

i-Autoc

Your Automation Partner



Innovation
Automation
Unique
Technology
Optimization
Commitment

Product Selection

Core value

Innovation
Automation
Unique
Technology
Optimization
Commitment

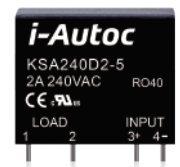
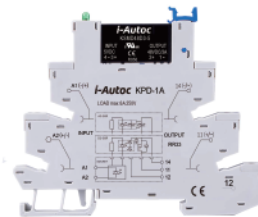
About us

Kudom Electronics is a national high-tech enterprise which is in compliance with the intellectual property management system. The company is a ISO9001:2015, ISO14001:2015 & OHSAS18001:2007 certified enterprise, and has a professional R&D team with more than 20 years of experience in product design and manufacturing process.

Kudom Electronics has a product testing center with complete facilities for wide range of performance and reliability tests. Kudom electronics provides more than 50 categories, with over 3000 kinds of specifications of various types of power semiconductor switching products. Kudom Electronics was the first company that launched the intelligent switching parts with self-detection, self-diagnosis, and networked functions products in the same industry. Our products are in compliance with IEC62314, IEC60947, IEC60335, IEC61000 and other international standards, and most of the products are certified by CE, TUV, UL, CCC, S-mark and other agency approvals. We also provide customized products.

Our advantages:

- ★ **Globalization:** i-Autoc distribution network covers more than 50 countries and territories, which enables us to provide strong technical support with quick responses.
- ★ **Professional:** i-Autoc owns more than 20 patents. We are not only specializing in the manufacturing of standard & intellectual solid state relays, but also keep researching and developing the high performance Triac & SCR, which are the key components of solid state relays.
- ★ **Reliability:** Most of i-Autoc products are approved by CCC, UL, TUV, S-mark and CE. We are the reliable cooperation partner with high quality products and services, and we are also available to provide customized products.
- ★ **Innovation:** Based on the fundamental technology of SSR's, we also offer the intellectual, high-efficient and customized products, such as motor reversing modules, voltage regulator modules, industrial modules, etc.



Product Selection

PCB Mount

AC Output

KSA	01
KSB	01
KSC	01
KSD	01
KSG	02
KSH	02
KSG3R	02

DC Output

KSF	02
KSL	03
KSCD	03
KSGD	03
KG3RD	03

Panel Mount

Single Phase | AC Output

KSIM	04
KSIM(045)	04
KSI	04
KSI(068)	04
KSI(083)	05
KSU	05
KSIA	05
KSID	05

Single Phase | DC Output

KSJ	06
-----	----

Three Phase | AC Output

KSQF	06
KSQC	06

DIN Rail Mount

KSV	07
KST	07
KSG***D	07
KSMA***D	07
KSG3R***D	08
KSGD***D	08
KSMD***D	08
KG3RD***D	08

Industrial Module

DRA-1/KSD	09
DRA-2/KSD	09
DRA-4/KSD	09
DRA-8/KSD	09
DRA-1/KSF	10
DRA-2/KSF	10
DRA-4/KSF	10
DRA-8/KSF	10

Motor Reversing

KMB	11
KMC	11
KMS	11
KSJD	12
KMTY	12
KMTYM	12

Voltage Regulator

KRB	13
KWR	13
KYR	13
KYRT	13

Intelligent Module

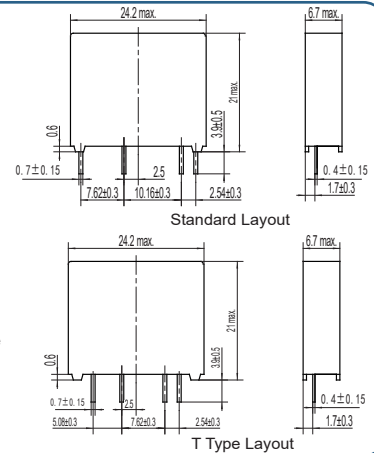
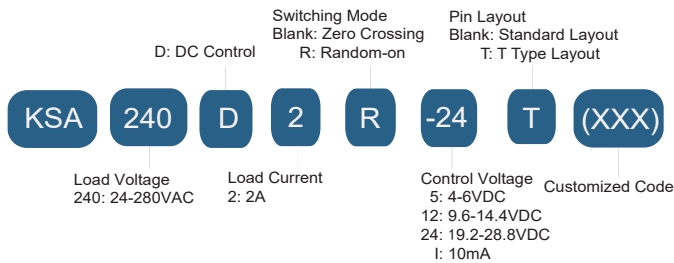
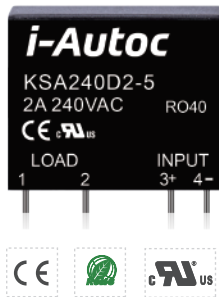
BCA	14
DRC	14
DRD	14
DRF	14

Accessories

Heat Sink	15-16
Thermal Pad	17
Din Rail Clip	17
Socket	17
Protection Cover	17

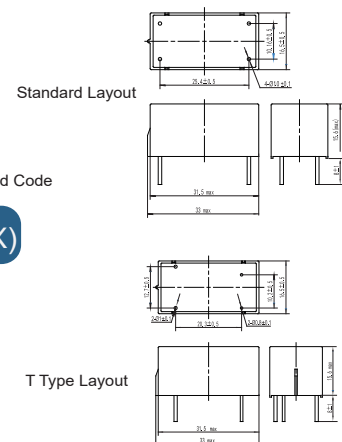
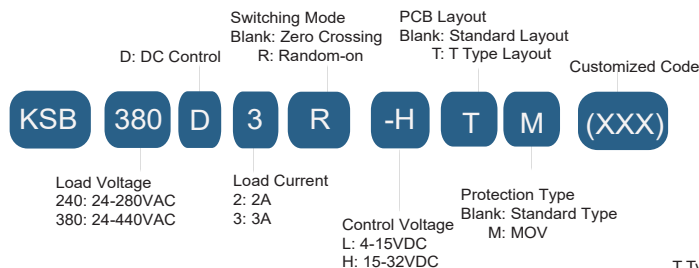
KSA Series AC Output

Output: AC Current Range: 2A



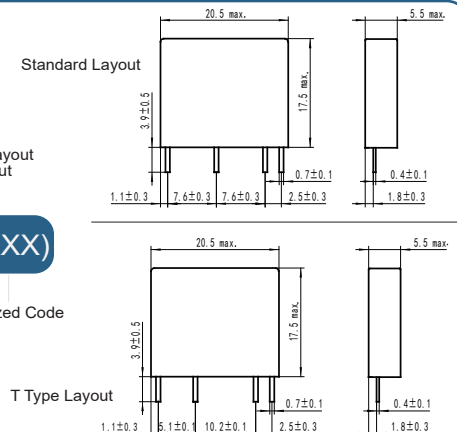
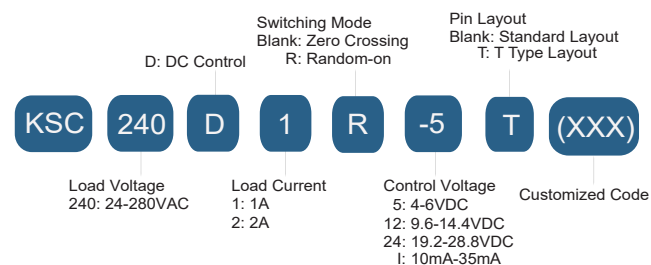
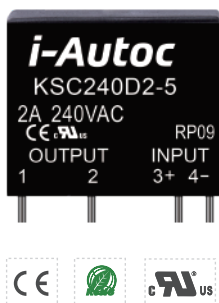
KSB Series AC Output

Output: AC Current Range: 2A - 3A



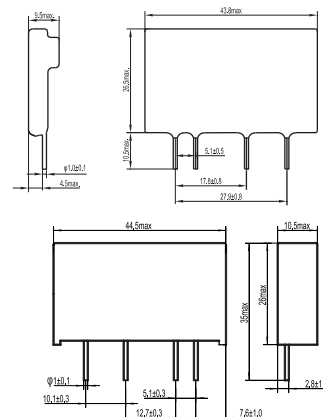
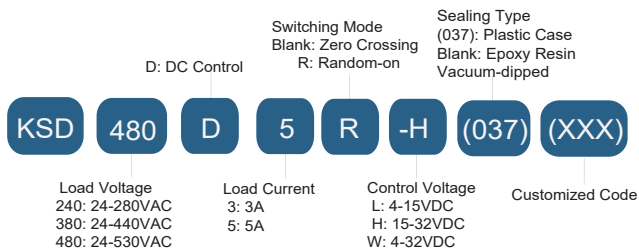
KSC Series AC Output

Output: AC Current Range: 1A - 2A



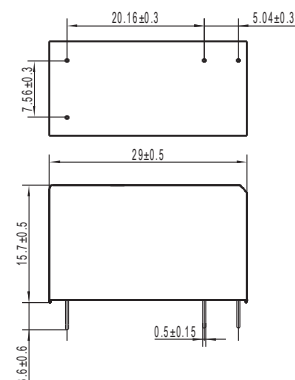
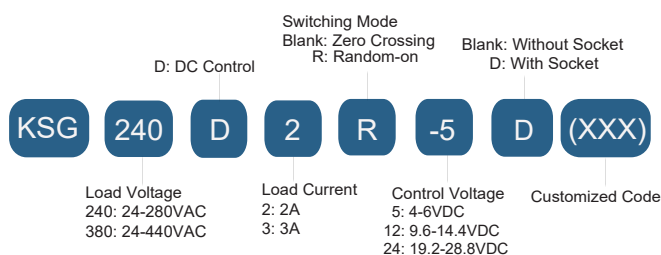
KSD Series AC Output

