



Slim Type
HSR-2SL
2-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

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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, 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 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 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 | Information |
|-----------------------|---|---|
| HSR-2SL | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | Slim Type 2-Phase Solid State Relay |
| Input Control Voltage | D | 4 - 32 V DC |
| Rated load current | 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 | Z | Zero Cross Switching (Standard product) |
| | R | Random Switching |

Specification

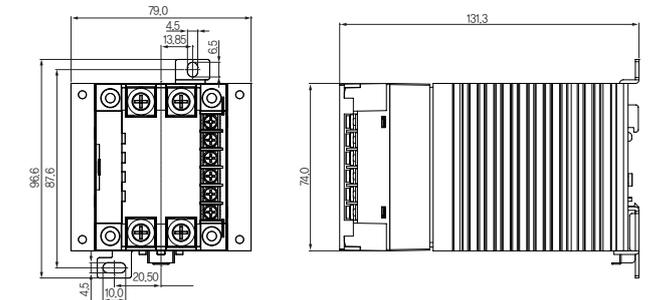
| Model | Low | HSR-2SLD252Z | HSR-2SLD402Z |
|--------------------------------------|----------------------------------|---|-----------------|
| | High | HSR-2SLD254Z | HSR-2SLD404Z |
| Rated Load Voltage | Low | 90 - 264 V AC | |
| | High | 90 - 480 V AC | |
| Peak Voltage (Non-repetition) | Low | 600 V | |
| | High | 1,200 V | |
| Rated load current | | 25 A | 40 A |
| | Frequency | 50/60 Hz (Dual usage) | |
| Surge current (8.3 ms No repetition) | Low | 260 A | 420 A |
| | High | 250 A | 370 A |
| Leakage current | | 10 mA max | |
| Output ON voltage dropping | | 1.8 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) | |
| Detection parts | Rated Voltage | 24 V DC | |
| | Operating Voltage Range | 20 - 26 V DC | |
| | Power consumption | Max 25 mA, Max 40 mA in case of Alarm output (Base on 24 V DC) | |
| | Collector pressure | 30 V DC max | |
| | Maximum rated through current | 50 mA max | |
| | Max. collector power consumption | 500 mW | |
| Output type | | Transistor open collector (Hi at detection of problem) | |
| Response Time | | 1/2 Cycle + 1 ms max. (*R*time below 1 ms) | |
| Insulating Resistance | | 500 V DC, 100 MΩ (Between the input / output and case) | |
| Dielectric strength | | 2,500 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

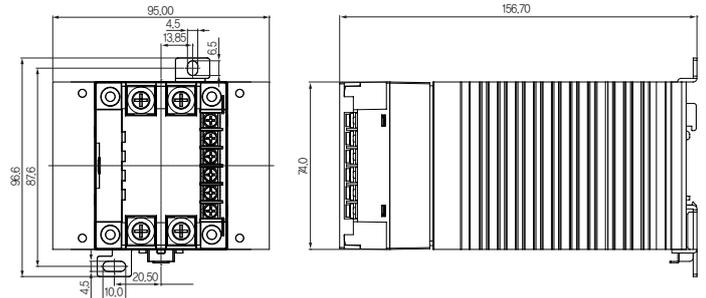
Dimension

[Unit : mm]

