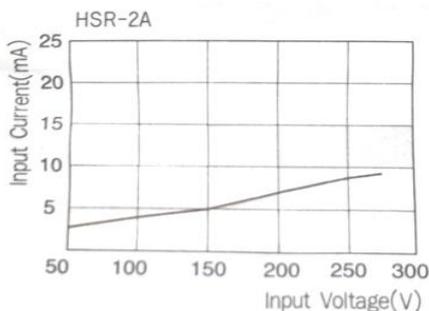
⑥ Application Circuit

■ DC Input Type

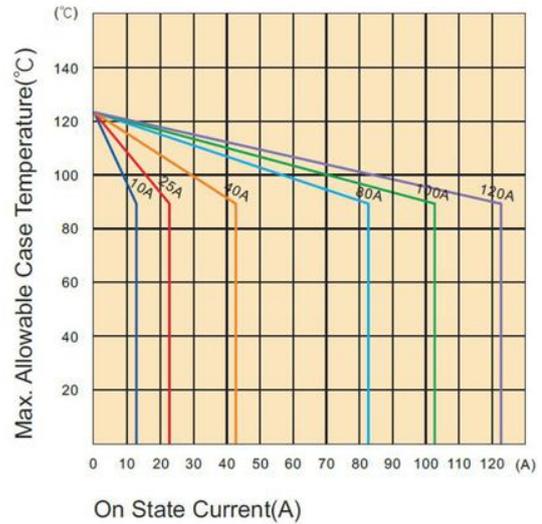


⑦ Load Current Characteristics

■ Input Voltage/Current Characteristics

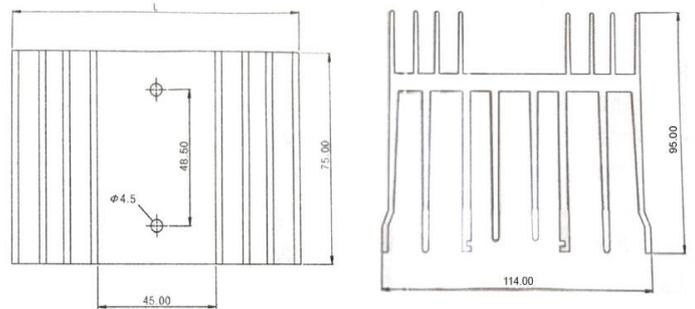


■ Max. Allowable Case Temperature



⑧ Heat Sink

■ Model Names :SSR Series



Model	Applicable Load			
	Rated Load Voltage	Load current		
		With heat sink	Length	With out heat sink
SSR-2D A 10	24-380 VAC	0.2 to 10 A (at 40 C)	48 mm	0.2 to 3 A (at 40 C)
SSR-2D A 15	24-380 VAC	0.2 to 15 A (at 40 C)	55 mm	0.2 to 3 A (at 40 C)
SSR-2D A 25	24-380 VAC	0.2 to 25 A (at 40 C)	80 mm	0.2 to 4 A (at 40 C)
SSR-2D A 40	24-380 VAC	0.2 to 40 A (at 40 C)	109 mm	0.2 to 6 A (at 40 C)

■ Precautions during the use of Heat Sink

Using standards heat sink is mandatory for this product.

Even the standard heat sink is used, SSR damage may occur if the environment temperature rises or if the ventilation does not work well. (Environment temperature : over 40°C)

The normal SSR element is damaged at the maximum temperature of 125°C. When the temperature of heat sink is 80°C, during operation, measure the temperature of heat sink.

When you connected SSR onto the heat sink, heat transmitting grease is needed for smooth heat transmission.

To prevent separation by vibration, tighten up with bolts.

Do not use any insulating materials such as wood, plastic or rubber. The standards heat sink must be greased on the bottom side as shown below and connected. The heatproof silicon grease must be applied thoroughly on the heat sink as well as the bottom of SSR. The case side of heat sink needs to be installed on up and down directions.

