# WORN Series Single Phase AC Output

## Product Description

- Zero Crossing or Random-on Switching
- Ratings from 15A to 125A @ 24-660VAC
- SCR Output or TRIAC Output
- DC or AC Input
- Dielectric Strength 4000VACrms
- LED Indication
- Panel mounted
- IP20 touch-safe housing

(1)

Note: (1)The 15A product is not UL certified, and the 25A and 40A TRIAC output are not UL certified，WORN380 series are not UL certified.

## Ordering Information

| WORN | 480 | D | 25 | T | R | N | -L | M | (XXX) |
|---|---|---|---|---|---|---|---|---|---|
| WORN Series | Load Voltage<br>240:240VAC<br>380:380VAC<br>480:480VAC<br>600:600VAC | D: DC Control<br>A: AC Control | Load Current(2)<br>15:15Amp<br>25:25Amp<br>40:40Amp<br>60:60Amp<br>80:80Amp<br>100:100Amp<br>125:125Amp | T:TRIAC Output(3)<br>None:SCR Output | Switching Mode<br>None:Zero Crossing<br>R:Random-on | None:With RC<br>N:Without RC | L:LED | M:MOV<br>T:TVS<br>without:<br>No protection<br>(Optional) | Customized |

Note:

(2)15A version is only available for 240V，380V or 480V load voltage version.

(3)15A version is Triac output，25A/40A version are available with SCR or Triac output, 60A/80A/100A/125A are all SCR Output.

## Technical parameters

| **Input Specifications (Ta=25℃)** | | |
|---|---|---|
| Control Voltage Range | DC Control | 3-32VDC |
| | AC Control | 90-280VAC |
| Must Turn-on Voltage | DC Control | 3VDC |
| | AC Control | 90VAC |

| | | |
|---|---|---|
| Must Turn-off Voltage | DC Control | 1VDC |
| | AC Control | 15VAC |
| Maximum Input Current | DC Control | 25mA(32VDC) |
| | AC Control | 25mA(@280VAC/50Hz) |

| **Output Specifications (Ta=25℃)** | | | |
|---|---|---|---|
| Load Voltage | 240VAC | 24-280VAC | |
| | 380VAC | 24-440VAC | |
| | 480VAC | 24-530VAC | |
| | 600VAC | 24-660VAC | |
| Maximum Turn-on Time | DC Input Zero-crossing | 10ms | |
| | DC Input Random-on | 1ms | |
| | AC Input | 40ms | |
| Maximum Turn-off Time | DC Control | 10ms | |
| | AC Control | 20ms | |
| Maximum Surge Current (@10ms) | 15A | 150A | |
| | 25A | SCR Output | 300A |
| | | TRIAC Output | 250A |
| | 40A | SCR Output | 500A |
| | | TRIAC Output | 400A |
| | 60A | 700A | |
| | 80A | 800A | |
| | 100A | 1500A | |
| | 125A | 2250A | |
| Maximum $I^2t$ for Fusing （@10ms） | 15A | 112A2s | |
| | 25A | SCR Output | 450A2s |
| | | TRIAC Output | 312A2s |
| | 40A | SCR Output | 1250A2s |
| | | TRIAC Output | 880A2s |
| | 60A | 2450A2s | |
| | 80A | 3200A2s | |
| | 100A | 11250A2s | |

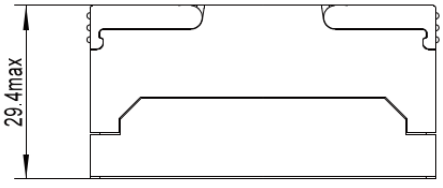
| | | |
|---|---|---|
| | 125A | 25000A2s |
| Transient Overvoltage | 240VAC | 600Vpk |
| | 380VAC | 800Vpk |
| | 480VAC | 1200Vpk |
| | 600VAC | 1200Vpk |
| Maximum Off-State Leakage Current@Rated Load Voltage | 3mA | |
| | Without RC | 0.1mA |
| Maximum On-State Voltage Drop@Rated Current | Typical | 1.25Vrms |
| | Maximum | 1.5Vrms |
| Minimum Off-state dv/dt | TRIAC Output | 200V/μs |
| | SCR Output | 500V/μs |
| Operating Frequency Range | 47Hz~63Hz | |