Output: AC Current Range: 3A-5A



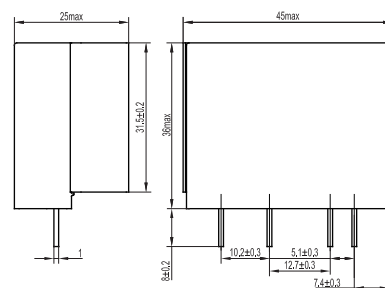
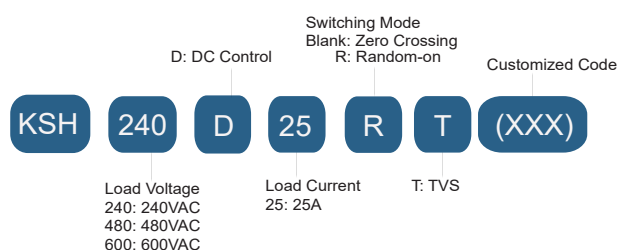
KSG Series AC Output

Output: AC Current Range: 2A-3A



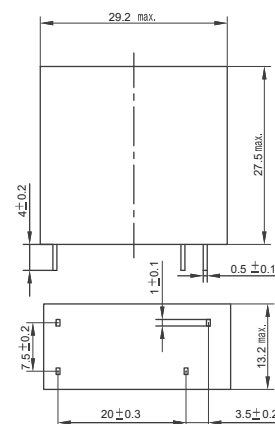
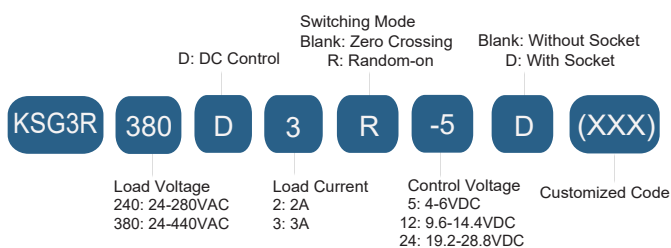
KSH Series AC Output

Output: AC Current Range: 25A



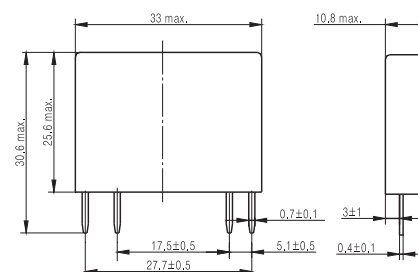
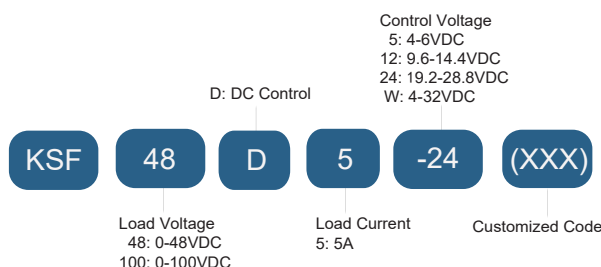
KSG3R Series AC Output

Output: AC Current Range: 2A-3A



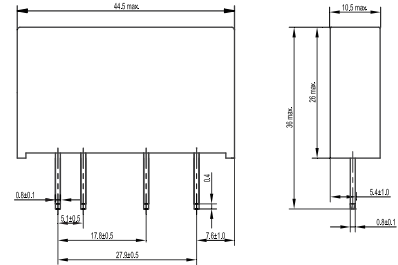
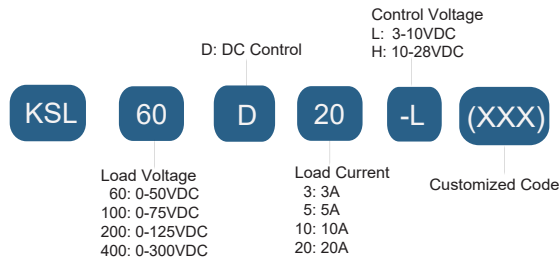
KSF Series DC Output

Output: DC Current Range: 5A



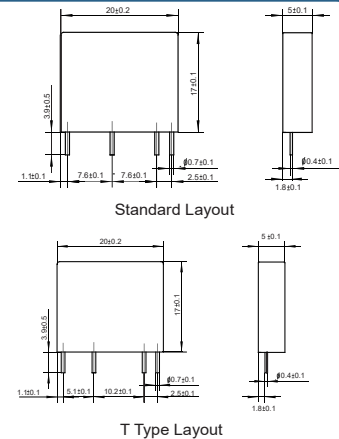
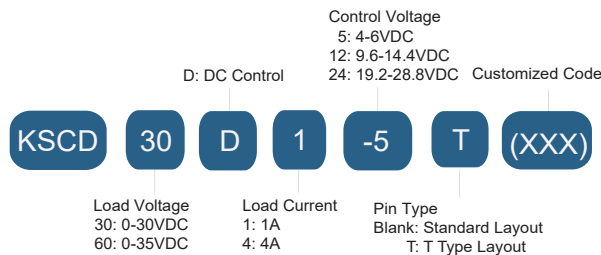
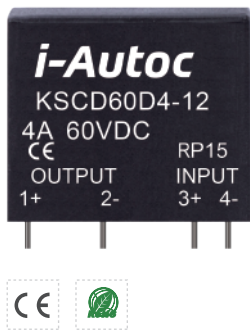
KSL Series DC Output

Output: DC Current Range: 3A - 20A



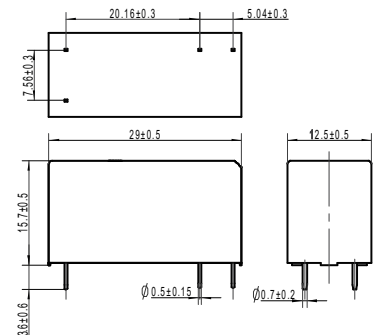
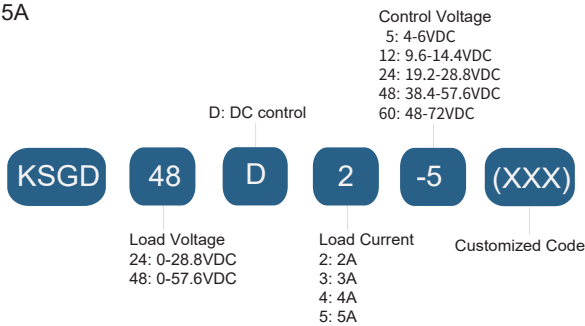
KSCD Series DC Output

Output: DC Current Range: 1A - 4A



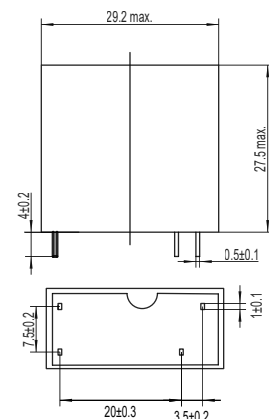
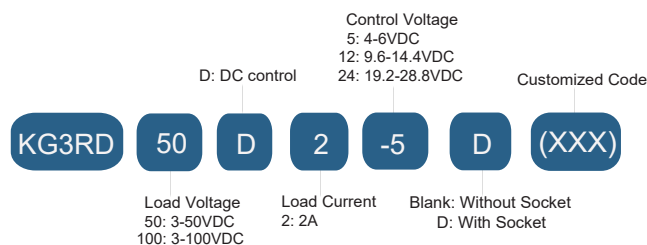
KSGD Series DC Output

Output: DC Current Range: 2A - 5A



KG3RD Series DC Output

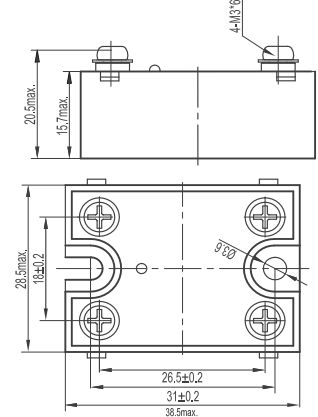
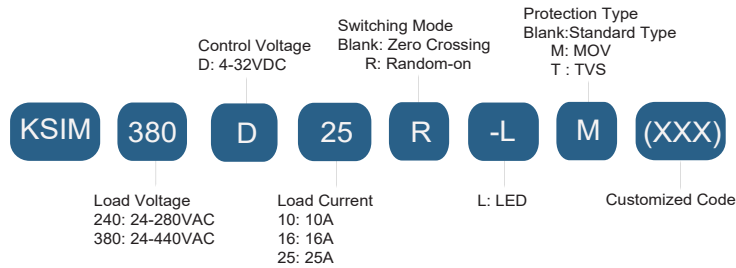
Output: DC Current Range: 2A



