Product Description

Zero Cross or Random-on Switching

- SCR Output
- IP20 Touch-safe Housing
- Build-in RC Protection Circuit
- Integrated with Heatsink
- EN50022 35mm DIN Rail Mount
- Control Voltage Range: 3~32VDC，4~32VDC，19.2~28.8VAC
- Load Current: 25A，50A，75A
- Load Voltage: 240VAC，600VAC
- Available with Thermal Protector Option



Product Selection

KSK	240	D	25	R	T	(XXX)
KSK Series	Load Voltage 240: 240VAC 600: 600VAC	Control Mode D: DC Control E: 24VAC Control	Load Current 25: 25Amp 50: 50Amp 75: 75Amp	Switching Mode Blank: Zero Crossing R: Random-on	Protection Type T: TVS Protection Blank: Without Protection	Customized Code

-K	F24DC
Heatsink(1) K:KHS-K90 L:KHS-L90 I:KHS-I93	Fan(1) Blank: No Fan F24DC:24VDC Fan (Only for KHS-I93)

Note: (1)The code for heatsink will not display on the product marking.

Available Part Numbers

Load Voltage	Blocking Voltage	Control Voltage	Zero Crossing		Random-on	
			-	With TVS	-	With TVS
240:240VAC	800Vpk	D：3～32VDC	KSK240D#	KSK240D#-T	KSK240D#R	KSK240D#R-T
		E：24VAC	KSK240E#	KSK240E#-T	KSK240E#R	KSK240E#R-T
600:600VAC	1200Vpk	D：4～32VDC	KSK600D#	KSK600D#-T	KSK600D#R	KSK600D#R-T
		E：24VAC	KSK600E#	KSK600E#-T	KSK600E#R	KSK600E#R-T

Note: 1. For products with TVS, the blocking voltage refers to SCR chip and optocoupler.
2. # Represents the rated load current, which is 25, 50 or 75.

Technical Specifications

Input Specifications (Ta=25°C)	Condition	Symbol	Model	Min	Typ	Max	Unit
Control Voltage		U_c	KSK240D... Series	3	24	32	VDC
			KSK600D... Series	4	24	32	VDC
			KSK...E... Series	19.2	24	28.8	VAC
Input Current (Typ)	@U_c	I_c	KSK240D... Series	7.8	12.7	13.3	mA
			KSK600D... Series	8	12.9	13.5	mA
			KSK...E... Series	7.9	10.5	13.2	mA
Must Turn-on Voltage		$U_{c\,on}$	KSK240D... Series		3		VDC
			KSK600D... Series		4		VDC
			KSK...E... Series		18		VAC
Must Turn-off Voltage		$U_{c\,off}$	KSK...D... Series		1		VDC
			KSK...E... Series		5		VAC
Maximum Reverse Voltage		U_{rv}	KSK...D... Series		-32		VDC

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Output Specifications (Ta=25°C)	Condition	Symbol	Model		Min	Typ	Max	Unit
Load Voltage		U_e	KSK240... Series		24		280	VAC
			KSK600... Series		24		660	VAC
Blocking Voltage		U_e	KSK240... Series		800			Vpk
			KSK600... Series		1200			Vpk
Load Current		I_e	KSK...25... Series		0.1		25	A
			KSK...50... Series		0.1		50	A
			KSK...75... Series		0.1		75	A
Turn-On Time		t_{on}	KSK...D... Series	Zero Crossing			1/2cycle+1ms	ms
				Random-on			1	ms
			KSK...E... Series				30	ms
Turn-Off Time		t_{off}	KSK...D... Series				1/2cycle+1ms	ms
			KSK...E... Series				30	ms
On-State Voltage Drop	@ Rated Load Current	U_d	KSK...25... Series			0.9	1.5	Vrms
			KSK...50... Series			1	1.5	Vrms
			KSK...75... Series			1.1	1.5	Vrms
Off-State Leakage Current	@ Rated Load Voltage	I_{lk}					1.5	mA
	@220VAC/50Hz					0.6		mA
Operational Frequency		f			47		63	Hz
Non-repetitive Surge Current	@10ms	I_{TSM}	KSK...25... Series			800		Apk
			KSK...50... Series			850		Apk
			KSK...75... Series			900		Apk
Maximum I^2t for Fusing	@10ms	I^2t	KSK...25... Series			3200		A^2s
			KSK...50... Series			3612		A^2s
			KSK...75... Series			4050		A^2s
TVS Breakdown Voltage		V_{br}	KSK240...T... Series			480		V
			KSK600...T... Series			1100		V
Minimum Off-State dv/dt		dv/dt				1000		V/μs
Minimum Power Factor		cosφ				0.5		

