

PRODUCT SELECTION

SSR • Motor Reversing • Voltage Regulator • Intelligent Module • Industrial Module



Innovation Automation Unique Technology Optimization Commitment



Founded in October 2012, Xiamen Kudom Electronics Technology Co., Ltd. is a professional manufacturer of solid state relays, power regulators, motor reversing module, voltage regulator and power semiconductor products. Xiamen Kudom is an national high-tech enterprise with intellectual property management system, and has obtained three international quality system certificates -- ISO9001:2015, ISO14001:2015, ISO45001:2018.

Kudom Electronics has a design and process team with over 20 years of experiences in the industry, as well as a fully functional product testing center. Kudom Electronics offers more than 60 categories with over 3,000 part numbers of solid state relays, power regulators and other semiconductor switch components. Besides, Kudom is the leading player in the industry to introduce self-diagnosis, self-detection, data interactive Mod-bus intelligent switching components. The products produced by Kudom comply with various international standards such as IEC62314, IEC60947, IEC60335, IEC61000, UL508, and been approved by CE, TUV, cUL, CCC, S-mark etc.

Kudom Electronics is committed to providing integrated solutions with high cost-effectiveness according to customer's requirements.



Our Advantages

Specialty

Owns more than 46 patents and software Copyrights, Kudom Electronics not only produces standard and customized solid state relays, intelligent power regulators and power semiconductor components, but also continuously invests in the research and development of related semiconductor devices.

Globalization

Distribution network spread in more than 20 countries and regions, providing customers with fast technical support.

Reliable

As your reliable partners, Kudom Electronics provides high-quality products, services and customized solutions. Most of our products are approved by CCC, cUL, TUV, CE, Smark etc.

Innovation

Based on the basic technology of power semiconductors, Kudom Electronics continuously develops and improves production processes to provide customers with intelligent, efficient, and customized products, such as motor reversing modules, voltage regulator, industrial modules, and Mod-bus modules etc.

Sales Network



Product Selection

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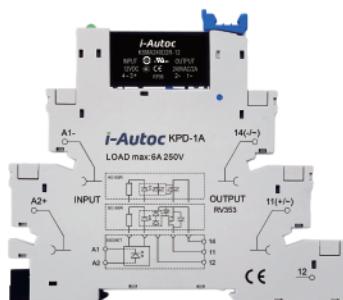
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Motor Reversing

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Product Selection

Motor Reversing

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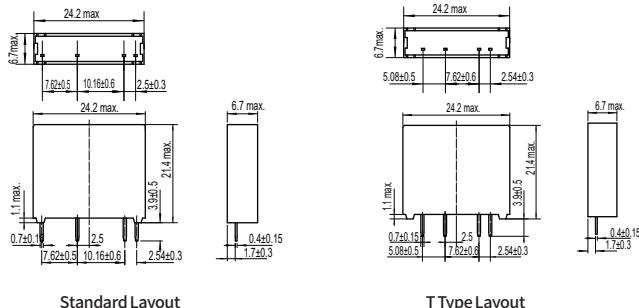
FAQ	35-37
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KSA Series AC Output

Output: AC Output
 Voltage Range: 24-280VAC
 Current Range: 2A
 Switching Mode: Random-on, Zero Crossing



KSA	240	D	2	R	24	T	(XXX)
Control Type	D: DC Control	Switching Mode	Blank: Zero Crossing	Pin Layout	Blank: Standard Layout		
Load Voltage	240: 24-280VAC	Load Current	2: 2A	Control Voltage	5: 5VDC	T: T Type Layout	
					12: 12VDC		
					24: 24VDC		
					I: 10mA		
							Customized Code

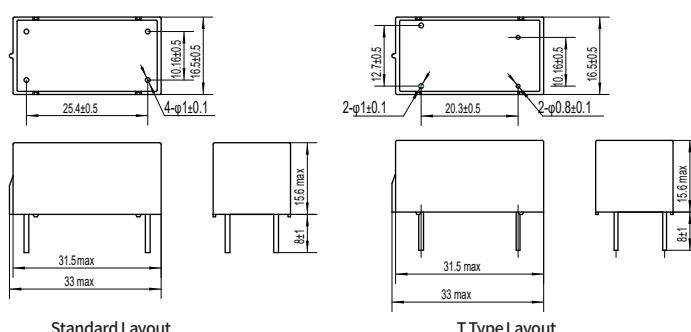


KSB Series AC Output

Output: AC Output
 Voltage Range: 24-280VAC, 24-440VAC
 Current Range: 2A, 3A
 Switching Mode: Random-on, Zero Crossing



KSB	240	D	3	R	-L	N	T	(XXX)
Control Type	D: DC Control	Switching Mode	Blank: Zero Crossing	Blank: With RC	Pin Layout			
Load Voltage	240: 24-280VAC	Load Current	2: 2A	R: Random-on	N: Without RC			
	380: 24-440VAC		3: 3A					
Control Voltage	L: 4-15VDC	Pin Layout		H: 15-32VDC	Blank: Standard Layout			
					T: T Type Layout			
								Customized Code

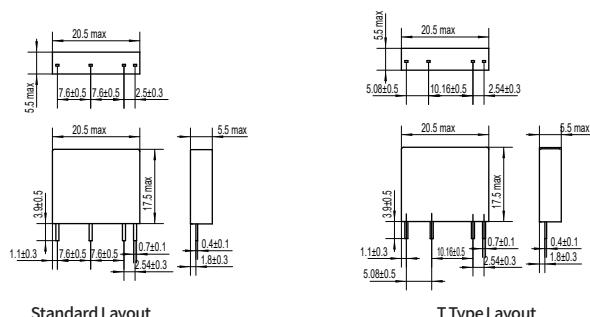


KSC Series AC Output

Output: AC Output
 Voltage Range: 24-280VAC
 Current Range: 1A, 2A
 Switching Mode: Random-on, Zero Crossing



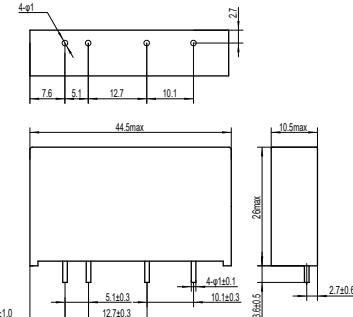
KSC	240	D	2	R	-24	T	(XXX)
Control Type	D: DC Control	Switching Mode	Blank: Zero Crossing	Pin Layout	Blank: Standard Layout		
Load Voltage	240: 24-280VAC	Load Current	1: 1A	R: Random-on	T: T Type Layout		
			2: 2A				
Control Voltage	5: 4-6VDC	Pin Layout		12: 9.6-14.4VDC	Blank: Standard Layout		
	12: 9.6-14.4VDC			24: 19.2-28.8VDC	T: T Type Layout		
	24: 19.2-28.8VDC			I: 10mA			Customized Code



KSD Series AC Output

Output: AC Output
 Voltage Range: 24-280VAC, 24-440VAC, 24-530VAC
 Current Range: 5A
 Switching Mode: Random-on, Zero Crossing

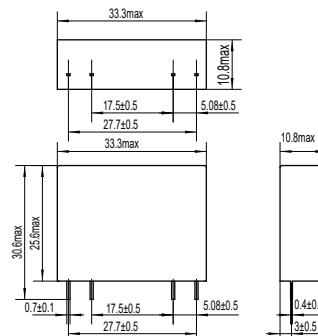
Control Type D: DC Control	380	D	5	R	-H	(037)	Switching Mode Blank: Zero Crossing R: Random-on
							Sealing Type (037): Plastic Case
Load Voltage 240: 24-280VAC 380: 24-440VAC 480: 24-530VAC	380	D	5	Load Current 5: 5A	Control Voltage H: 15-32VDC W: 4-32VDC	Control Voltage H: 15-32VDC W: 4-32VDC	Control Voltage H: 15-32VDC W: 4-32VDC



KSFA Series AC Output

Output: AC Output
 Voltage Range: 24-280VAC, 24-440VAC
 Current Range: 3A
 Switching Mode: Random-on, Zero Crossing

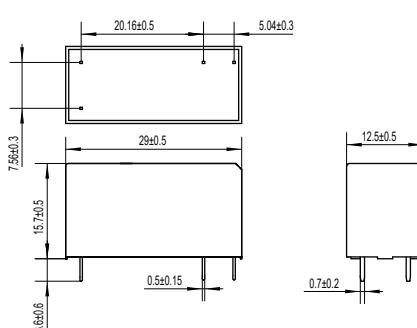
Control Type D: DC Control	KSFA	380	D	3	R	-24	N	(XXX)	Switching Mode Blank: Zero Crossing R: Random-on
									Blank: With RC N: Without RC
Load Voltage 240: 24-280VAC 380: 24-440VAC	380	D	3	Load Current 3: 3A	Control Voltage 5: 4-6VDC 12: 9.6-14.4VDC 24: 19.2-28.8VDC	Customized Code			



KSG Series AC Output

Output: AC Output
 Voltage Range: 24-280VAC, 24-440VAC
 Current Range: 2A, 3A
 Switching Mode: Random-on, Zero Crossing

Control Type D: DC Control	KSG	240	D	2	R	-5	D	(XXX)	Switching Mode Blank: Zero Crossing R: Random-on
									Blank: Without Socket D: With Socket
Load Voltage 240: 24-280VAC 380: 24-440VAC	240	D	2	Load Current 2: 2A 3: 3A	Control Voltage 5: 4-6VDC 12: 9.6-14.4VDC 24: 19.2-28.8VDC	Customized Code			

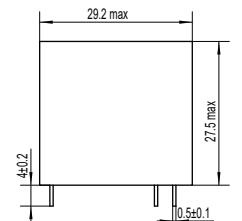
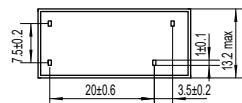


KSG3R Series AC Output

Output: AC Output
Voltage Range: 24-440VAC
Current Range: 3A
Switching Mode: Random-on, Zero Crossing



KSG3R	380	D	3	R	-5	D	(XXX)	Control Type D: DC Control	Switching Mode Blank: Zero Crossing R: Random-on	Blank: Without Socket D: With Socket
								Load Voltage 380: 24-440VAC	Load Current 3: 3A	Control Voltage 5: 4-6VDC 12: 9.6-14.4VDC 24: 19.2-28.8VDC

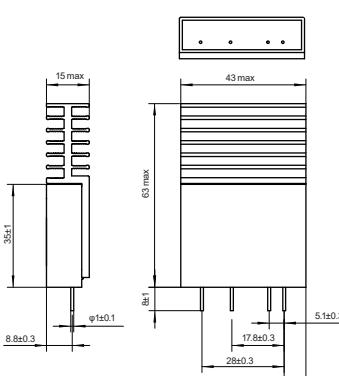
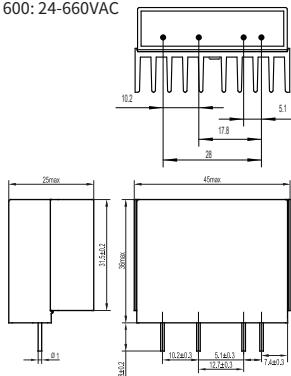


KSH / KSHA Series AC Output

Output: AC Output
Voltage Range: 24-280VAC, 24-530VAC, 24-660VAC
Current Range: 25A
Switching Mode: Random-on, Zero Crossing



KSH KSHA	240	D	25	R	N	-T	(XXX)	Control Type D: DC Control	Switching Mode Blank: Zero Crossing R: Random-on	Protection Type T: TVS Protection (Optional)
								Load Voltage 240: 24-280VAC 480: 24-530VAC 600: 24-660VAC	Load Current 25: 25A	Blank: With RC N: Without RC

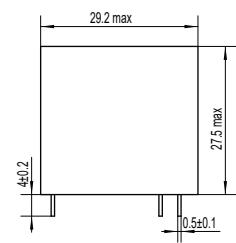
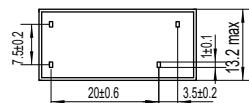


KSH Series KSHA Series

KG3RD Series DC Output

Output: DC Output
Voltage Range: 3-100VDC
Current Range: 2A

KG3RD	100	D	2	-5	D	(XXX)	Control Type D: DC Control	Control Voltage 5: 4-6VDC 12: 9.6-14.4VDC 24: 19.2-28.8VDC	Customized Code
							Load Voltage 100: 3-100VDC	Load Current 2: 2A	Blank: Without Socket D: With Socket



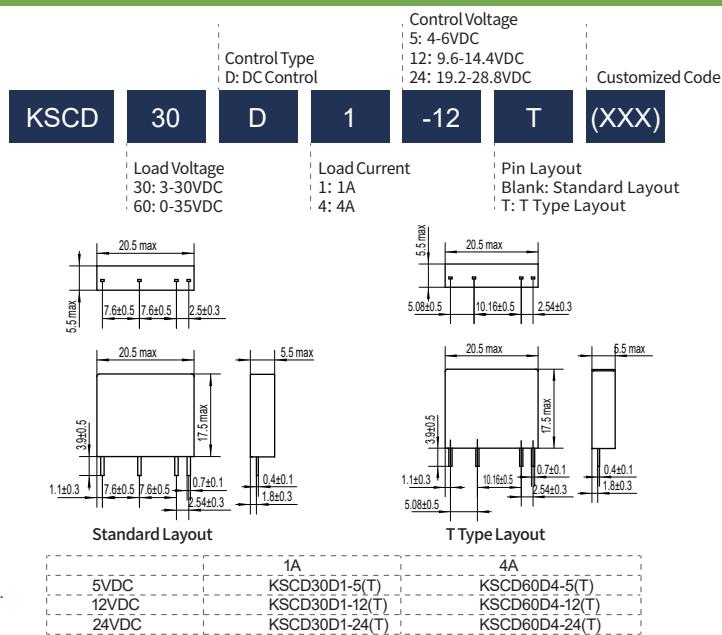
PCB Mount

KSCD Series DC Output

Output: DC Output
Voltage Range: 3-30VDC, 0-35VDC
Current Range: 1A, 4A

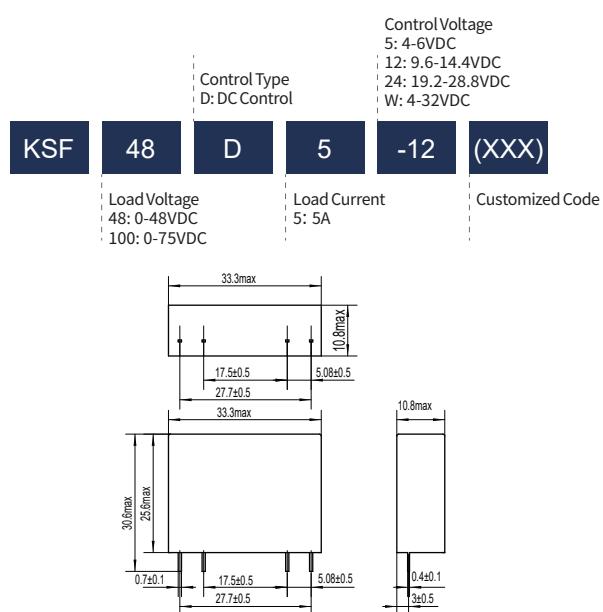


- MOSFET Output (4A) or Transistor Output (1A)
- Part numbers available are listed in the table below.