Panel Mount

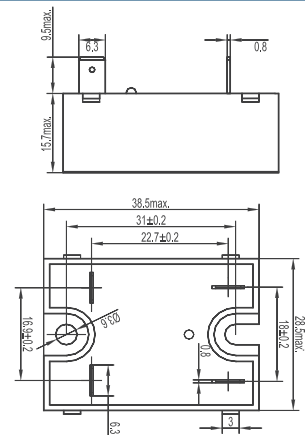
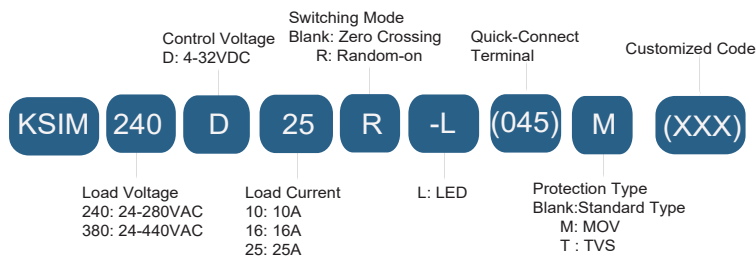
KSIM Series Mini Single Phase AC Output

Output: AC Current Range: 10A-25A



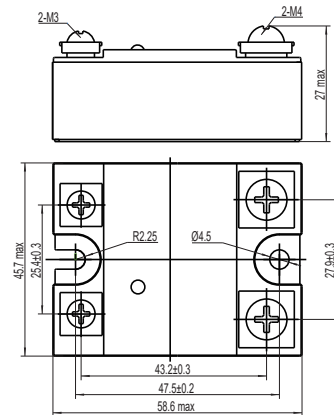
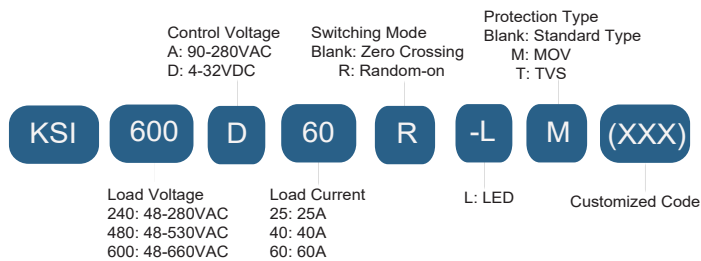
KSIM (045) Series Mini Single Phase AC Output

Output: AC Current Range: 10A-25A



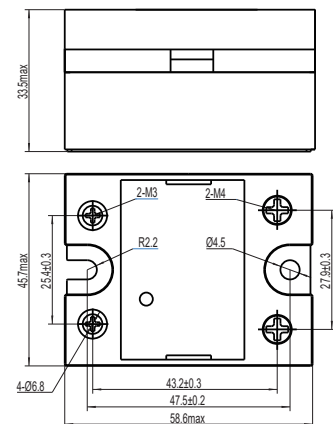
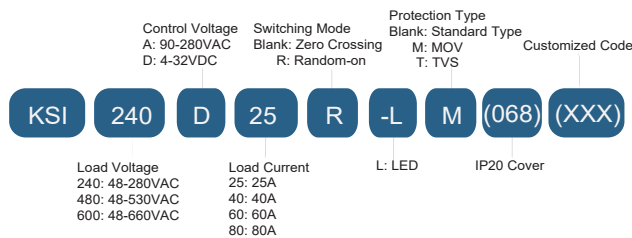
KSI Series Single Phase AC Output

Output: AC Current Range: 25A-60A



KSI(068) Series Single Phase AC Output

Output: AC Current Range: 25A-80A



KSI(083) Series Single Phase AC Output

Output: AC Current Range: 80A-125A



Control Voltage
A: 90-280VAC
D: 4-32VDC

Switching Mode
Blank: Zero Crossing
R: Random-on

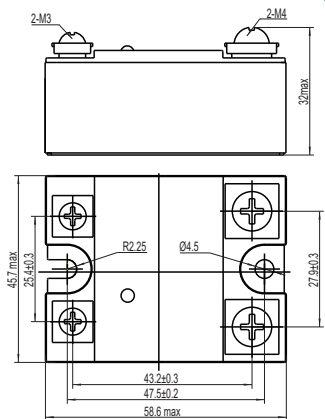
Protection Type
Blank: Standard Type
M: MOV
T: TVS

KSI 240 D 125 R -L M (083)

Load Voltage
240: 48-280VAC
480: 48-530VAC
600: 48-660VAC

Load Current
80: 80A
100: 100A
125: 125A

L: LED 083: Higher Profile



KSU Series Single Phase AC Output

Output: AC Current Range: 30A-75A



Control Voltage
A: 90-280VAC
D: 4-32VDC

Switching Mode
Blank: Zero Crossing
R: Random-on

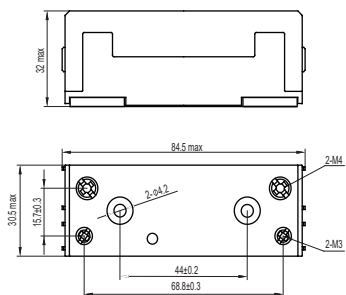
Protection Type
Blank: Standard Type
M: MOV
T: TVS

KSU 240 D 30 R -L M (XXX)

Load Voltage
240: 24-280VAC
600: 24-660VAC

Load Current
30: 30Amp
50: 50Amp
75: 75Amp

L: LED Customized Code



KSIA Series Single Phase AC Output

Output: AC Current Range: 25A-100A

Built in Function: SCR Short Circuit, Open Circuit and Error Self-Inspection



Control Voltage
D: DC

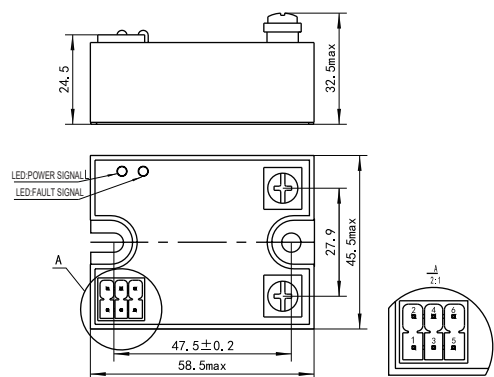
Blank: Negative Trigger
P: Positive Trigger

KSIA 600 D 25 -P -L (XXX)

Load Voltage
240: 150-280VAC
480: 150-530VAC
600: 300-660VAC

Load Current
25: 25A
40: 40A
60: 60A
80: 80A
100: 100A

L: LED Customized Code



KSID Series Dual Pole AC Output

Output: AC Current Range: 25A-50A



Control Voltage
LD: 4-15VDC
HD: 15-32VDC
D: 4-32VDC

Switching Mode
Blank: Zero Crossing
R: Random-on

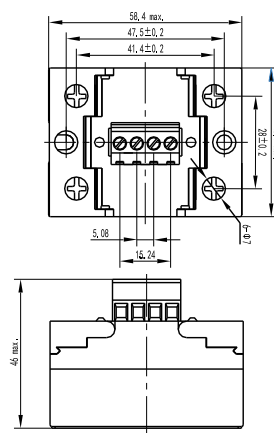
Customized Code

KSID 240 LD 25 R P (XXX)

Load Voltage
240: 24-280VAC
480: 24-530VAC
600: 24-660VAC

Load Current
25: 25A
40: 40A
50: 50A
75: 75A

Blank: 4 Pin Connector
P: Screw Terminal



Output: DC **Current Range:** 7A-100A

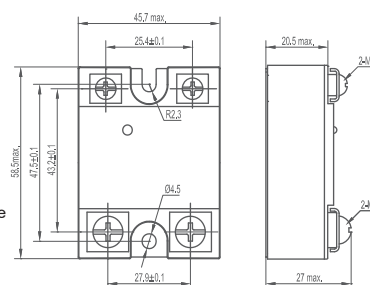


	Load Current	
	7: 7A	40: 40A
	10: 10A	50: 50A
	20: 20A	80: 80A
Control Voltage	25: 25A	100: 100A
D: 4-32VDC	30: 30A	

KSJ 100 D 80 -L (XXX)

L: LED Customized Code

Load Voltage
30: 0-24VDC
50: 0-36VDC
60: 0-48VDC
100: 0-75VDC
200: 0-120VDC
400: 0-300VDC
600: 0-500VDC
1200: 0-650VDC



Output: AC Current Range: 25A-80A



Control Voltage
A: 90-280VAC
D: 4-32VDC

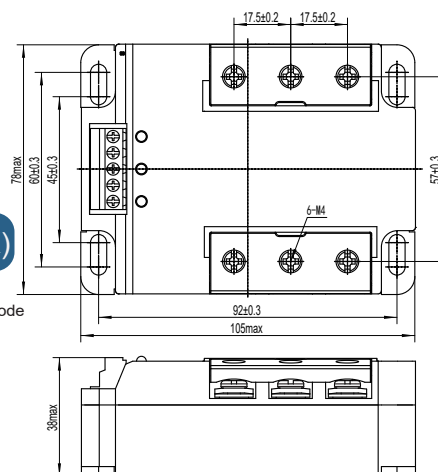
Switching Mode
Blank: Zero Crossing
R: Random-on

KSQF 480 D 80 R (XXX)

Load Voltage
480: 24-530VAC
600: 24-660VAC

Load Current
25: 25A
40: 40A
60: 60A
80: 80A

Customized Code



Output: AC Current Range: 25A-80A

Built in Function: Phase-loss Protection / Over Temperature Protection / SCR Fault Detection / Alarm Signal Output(optional)



