Product Description

- Load Current: 25A、50A、75A、90A、125A
- SCR Output
- Control Model: 0-5VDC、0-10VDC、4-20mA、PWM
- Phase-Shift or Cyclic Output
- LED Indicator
- RoHS Compliant





Pending

Product Selection[1]

KRI	240	I	25	P	-D	E	(XXX)
KRI Series	Load Voltage 240: 176~280VAC 480: 176~530VAC	Control Mode V:0-5V/0-10V I: 4-20mA L: 0-5V H: 0-10V W: PWM	Load Current 25:25A 50:50A 75:75A 90:90A 125:125A	Output Type P: Phase-Shift C: Full cycle	APS D: 24VDC	Enable Function E: Positive triggered enable function Blank: Without enable function	Customized Code

Note: (1) KRI..I..P series without full cycle output, APS & enable function.

Load Voltage Calculation Formula	
Control Mode	**Load Voltage[2]**
L: 0~5VDC	$U_{LOAD}^2=U_{AC}^2\times V_{CONTROL}/5$
H: 0~10VDC	$U_{LOAD}^2=U_{AC}^2\times V_{CONTROL}/10$
I : 4~20mA	$U_{LOAD}^2=U_{AC}^2\times(I_{CON}-4)/16$
W: PWM(@100ms cycle)	$U_{LOAD}^2=U_{AC}^2\times$Duty cycle

Note: (2) U_{LOAD} indicates the voltage at both ends of the load, and U_{AC} indicates the power grid voltage, $V_{CONTROL}$ indicates the control voltage, I_{CON} indicates the control current.

Technical Specifications

Input Specifications (Ta=25°C)	Condition	Symbol	Model	Min	Typ	Max	Unit
Auxiliary Power Supply Voltage				10	12/24	32	VDC
Auxiliary Power Supply Current(Typ)						25	mA
Voltage Control	**Condition**	**Symbol**	**Model**	**Min**	**Typ**	**Max**	**Unit**
Control Voltage		U_c	0-5V	0		5	VDC
			0-10V	0		10	VDC
Turn-on Voltage		$U_{c\,on}$	0-5V			0.15	VDC
			0-10V			0.25	VDC
Turn-off Voltage		$U_{c\,off}$	0-5V	0.05			VDC
			0-10V	0.1			VDC
Current Control[3]	**Condition**	**Symbol**	**Model**	**Min**	**Typ**	**Max**	**Unit**
Control Current		I_c		4		20	mA
Turn-on Current		$I_{c\,on}$				4.9	mA
Turn-off Current		$I_{c\,off}$		4			mA
PWM Control[4]	**Condition**	**Symbol**	**Model**	**Min**	**Typ**	**Max**	**Unit**
Period					100		ms
Amplitude				10	12/24	32	VDC
Control Current		I_c				15	mA

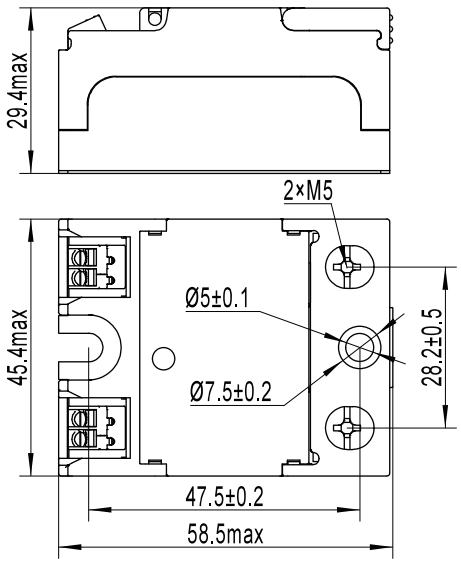
Note: (3) Current control type, the drive voltage should be more than 6V.
(4) Control mode such as other cycles of PWM requirements, can be customized.

