

Slim Type

HSR-3SL

3-Phase Solid State Relay

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

HEAD OFFICE

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FACTORY

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HANYOUNG NUX



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

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

DANGER

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

WARNING

- Before you use, read safety precautions carefully, and use this product properly.
- Do not touch or contact the input/output terminals because they may cause electric shock.
- If you are concerned about serious accident due to the malfunction of products, please install the external safety equipment
- To prevent deflection 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 use the product with methods other than specified by the manufacturer, there may be bodily injuries or property damages.
- Due to the danger of electric shock, use this product installed onto a panel while an electric current is applied.

CAUTION

- Before using the product you have purchased, check to make sure that it is exactly what you ordered.
- Do not use this product at any place with corrosive (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 danger of an electric leakage or fire.
- Do not connect anything to the unused terminals.
- For DC types, connect wires at the correct position after checking polarity of terminal.
- The rated heat sink must be used otherwise, the product may be destroyed.
- 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 temperature would be high so that it could lead people to suffer burns.
- This model has epoxy molding for the purpose of safety, reliability and extends of the life.
- When it is out of order, please separate SSR from heat sink and only change SSR.
- 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	Information
HSR-3SL	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Slim Type 3-Phase Solid State Relay
Input Operating Voltage	D	4 – 32 V DC
Rated load current	15	15 A
	25	25 A
	40	40 A
Rated load voltage	2	90 – 264 V AC (Low voltage)
	4	90 – 480 V AC (High voltage)
Operation method (Switching Mode)	Z	Zero Cross Switching (Standard product)
	R	Random Switching

Specification

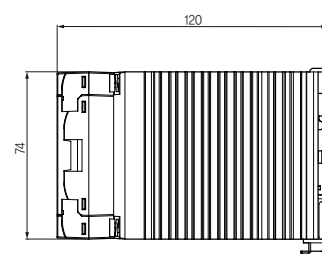
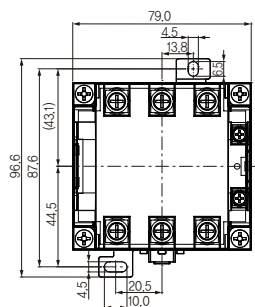
Model	Low	HSR-3SLD152Z	HSR-3SLD252Z	HSR-3SLD402Z
	High	HSR-3SLD154Z	HSR-3SLD254Z	HSR-3SLD404Z
Load	Rated Load Voltage	Low	90 – 264 V AC	
		High	90 – 480 V AC	
	Peak Voltage (Non-repetition)	Low	600 V	
		High	800 V	1,200 V
	Rated load current	15 A	25 A	40 A
	Frequency	50/60 Hz (Dual usage)		
	Surge current (8.3 ms No repetition)	Low	170 A	260 A
		High	170 A	250 A
	Leakage current	20 mA max		
	Output ON voltage dropping	1.6 V (R.M.S) max		
Input	Rated Voltage	5 – 24 V DC		
	Operating Voltage Range	4 – 32 V DC		
	Impedance	Less than 4 kΩ		
	Operation Voltage	More than 3 V DC		
	Reset Voltage	Less than 1.5 V DC		
	Input Current	Constant-current system : 10 mA (±3)		
Response Time		1/2 Cycle + 1 ms max. ("R" type below 1 ms)		
Insulating Resistance		500 V DC, 100 MΩ (Between the input / output and case)		
Dielectric strength		3,000 V AC (For 1 min at 60 Hz)		
Vibration resistance		10 – 55 Hz, Double amplitude : 1.5 mm, X,Y, and Z direction for 2 hours		
Shock resistance		1,000 %, X,Y,Z each axis 3 times		
Storage Temperature		-30 ~ 90 °C		
Ambient Temperature		0 ~ 25 °C (But without frostiness)		
Ambient Humidity		45 ~ 85 % R.H.		
Weight		Approx. 1,000 g		Approx. 1,300 g

※ Weight included the weight of box

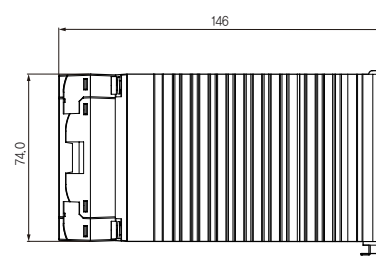
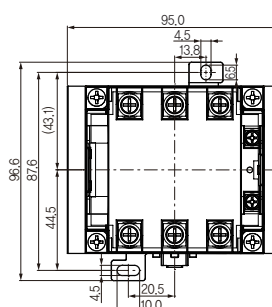
Dimension

[Unit : mm]

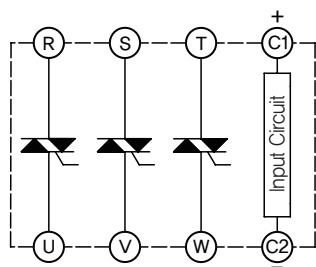
■ 15 A, 25 A



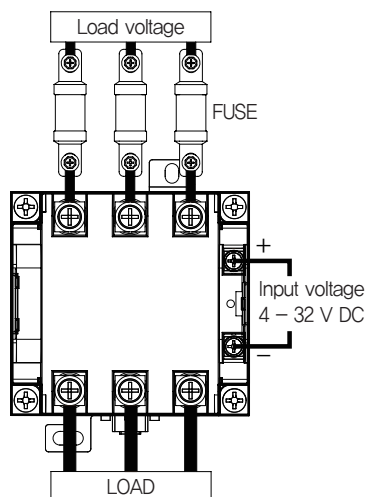
■ 40 A



Equivalent Circuit

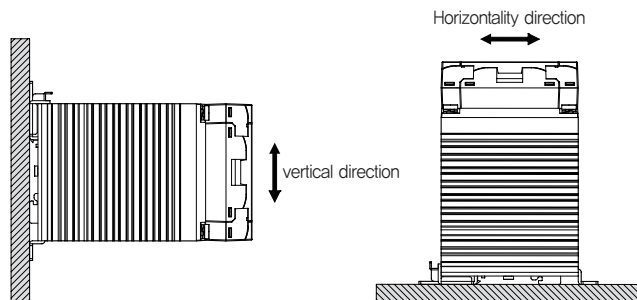


Connection

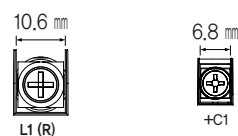


How to install

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



- 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.

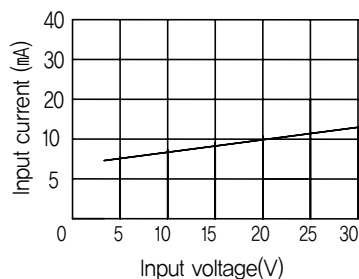


Installation intervals

- 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

Input/Surge current Characteristics

Input current Characteristics



Surge current Characteristics