Control Voltage
D: 10-32VDC

Switching Mode
Blank: Zero Crossing
R: Random-on

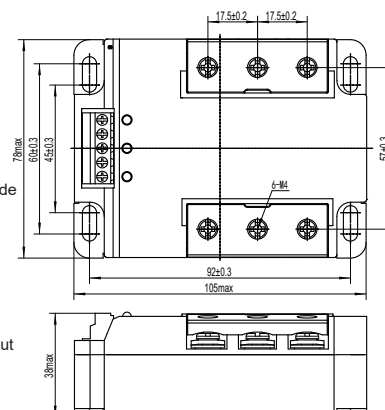
Customized Code

KSQC 600 D 60 R -C (XXX)

Load Voltage
480: 180-530VAC
600: 180-660VAC

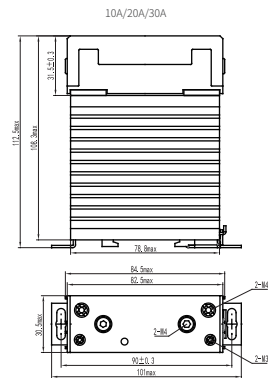
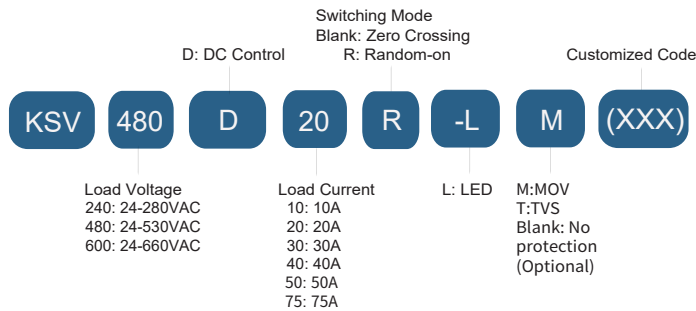
Load Current
25: 25A
40: 40A
60: 60A
80: 80A

Blank: Without Alarm Signal Output
C: With Alarm Signal Output



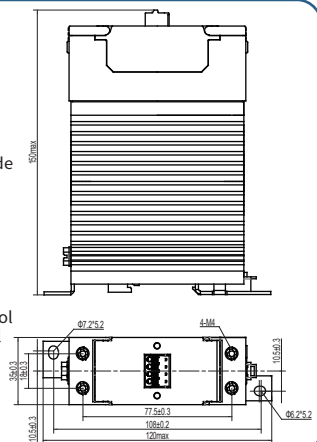
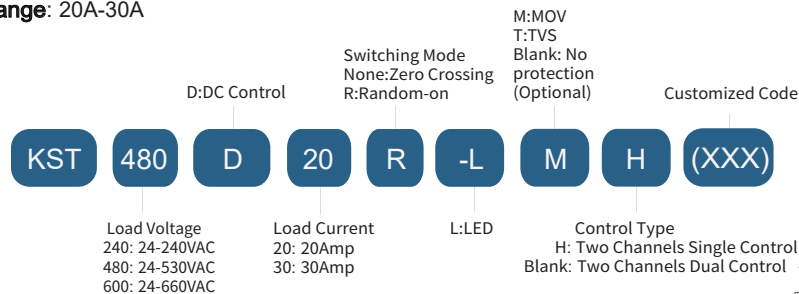
KSV Series Single Phase AC Output

Output: AC Current Range: 10A - 75A



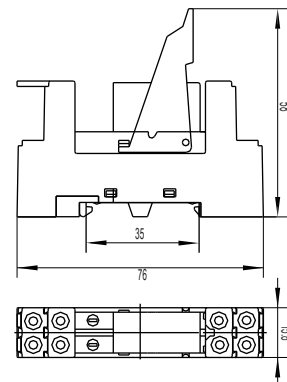
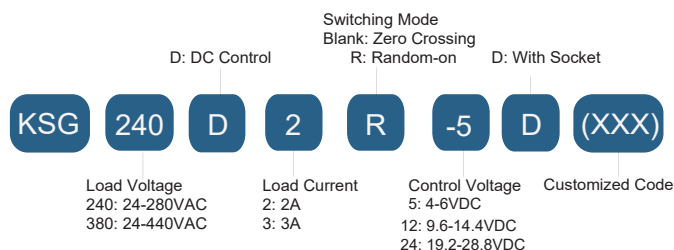
KST Series Dual pole AC Output

Output: AC Current Range: 20A-30A



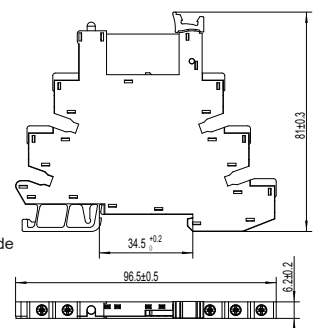
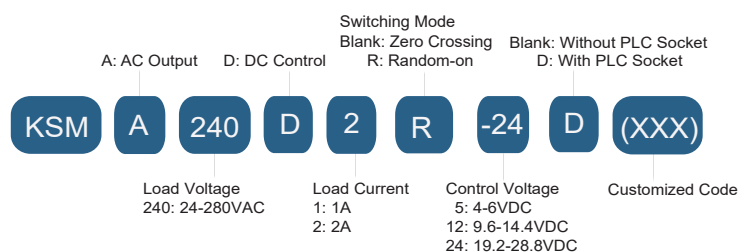
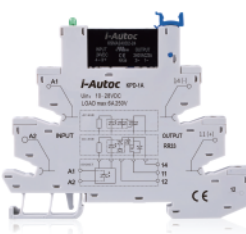
KSG***D Series AC Output

Output: AC Current Range: 2A - 3A



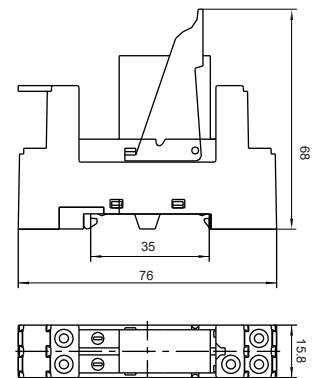
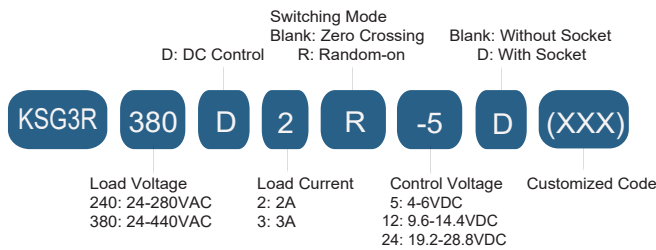
KSMA***D Series Single Phase AC Output

Output: AC Current Range: 1A - 2A



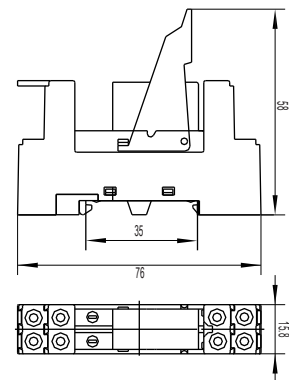
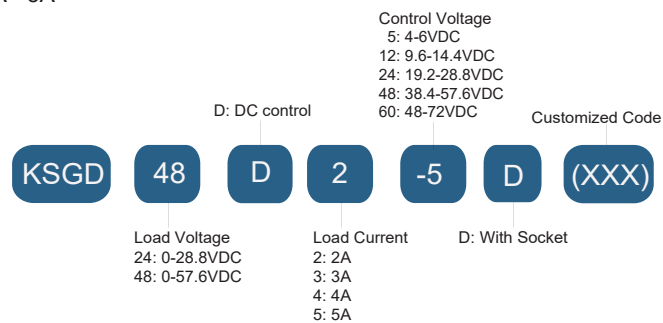
KSG3R***D Series AC Output

Output: AC Current Range: 2A - 3A



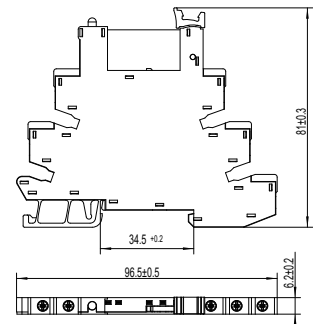
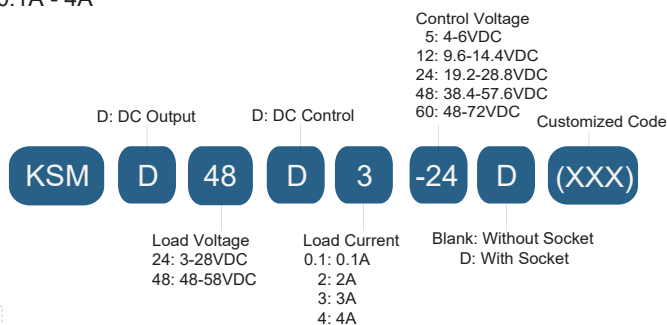
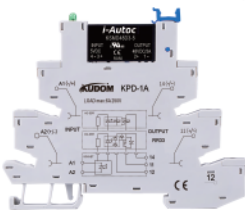
KSGD***D Series DC Output