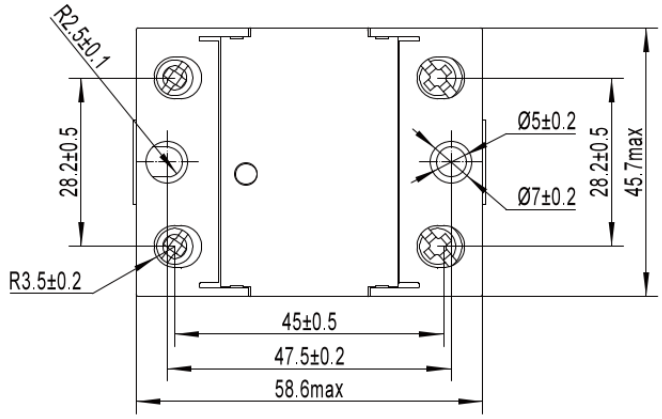
| **General Specifications (Ta=25℃)** | | | |
|---|---|---|---|
| Dielectric Strength (50/60Hz) | Input/Output | 4000Vrms | |
| | Input, output/Base | SCR Output | 4000Vrms |
| | | TRIAC Output | 2500Vrms |
| Minimum Insulation Resistance (@500VDC) | 100MΩ | | |
| Min.Power Factor | 0.5 | | |
| Min. Load Current | ⩾100mA | | |
| Ambient Temperature Range | -30℃ ～ +80 ℃ | | |
| Storage Temperature Range | -30℃ ～ +100 ℃ | | |
| Weight (Typical) | SCR Output | 80g | |
| | TRIAC Output | 75g | |

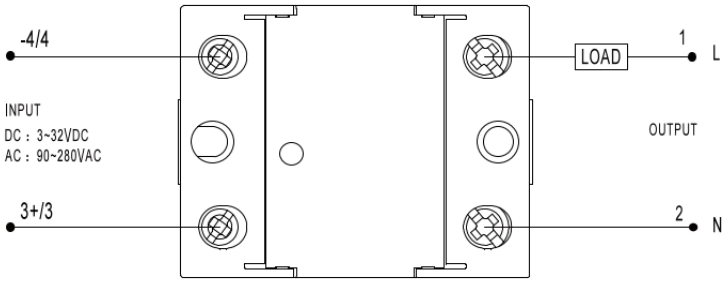
## Applications

High-low Temperature Chamber, Food processing machinery, Plastics processing Machinery.