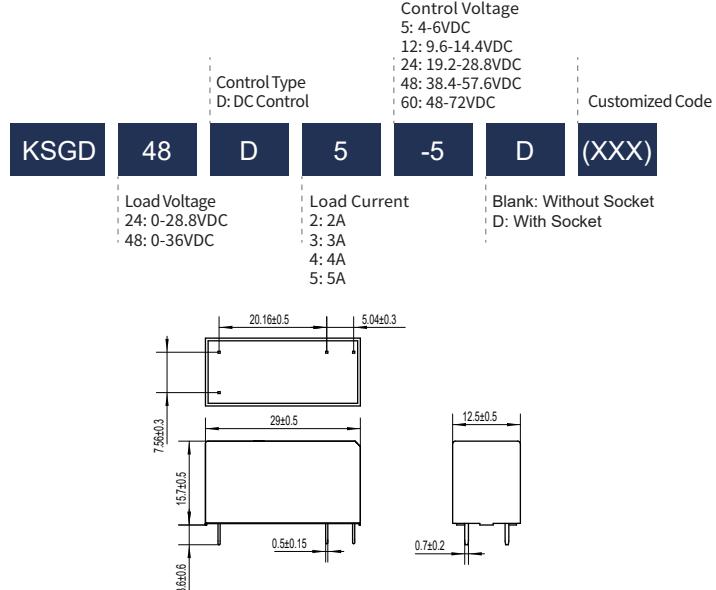
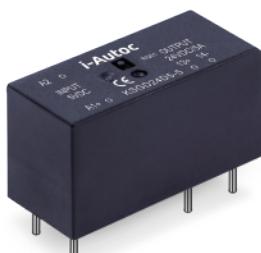
KSF Series DC Output

Output: DC Output
Voltage Range: 0-48VDC, 0-75VDC
Current Range: 5A



KSGD Series DC Output

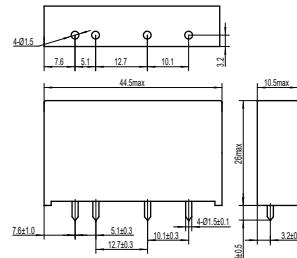
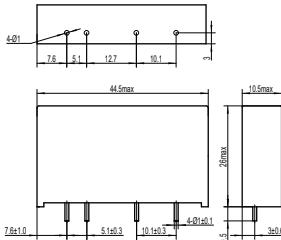
Output: DC Output
Voltage Range: 0-28.8VDC, 0-36VDC
Current Range: 2A,3A,4A,5A



KSLE Series DC Output

Output: DC Output
Voltage Range: 0-50VDC, 0-75VDC, 0-125VDC,
0-300VDC
Current Range: 3A, 5A, 10A, 20A

KSLE	60	D	20	-L	B	(XXX)
Control Type	D: DC Control	Control Voltage	L: 3-10VDC H: 10-28VDC	Customized Code		
Load Voltage	60: 0-50VDC 100: 0~75VDC 200: 0-125VDC 400: 0-300VDC	Load Current	3: 3A 5: 5A 10: 10A 20: 20A			



► Part numbers available are listed in the table below.

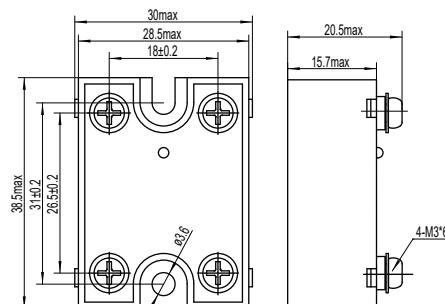
	3A	5A	10A	20A
L	KSLE60D3-L KSLE400D3-L KSLE60D3-LB	KSLE200D5-L	KSLE100D10-L	KSLE60D20-L
	KSLE60D3-H KSLE400D3-H KSLE60D3-HB			
H		KSLE200D5-H	KSLE100D10-H	KSLE60D20-H

Panel Mount

KSIM Series Mini Single Phase AC Output

Output: AC Output
Voltage Range: 24-280VAC, 24-440VAC
Current Range: 10A, 16A, 25A

KSIM	240	D	25	R	-L	T	(XXX)
Control Voltage	D: 4-32VDC	Switching Mode	Blank: Zero Crossing R: Random-on	Protection Type	Blank: Without Protection T: TVS Protection		
Load Voltage	240: 24-280VAC 380: 24-440VAC	Load Current	10: 10A 16: 16A 25: 25A	L: LED			

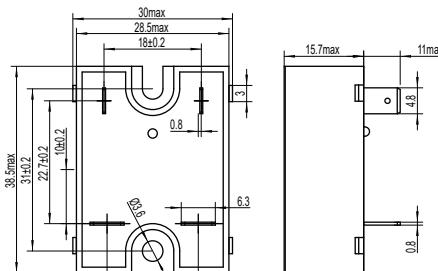
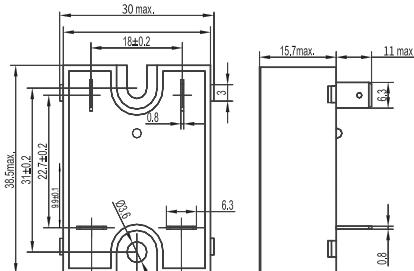


Panel Mount

KSIM (045) Series Mini Single Phase AC Output

Output: AC Output
Voltage Range: 24-280VAC, 24-440VAC
Current Range: 10A, 16A, 25A

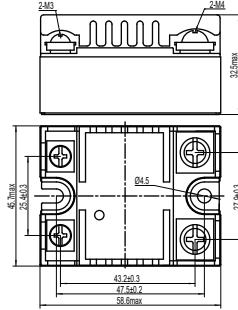
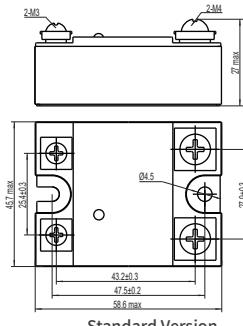
Control Voltage D: 4-32VDC	Switching Mode Blank: Zero Crossing R: Random-on	Protection Type Blank: Without Protection T: TVS Protection	Customized Code
Load Voltage 240: 24-280VAC 380: 24-440VAC	Load Current 10: 10A 16: 16A 25: 25A	L: LED	045: Quick Connection 117: Quick Connection



KSI Series Single Phase AC Output

Output: AC Output
Voltage Range: 48-280VAC, 48-530VAC,
48-660VAC
Current Range: 25A, 40A, 60A

Control Voltage A: 90-280VAC D: 4-32VDC	Switching Mode Blank: Zero Crossing R: Random-on	Protection Type Blank: Without Protection T: TVS Protection B: Normally Closed	Protective Cover(Optional)
Load Voltage 240: 48-280VAC 480: 48-530VAC 600: 48-660VAC	Load Current 25: 25A 40: 40A 60: 60A	L: LED	Customized Code

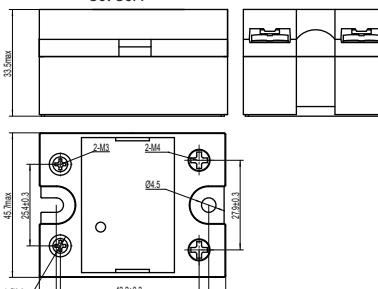


► Suffix T series products (TVS protection products) without TUV certification.
► KSI240... Series Control Voltage Range: 3-32VDC or 4-32VDC.

KSI(068) Series Single Phase AC Output

Output: AC Output
Voltage Range: 48-280VAC, 48-530VAC,
48-660VAC
Current Range: 25A, 40A, 60A, 80A

Control Voltage A: 90-280VAC D: 4-32VDC	Switching Mode Blank: Zero Crossing R: Random-on	Protection Type Blank: Without Protection T: TVS Protection
Load Voltage 240: 48-280VAC 480: 48-530VAC 600: 48-660VAC	Load Current 25: 25A 40: 40A 60: 60A 80: 80A	L: LED (068): IP20 Cover Customized Code



► Suffix T series products (TVS protection products) without TUV certification.
► KSI240... Series Control Voltage Range: 3-32VDC or 4-32VDC.

KSIA Series Single Phase AC Output

Output: AC Output

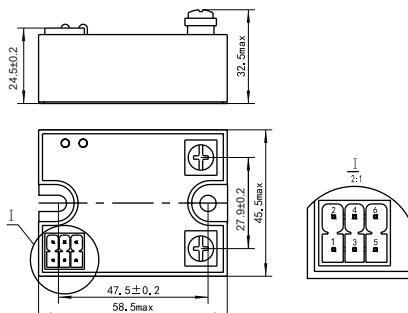
Voltage Range: 150-280VAC, 150-530VAC,
150-660VAC

Current Range: 25A, 40A, 60A, 80A, 100A

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



KSIA	480	D	25	-P	-L	(XXX)
Control Voltage D: 4-32VDC	Load Voltage 240: 150-280VAC 480: 150-530VAC 600: 150-660VAC	Load Current 25: 25A 40: 40A 60: 60A 80: 80A 100: 100A	Trigger Mode None: Negative Trigger P: Positive Trigger	L: LED	Customized Code	



KSN Series Single Phase AC Output

Output: AC Output

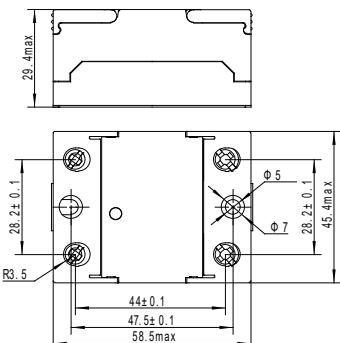
Voltage Range: 24-280VAC, 24-440VAC,
24-530VAC, 24-660VAC

Current Range: 15A, 25A, 40A, 60A, 80A,
100A, 125A



- The 15A product is not UL certified, and the 25A and 40A TRIAC output are not UL certified.
- KSN380...Series without UL certification.

KSN	480	D	80	T	R	N	-L	T	(XXX)
Control Voltage D: 3-32VDC A: 90-280VAC	Output Type T: TRIAC Output None: SCR Output	Blank: With RC N: Without RC	Protection Type Blank: Without Protection T: TVS Protection						
Load Voltage 240: 24-280VAC 380: 24-440VAC 480: 24-530VAC 600: 24-660VAC	Load Current 15: 15A 25: 25A 40: 40A 60: 60A 80: 80A 100: 100A 125: 125A	Switching Mode Blank: Zero Crossing R: Random-on	L: LED	Customized Code					



KSU Series Single Phase AC Output

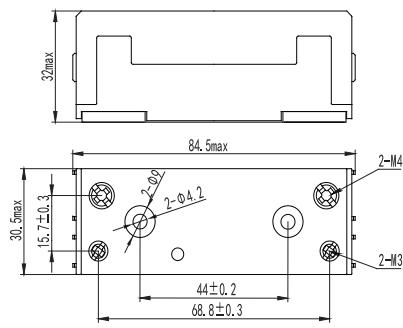
Output: AC Output

Voltage Range: 24-660VAC

Current Range: 30A, 50A, 75A



KSU	600	D	30	R	-L	T	(XXX)
Control Voltage A: 90-280VAC D: 4-32VDC	Switching Mode Blank: Zero Crossing R: Random-on	Protection Type Blank: Without Protection T: TVS Protection					
Load Voltage 600: 24-660VAC	Load Current 30: 30A 50: 50A 75: 75A	L: LED	Customized Code				

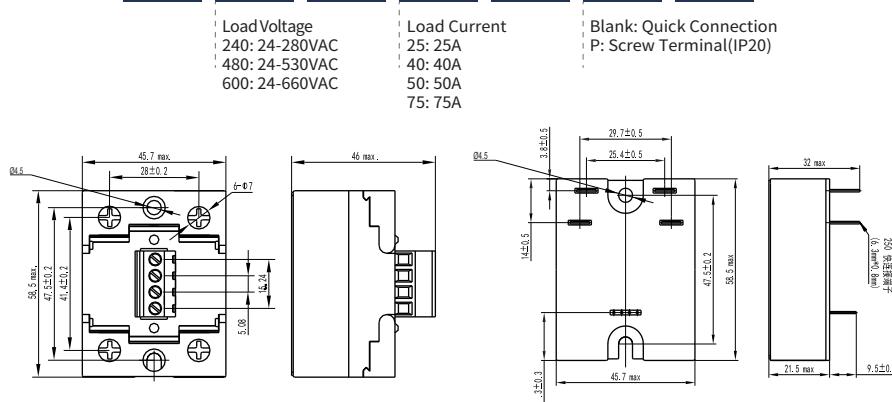


Panel Mount

KSID Series Dual Phase AC Output

Output: AC Output
Voltage Range: 24-280VAC, 24-530VAC,
24-660VAC
Current Range: 25A, 40A, 50A, 75A

Control Voltage		Switching Mode		Customized Code
LD: 4-15VDC		Blank: Zero Crossing		
HD: 15-32VDC		R: Random-on		
D: 4-32VDC				
KSID	240	LD	25	R
				P
			(XXX)	



► Products of IP20 structure 600V and 75A do not have TUV certification or S-mark certification;
Quick Connection Terminal does not have TUV certification or S-mark certification.

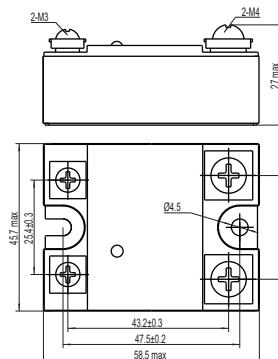
KSJ Series Single Phase DC Output

Output: DC Output
Voltage Range: 0-24VDC, 0-48VDC, 0-75VDC ,
0-120VDC, 3-500VDC, 3-700VDC
Current Range: 7A~100A



► Part numbers available are listed in the table below.