Output: DC Current Range: 2A - 5A



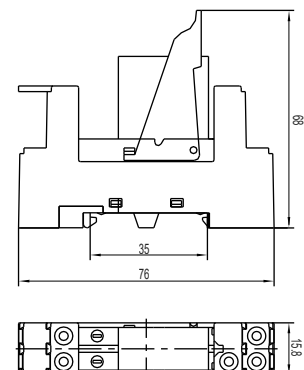
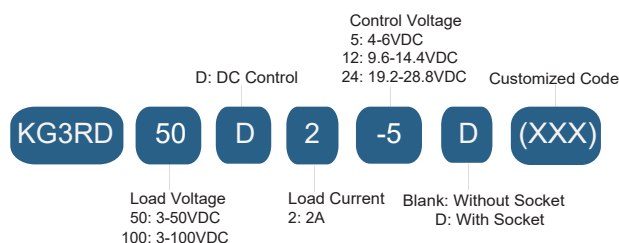
KSMD***D Series Single Phase DC Output

Output: DC Current Range: 0.1A - 4A

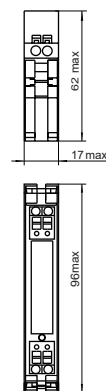
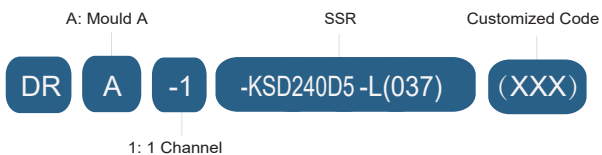


KG3RD***D Series DC Output

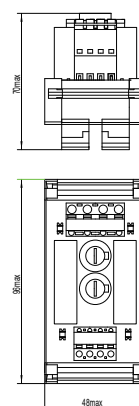
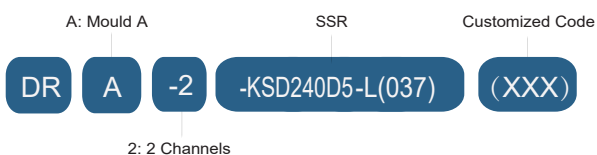
Output: DC Current Range: 2A



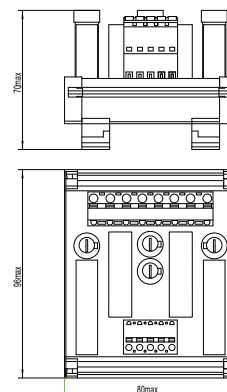
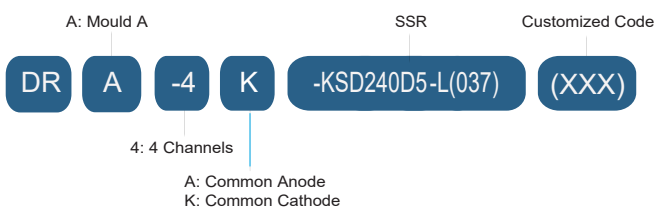
DRA-1-KSD Series 1 Channel AC Output



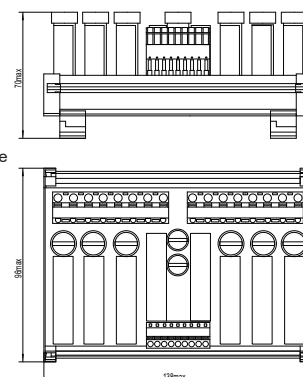
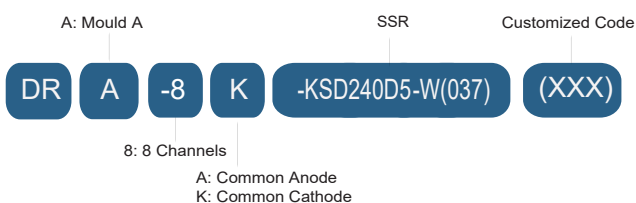
DRA-2-KSD Series 2 Channels AC Output



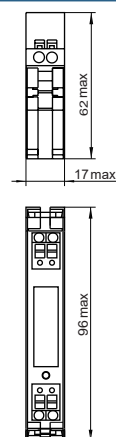
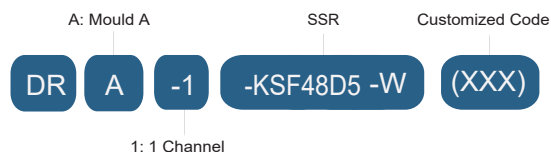
DRA-4-KSD Series 4 Channels AC Output



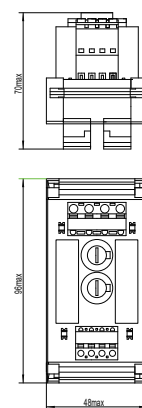
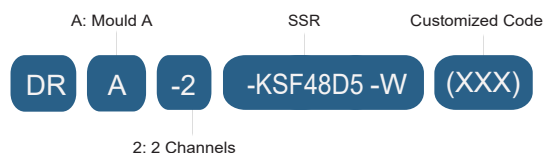
DRA-8-KSD Series 8 Channels AC Output



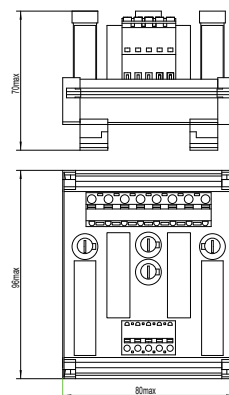
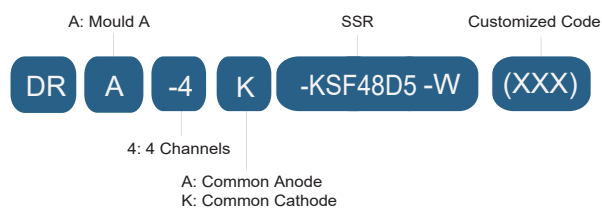
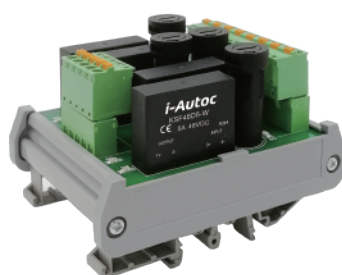
DRA-1-KSF Series 1 Channel DC Output



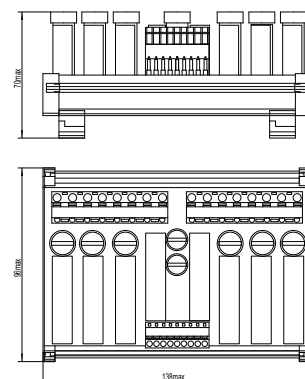
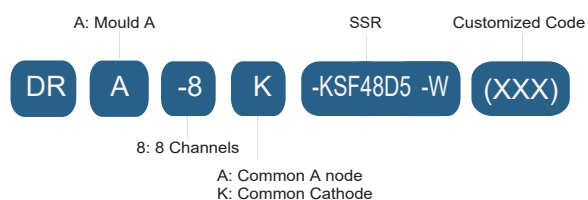
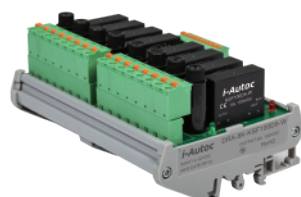
DRA-2-KSF Series 2 Channels DC Output



DRA-4-KSF Series 4 Channels DC Output

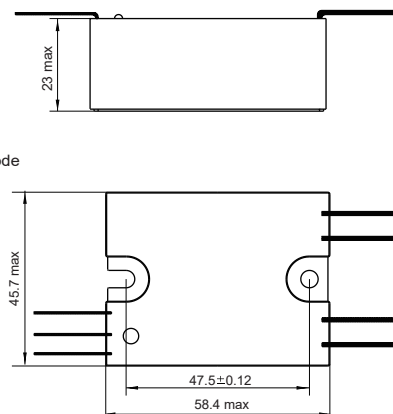
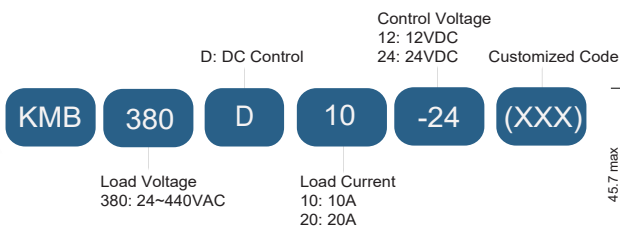


DRA-8-KSF Series 8 Channels DC Output



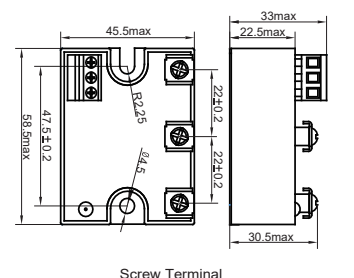
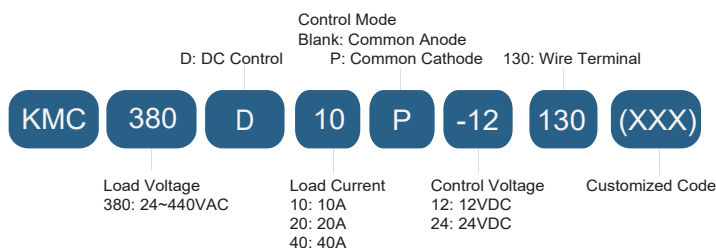
KMB Series Three Phase Motor Reversing Module