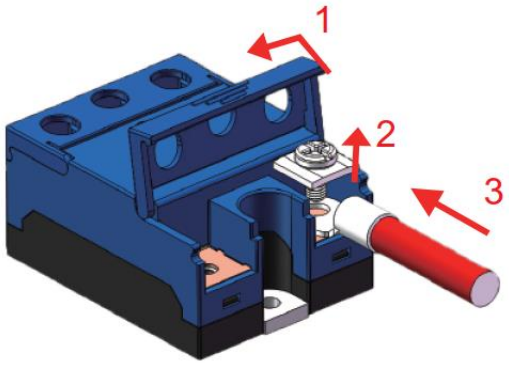
## Installation



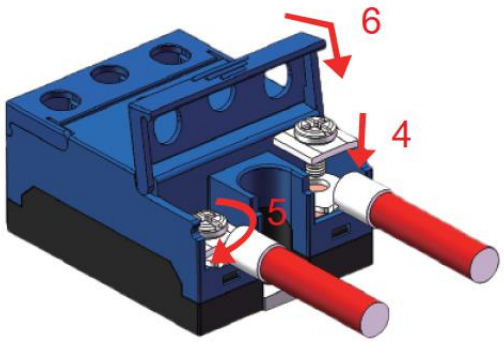


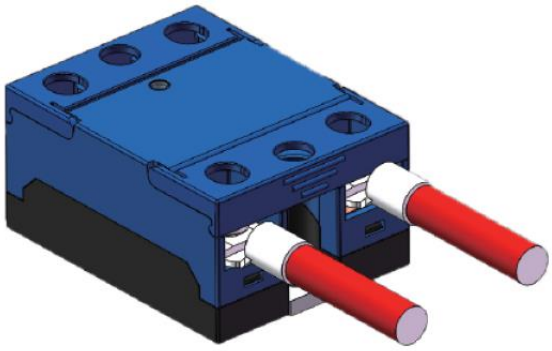

## Wiring instruction:




**Step1**



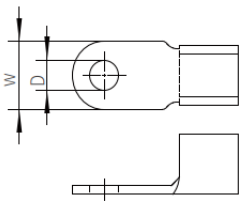

**Step2**



**Step3**

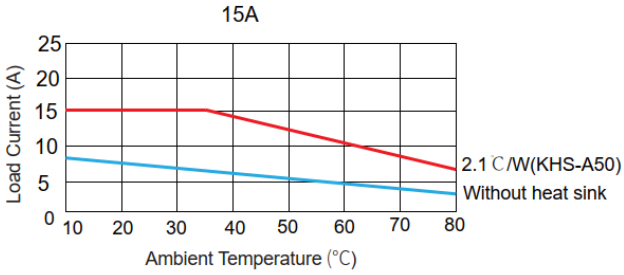
## Recommendation for wiring:

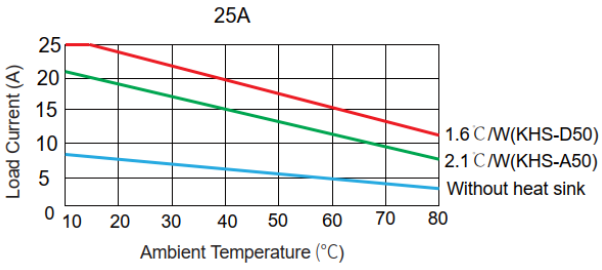
| Load current(A) | Cross section area of wire (mm2） | Wire size(AWG) | DIN 46234 terminal model | Terminal mounting hole size D (mm) | Terminal width W(mm) | |
|---|---|---|---|---|---|---|
| 15-20 | 2.5 | 12 | 4.6 | 4.3 | 8 | |
| | | | 5-6 | 5.3 | 10 | |
| 20-35 | 4 | 10 | 4.6 | 4.3 | 8 | |
| | | | 5-6 | 5.3 | 10 | |
| 25-32 | 6 | 10 | 4.6 | 4.3 | 8 | |
| | | | 5-6 | 5.3 | 10 | |
| 32-50 | 10 | 8 | 5-10 | 5.3 | 10 | |
| 50-65 | 16 | 6 | 5-16 | 5.3 | 11 | |
| 65-85 | 25 | 4 | 5-25 | 5.3 | 12 | |

