

# HSR-SL

## INSTRUCTION MANUAL

Thank you for purchasing HANYOUNG product.  
Please check whether the product is the exactly same as you ordered.  
Before using the product, please read this instruction manual carefully.  
Please keep this manual where you can view at any time

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MC0501KE190718

### Safety information

Before using the product, please read the safety information thoroughly and use it properly.  
Alerts declared in the manual are classified to Danger, Warning and Caution by their criticality.

	<b>DANGER</b>	DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury
	<b>WARNING</b>	WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury
	<b>CAUTION</b>	CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury

#### DANGER

- The input/output terminals are subject to electric shock risk.  
Never let the input/output terminals come in contact with your body or conductive substances.

#### WARNING

- Before you use, please read safety precautions carefully, and use this product properly.
- If you are concerned about serious accident due to the malfunction of products, please install the external safety equipment
- To prevent defecion or malfunction of this product, supply proper power voltage in accordance with the rating.
- To prevent electric shock or devise malfunction of this product, do not supply the power until the wiring is completed.
- Reassemble this product while the power is off. Otherwise, it may cause malfunction or electric shock.
- If the user uses the product with methods other than specified by the manufacturer, it will bring the bodily injuries or property damages.
- Due to the danger of electric shock, please use this product installed onto a panel while an electric current is applied.

#### CAUTION

- Before using the product you have purchased, please check out if it is exactly what you ordered.
- Do not use this product at any place with corrosive gas (especially noxious gas or ammonia) or flammable gas.
- Do not use this product at any place with liquid, oil, medical substances, dust, salt or iron contents.
- Do not use this product at any place with excessive induction trouble, static electricity or magnetic noise.
- Do not use this product at any place with possible thermal accumulation due to direct sunlight or heat radiation.
- When the product gets wet, the inspection is essential because there is a danger of an electric leakage or fire.
- Do not connect anything to the unused terminals.
- For DC types, please connect wires at the correct position after checking polarity of terminal.
- When product is disposed, treat as a industrial waste.
- Since a heat sink corner is sharp, it would lead to a serious injury.
- When electricity flows, desktop or heat sink's corner temperature would be high so that it could lead people to suffer burns.
- When it is out of order, please separate SSR from head sink and change only SSR.
- This model has epoxy molding for the purpose of safety, reliability and extends of the life.
- When applying an electric current, SSR is heated more and more. So, it has more durable at low heat sink temperature and ambient temperature.

### Suffix code

Model	Code	Content
HSR-SL	□ □ □ □ □ □ □ □	Slim Type Single-Phase Solid State Relay
Input control oltage	D	4 - 32 VDC
Contact	-	1 contact (No mark)
	2C	2 contact (Only for 15 A)
Rated load current	15	15 A
	25	25 A
	40	40 A
Rated load voltage	2	90 - 264 VAC (Low voltage)
	4	90 - 480 VAC (High voltage)
Operation method (Switching Mode)	Z	Zero Cross Switching (Standard product)
	R	Random Switching
Option	BI	60 ° C, 80 ° C Bimetallic Mounting

※ 2 contact : Only available for 15 A items (HSR-SLD2C152Z, HSR-SLD2C154Z)

### Specification

Model	Low	HSR-SLD152Z	HSR-SLD252Z	HSR-SLD402Z	
	High	HSR-SLD154Z	HSR-SLD254Z	HSR-SLD404Z	
LOAD	Rated Load Voltage	Low	90 - 264 VAC		
		High	90 - 480 VAC		
	Peak Voltage (Non-repetition)	Low	600 V		
		High	800 V	1,200 V	
	Rated load current		15 A	25 A	40 A
	Frequency		50/60 Hz(Dual usage)		
Surge current (8.3 ms No repetition)	Low	170 A	260 A	420 A	
	High	170 A	250 A	370 A	
Leakage current		20 mA max			
Output ON voltage dropping		1.6 V (R.M.S) max			
INPUT	Rated Voltage	5 - 24 VDC			
	Operating Voltage Range	4 - 32 VDC			
	Impedance	Less than 4 kΩ			
	Operation Voltage	More than 3 VDC			
	Reset Voltage	Less than 1.5 VDC			
	Input Current	Constant-current system : 8 mA (±3)			
Response Time	1/2 Cycle + 1 ms max. ("R" type below 1 ms)				
Insulating Resistance	500 VDC, 100 MΩ (Between the input / output and case)				
Dielectric strength	3,000 VAC (For 1 min at 60 Hz)				
Vibration resistance	10 - 55 Hz, Double amplitude : 1.5 mm each X,Y and Z direction for 2 hours				
Shock resistance	1,000 m/s <sup>2</sup> , X:Y:Z each axis 3 times				
Storage Temperature	-30 ~ 90 °C				
Ambient Temperature	-5 ~ 40 °C (But without frostiness)				
Ambient Humidity	45 ~ 85 % RH				
Pollution rate	2nd rating				
Purpose of use	Resistance/inductive load				
Accepted standard	IEC 62314				
Weight (Including box)		Approx 230g	Approx 372g		

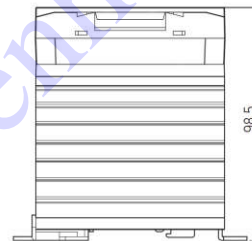
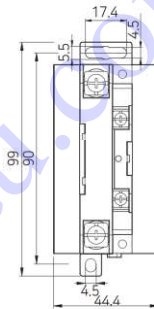
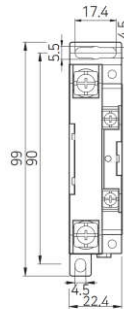
### Dimension