Output: AC Current Range: 10A-20A

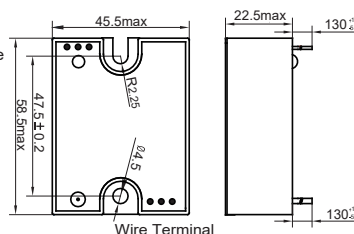


KMC Series Single Phase Motor Reversing Module

Output: AC Current Range: 10A-40A



Screw Terminal

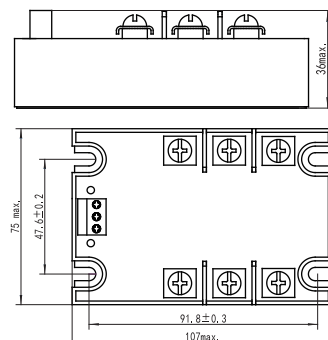
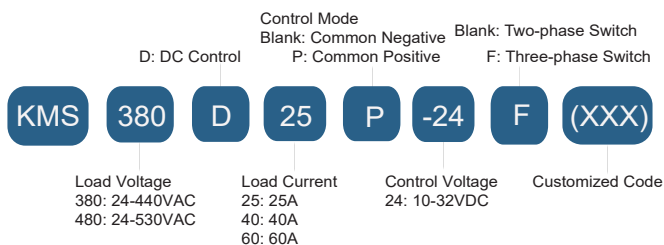


Wire Terminal



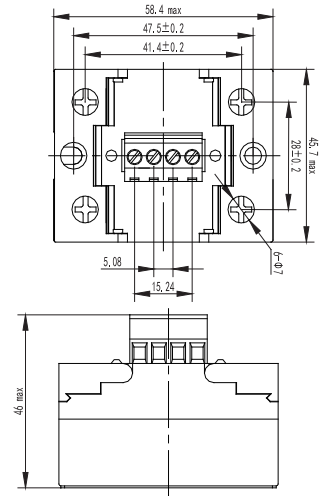
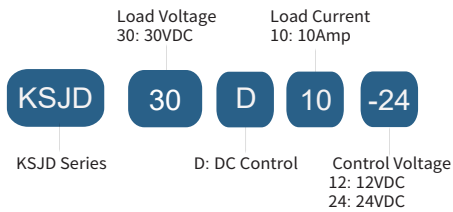
KMS Series Three Phase Motor Reversing Module

Output: AC Current Range: 25A-60A



KSJD Single Phase DC to DC Motor Reversing Module

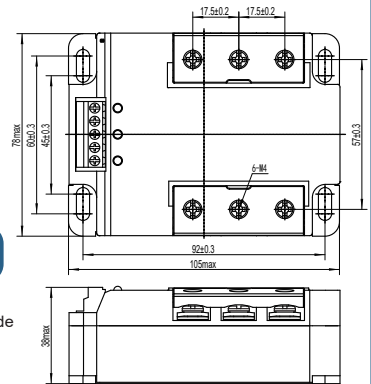
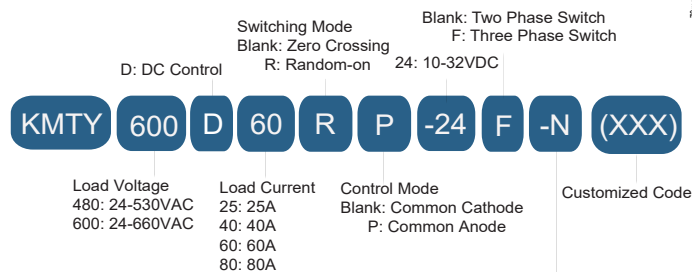
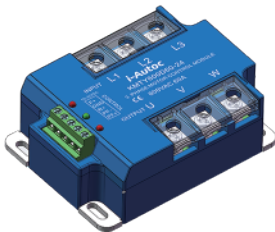
Output: DC Current Range: 10A



KMTY Series Three Phase Motor Reversing Module

Output: AC Current Range: 25A-80A

Built in Function: Automatic Phase Correction / Phase-loss Protection(optional)

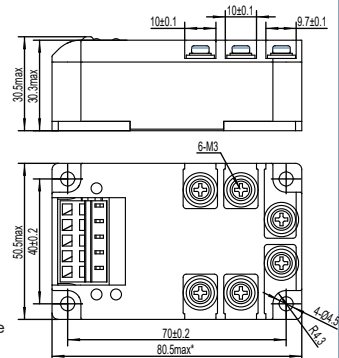
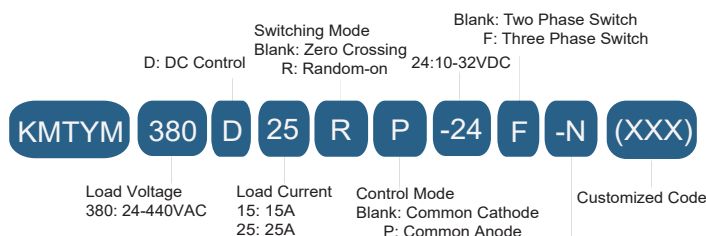
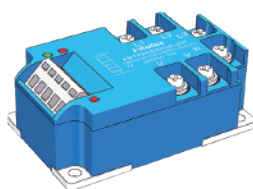


Blank: With Automatic Phase Correction & Phase-loss Correction Function
N: Without Automatic Phase Correction & Phase-loss Correction Function

KMTYM Series Mini Three Phase Motor Reversing Module

Output: AC Current Range: 15A-25A

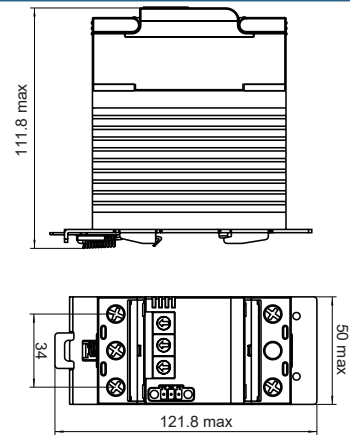
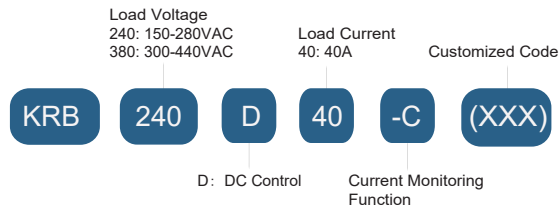
Built in Function: Automatic Phase Correction / Phase-loss Protection(optional)



Blank: With Automatic Phase Correction & Phase-loss Correction Function
N: Without Automatic Phase Correction & Phase-loss Correction Function

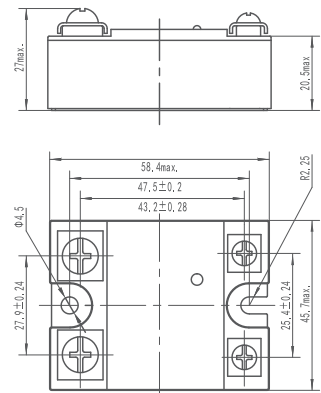
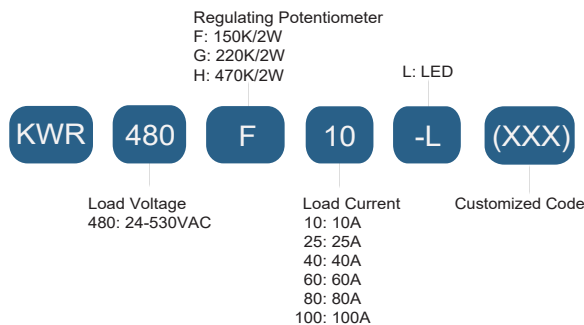
KRB Bus Communication Intellectual Voltage Regulator

Output: AC Current Range: 40A



KWR Non-isolated Single Phase Voltage Regulator

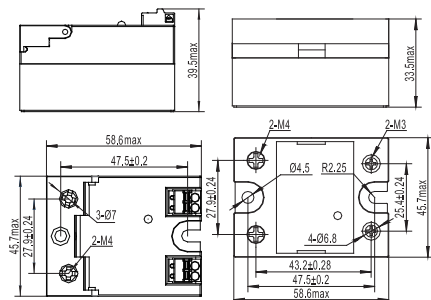
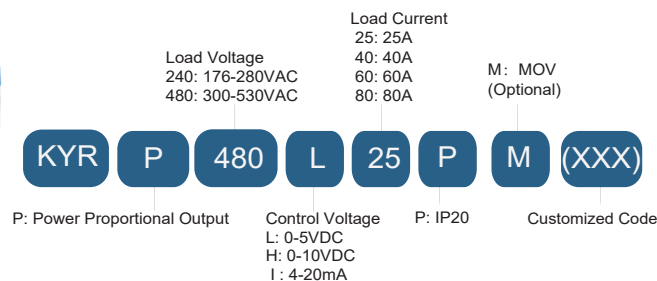
Output: AC Current Range: 10A-100A



