3-Phase Solid State Relay
HSR-3SL
INSTRUCTION MANUAL

HANYOUNG nux

Thank you for purchasing Hanyoung Nux products.
Please read the instruction manual
carefully before using this product, and use the product correctly.
Also, please keep this instruction manual where you can see it any time.

Safety information

Please read the safety information carefully before use, and use the product correctly.
The alerts declared in the manual are classified into **Danger**, **Warning** and **Caution** according to their importance

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

⚠ 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, 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 defection 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
• 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.
• Since a heat sink corner is sharp, it would lead to a serious injury.
• 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 head 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				Content
HSR-3SL	□	□	□	□	Slim Type 3-Phase Solid State Relay
Input Operating Voltage	D				4 - 32 VDC
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

Specification

| Model		Low	HSR-3SLD152Z	HSR-3SLD252Z	HSR-3SLD402Z
		High	HSR-3SLD154Z	HSR-3SLD254Z	HSR-3SLD404Z
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 (40 °C)	25 A (25 °C)	40 A (25 °C)
	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		Max. 20 mA		
	Output ON voltage dropping		Max. 1.6 V (R.M.S)		
Input	Rated Voltage		5 - 24 VDC		
	Operating Voltage Range		4 - 32 VDC		
	Impedance		Max. 4 kΩ		
	Operation Voltage		Min. 3 VDC		
	Reset Voltage		Max. 1.5 VDC		
	Input Current		Constant-current system : 10 mA (±3)		
Response Time			Max. 1/2 Cycle + 1 ms ("R"type Max. 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, X·Y·Z in each direction for 2 hours		
Shock resistance			1,000 ㎧, X·Y·Z in each direction 3 times		
Storage Temperature			-30 ~ 90 °C		
Ambient Temperature			-20 ~ 80 °C (But without frostiness)		
Ambient Humidity			45 ~ 85 % R.H.		
Weight(g)			1,000		1,300

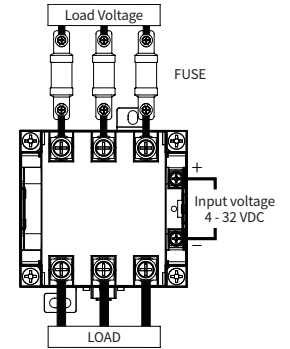## Dimension

[Unit : mm]

■ 15A, 25A
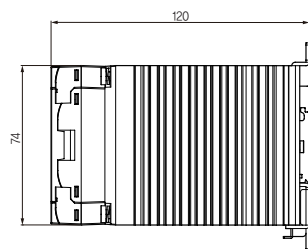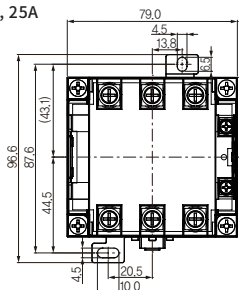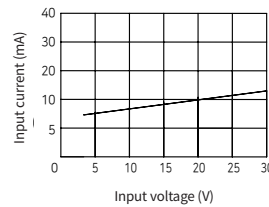

■ 40A
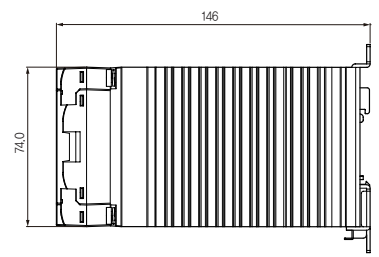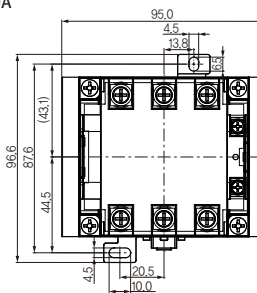
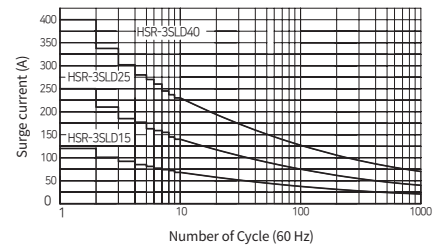## Equivalent Circuit
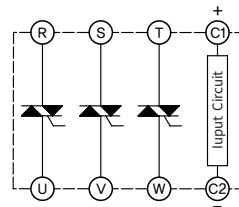
Connection diagram

※ Fuse is not installed inside this product. We suggest you to use fasr-acting fuse outside separately like the picture.

Input/Surge current Characteristics

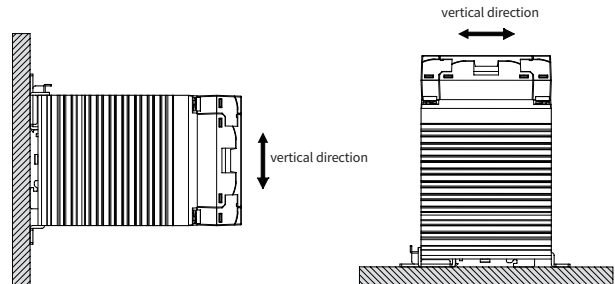### ■ Input current Characteristics



■ Surge current Characteristics

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 Load's output terminal is as follows. So, assemble strongly by using the terminal shorter than the width and wire it.

10.6 mm   6.8 mm
L1 (R)   +C1
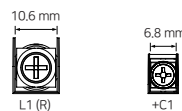
Installation intervals

• Like the following picture, leave an interval over the dimension shown in the picture when installing.
• Install the wiring duct at the lower than the half of the height of heat sink for not blocking the flow of air.
• The ambient temperature of Hanyoung Nux's SSR is different depending on the products when using the maximum rated load. So, you always need to use it in the condition under the standard temperature after checking out the ambient temperature in the specification.