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}		-30		+80	℃
Storage Temperature		T_{SPR}		-30		+100	℃
Weight			KSK…25…-K Series		190		g
			KSK…25…-L Series		260		g
			KSK…50…-L Series		260		g
			KSK…50…-I Series		420		g
			KSK…75…-IF24DC Series		470		g
Fan Voltage			KSK…75…-IF24DC Series		24		VDC

Short-Circuit Current Rating (SCCR)

Type 1 Coordination Protection Description:
Upon occurrence of a short circuit, the EUT (Equipment Under Test) is permitted to fail, provided no components are ejected out of the enclosure and the enclosure remains intact. The upstream short-circuit protective device (e.g., fuse) must operate correctly to interrupt the short-circuit current. In addition, cabinet doors or protective covers shall not open accidentally due to short-circuit impact. Wires and terminals shall remain intact; wires shall not pull out from terminals. The insulating base shall not develop fractures or cracks that cause overall damage to the mounted live parts. No component arcing or fire hazard shall occur.

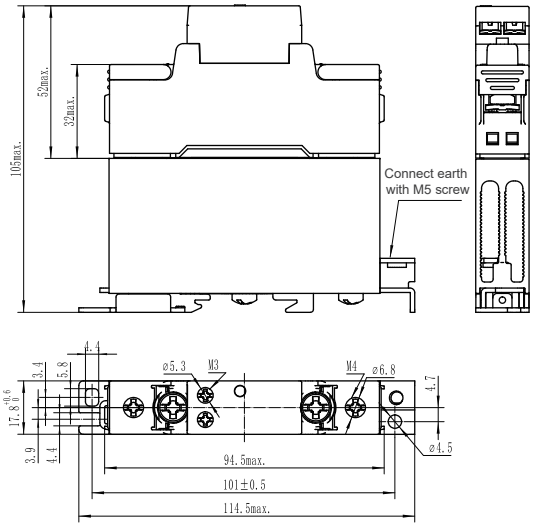
Type 1 Coordination Protection · Compliant with UL 508

Mode	Prospective Short-Circuit Current(kArms)	Maximum Fuse Rating(A)	Fuse Type	Voltage(VAC)
KSK...25... Series	100	30	J or CC	600 max
KSK...50... Series				
KSK...75... Series				

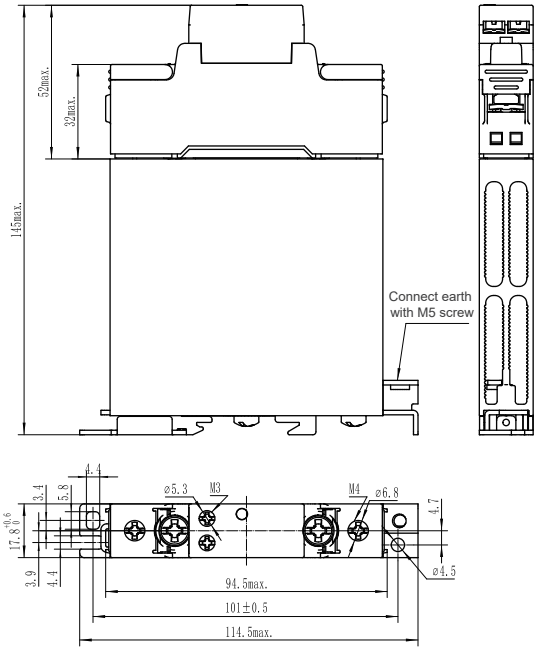
The Short-Circuit Current Rating (SCCR) of the products listed in the table above is 100 kArms symmetrical at 600 V maximum, meaning that the symmetrical RMS short-circuit current is 100 kA at a maximum voltage of 600 V. This rating is valid only when a maximum 30 A Class J current-limiting fuse(rated 600 V) is installed on the line side. The stated SCCR is achievable only when 8 AWG conductors are used on both the line side and the load side. Tests performed with Class J fast-acting fuses may represent Class CC fast-acting fuses.
Note: If the required Class J fuse is not installed on the line side as specified, or if the conductor size exceeds the range stated above, the actual SCCR of the equipment will be lower than the marked value and may not meet the available fault current requirements at the installation site.