[Unit : mm]

#### ■ CE applicable standard measurement

● HSR-SLD15□, HSR-SLD25□

● HSR-SLD40□

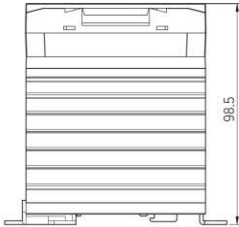
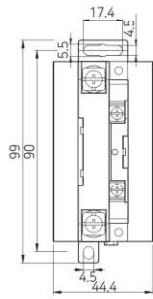
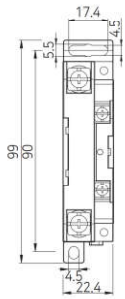


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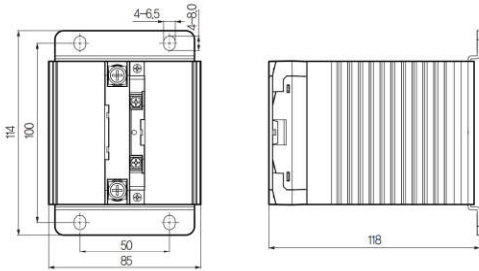
■ S-MARK applicable standard measurement

● HSR-SLD15 □

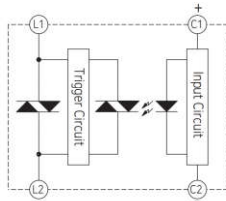
● HSR-SLD25 □



● HSR-SLD40 □

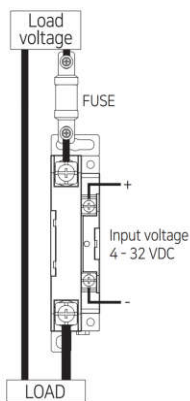


Equivalent Circuit



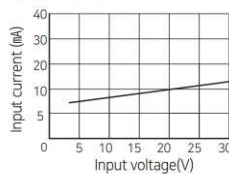
Connection

※ This model does not have a fuse internally. So we suggest using fast-acting fuse separately on the outside as following picture.

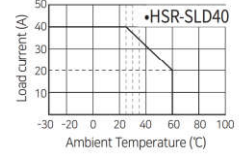
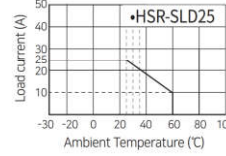
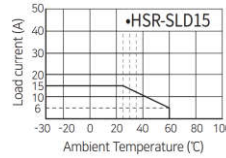


Input/Load/Surge current Characteristics

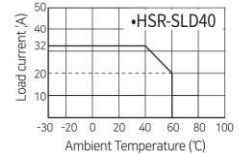
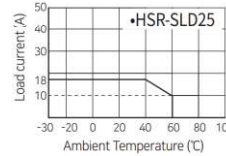
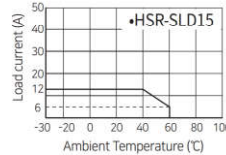
■ Input current Characteristics



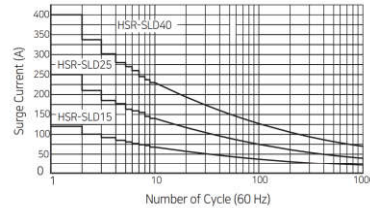
■ Load current Characteristics (25 °C)



■ Load current Characteristics (40 °C)

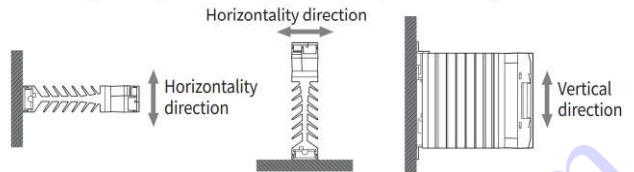


■ Surge current Characteristics



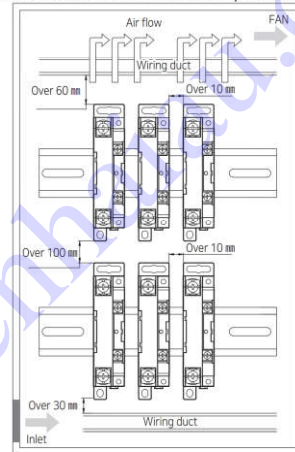
How to install

- Please install SSR in the vertical direction.
- Otherwise, production performance may be reduced to less than 50 %.
- Since the weight of the product is heavy, install it stably when installing DIN rail



Installation intervals

- Please make intervals more than following picture.
- Please install wiring duct less than half the height of the heat sink to prevent obstruction the flow of air.
- The optimal performance of our SSR is in the ambient temperature by 25 °C so please use it lower than 25 °C



Caution

- The width of the load output terminal is 10.6 mm and Input terminal is 6.8 mm so please use terminal that has less than size of them.
- When the product is defective, separate main body and exchange it.
- The product is molded by epoxy to increase safety, credibility and durability of SSR.
- Use it under temperature 25 °C when a real load current is 35 ~ 40 A.
- When 40 A maximum load is used, use 10 SQ wiring. Use clamping unit or lug when tightening it.