Control Voltage	D: 4-32VDC	L: LED	Customized Code
KSJ	50	D	40
		-L	(XXX)
Load Voltage		Load Current	
30: 0-24VDC		7A: 7A	
60: 0-48VDC		10: 10A	
100: 0-75VDC		20: 20A	
200: 0-120VDC		25: 25A	
600: 3-500VDC		40: 40A	
1200: 3-700VDC		50: 50A	
		80: 80A	
		100: 100A	

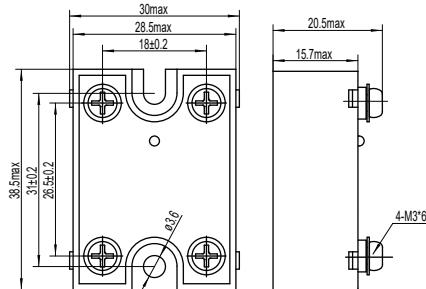


	30VDC	60VDC	100VDC	200VDC	600VDC	1200VDC
7A		KSJ60D7-L				
10A				KSJ200D10-L		
20A			KSJ100D20-L	KSJ200D20-L		
25A					KSJ600D25-L	KSJ1200D25-L
40A		KSJ60D40-L	KSJ100D40-L	KSJ200D40-L		
50A	KSJ30D50-L				KSJ600D50-L	KSJ1200D50-L
80A		KSJ60D80-L	KSJ100D80-L			
100A	KSJ30D100-L					

K SJM Mini Single Phase DC Output

Output: DC Output
 Voltage Range: 0-24VDC, 0-48VDC, 0-75VDC ,
 0-120VDC
 Current Range: 10A, 20A, 40A, 50A

KSJM	60	D	40	-L	(XXX)
				Control Voltage D: 4-32VDC	L: LED
				Load Voltage 30: 0-24VDC 60: 0-48VDC 100: 0-75VDC 200: 0-120VDC	Load Current 10: 10A 20: 20A 40: 40A 50: 50A
					Customized Code



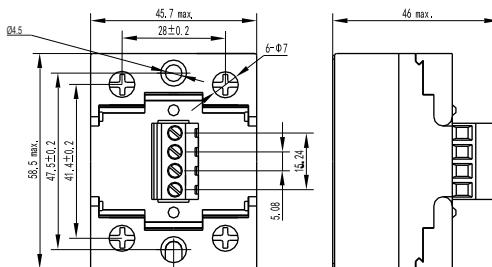
► Part numbers available are listed in the table below.

	30VDC	60VDC	100VDC	200VDC
10A		KSJM60D10-L		
20A			KSJM100D20-L	
40A		KSJM60D40-L		
50A	KSJM30D50-L			

K SJB Series Dual Phase DC Output

Output: DC Output
 Voltage Range: 0-24VDC, 0-48VDC, 0-75VDC ,
 0-120VDC
 Current Range: 10A, 20A, 40A, 50A

KSJB	30	LD	10	(XXX)
			Control Voltage LD: 4-15VDC HD: 15-32VDC	Customized Code
			Load Voltage 30: 0-24VDC 60: 0-48VDC 100: 0-75VDC 200: 0-120VDC	Load Current 10: 10A 20: 20A 40: 40A 50: 50A

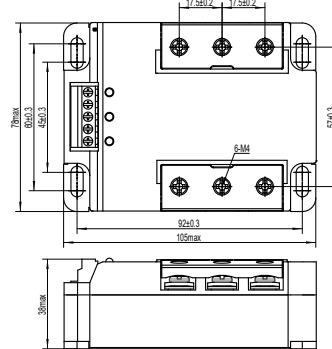


Panel Mount

KSQC Series Three Phase AC Output

Output: AC Output
 Voltage Range: 200-530VAC, 200-660VAC
 Current Range: 25A, 40A, 60A, 80A
 Built in Function: SCR Short Circuit, Open Circuit and Error Self-Inspection
 Built in Function: Phase-loss Protection / Over Temperature Protection / SCR Fault Detection / Alarm Signal Output(optional)

KSQC	600	D	60	R	-C	(XXX)
Control Voltage	D: 10-32VDC	Switching Mode	Blank: Zero Crossing			Customized Code
Load Voltage	480: 200-530VAC	R: Random-on				
	600: 200-660VAC					
Load Current	25: 25A	C: Alarm Output				
	40: 40A	Blank: without Alarm Output				
	60: 60A					
	80: 80A					

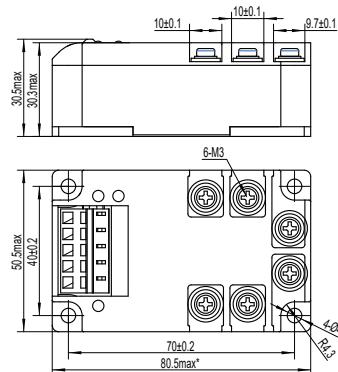


► Only KSQC XXX-C series products have TUV and S-mark certification.

KSQE Series Three Phase AC Output

Output: AC Output
 Voltage Range: 24-440VAC, 24-530VAC
 Current Range: 10A, 15A, 25A

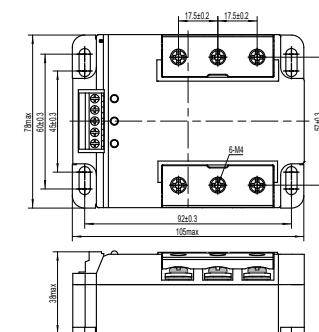
KSQE	480	D	10	R	(XXX)
Control Voltage	D: 4-32VDC	Switching Mode	Blank: Zero Crossing		Customized Code
	A: 90-280VAC	R: Random-on			
Load Voltage	380: 24-440VAC				
	480: 24-530VAC				
Load Current	10: 10A				
	15: 15A				
	25: 25A				



KSQF Series Three Phase AC Output

Output: AC Output
 Voltage Range: 24-530VAC, 24-660VAC
 Current Range: 25A, 40A, 60A, 80A

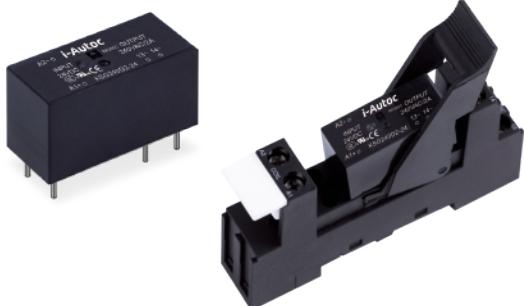
KSQF	480	D	80	R	(XXX)
Control Voltage	A: 90-280VAC	Switching Mode	Blank: Zero Crossing		Customized Code
	D: 4-32VDC	R: Random-on			
Load Voltage	480: 24-530VAC				
	600: 24-660VAC				
Load Current	25: 25A				
	40: 40A				
	60: 60A				
	80: 80A				



► No TUV or S-mark for AC input.

KSG...D Series AC Output

Output: AC Output
Voltage Range: 24-440VAC
Current Range: 2A, 3A



►UL,CCC certification only for SSR.

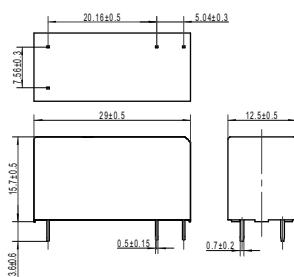
KSG	240	D	2	R	-5	D	(XXX)
				Control Type D: DC Control			
				Switching Mode Blank: Zero Crossing R: Random-on			
				Blank: without Socket D: with Socket			

Load Voltage
380: 24-440VAC

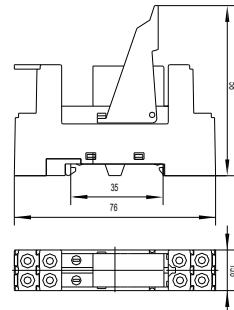
Load Current
2: 2A
3: 3A

Control Voltage
5: 4-6VDC
12: 9.6-14.4VDC
24: 19.2-28.8VDC

Customized Code



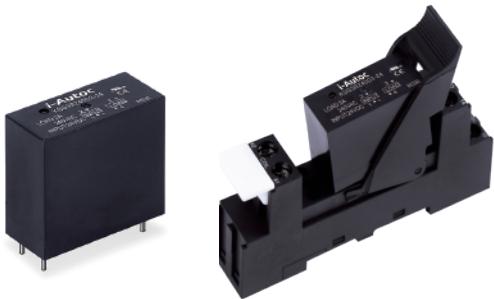
KSG without socket



KSG with socket

KSG3R...D Series AC Output

Output: AC Output
Voltage Range: 24-440VAC
Current Range: 3A



►UL certification only for SSR.

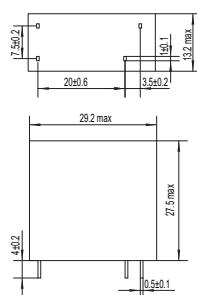
KSG3R	380	D	3	R	-5	D	(XXX)
				Control Type D: DC Control			
				Switching Mode Blank: Zero Crossing R: Random-on			
				Blank: without Socket D: with Socket			

Load Voltage
380: 24-440VAC

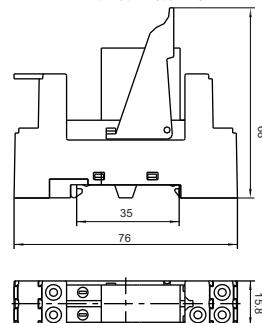
Load Current
3: 3A

Control Voltage
5: 4-6VDC
12: 9.6-14.4VDC
24: 19.2-28.8VDC

Customized Code



KSG3R without socket



KSG3R with socket

KSMA...D Series AC Output

Output: AC Output
Voltage Range: 24-280VAC
Current Range: 1A, 2A



►UL,TUV,CCC certification only for SSR.

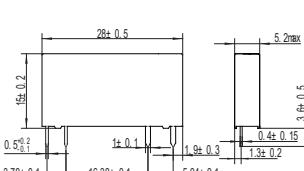
KSMA	A	240	D	1	R	-5	D	(XXX)
				A: AC Output				
				Control Type D: DC Control				
				Switching Mode Blank: Zero Crossing R: Random-on				
				Blank: without Socket D: with Socket				

Load Voltage
240: 24-280VAC

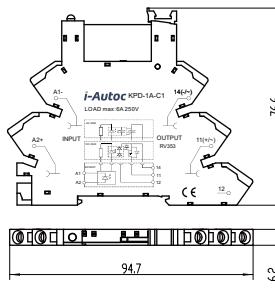
Load Current
1: 1A
2: 2A

Control Voltage
5: 4-6VDC
12: 9.6-14.4VDC
24: 19.2-28.8VDC

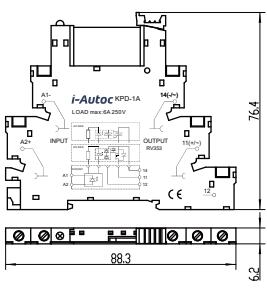
Customized Code



KSMA without socket



KSMA with spring type socket



KSMA with screw type socket

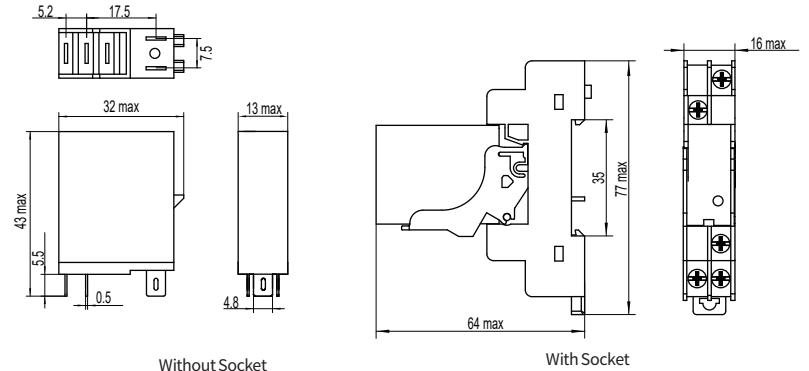
Din-Rail Mount

KSO...D Series AC Output

Output: AC Output
Voltage Range: 24-280VAC, 24-660VAC
Current Range: 5A



KSO	240	D	5	R	-W	T	D	(XXX)
Load Voltage 240: 24-280VAC 600: 24-660VAC	Load Current 5: 5A	Switching Mode Blank: Zero Crossing R: Random-on	Control Voltage W: 4-32VDC	Protection Type Blank: without Protection T: TVS Protection	Customized Code			



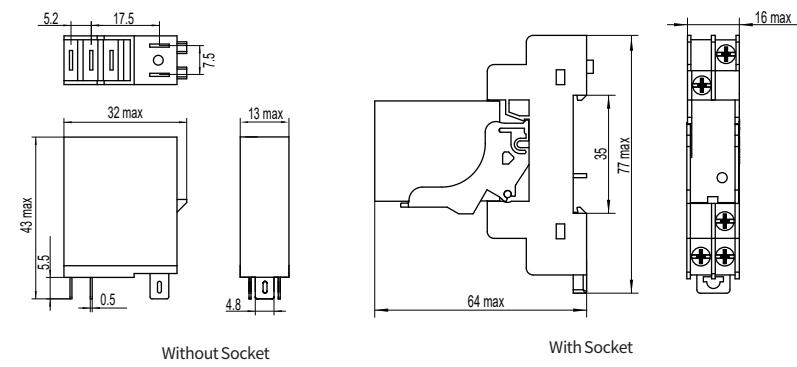
►UL certification only for SSR.

KSOB...D Series AC Output (Normally Closed)

Output: AC Output
Voltage Range: 24-280VAC
Current Range: 5A



KSOB	240	D	5	R	-W	D	(XXX)
Load Voltage 240: 24-280VAC	Load Current 5: 5A	Switching Mode Blank: Zero Crossing R: Random-on	Control Voltage W: 4-32VDC	Protection Type Blank: without Socket D: with Socket	Customized Code		



►UL certification only for SSR.