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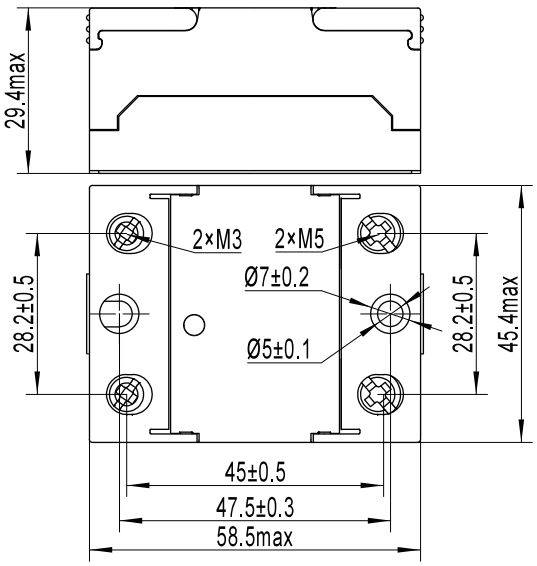
Output Specifications (Ta=25°C)	Condition	Symbol	Model	Min	Typ	Max	Unit
Load Voltage		U_e	240	176		280	VAC
			480	176		530	VAC
Load Current		I_e	25A	0.1		25	A
			50A	0.1		50	A
			75A	0.1		75	A
			90A	0.1		90	A
			125A	0.1		125	A
Off-State Leakage Current	@ Rated Load Voltage	I_{lk}				5	mA
	@220VAC/50Hz				1.6		mA
Operational Frequency		f		47	50/60	63	Hz
Output Power				0		99	%
Transient Overvoltage		U_P	240VAC		600		Vpk
			480VAC		1200		Vpk
Non-repetitive Surge Current	@10ms	I_{TSM}	25A		400		Apk
			50A		720		Apk
			75A		1000		Apk
			90A		1100		Apk
			125A		2250		Apk
Maximum I^2t for Fusing	@10ms	I^2t	25A		800		A^2s
			50A		2592		A^2s
			75A		5000		A^2s
			90A		6050		A^2s
			125A		25000		A^2s
Minimum Off-State dv/dt		dv/dt			1000		V/μs

General Specifications (Ta=25°C)	Condition	Symbol	Model	Min	Typ	Max	Unit
Dielectric Strength	50/60Hz, Input/Output	V_{ISO}			4000		Vrms
	50/60Hz, Input,Output/Base				4000		Vrms
Insulation Resistance	@500VDC	R_{ISO}			1000		MΩ
Operating Temperature		T_{OPR}		-40		+70	℃
Storage Temperature		T_{SPR}		-40		+100	℃
Weight					80		g
LED Indication			Red	When the product is connected, LED lights up			

Outline Dimensions



KRI...I...P Series



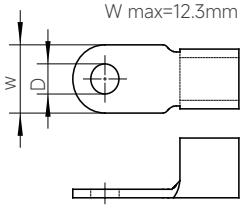
KRI...-D... Series

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Recommendation for wiring:

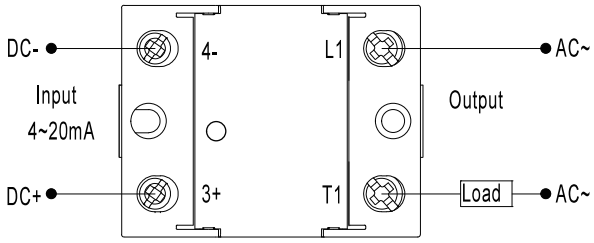
Load current (A)	Wire size (AWG)	Cross section area of wire (mm^2)(5)	DIN 46234 terminal model	Terminal mounting hole size D (mm)	Terminal width W(mm)
15-20	12	2.5	4-6	4.3	8
			5-6	5.3	10
20-35	10	4	4-6	4.3	8
			5-6	5.3	10
25-32	10	6	4-6	4.3	8
			5-6	5.3	10
32-50	8	10	5-10	5.3	10
50-65	6	16	5-16	5.3	11
65-85	4	25	5-25	5.3	12



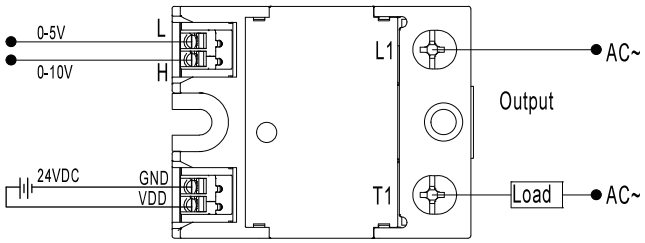


Note: (5) When use the wire cross-sectional area greater than $25mm^2$, we suggest to break it in to two smaller wires and connect them back to back superimposed.