KYR Series Single Phase Voltage Regulator

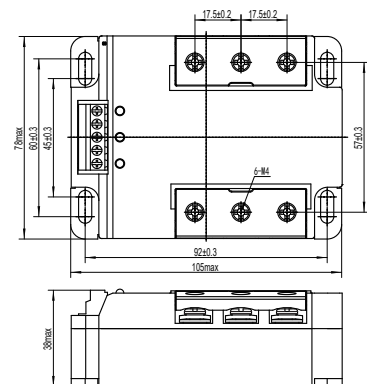
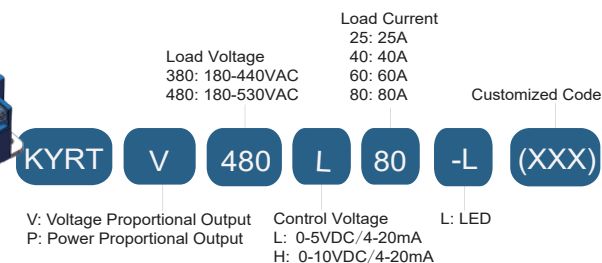
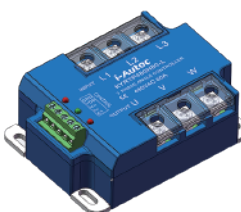
Output: AC Current Range: 25A-80A

Note: Work with external power supply



KYRT Series Three Phase Voltage Regulator

Output: AC Current Range: 25A-80A



BCA Series Temperature Control Module



Load Voltage
240: 240VAC
380: 380VAC

Load Current
40: 40Amp

BCA

240

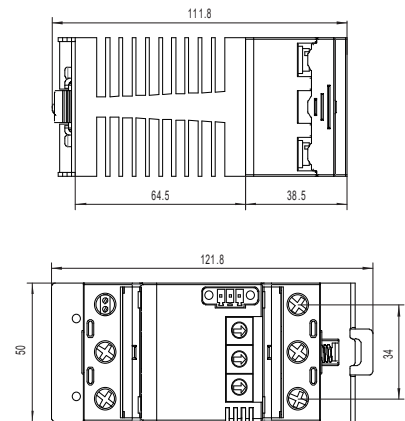
T

40

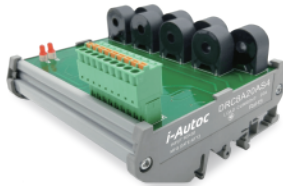
-S4

Temperature Sensor
T: Thermal Coupler

Control Mode
S4: RS 485



DRC Series Mod-Bus Current Detection Module



Channel
8: 8 Channels

Rated Current
20: 20Amp

Control Mode:
RS 485

DRC

8

A

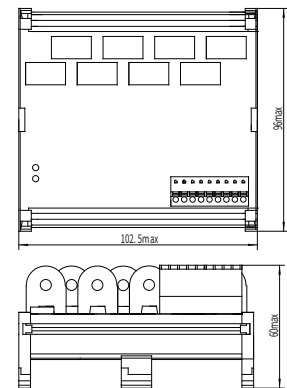
20

A

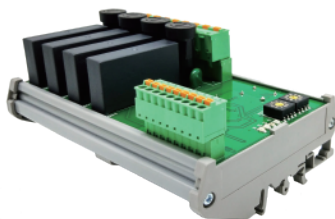
S4

Current type
A: AC

Tolerance
A: $\pm 5\%$



DRD Intelligent Module Voltage Regulator



Channel
4: 4 Channels

Load Voltage
220: 220VAC

Load Current
5: 5A

DRD

4

D

220

P

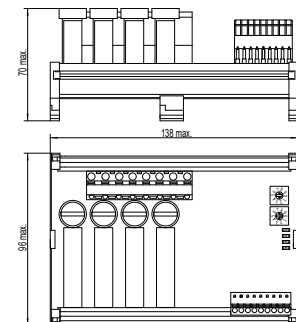
5

S4

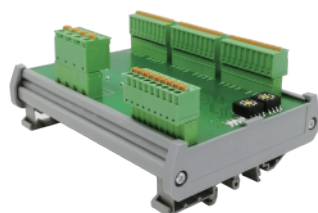
D: DC Control

Output Mode
P: Power
Proportional Output

Control Mode
S4: RS 485



DRF Series Multi-channels Modbus Voltage Regulator



Channel
12: 12 Channels

Load Voltage
220: 220VAC

Control Mode
S4: RS 485

DRF

12

S

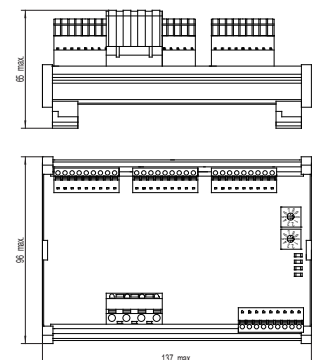
220

P

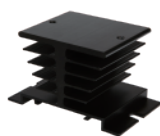
-S4

Function
S: Steady
Output
Voltage

Output Mode
P: Power Proportional Output



Heatsink

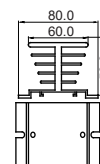
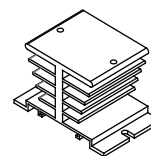


KHS-A50 Heatsink

Weight: 115g

Thermal Resistance: 2.1°C/W

Suitable for KSI, KSID, KSJ, KWR, KSQM, KMB
KMC, KSIA, KYR

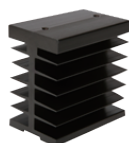
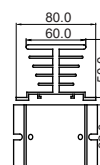
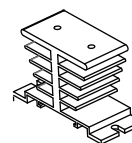


KHS-A32 Heatsink

Weight: 70g

Thermal Resistance: 2.8°C/W

Suitable for KSIM

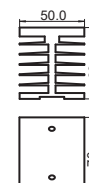
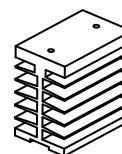


KHS-B70 Heatsink

Weight: 235g

Thermal Resistance: 1.9°C/W

Suitable for KSI, KSID, KSJ, KWR, KSQM, KMB
KMC, KSIA, KYR

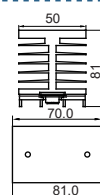
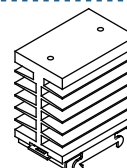


KHS-B70-D Heatsink with DIN Rail

Weight: 290g

Thermal Resistance: 1.9°C/W

Suitable for KSI, KSID, KSJ, KWR, KSQM, KMB
KMC, KSIA, KYR

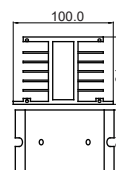
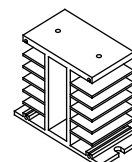


KHS-C49 Heatsink

Weight: 255g

Thermal Resistance: 1.7°C/W

Suitable for KSI, KSID, KSJ, KWR, KSQM, KMB
KMC, KSIA, KYR

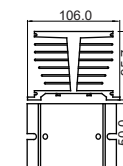
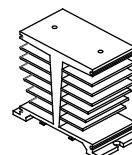


KHS-D50 Heatsink

Weight: 375g

Thermal Resistance: 1.6°C/W

Suitable for KSI, KSID, KSJ, KWR, KSQM, KMB
KMC, KSIA, KYR

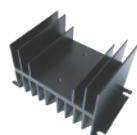
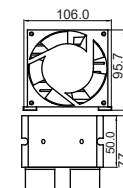
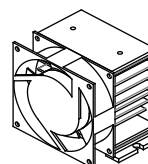


KHS-D50-F Heatsink with Fan

Weight: 645g

Thermal Resistance: 0.6°C/W

Suitable for KSI, KSID, KSJ, KWR, KSQM, KMB
KMC, KSIA, KYR

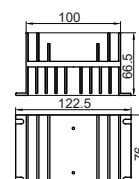
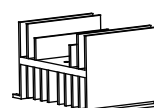


KHS-E76 Heatsink

Weight: 300g

Thermal Resistance: 1.4°C/W

Suitable for KSI, KSID, KSJ, KWR, KSQM, KMB
KMC, KSIA, KYR

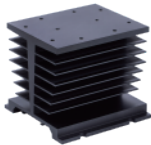
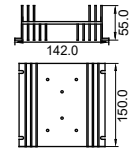
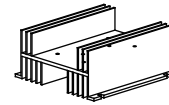


**KHS-F150 Heatsink**

Weight: 539g

Thermal Resistance: 0.6°C/W

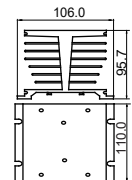
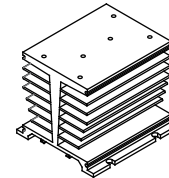
Suitable for KSI, KSID, KSJ, KWR, KYR, KSIA, KSQC, KMS, KMT, KMTY, KMB, KMC, KSQF, KYRT

**KHS-D110 Heatsink**

Weight: 825g

Thermal Resistance: 0.8°C/W

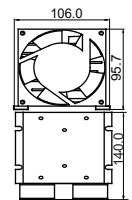
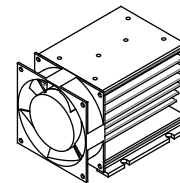
Suitable for KSI, KSID, KSJ, KWR, KYR, KSIA, KSQC, KMS, KMT, KMTY, KMB, KMC, KSQF, KYRT, KMTYM, KRB