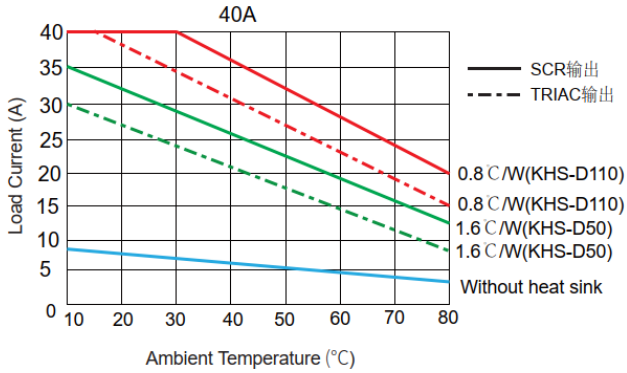


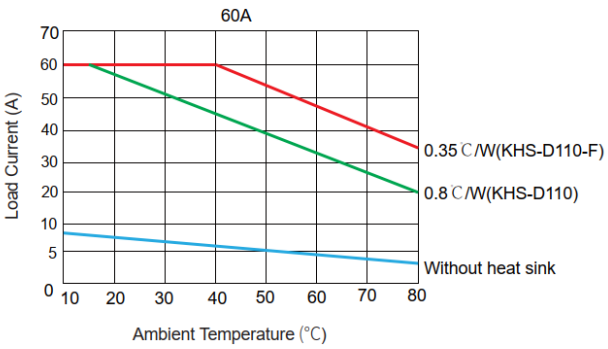

Note: When use the wire cross-sectional area greater than 25mm2, we suggest to break it in to two smaller wires and connect them back to back superimposed.