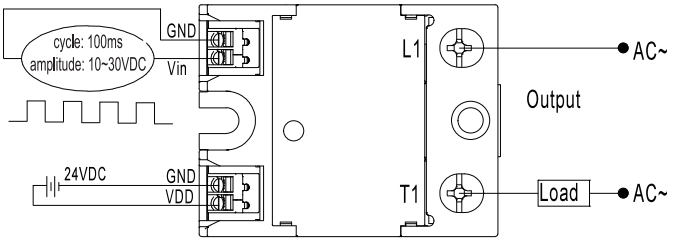
Wiring Diagram



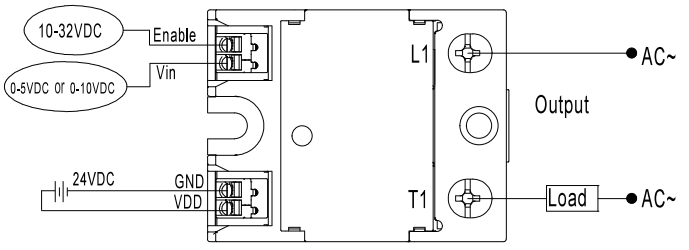
KRI...I...P Series



KRI...V...-D Series



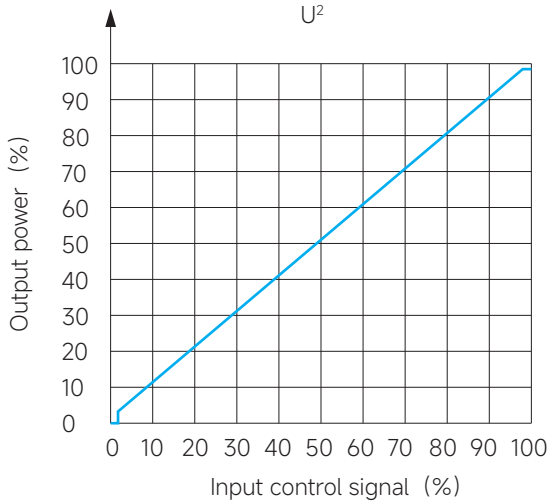
KRI...W...-D... Series

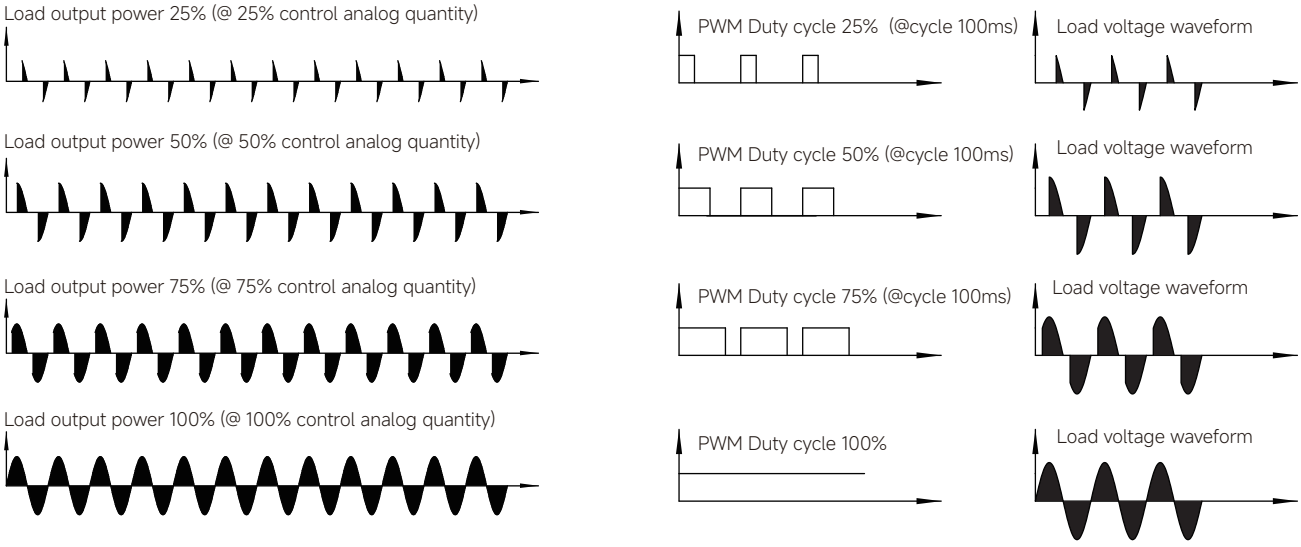


KRI...-DE... Series

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Output / Proportional Control Features





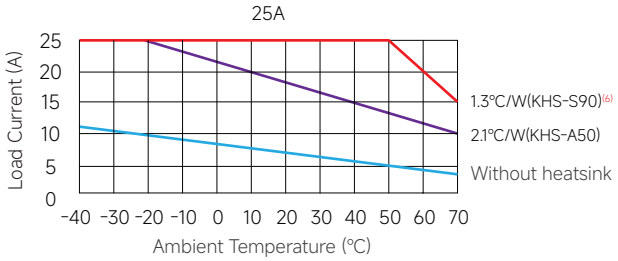
Phase-Shift Output

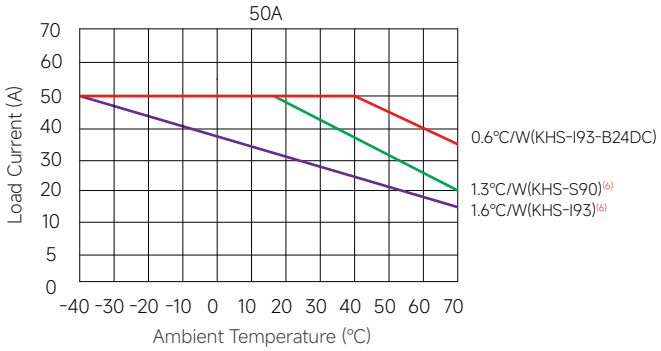
Control Signal	Load Output Power
10% Control Signal	Output power 10%: 1 second for one cycle and 5 sine waves conducting
20% Control Signal	Output power 20%: 1 second for one cycle and 10 sine waves conducting
30% Control Signal	Output power 30%: 1 second for one cycle and 15 sine waves conducting
40% Control Signal	Output power 40%: 1 second for one cycle and 20 sine waves conducting
50% Control Signal	Output power 50%: 1 second for one cycle and 25 sine waves conducting
60% Control Signal	Output power 60%: 1 second for one cycle and 30 sine waves conducting
70% Control Signal	Output power 70%: 1 second for one cycle and 35 sine waves conducting
80% Control Signal	Output power 80%: 1 second for one cycle and 40 sine waves conducting
90% Control Signal	Output power 90%: 1 second for one cycle and 45 sine waves conducting
100% Control Signal	Output power 100%: One cycle lasts for 1 second, with 49 sine waves conducting and 1 10ms half waveguide conducting