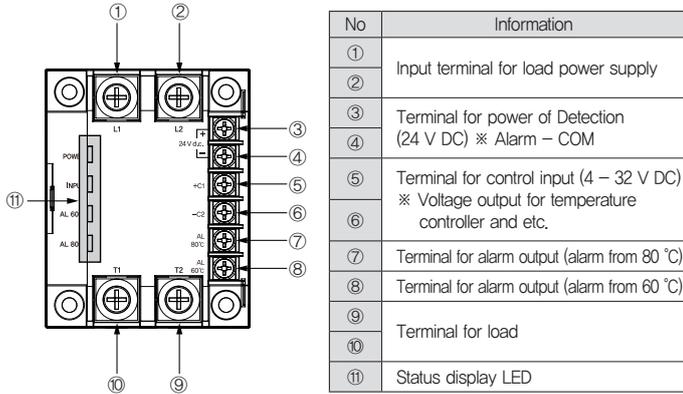
■ 25 A



■ 40 A



Part name and function



Explanation for status display LED

| Name | LED Color | Information |
|---------|-----------|--|
| POWER | Green | Light on when power ON to the terminal for power of detection part |
| INPUT | Green | Light on when 4 – 32 V DC power ON to the terminal for control input Brightness is brighter in proportional to voltage |
| AL 60°C | Red | Ling on when internal heat sink temperature is more than 60 °C |
| AL 80°C | Red | Ling on when internal heat sink temperature is more than 80 °C |

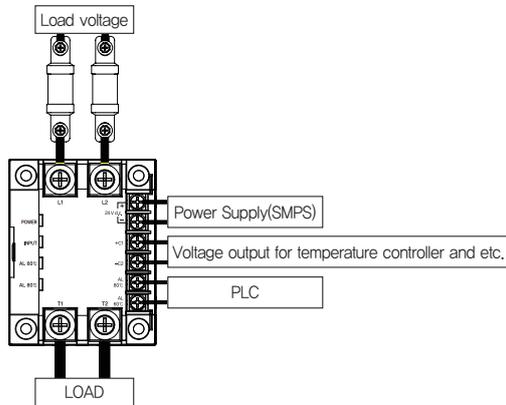
Alarm output

| Status | Alarm output |
|-----------------|---|
| Less than 60 °C | Normal operation Alarm terminal low |
| More than 60 °C | AL 60 °C LED ON AL 60 °C alarm terminal Hi |
| More than 80 °C | AL 80 °C LED LED ON, Operation stop AL 80 °C alarm terminal Hi |

- If heat sink temperature is lower than the set temperature, the alarm is automatically turned off.
- When internal heat sink temperature is more than 80 °C, operation will be forced to stop.

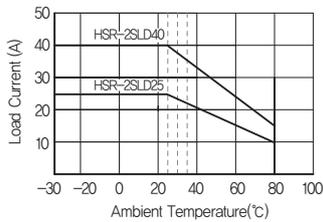
Connection

※ This model does not have fuse internally
We would like to suggestion using fast acting fuse as shown below picture

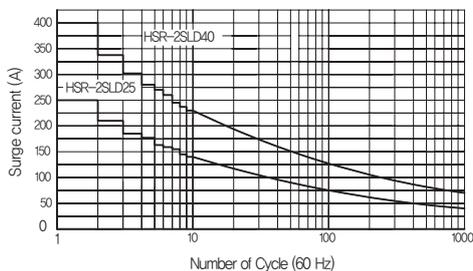


Load/Surge current Characteristics

Load current Characteristics

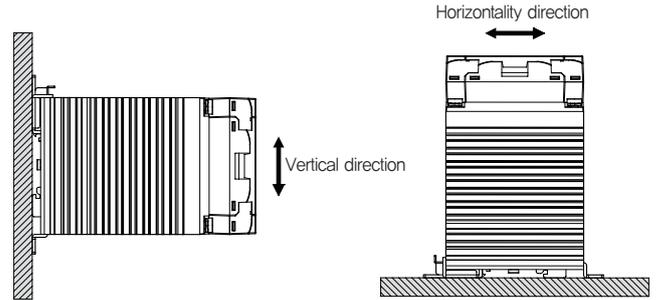


Surge current Characteristics



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 the load output terminal is 13 mm and Input terminal is 7 mm so please use terminal that has less than size of them. (Load Bolt M5, Control Terminal M3)



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
- When using 40 A maximum load, please use 10 SQ wiring. Also please use clamping unit and lugs when tightening wires.