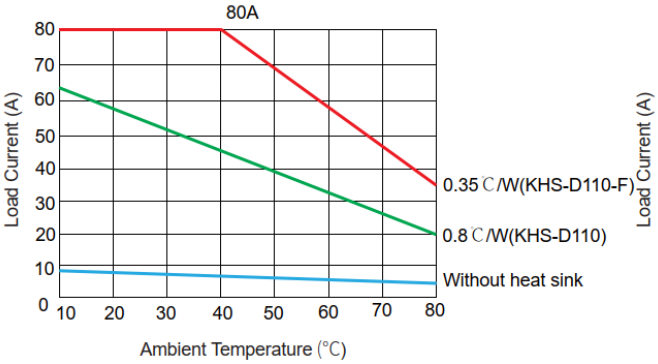
## Thermal Derating Curve

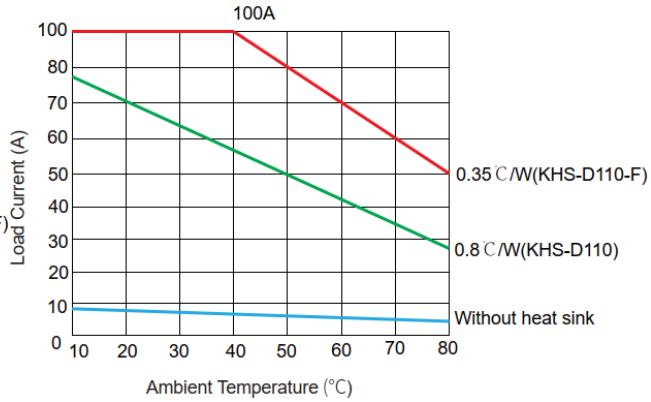


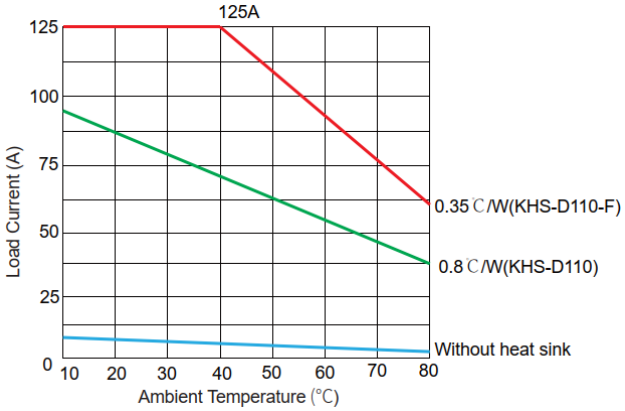



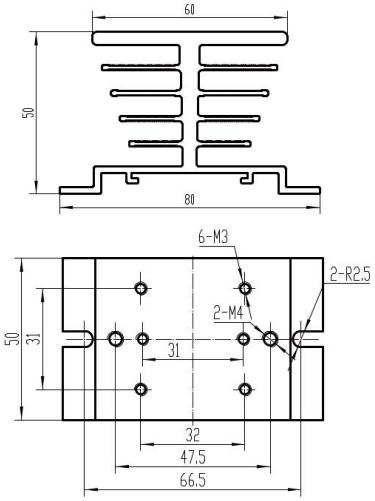





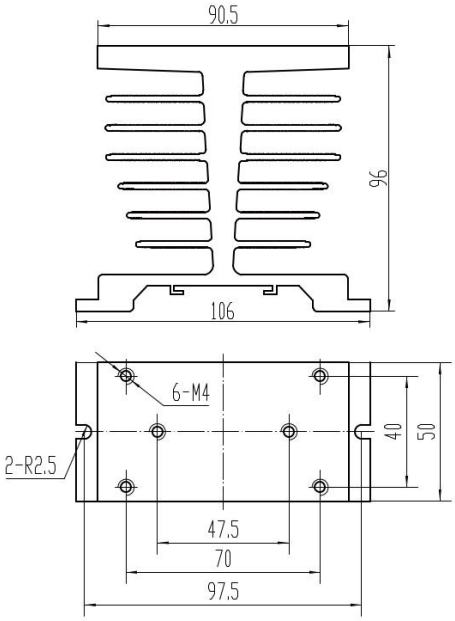



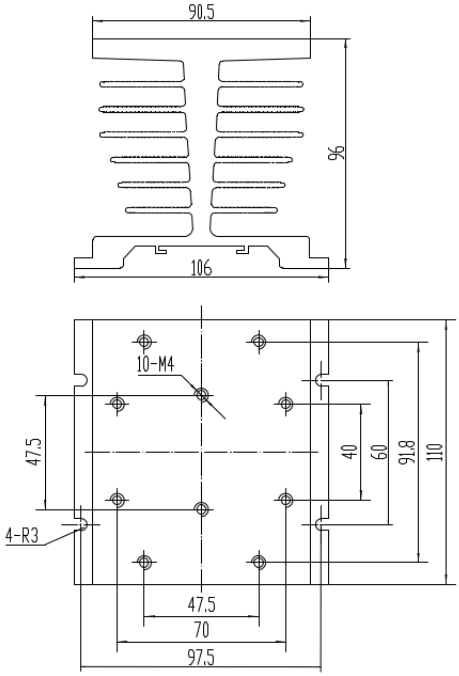

**The above temperature curve is configured with radiator models as follows:**

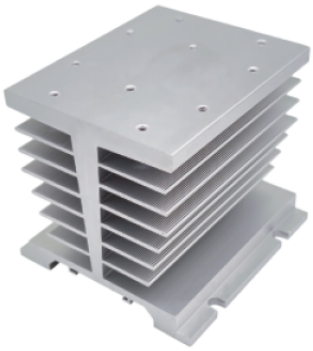



**KHS-A50**

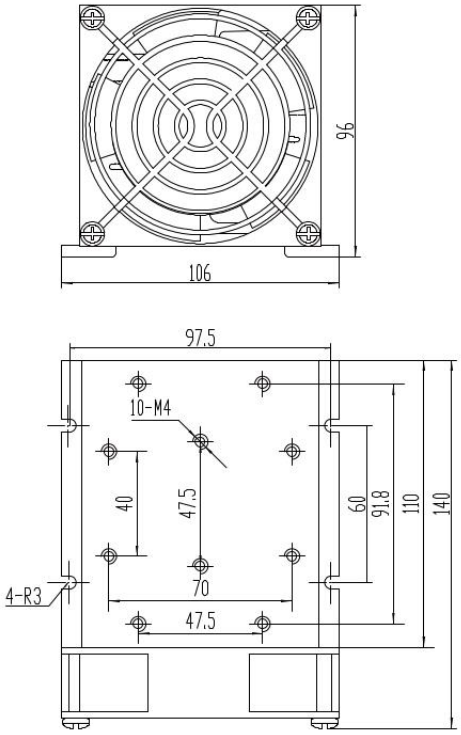



**KHS-D50**



**KHS-D110**




**KHS-D110F**

## General Notes

1. Relay must be mounted to proper sized heat sink based on thermal curves. Thermal grease or a thermal pad must be used between relay and heat sink and be torqued down to 18-20/2.0-2.2in-lb/Nm.