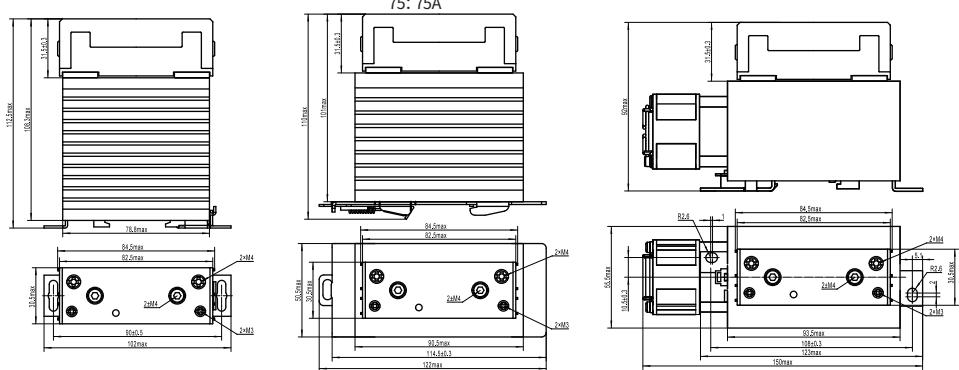
KSV Series AC Output

Output: AC Output
Voltage Range: 24-280VAC, 24-530VAC,
24-660VAC
Current Range: 10A, 20A ,30A ,40A ,50A,
75A



►Contact with our sales or technical support to get the drawing of 75A version.

KSV	480	D	30	R	-L	T	(XXX)
Load Voltage 240: 24-280VAC 480: 24-530VAC 600: 24-660VAC	Load Current 10: 10A 20: 20A 30: 30A 40: 40A 50: 50A 75: 75A	Switching Mode Blank: Zero Crossing R: Random-on	L: LED	Protection Type Blank: Without Protection T: TVS Protection	Customized Code		



10A-30A

40A

50A

KSK Series AC Output

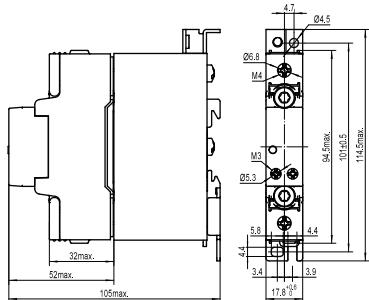
Output: AC Output

Voltage Range: 24-280VAC, 24-660VAC

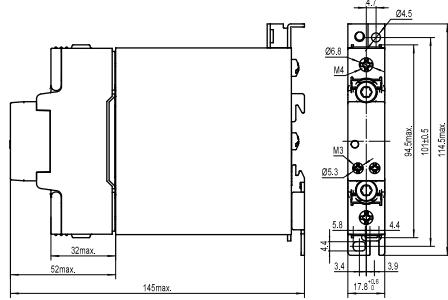
Current Range: 25A, 50A, 75A



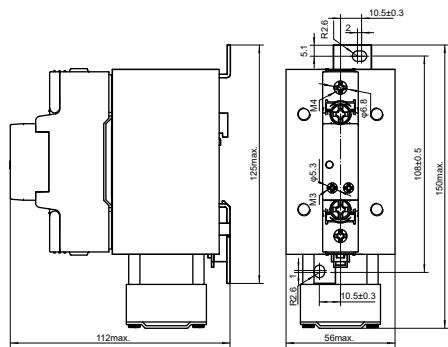
Control Type	Switching Mode	Customized Code	Fan
D: DC Control	Blank: Zero Crossing R: Random-on	(XXX)	Blank: Without Fan F24DC: 24VDC Fan (Only for KHS-I93 & KHS-J93 Heat Sink)
		-K	K: KHS-K90 Heat Sink L: KHS-L90 Heat Sink I: KHS-I93 Heat Sink J: KHS-J93 Heat Sink



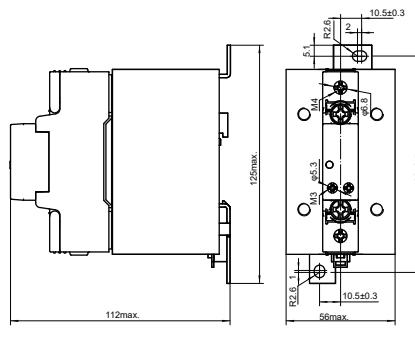
KSK...25...-K Series



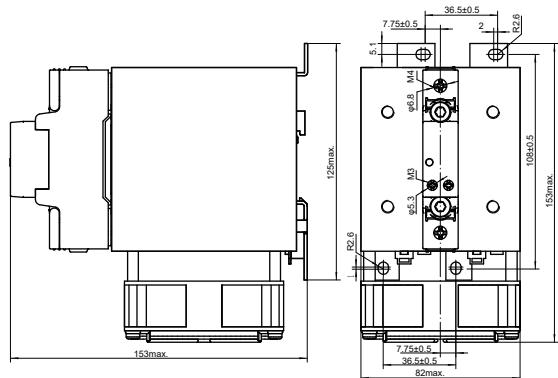
KSK...25...-L Series



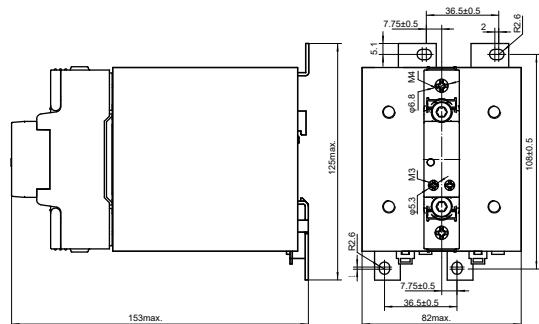
KSK...50...-IF24DC Series



KSK...50...-I Series



KSK...75...-JF24DC Series



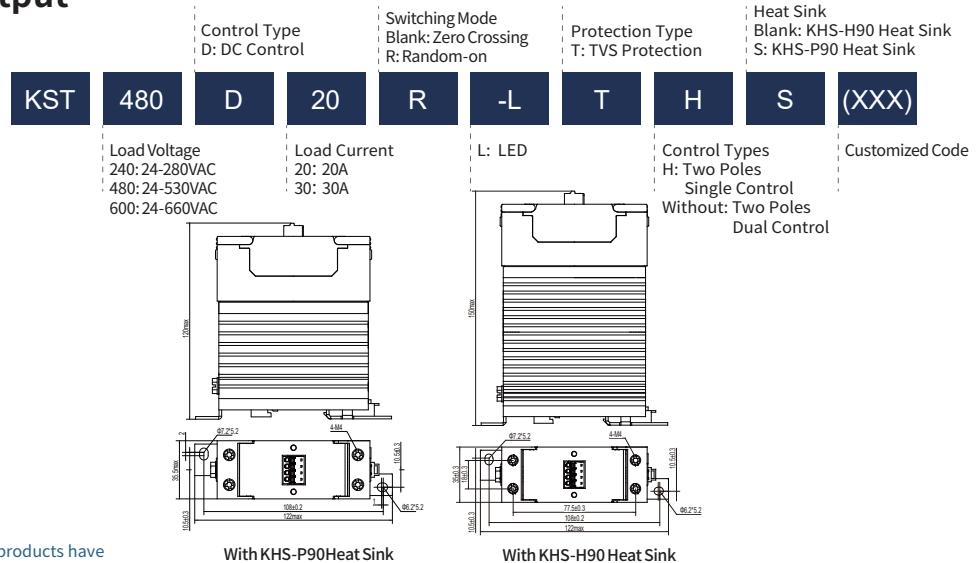
KSK...75...-J Series

KST Series Dual Phase AC Output

Output: AC Output
Voltage Range: 24-280VAC, 24-530VAC,
24-660VAC
Current Range: 20A ,30A

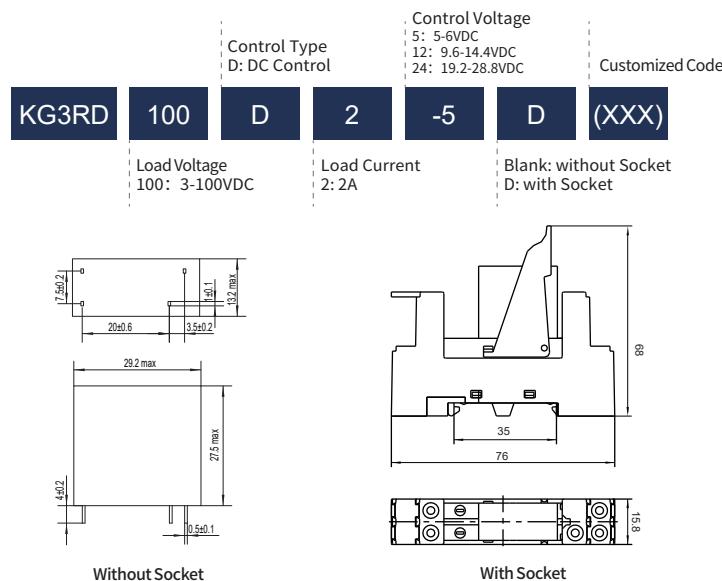


► Only KST240... series products have S-mark certification.



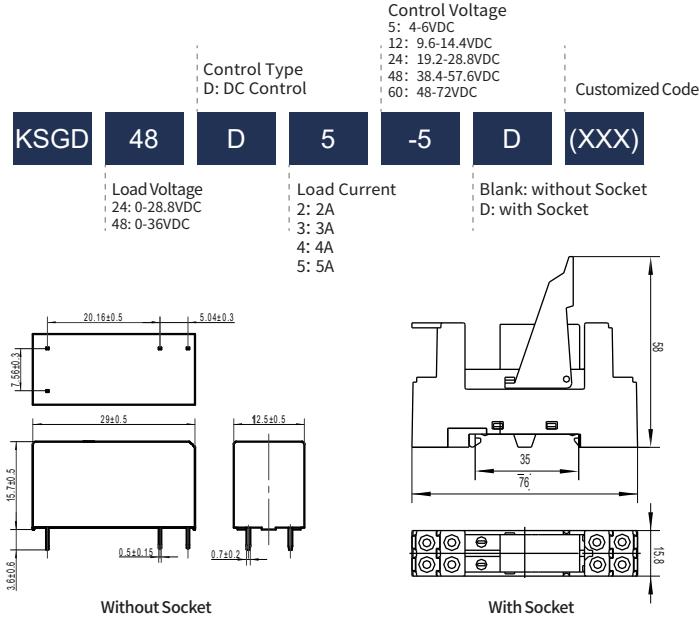
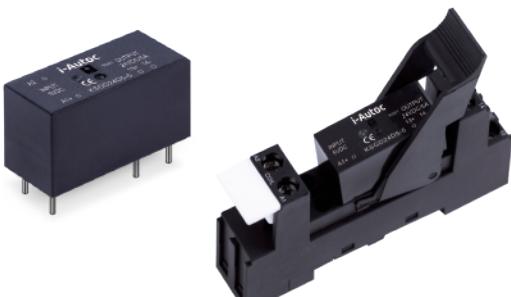
KG3RD...D Series DC Output

Output: DC Output
Voltage Range: 3-100VDC
Current Range: 2A



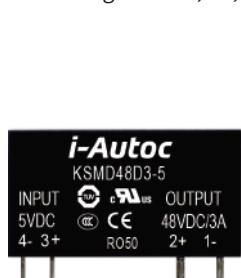
KSGD...D Series DC Output

Output: DC Output
Voltage Range: 0-28.8VDC, 0-36VDC
Current Range: 2A, 3A, 4A, 5A



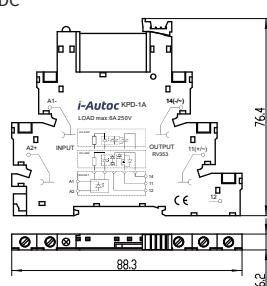
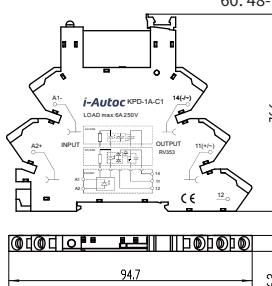
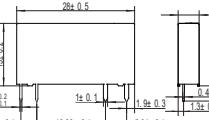
KSM...D Series DC Output

Output: DC Output
Voltage Range: 3-28VDC, 3-58VDC
Current Range: 0.1A ,2A ,3A ,4A



►UL,TUV,CCC certification only for SSR.

KSM	D	48	D	3	-5	D	(XXX)	D: DC Output	Control Type	Blank: without Socket
								D: DC Control	Load Voltage	D: with Socket
								24: 3-28VDC	0.1: 0.1A	
								48: 3-58VDC	2: 2A	
									3: 3A	Control Voltage
									4: 4A	5: 4-6VDC
										12: 9.6-14.4VDC
										24: 19.2-28.8VDC
										48: 38.4-57.6VDC
										60: 48-72VDC
										Customized Code



KSOD...D Series DC Output

Output: DC Output
Voltage Range: 100VDC, 200VDC, 400VDC
Current Range: 2A, 3A, 5A, 10A, 16A



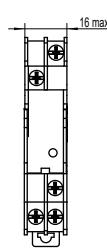
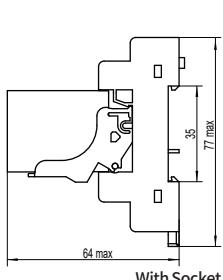
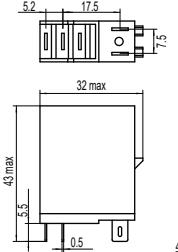
►Part numbers available are listed in the table below.