**KHS-D110-F Heatsink with Fan**

Weight: 1095g

Thermal Resistance: 0.35°C/W

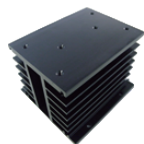
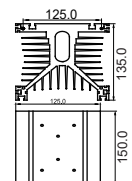
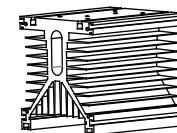
Suitable for KSI, KSID, KSJ, KWR, KYR, KSIA, KSQC, KMS, KMT, KMTY, KMB, KMC, KSQF, KYRT, KMTYM, KRB

**KHS-G150 Heatsink**

Weight: 2320g

Thermal Resistance: 0.4°C/W

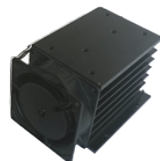
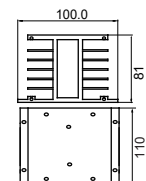
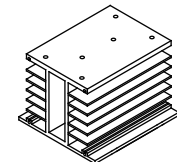
Suitable for KSI, KSID, KSJ, KWR, KYR, KSIA, KSQC, KMS, KMT, KMTY, KMB, KMC, KSQF, KYRT

**KHS-C110 Heatsink**

Weight: 560g

Thermal Resistance: 0.9°C/W

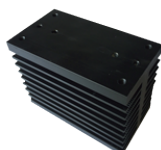
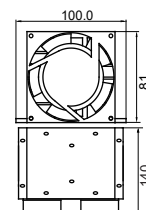
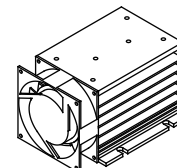
Suitable for KSI, KSID, KSJ, KWR, KYR, KSIA, KSQC, KMS, KMT, KMTY, KMB, KMC, KSQF, KYRT, KMTYM, KRB

**KHS-C110-F Heatsink with Fan**

Weight: 830g

Thermal Resistance: 0.4°C/W

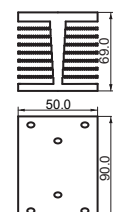
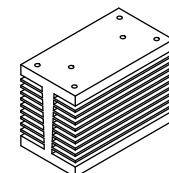
Suitable for KSQF, KSQC, KMS, KMT, KMTY

**KHS-B90 Heatsink**

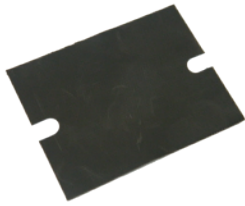
Weight: 390g

Thermal Resistance: 1.7°C/W

Suitable for KRB



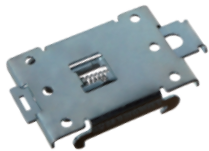
Thermal Pad KTP-0(A)



Thermal Pad KTP-1



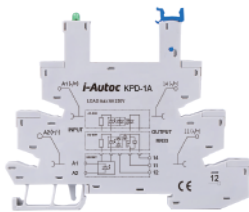
Din-Rail DR-1



Din-Rail DR-3



DIN Rail Socket KPD-1A
for KSMA/KSMD



DIN Rail Socket KPD-3A
for KSG/KSGD



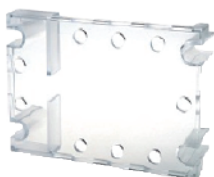
DIN Rail Socket KPD-4A
for KSG3R/KG3RD



1 Phase Protection
Cover KPC-0A



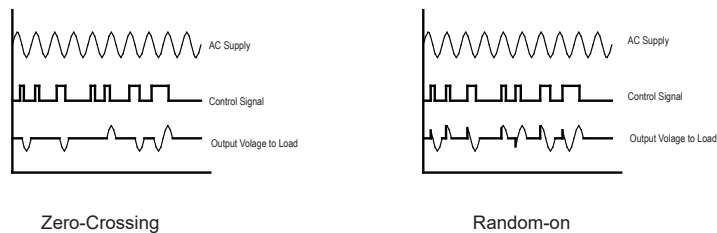
3 Phase Protection
Cover KPC-1A



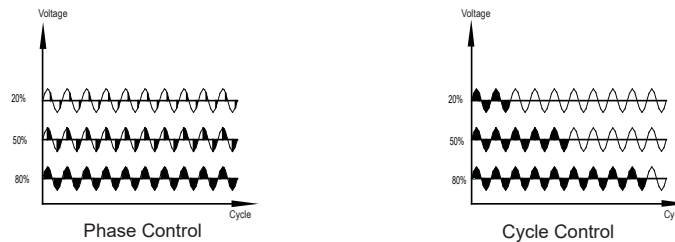
Mini 1 Phase Protection
Cover KPC-2A



1. Typical operation sequence of an AC SSR



2. Typical operation sequence of an AC voltage regulator



3. What types of loads are used for Zero Cross and Random turn-on SSR?

For AC output SSR, there are two switching ways zero-crossing and random-on. Except for some special application (for example, phase angle control must apply random-on), zero-crossing SSR is recommended for, resistive, capacitive, lamp and slightly inductive loads. Random-on relays are used for highly inductive loads, or when you need to phase angle fire a load. If a SSR is applied to a special application, please contact KUDOM for technical support.

4. How to calculate the rating current of a resistive load?

Single-phase: $I = P/220$ or $I = P/380$

Three-phase: $I = P\sqrt{3}/380$

Considering the ambient temperature, heat emission and other conditions, our think it is prudent to include 40-80% safety margin for load current, when selecting a SSR for sistive load.

5. How to calculate the steady-state current of a motor load?

Single-phase motor: $I = P/220/0.85$

Three-phase motor: $I = P/\sqrt{3}/380/0.85$

When the motor turns on, the surge current could be 5-7 times of steady-state current for several seconds.

6. How to choose an appropriate MOV for an application using a SSR?

SSR is used for various applications, overvoltage may occur during its operation. We can use MOV to suppress the transient voltage on power components, reducing the damage to SSR. To choose an appropriate MOV, first you must determine circuit conditions such as peak voltage and current during the event. You also must determine the number of surges the MOV must survive as well as the acceptable let-through voltage for the application. The transient overvoltage endurance of a 380 series AC SSR is 800V, it can operate a 220VAC load, or lower, without MOV. The transient ervice voltage endurance of a 480 series AC SSR is 1200V, it can operate a 380VAC load, or lower, without MOV.

7. Over-current and short-circuit protection

There is no over-current protection designed in KUDOM regular SSR. We suggest that, a thermal relay can be series to the load for over-current protection, and a semi-conductor style fuse be placed in series with the load circuit to help protect the SSR from short circuit

8. How to protect a DC SSR controlling an inductive load?

To protect a DC SSR from the electromagnetic field (EMF) when the inductive load is turned off, you need to place a diode in reverse parallel across the load.

9. Why do I see leakage current from the SSR when the relay is not on?

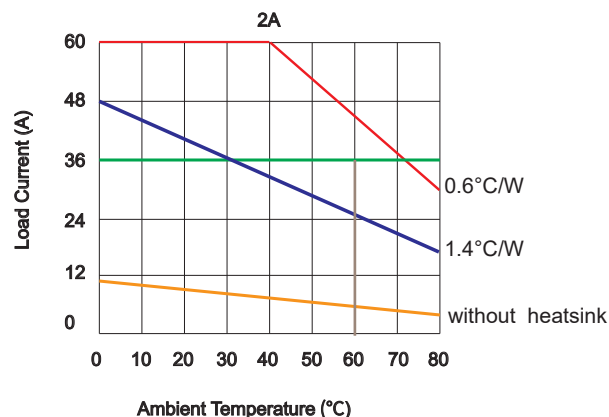
During the SSR is turned-off, we can observe an extremely small current when apply a voltage to SSR output, due to the power component has an impedance. Besides, the leakage current is caused by the snubber network which is a resistor and capacitor in series placed in parallel across the output of the SSR. This snubber protects the relay from static and commutating dv/dt .

10. Why do I need to use a heat sink with a SSR?

When a SSR is on, the relay will generate heat due to the forward voltage drop across the output. The amount of power generated is a function of the load current. The maximum chip temperature for a SCR is 125°C , if the SCR exceeds this temperature it can go into thermal run away. This will cause you to lose the ability to turn the relay off. The heat sink takes the heat generated by the SSR and dissipate it keeping the SSR cooler.

11. Selection of heat sink

To select the proper sized heat sink, you need to know 2 things: the load current and the maximum ambient temperature the relay will be exposed to. Once you know these parameters and have selected the proper SSR, you can now use the thermal derating curves included in the data sheet of the particular model you have selected. For example: SSR # KSI240D60-L, if you want to use it load current at 36A, ambient temperature at 60°C , with this example we go to the data sheet and find 60 A thermal curve. On the left side we find 36A and draw a line straight across to the right then we find the ambient temperature of 60°C on the bottom and draw a line straight up until it intersects with the previous line. At this point we can see that the point falls between the 1.4°C/W and the 0.6°C/W line. You always pick the rating above your point since the heat sink rating below would not keep the relay cool enough. So therefore we need a 0.6°C/W sized heat sink.





Xiamen Kudom Electronics Technology Co.,Ltd
Add:No.52,Hongtangtou 1st Road,Xike Town,Tongan District,Xiamen
Tel.:+86-592-7156029
Fax:+86-592-7156038
sales@i-autoc.com
www.i-autoc.com

Technical support
+86 180 5926 3013 (SSR, Voltage Regulator, Motor Reversing)
+86 180 5926 9771 (Intelligent Module)
US technical support line: +1 440-479-9905

REGIONAL DISTRIBUTOR