2. When connection wiring to SSR, please ensure screws are torqued down properly (input 13-15/1.5-1.7in/lb/Nm, output18-20/2.0-2.2 in-lb/Nm).

3. SSR's carrying load capacity is related to the operation ambient temperature and heat dissipation condition, please refer to the Thermal Derating Curve for derating.

## Warnings

1. The product's side panels may be hot, allow the product to cool before touching.
2. Disconnect all power before installing or working with this equipment.
3. Verify all connections and replace all covers before turning on power.

### CONTACT INFORMATION

No.1001, Shiwan (7) Road, Pudong District, Shanghai, P.R.China.201207
Tel: 86-21-68969993 Fax: 86-21-50757680 Email: market@way-on.com
WAYON website: **http://www.way-on.com**
For additional information, please contact your local Sales Representative.

## Product Specification Statement

1. The product specification aims to provide users with a reference regarding various product parameters, performance, and usage. It presents certain aspects of the product's performance in graphical form and is intended solely for users to select product and make product comparisons, enabling users to better understand and evaluate the characteristics and advantages of the product. It does not constitute any commitment, warranty, or guarantee.

2. The product parameters described in the product specification are numerical values, characteristics, and functions obtained through actual testing or theoretical calculations of the product in an independent or ideal state. Due to the complexity of product applications and variations in test conditions and equipment, there may be slight fluctuations in parameter test values. WAYON shall not guarantee that the actual performance of the product when installed in the customer's system or equipment will be entirely consistent with the product specification, especially concerning dynamic parameters. It is recommended that users consult with professionals for product selection and system design. Users should also thoroughly validate and assess whether the actual parameters and performance when installed in their respective systems or equipment meet their requirements or expectations. Additionally, users should exercise caution in verifying product compatibility issues, and WAYON assumes no responsibility for the application of the product.

3. WAYON strives to provide accurate and up-to-date information to the best of our ability. However, due to technical, human, or other reasons, WAYON cannot guarantee that the information provided in the product specification is entirely accurate and error-free. WAYON shall not be held responsible for any losses or damages resulting from the use or reliance on any information in these product specifications. WAYON reserves the right to revise or update the product specification and the products at any time without prior notice, and the user's continued use of the product specification is considered an acceptance of these revisions and updates. Prior to purchasing and using the product, users should verify the above information with WAYON to ensure that the product specification is the most current, effective, and complete. If users are particularly concerned about product parameters, please consult WAYON in detail or request relevant product test reports. Any data not explicitly mentioned in the product specification shall be subject to separate agreement.

4. Users are advised to pay attention to the parameter limit values specified in the product specification and maintain a certain margin in design or application to ensure that the product does not exceed the parameter limit values defined in the product specification. This precaution should be taken to avoid exceeding one or more of the limit values, which may result in permanent irreversible damage to the product, ultimately affecting the quality and reliability of the system or equipment.

5. The design of the product is intended to meet civilian needs and is not guaranteed for use in harsh environments or precision equipment. It is not recommended for use in systems or equipment such as medical devices, aircraft, nuclear power, and similar systems, where failures in these systems or equipment could reasonably be expected to result in personal injury. WAYON shall assume no responsibility for any consequences resulting from such usage.

6. Users should also comply with relevant laws, regulations, policies, and standards when using the product specification. Users are responsible for the risWOR and liabilities arising from the use of the product specification and must ensure that it is not used for illegal purposes. Additionally, users should respect the intellectual property rights related to the product specification and refrain from infringing upon any third-party legal rights. WAYON shall assume no responsibility for any disputes or controversies arising from the above-mentioned issues in any form.