KSOD	100	D	2	-W	D	(XXX)	Control Type	Control Voltage	Customized Code
							D: DC Control	W: 4-32VDC	

Load Voltage
100: 100VDC
200: 200VDC
400: 400VDC

Load Current
2: 2A
3: 3A
5: 5A
10: 10A
16: 16A

Blank: without Socket
D: with Socket



	3A	5A	10A	16A
100VDC	KSOD100D3-W(D)	KSOD100D5-W(D)	KSOD100D10-W(D)	KSOD100D16-W(D)
200VDC		KSOD200D5-W(D)		
400VDC	KSOD400D3-W(D)			

KSODB...D Series DC Output (Normally Closed)

Output: DC Output
Voltage Range: 100VDC
Current Range: 3A

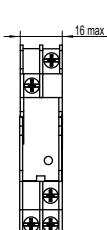
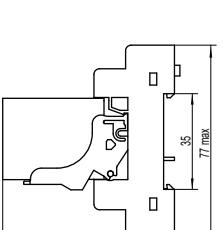
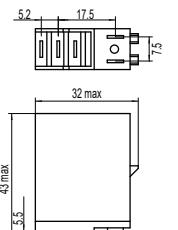


KSODB	100	D	3	-W	D	(XXX)	Control Type	Control Voltage	Customized Code
							D: DC Control	W: 4-32VDC	

Load Voltage
100: 100VDC

Load Current
3: 3A

Blank: without Socket
D: with Socket

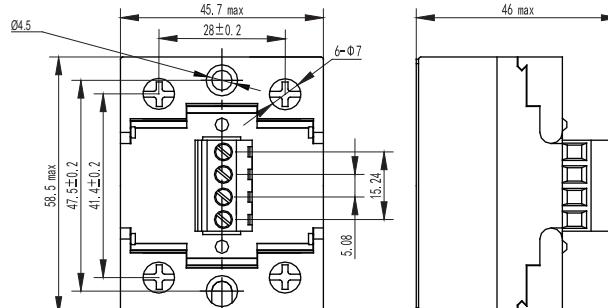


KSJD Series DC Motor Control

Output: DC Output
Voltage Range: 8-28.8VDC
Current Range: 10A, 40A



KSJD	30	D	10	-24	(XXX)
Control Type D: DC Control	Load Voltage 30: 8-28.8VDC	Control Voltage 24: 24VDC			
	Load Current 10: 10A 40: 40A				Customized Code

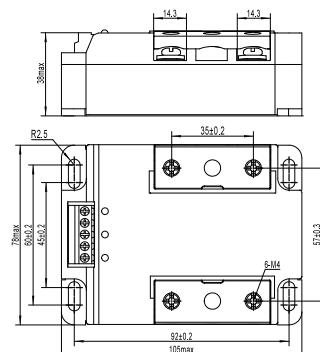


KSJR Series DC Motor Control

Output: DC Output
Voltage Range: 12-28.8VDC, 12-60VDC
Current Range: 40A, 60A, 75A



KSJR	30	D	75	-24	(XXX)
Control Type D: DC Control	Load Voltage 30: 12-28.8VDC 60: 12-60VDC	Control Voltage 24: 24VDC			
	Load Current 40: 40A 60: 60A 75: 75A				Customized Code



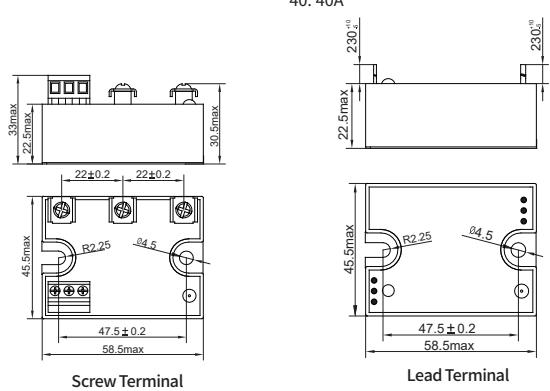
KMC Series Single Phase Motor Control

Output: AC Output
Voltage Range: 24-440VAC
Current Range: 10A, 20A, 40A



► Only screw terminal products have 40A specifications and Common anode.

KMC	380	D	10	P	-24	(XXX)
Control Type D: DC Control	Blank: Common Cathode P: Common Anode	Control Voltage 12: 12VDC 24: 24VDC				Customized Code 130: Lead Terminal Blank: Screw Terminal
Load Voltage 380: 24-440VAC	Load Current 10: 10A 20: 20A 40: 40A					

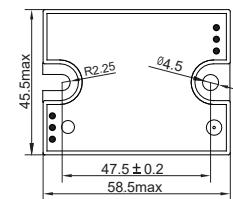
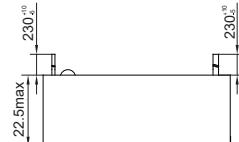


KMGC Series Single Phase Motor Control

Output: AC Output
Voltage Range: 24-440VAC
Current Range: 10A, 20A



KMGC	380	D	10	-24	(XXX)
Control Type D: DC Control	Load Voltage 380: 24-440VAC	Load Current 10: 10A 20: 20A	Control Voltage 12: 12VDC 24: 24VDC	Customized Code	

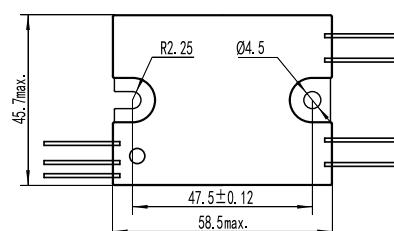


KMGB Series Three Phase Motor Control

Output: AC Output
Voltage Range: 24-510VAC
Current Range: 10A, 20A



KMGB	480	D	10	R	-24	(XXX)
Control Type D: DC Control	Load Voltage 480: 24-510VAC	Load Current 10: 10A 20: 20A	Switching Mode R: Random-on	Control Voltage 12: 12VDC 24: 24VDC	Customized Code	

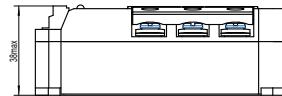
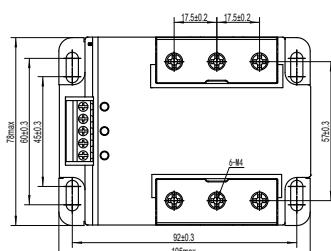


KMG Series Three Phase Motor Control

Output: AC Output
Voltage Range: 24-510VAC
Current Range: 50A, 75A



KMG	480	D	50	R	-24	F	(XXX)
Control Type D: DC Control	Load Voltage 480: 24-510VAC	Load Current 50: 50A 75: 75A	Switching Mode R: Random-on	Control Voltage 12: 12VDC 24: 24VDC	F: Three Phase Switch	Customized Code	

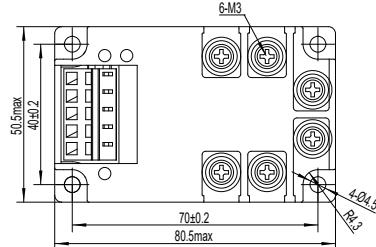
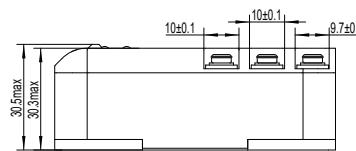


Motor Reversing

KMGM Series Three Phase Motor Control

Output: AC Output
Voltage Range: 24-440VAC
Current Range: 25A

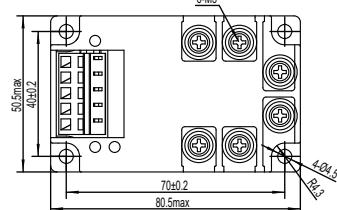
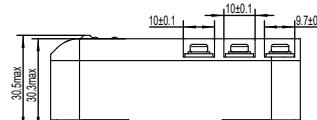
KMGM	480	D	25	R	P	-24	F	(XXX)
Load Voltage 480: 24-440VAC	Load Current 25: 25A	Switching Mode Blank: Common Cathod P: Common Anode	Control Voltage 12: 12VDC 24: 24VDC	Customized Code				



KMTYM Series MiNi Three Phase Motor Control

Output: AC Output
Voltage Range: 24-440VAC
Current Range: 15A, 25A

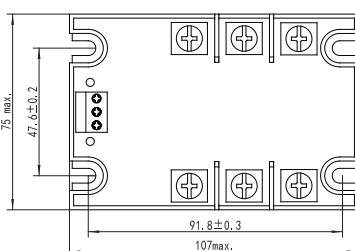
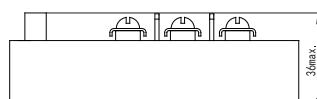
KMTYM	380	D	25	R	P	-24	F	-N	(XXX)
Load Voltage 380: 24-440VAC	Load Current 15: 15A 25: 25A	Switching Mode Blank: Zero Crossing R: Random-on	Control Voltage 24: 10-32VDC	N:Without Automatic Phase Correction Function					



KMS Series Three Phase Motor Control

Output: AC Output
Voltage Range: 24-440VAC, 24-530VAC
Current Range: 25A, 40A

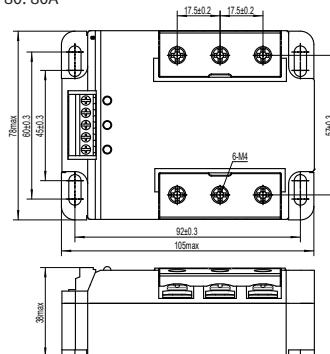
KMS	480	D	25	P	-24	F	(XXX)
Load Voltage 380: 24-440VAC 480: 24-530VAC	Load Current 25: 25A 40: 40A	Control Type D: DC Control	Blank: Common Cathod P: Common Anode	F: Three Phase Switch Blank: Two Phase Switch	Control Voltage 24: 10-32VDC	Customized Code	



KMTY Series Three Phase Motor Control

Output: AC Output
Voltage Range: 24-530VAC, 24-660VAC
Current Range: 25A, 40A, 60A, 80A

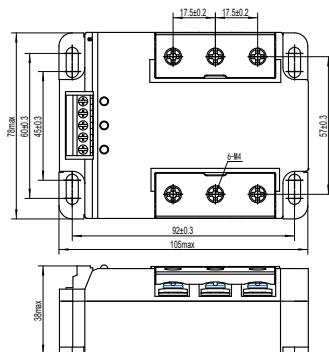
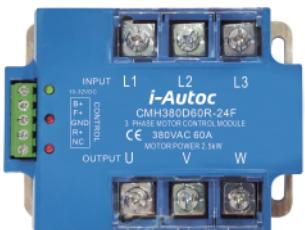
KMTY	480	D	25	R	P	-24	F	-N	(XXX)
Load Voltage				Switching Mode			Control Voltage		
480: 24-530VAC				Blank: Zero Crossing			24: 10-32VDC		
600: 24-660VAC				R: Random-on					
Load Current									
25: 25A									
40: 40A									
60: 60A									
80: 80A									
Blank: Common Cathod									
P: Common Anode									
F: Three Phase Switch									
Blank: Two Phase Switch									
Customized Code									



CMH Series Three Phase Motor Control

Output: AC Output
Voltage Range: 300-530VAC
Current Range: 25A, 40A, 60A

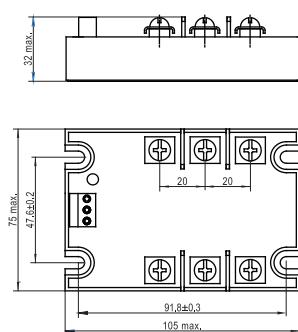
CMH	380	D	25	R	-24	F	T	(XXX)
Load Voltage				Switching Mode				
380: 300-440VAC				Blank: Random-on				
Load Current				R: Random-on				
25: 25A								
40: 40A								
60: 60A								
Control Voltage								
24: 24VDC								
Customized Code								



KMT Series Three Phase Motor Control

Output: AC Output
Voltage Range: 24-440VAC, 24-530VAC
Current Range: 25A, 50A

KMT	380	D	50	R	P	-24	(XXX)
Load Voltage				Switching Mode			Control Voltage
380: 24-440VAC				Blank: Random-on			24: 24VDC
480: 24-530VAC				R: Random-on			
Load Current							
25: 25A							
50: 50A							
Blank: Common Cathod							
P: Common Anode							
Customized Code							

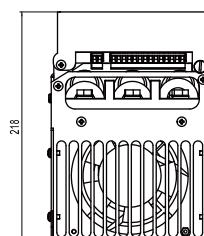
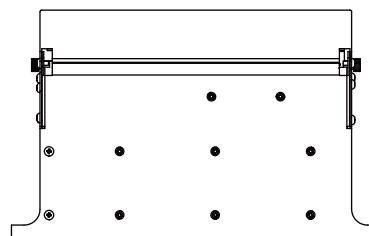
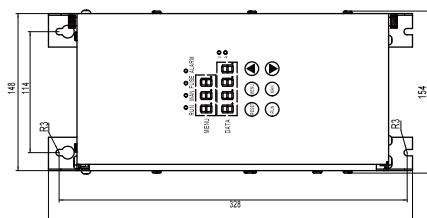


KRH Three Phase Power Regulator

Output: AC Output
Voltage Range: 176-440VDC, 24-530VDC
Current Range: 120A, 150A



KRH	380	E	120	M	-T3	(XXX)
Load Voltage 380:176-440VAC		Load Current 120:120A 150:150A		T3: 3 Phase 3 Control		
Control Type E: Cycle Output or Phase Shift Output (Optional)		Characteristic Functions Load disconnection alarm Fuse break alarm Phase loss alarm Overcurrent alarm Output settings of max, constant current and voltage Max. output percentage setting SCR fault detection Over temperature alarm Transformer load setting Soft start, Soft off, Soft raise, Soft down		Customized Code		



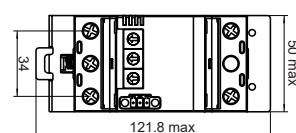
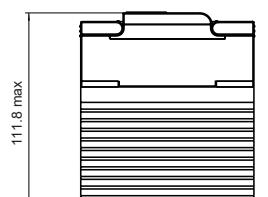
Voltage Regulator

KRB Bus Communication Intelligent Voltage Regulator

Output: AC Output
Voltage Range: 150-240VAC, 300-440VAC
Current Range: 40A



KRB	240	D	40	-C	(XXX)
Load Voltage 240: 150-240VAC 380: 300-440VAC		Control Type D: DC Control		C: Current Monitoring Detect Function	
Load Current 40: 40A				Customized Code	

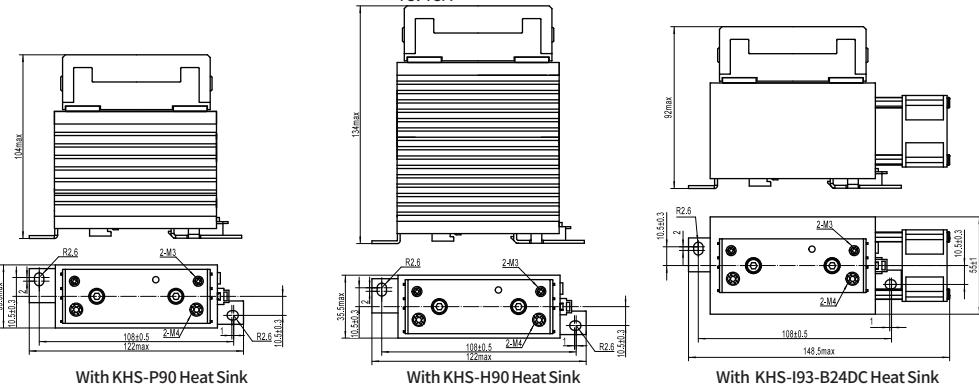


KRF Series Single Phase Voltage Regulator

Output: Power Proportion
Voltage Range: 176-440VAC, 300-530VAC
Current Range: 25A, 50A, 75A