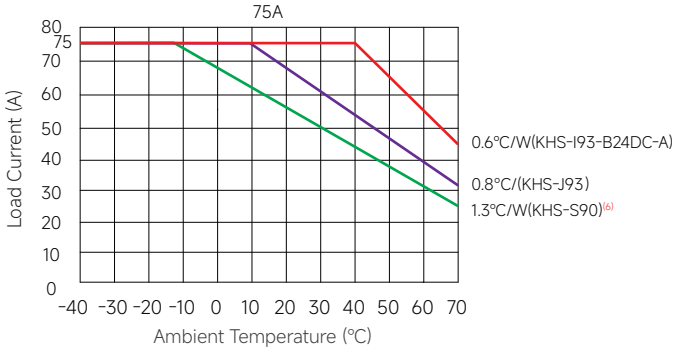
Full Cycle Output

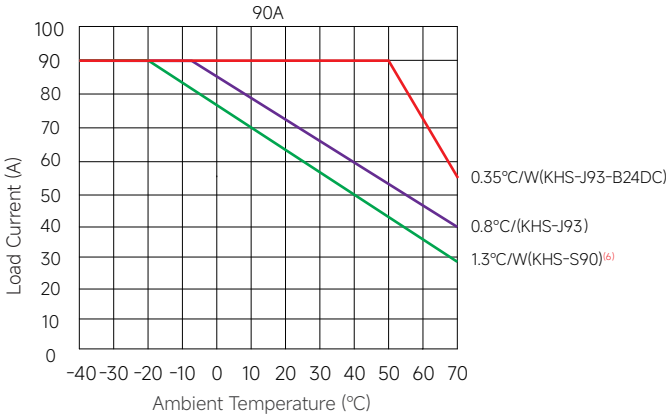
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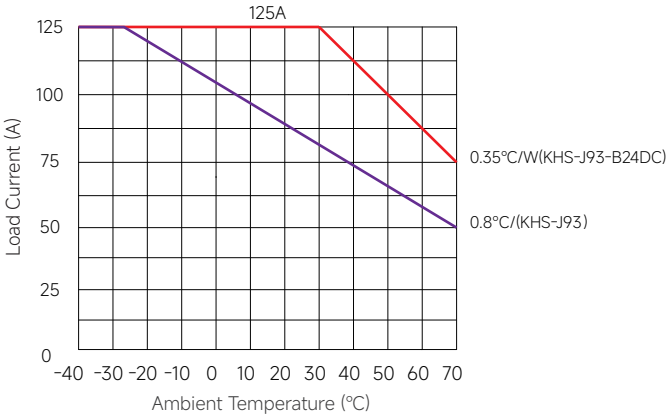
Thermal Derating Curve







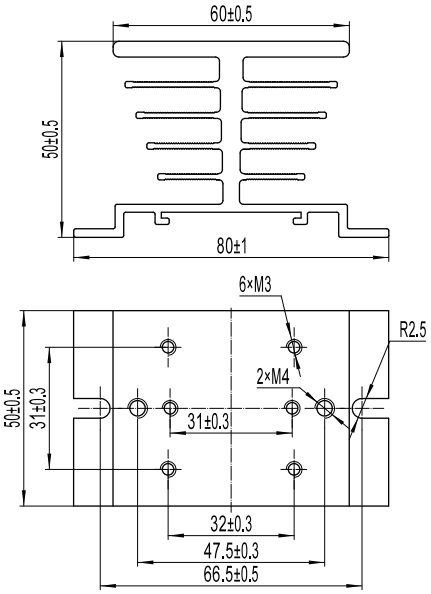




Note: (6) The standard installation direction for the 1.3 °C/W (KHS-S90) radiator is to install the exhaust hole vertically up and down. Installing in other directions will reduce the heat dissipation effect of the radiator.
The curve above shows the heatsink capability under the worst case (100% continuous operation) for a solid state relay. If your application involves intermitent operation, please contact us with your actual operating conditions (load current, on/off time, ambient temperature, etc.), and we will recommend the most suitable solution for you.

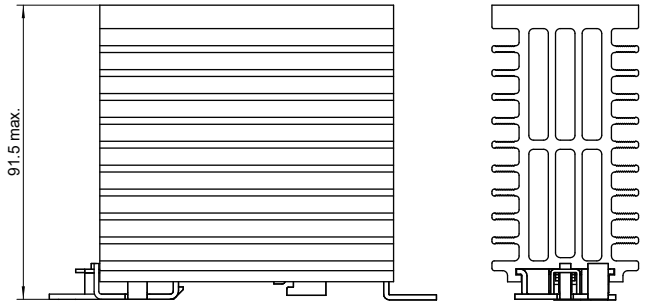
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he above temperature curve is configured with radiator models as follows:

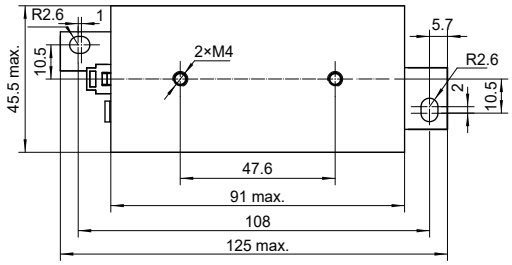




KHS-A50

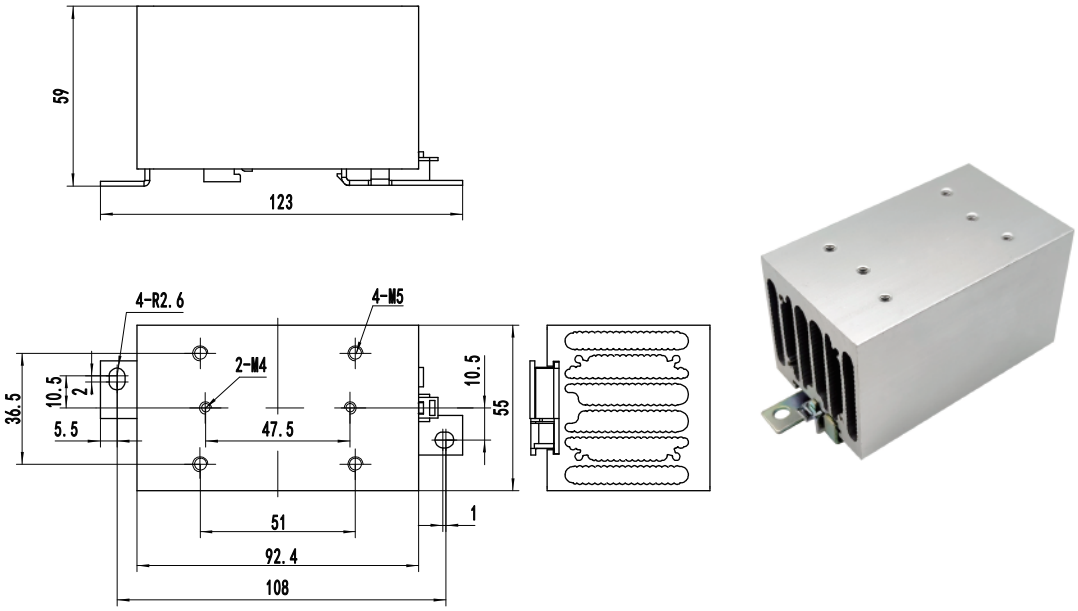




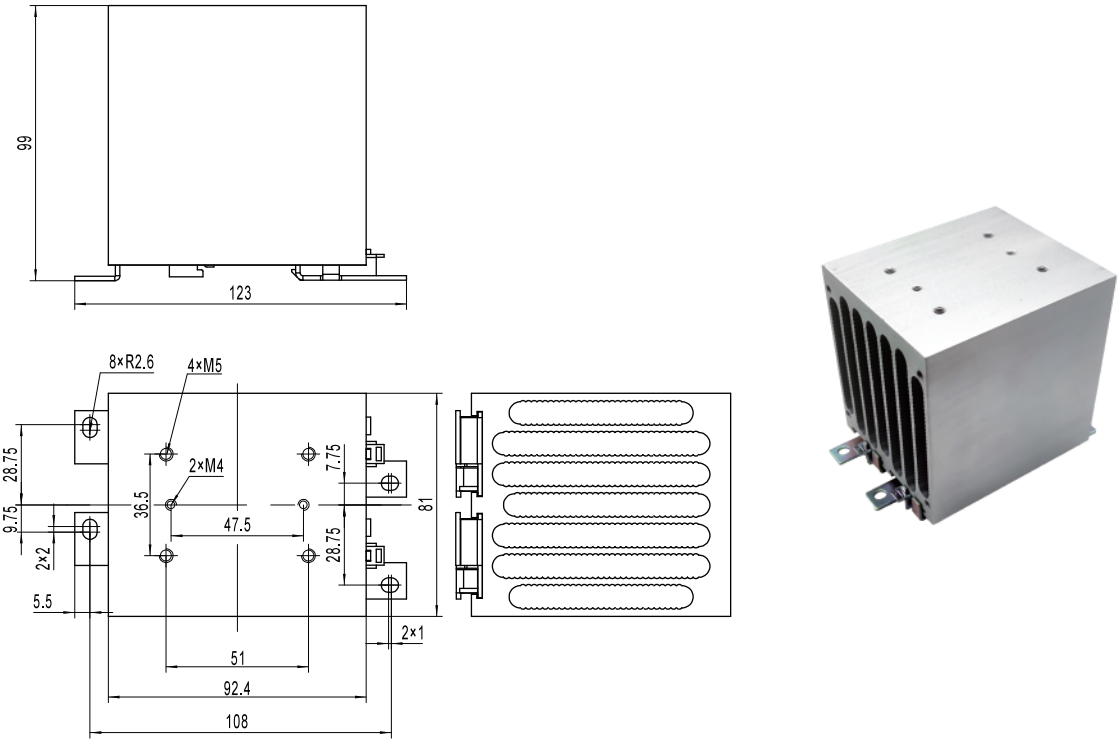


KHS-S90

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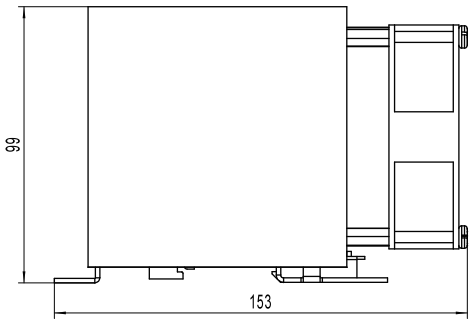


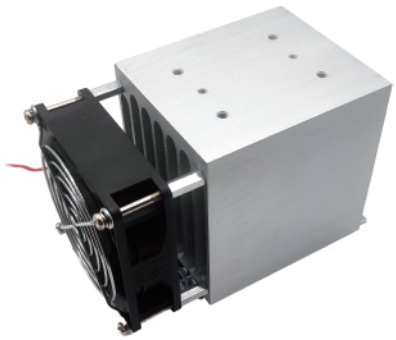
KHS-I93

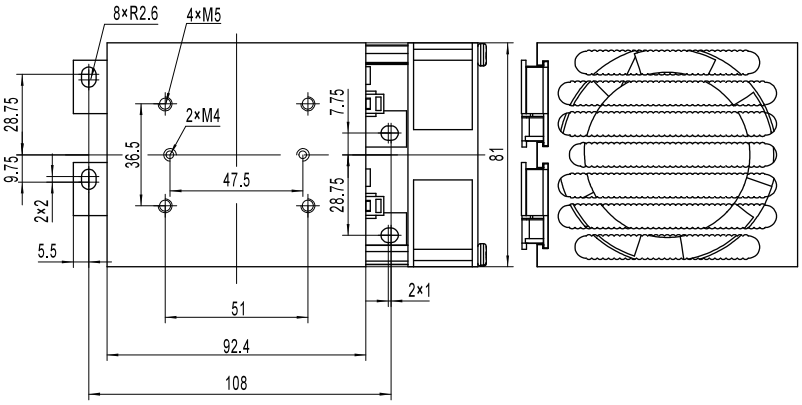


KHS-J93

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KHS-J93-B24DC

General Notes

1. The heat generated by the relay operation must be dissipated through the base plate. It is essential to ensure that the relay base plate is in close and secure contact with the heat sink, and that thermal pads or thermal paste are applied to the contact surfaces. The recommended installation torque between the product and the radiator is 0.98~1.37 N · m.
2. The terminal should ensure reliable connection. Otherwise, it may cause the overheating of relay and lead to the damage.
3. For KRI...I...P series, the recommended installation torque for M3 terminals is (0.58~0.98) N·m, and the recommended installation torque for M5 terminals is (2.0~3.0) N·m.
4. For KRI...-D... series, the input end single core or multi-core wire diameter should be controlled between 0.5~1.5mm ^{2}, and the stripping length of the wire core should be controlled between 8~10mm. After stripping the wire core, it needs to be tinned before crimping to avoid disconnection. The recommended installation torque for M5 terminal is 2.0~3.0 N · m.
5. When the operation temperature is above 25℃, please consider the derating as per the Thermal Derating Curve.
6. This product is suitable for resistive loads. If you need to control inductive loads, please consult our technical personnel.

! Warnings

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

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