KRF	380	I	25	P	(XXX)	-P
Control Type I: 4-20mA	Load Voltage 380: 176-440VAC 480: 300-530VAC	Output Type P: Power Proportion	Heat Sink P: KHS-P90 Heat Sink H: KHS-H90 Heat Sink IF24DC: KHS-I93-B24DC	Customized Code		

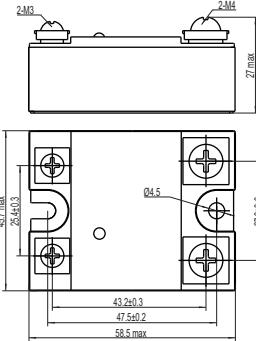


KWR Series Single Phase Voltage Regulator

Output: AC Output
Voltage Range: 24-530VAC
Current Range: 10A, 25A, 40A, 60A, 80A, 100A



KWR	480	F	40	-L	(XXX)
Load Voltage 480: 24-530VAC	Load Current 10: 10A 25: 25A 40: 40A 60: 60A 80: 80A 100: 100A	Customized Code	Regulating Potentiometer F: 150K/2W G: 220K/2W H: 470K/2W	L: LED	

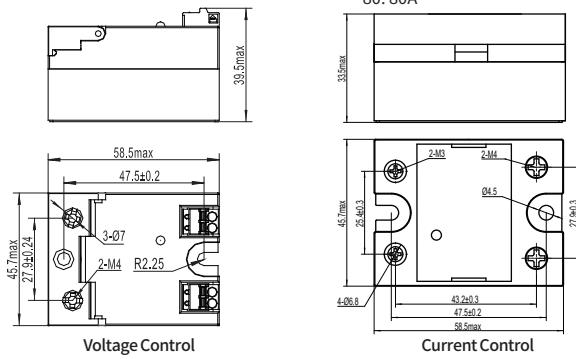


KYR Series Single Phase Voltage Regulator

Output: AC Output
Voltage Range: 176-440VAC, 300-530VAC
Current Range: 25A, 40A, 60A, 80A



KYR	P	240	L	25	P	(XXX)
Output Type P: Power Proportional Output	Control Type L: 0-5VDC H: 0-10VDC I: 4-20mA W: PWM	Load Voltage 240: 176-280VAC 380: 176-440VAC 480: 300-530VAC	Load Current 25: 25A 40: 40A 60: 60A 80: 80A	Customized Code	P: IP20	



Voltage Regulator

CRA Series Single Phase Voltage Regulator

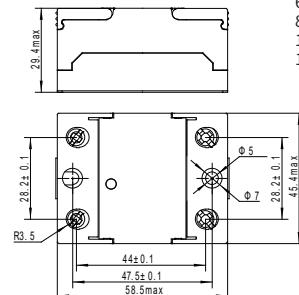
Output: Power Proportion
Voltage Range: 176-440VAC, 300-530VAC
Current Range: 25A, 40A, 60A, 80A, 100A, 125A



► Part numbers available are listed in the table below.

CRA	380	I	25	P	Control Type I: 4-20mA	Output Type P: Power Proportion
					Load Voltage 380: 176-440VAC 480: 300-530VAC	

CRA	380	I	25	P	Load Current 25: 25A 40: 40A 60: 60A 80: 80A 100: 100A 125: 125A	Customized Code



	25A	40A	60A	80A	100A	125A
380VAC	CRA380I25P	CRA380I40P	CRA380I60P	CRA380I80P	CRA380I100P	CRA380I125P
480VAC			CRA480I60P	CRA480I80P	CRA480I100P	CRA480I125P

CRB Series Single Phase Voltage Regulator

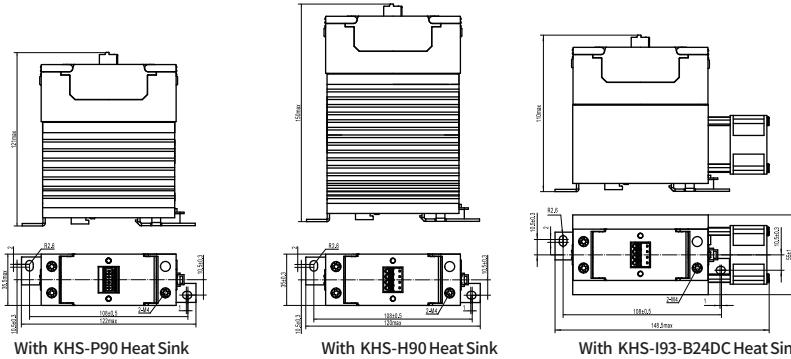
Output: Power Proportion
Voltage Range: 176-440VAC, 300-530VAC
Current Range: 25A, 50A, 75A



► Part numbers available are listed in the table below.

CRB	380	L	25	P	Control Type L: 4-20mA or 0-5VDC H: 4-20mA or 0-10VDC	Output Type P: Power Proportion
					Load Voltage 380: 176-440VAC 480: 300-530VAC	Heat Sink P: KHS-P90 Heat Sink H: KHS-H90 Heat Sink IF24DC: KHS-I93-B24DC

CRB	380	L	25	P	Load Current 25: 25A 50: 50A 75: 75A	Customized Code



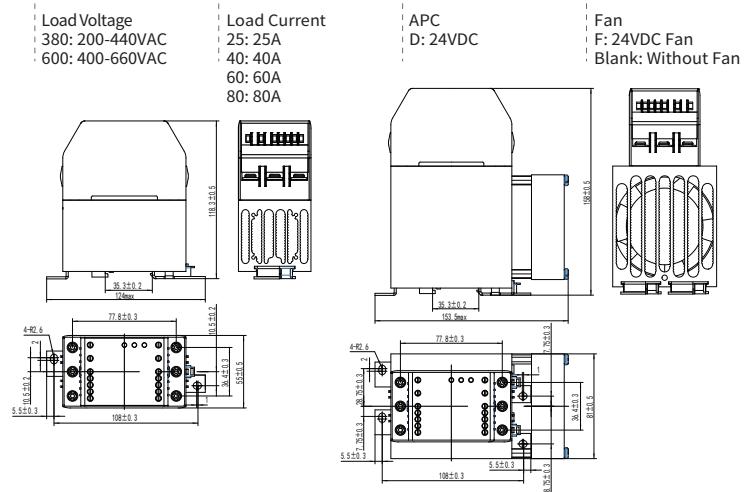
KRE Series Three Phase Voltage Regulator

Output: Power Proportion, Cycle
Voltage Range: 200-440VAC, 400-660VAC
Current Range: 25A, 40A, 60A, 80A



► 3 Phase 2 Control product output type only cycle output.

KRE	600	W	25	P	-D	M	F	-3	Control Type W: 4-20mA 0-5VDC 0-10VDC	Proportional Output: P: Power Proportion C: Cycle	Characteristic Functions M: Over-temperature Protection (Optional) SCR Fault Detection Function Load Disconnection Detection Function Phase-lack Detection Function EMR Alarm Output	3: 3 Phase 3 Control 2: 3 Phase 2 Control
									Load Voltage 380: 200-440VAC 600: 400-660VAC	Load Current 25: 25A 40: 40A 60: 60A 80: 80A	APC D: 24VDC	Fan F: 24VDC Fan Blank: Without Fan

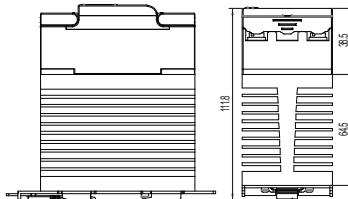
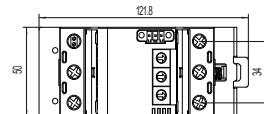
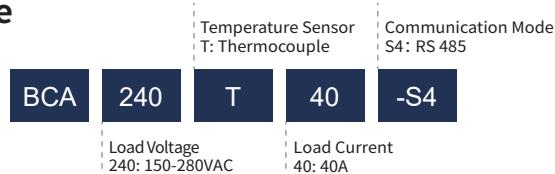


KRE...25... Series

KRE...(40, 60, 80)...F... Series

BCA Series Temperature Control Module

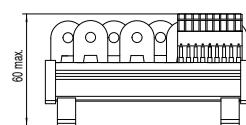
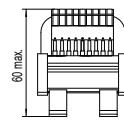
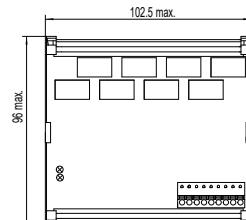
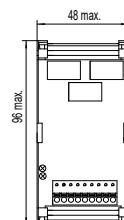
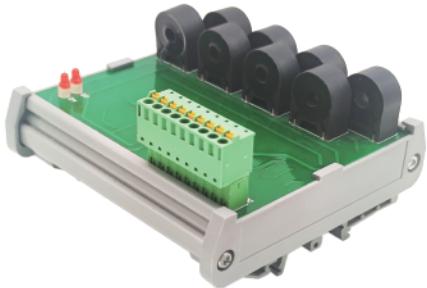
Voltage Range: 150-280VAC, 300-440VAC
Current Range: 40A



DRC Series Mod-Bus Current Detection Module

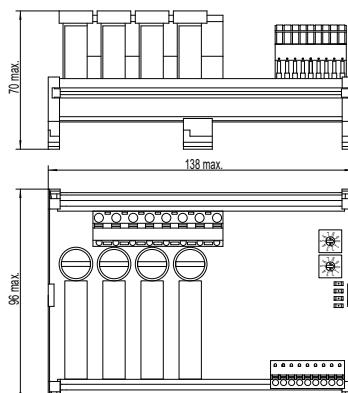
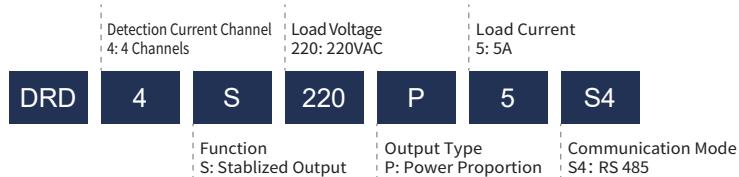
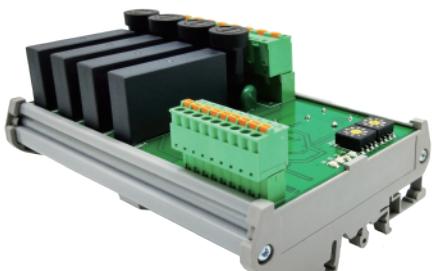
Detection Current Channel: 3 Channels
8 Channels

Current Range: 5A, 20A, 40A



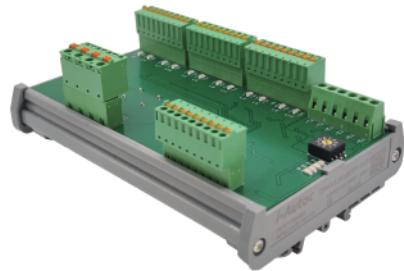
DRD Series Intelligent Module Voltage Regulator

Detection Current Channel: 4 Channels
Voltage Range: 220VAC
Current Range: 5A

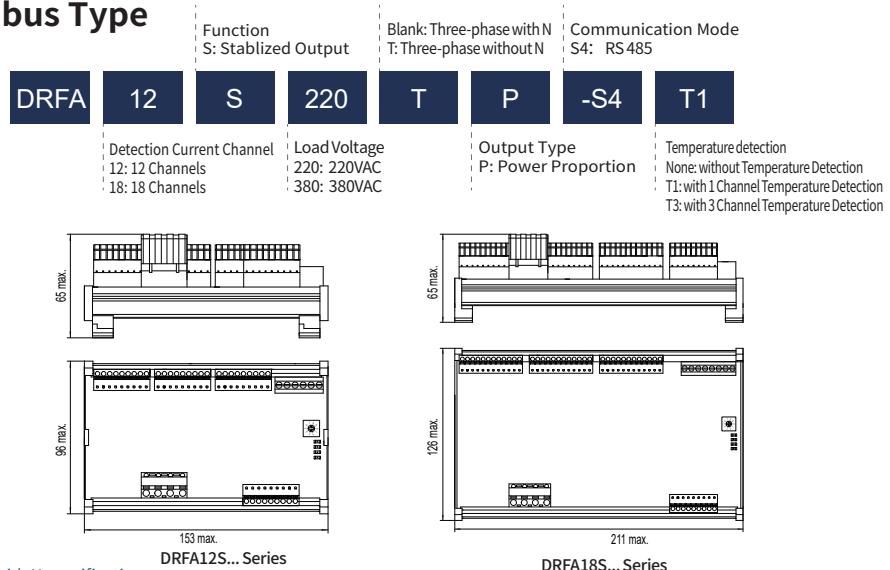


DRFA Series Multi-channel Mod-bus Type Control Voltage Regulator

Detection Current Channel: 12 Channels
18 Channels
Voltage Range: 220VAC, 380VAC

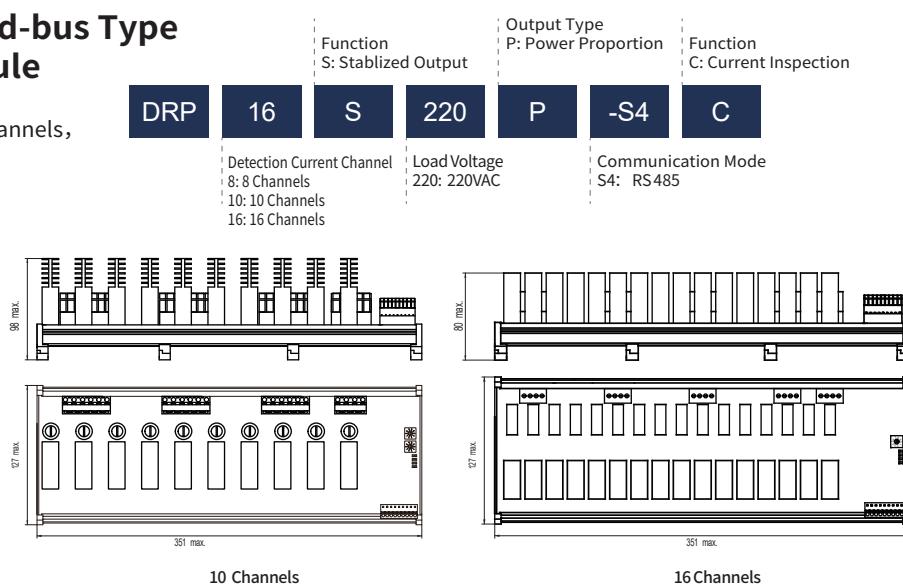
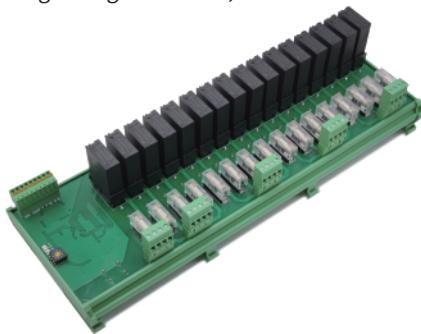


► Load voltage 220V products only three-phase with N specifications.

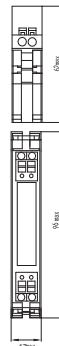
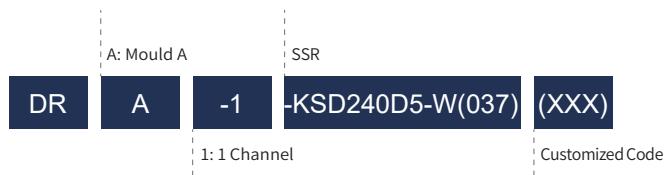


DRP Series Multi-channel Mod-bus Type Type Voltage Regulator Module

Detection Current Channel: 8 Channels, 10 Channels,
16 Channels
Voltage Range: 220VAC, 380VAC

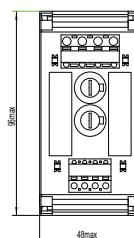
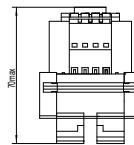
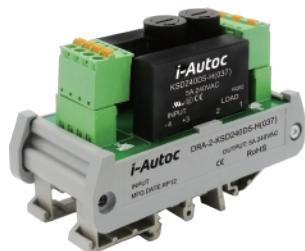


DRA-1-KSD Series 1 Channel AC Output



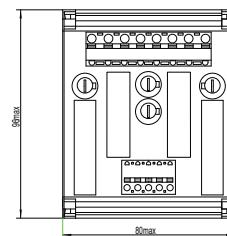
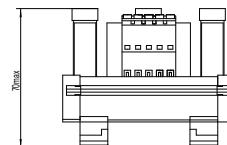
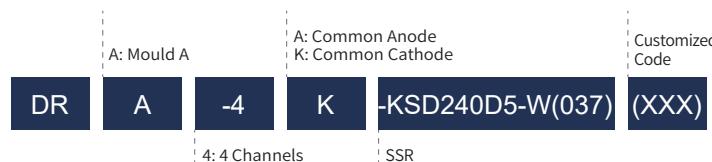
►UL,CCC certification only for SSR.

DRA-2-KSD Series 2 Channels AC Output



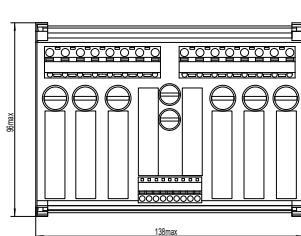
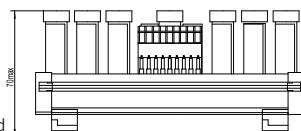
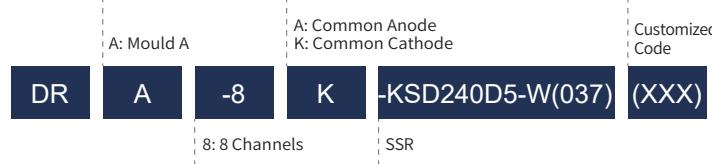
►UL,CCC certification only for SSR.

DRA-4-KSD Series 4 Channels AC Output



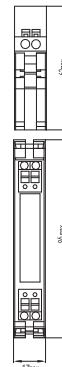
►UL,CCC certification only for SSR.

DRA-8-KSD Series 8 Channels AC Output

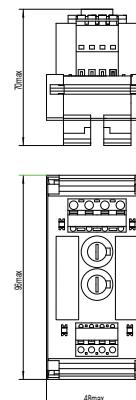


►UL,CCC certification only for SSR.

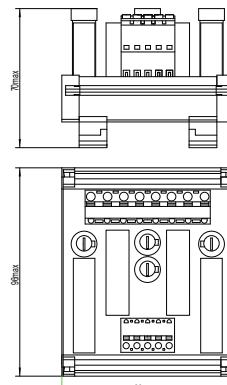
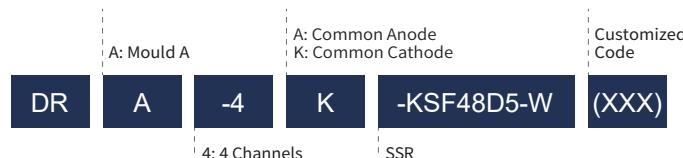
DRA-1-KSF Series 1 Channel DC Output



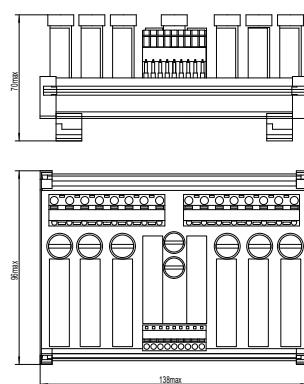
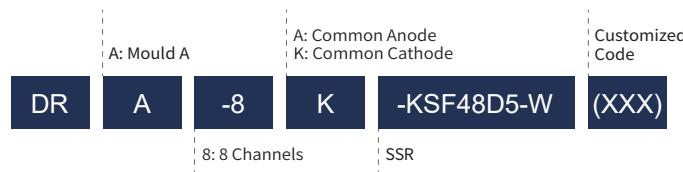
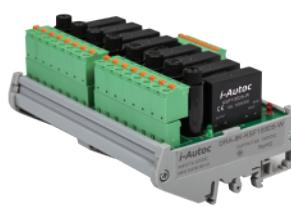
DRA-2-KSF Series 2 Channels DC Output



DRA-4-KSF Series 4 Channels DC Output



DRA-8-KSF Series 8 Channels DC Output



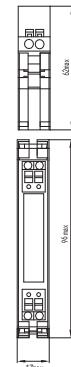
DRA-1-KSLE Series 1 Channel DC Output



DR A -1 -KSLE60D3-L (XXX)

A: Mould A SSR

1: 1 Channel Customized Code



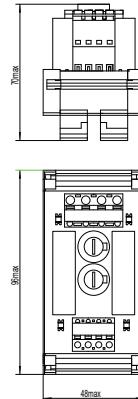
DRA-2-KSLE Series 2 Channels DC Output



DR A -2 -KSLE60D3-L (XXX)

A: Mould A SSR

2: 2 Channels Customized Code



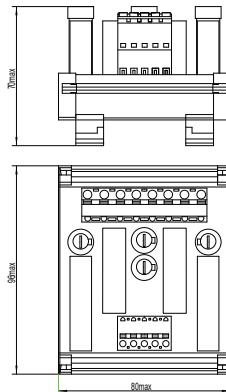
DRA-4-KSLE Series 4 Channels DC Output



DR A -4 K -KSLE60D3-L (XXX)

A: Mould A A: Common Anode
K: Common Cathode SSR

4: 4 Channels Customized Code



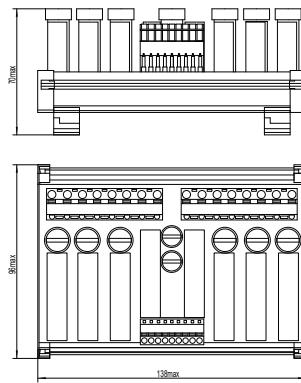
DRA-8-KSLE Series 8 Channels DC Output



DR A -8 K -KSLE60D3-L (XXX)

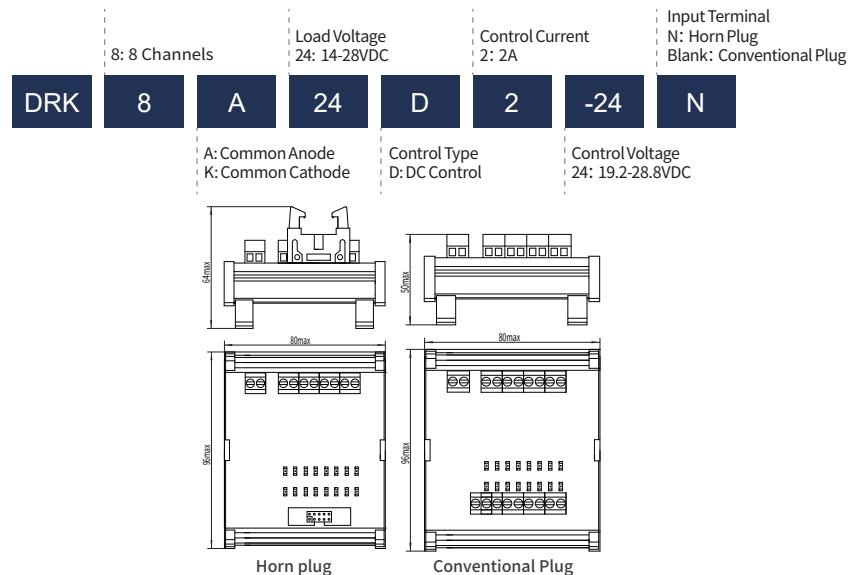
A: Mould A A: Common Anode
K: Common Cathode SSR

8: 8 Channels Customized Code



DRK Series Multiplex Amplifier Module

Channel: 8 Channels
Voltage Range: 14-28VDC

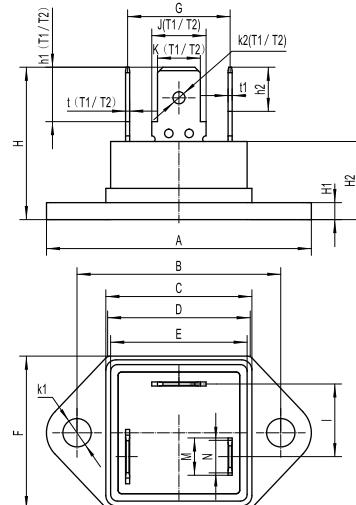


Triac

KTA Series Triac



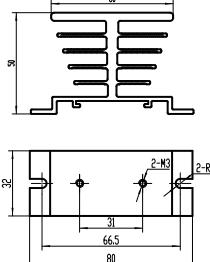
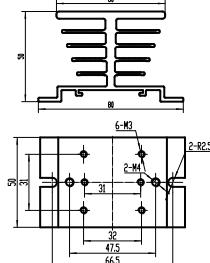
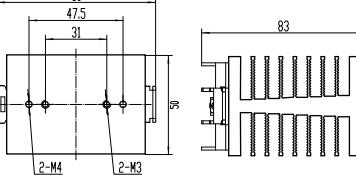
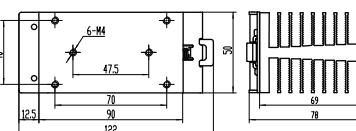
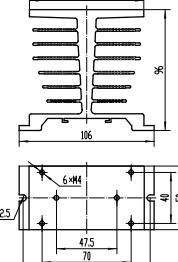
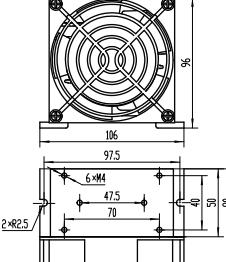
KTA	25	G	-600	BW	(B)	S	T)
Package type	G: TO-3	Trigger Sensitivity	BW: 50mA	Characteristic code	Blank: Standard main electrode terminal		
Load Current	25: 25A	Load Voltage	600: 600V	Characteristic code	Blank: Standard main electrode terminal		
40: 40A		800: 800V		Characteristic code	B: Main electrode terminal aperture 3.1mm		
				Characteristic code	Blank: Ferroalloy base plate		
				Characteristic code	B: Brass base plate		
				Characteristic code	Blank: Gate terminal thickness 0.5mm		
				Characteristic code	T: Gate terminal thickness 0.8mm		



Ref.	Dimensions (mm)			Ref.	Dimensions (mm)		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A			39.2	J		8	
B	29.8	30	30.2	K	6.2	6.35	6.5
C			21.7	M		5.5	
D			21.5	N	4.7	4.8	4.9
E			20.5	t		0.8	
F			23	t1		0.5	
H1	2.4	2.5	2.6	h1		8	
H2		11.5		h2		6.5	
H			23.5	k1	Φ4.1	Φ4.2	Φ4.3
G	15.1					Φ1.8	
I	10.7			k2		Φ3.0	Φ3.1
						Φ3.2	

The characteristic code S represents that the aperture k2 of T1 and T2 terminals is 3.1mm, which is suitable for M3 screw installation and wiring.
The characteristic code T represents that the gate terminal thickness t1 is 0.8mm.

KHS Series Heat Sink

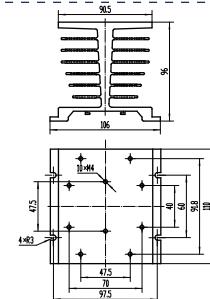
KHS-A32		<p>Surface Treatment: Anode Oxidation (Natural color) Net Weight: 71g Thermal Resistance: 2.8°C/W Outer Dimension: 80mm×50mm×32mm Suitable for: SSR with mounting hole spacing of 31mm, such as KSIM series</p>	
KHS-A50		<p>Surface Treatment: Anode Oxidation (Natural color) Net Weight: 110g Thermal Resistance: 2.1°C/W Outer Dimension: 80mm×50mm×50mm Suitable for: SSR with mounting hole spacing of 31mm or 47.5mm, such as KSI, KSIM series</p>	
KHS-B70-D		<p>Surface Treatment: Anode Oxidation (Natural color) Net Weight: 329g Thermal Resistance: 1.9°C/W Outer Dimension: 50mm×83mm×81mm Suitable for: SSR with mounting hole spacing of 31mm or 47.5mm, such as KSIM, KSI series</p>	
KHS-B90-D		<p>Surface Treatment: Anode Oxidation (Natural color) Net Weight: 420g Thermal Resistance: 1.7°C/W Outer Dimension: 50mm×78mm×122mm Suitable for: SSR with mounting hole spacing of 47.5mm or 40mm×70mm, such as KSI or KMTYM series</p>	
KHS-D50		<p>Surface Treatment: Anode Oxidation (Natural color) Net Weight: 334g Thermal Resistance: 1.6°C/W Outer Dimension: 96mm×106mm×50mm Suitable for: SSR with mounting hole spacing of 47.5mm, 40mm×70mm, such as KSI, KMTYM series</p>	
KHS-D50-F		<p>Surface Treatment: Anode Oxidation (Natural color) Net Weight: 616g Thermal Resistance: 0.6°C/W Outer Dimension: 96mm×106mm×80mm Suitable for: SSR with mounting hole spacing of 47.5mm, 40mm×70mm, such as KSI, KMTYM series</p>	

KHS Series Heat Sink

KHS-D110



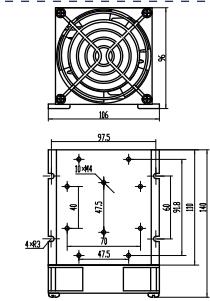
Surface Treatment:
Anode Oxidation (Natural color)
Net Weight:
736g
Thermal Resistance:
0.8°C/W
Outer Dimension:
96mm × 106mm × 110mm
Suitable for:
SSR with mounting hole spacing of
47.5mm, 40mm × 70mm,
47.5mm × 91.8mm, such as KSI,
KMTYM, KSQF series



KHS-D110-F



Surface Treatment:
Anode Oxidation (Natural color)
Net Weight:
1018g
Thermal Resistance:
0.35°C/W
Outer Dimension:
96mm × 106mm × 140mm
Suitable for:
SSR with mounting hole spacing of
47.5mm, 40mm × 70mm,
47.5mm × 91.8mm, such as KSI,
KMTYM, KSQF series

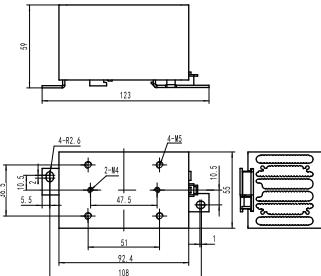


KHS Series Heat Sink

KHS-I93-D-A



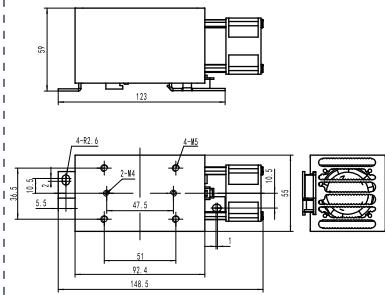
Surface Treatment:
Anode Oxidation (Natural color)
Net Weight:
346g
Thermal Resistance:
1.6°C/W
Outer Dimension:
123mm×55mm×59mm
Suitable for:
SSR with mounting hole spacing of
47.5mm, such as KSI series



KHS-I93-B24DC-A



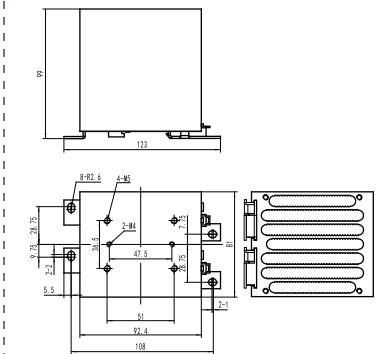
Surface Treatment:
Anode Oxidation (Natural color)
Net Weight:
394g
Thermal Resistance:
0.6°C/W
Outer Dimension:
148.5mm×55mm×59mm
Suitable for:
SSR with mounting hole spacing of
47.5mm, such as KSI series



KHS-J93-D-A



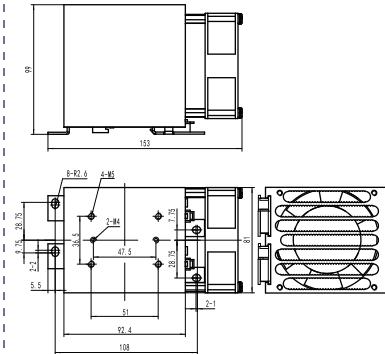
Surface Treatment:
Anode Oxidation (Natural color)
Net Weight:
723g
Thermal Resistance:
0.8°C/W
Outer Dimension:
123mm×81mm×99mm
Suitable for:
SSR with mounting hole spacing of
47.5mm, such as KSI series



KHS-J93-B24DC-A



Surface Treatment:
Anode Oxidation (Natural color)
Net Weight:
821g
Thermal Resistance:
0.35°C/W
Outer Dimension:
153mm×81mm×99mm
Suitable for:
SSR with mounting hole spacing of
47.5mm, such as KSI series

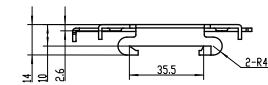


DR Series Din-Rail

DR-1



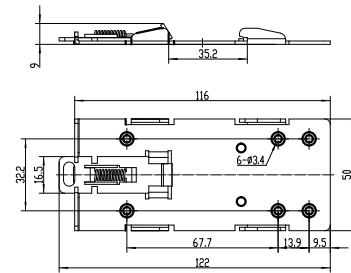
Surface Treatment:
Colored zinc plated
Net Weight:
58g
Outer Dimension:
81mm×45mm×14mm
Suitable Heat Sink:
KHS-B70



DR-3



Surface Treatment:
Colored zinc plated
Net Weight:
76g
Outer Dimension:
122mm×50mm×9mm
Suitable Heat Sink:
KHS-B90

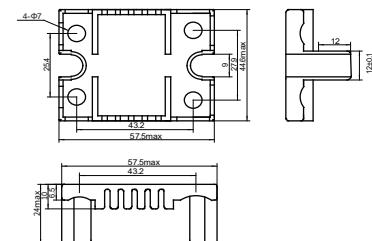


KPC Series Protection Cover

KPC-0A



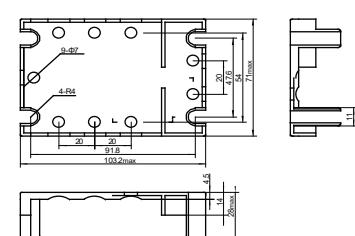
Suitable for Single Phase Relay, such as KSI, KSJ, KWR.



KPC-1A



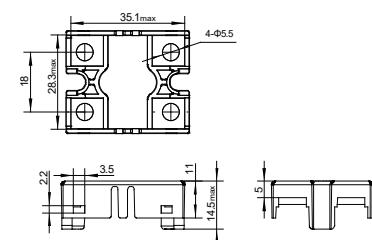
Suitable for Three Phase Relay, such as KMT, KMS.



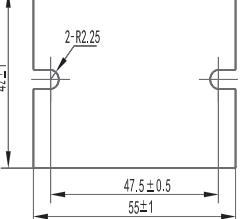
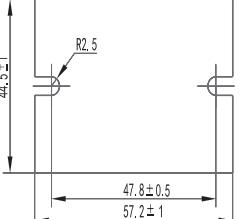
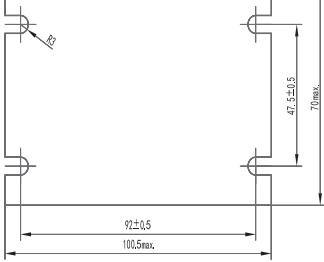
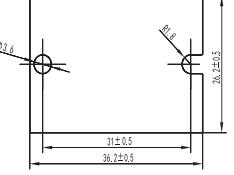
KPC-2A



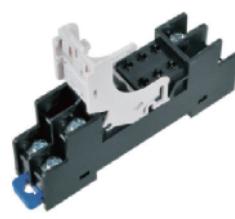
Suitable for Mini Single Phase Relay, such as KSIM, KSJM.



KTP Series Thermal Pad

KTP-0 (Non-adhesive)		Suitable for Single Phase Relay, such as KSI, KSJ.	
KTP-0A (Adhesive)		Suitable for Single Phase Relay, such as KSI, KSJ.	
KTP-1 (Non-adhesive)		Suitable for Three Phase Relay, such as KMS, KMTY, KSQF.	
KTP-2 (Non-adhesive)		Suitable for Mini Single Phase Relay, such as KSIM, KSJM.	

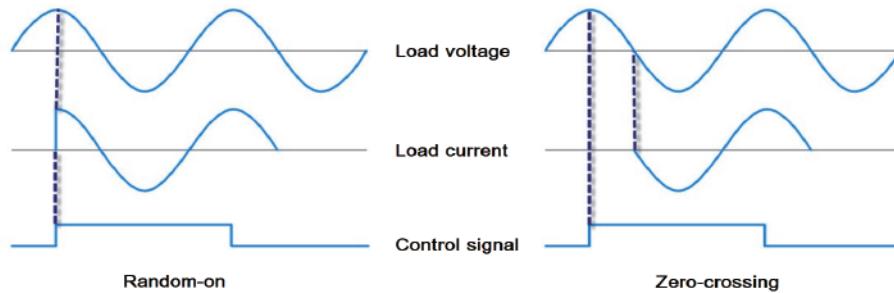
KPD Series Socket

KPD-1A		KPD-3A	 Suitable for KSG, KSGD
KPD-4A	 Suitable for KSG3R, KG3RD	KPD-5A	 Suitable for KSO, KSOB, KSOD, KSODB
KPD-6A	 Suitable for KSO, KSOB, KSOD, KSODB		

1. What's the difference between zero crossing and random-on solid state relay?

Zero crossing: When there is a control signal, the load is connected at the zero-crossing point of AC voltage. Its advantage is that it can suppress the generation of electromagnetic noise and reduce the impact on the power grid. It is recommended for general applications.

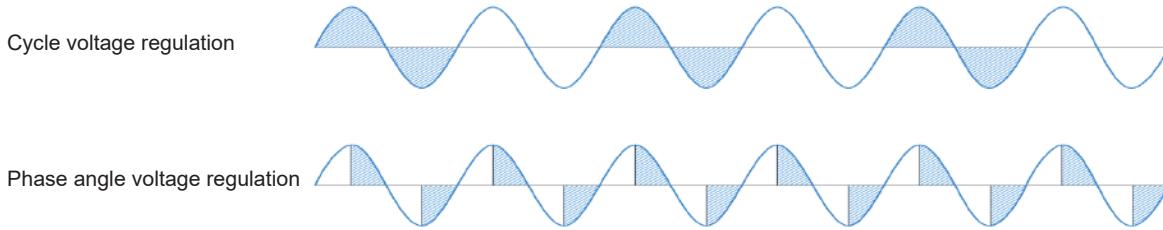
Random-on: When there is a control signal, the load is switched on immediately (at any AC voltage), which is mainly used in dimming and speed regulating applications.



2. What's the difference between cycle voltage regulation and phase angle voltage regulation?

Cycle voltage regulation: The voltage regulation module is controlled by on or off, the on / off time interval is multiple of power grid cycle, and the output power is adjusted by duty cycle. The advantage of the cycle voltage regulation is to be able to turn on/off the machine at the zero-crossing point in order to reduce the impact on the power grid.

Phase angle voltage regulation: The output voltage is controlled by adjusting the conduction angle of every half cycle.



3. Suggestion for the AC load control.

For AC output SSR, there are two switching modes zero-crossing and random-on. Except for some special application (for example phase angle control must apply random-on switching mode), zero-crossing SSR is recommended for resistive, capacitive, lighting control and small inductive loads. Random-on SSR is recommended for the inductive loads with power factor less than 0.8, or when there is a need to have the phase angle control. If there is any special requirement, please contact us for further technical support.

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

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

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

Considering the ambient temperature, heat dissipation and other conditions, it is recommended to choose the rated current as 1.4-1.6 times of the exact load current when it is a resistive load.

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

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

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

When the motor turns on, the surge current could be 5-7 times of steady-state current and it will last for several seconds. Please consider the derating and contact with our technical team when choose the solid state relay for inductive load.

6. How to choose an appropriate MOV for overvoltage protection?

SSR is used for various applications, overvoltage may occur during its operation. We can use MOV to suppress the transient voltage on the output terminals to reduce 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 overvoltage 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 our regular SSR.

In order to protect the SSR, we recommend to series connect a fast fuse to the load circuit.

8. Ingress Protection (IP) protection level

The IP rating normally has two (or three) numbers:

Protection from solid objects or materials

Protection from liquids (water)

Protection against mechanical impacts (commonly omitted, the third number is not a part of IEC 60529)

For example, IP20 is used to prevent the human body from touching the terminal directly but not waterproof grade.

9. 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 freewheeling diode in reverse parallel across the load. Capacitive load will produce very high surge current at the moment of conduction, which may lead to the damage of solid state relay due to the excessive surge current. Therefore, if the actual load is capacitive, or the load has paralleled large capacitance, it is strongly recommended that NTC should be connected in series in the load loop to suppress surge current in order to avoid damage to the product.

10. 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. Therefore, it is recommended to choose SSR without RC for small power load.

11. Can SSR be used in parallel?

Yes, AC output SSR is not recommended for parallel output. DC output SSR with output in parallel can increase the total current carrying capacity.

12. Can SSR output be used in series?

NO.

13. Can AC output SSR be applied to DC load?

No. SCR is usually used as power switch component for AC output SSR, and SCR is self-closing device at zero cross point, so it can only work under AC load.

14. Can DC output SSR be applied to AC loads?

No. AC load is usually controlled by AC output SSR. If you need DC output SSR for control, please contact us.

15. Why do I need to use a heat sink with an SSR? How to select an appropriate heatsink?

When an SSR is on, the SSR will generate heat due to the forward voltage drop across the output. Heat dissipation is an important issue in the use of SSR because it is directly affecting the max. load current and max. allowable ambient temperature of SSR. Usually, the user needs to fix the SSR firmly on the heatsink with a thermal pad or silicone grease in order to improve the heat dissipation performance. For high temperature operation, forced air cooling is also needed.

We can use a formula to calculate the heat dissipation.

$$T_j - T_a = P \cdot R_{ja}$$

T_j is junction temperature (°C)

T_a is ambient temperature (°C)

P is total power consumption (W)

R_{ja} is thermal resistance from core to environment of power device (°C / W)

Thermal resistance of SSR is composed of two parts: R_{ja} = R_{jc} + R_{ca}

R_{jc} is thermal resistance of junction to case

R_{ca} is thermal resistance from case to the ambient

We take a relay as example. The R_{jc} of this product is about 1.7°C/W and R_{ca} is about 8.5°C/W. the maximum allowable junction temperature is 125°C and the power consumption is P = U * I. when the current is 10A below, the voltage drop of the product is about 1.1V. When the product is not operating with a heatsink, 125 - Ta = 1.1 * I * (1.7 + 8.5).

According to the above formula, the maximum load current of the product without heatsink is 8.9A at 25°C and 5.8A at 60°C.

To select the proper sized heat sink, you need to know two 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.

If you have any questions, please consult our technical staff.

www.i-autoc.com

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