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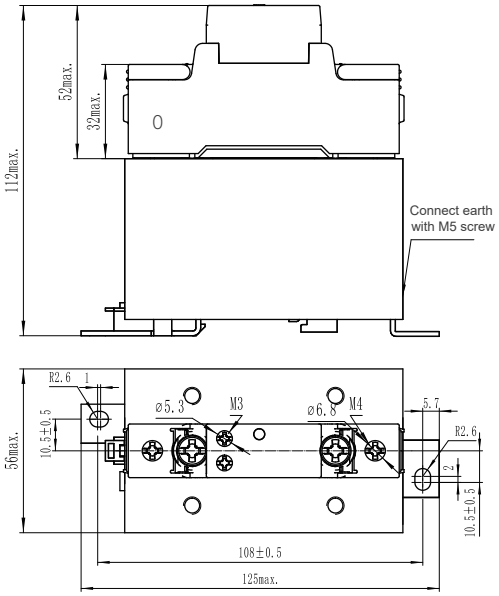
Outline Dimensions



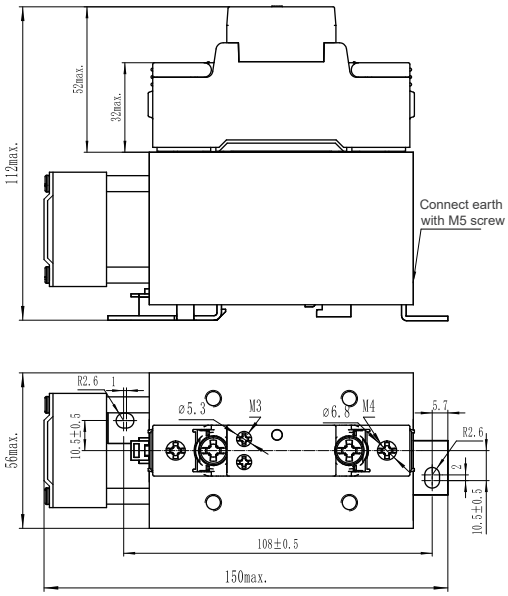
KSK...25...-K Series



KSK...25/50...-L Series



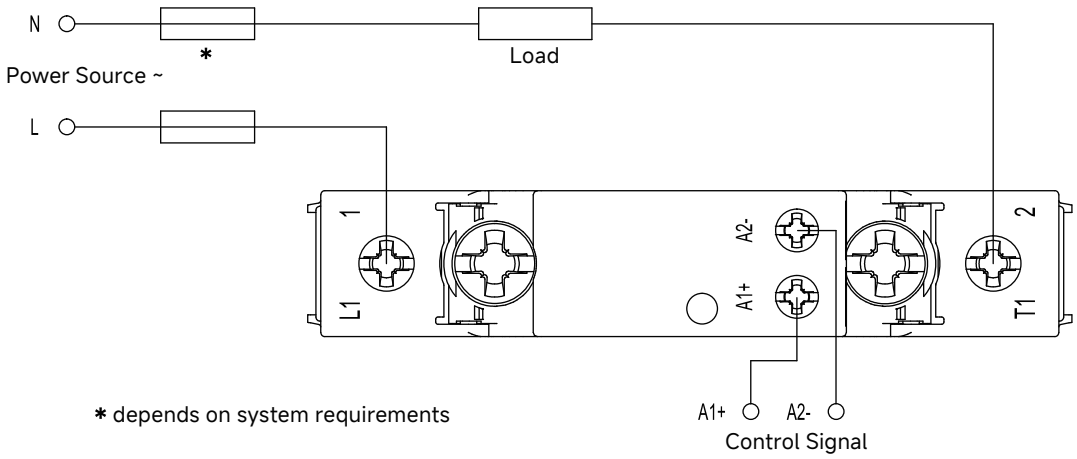
KSK...50...-I Series



KSK...75...-IF24DC Series

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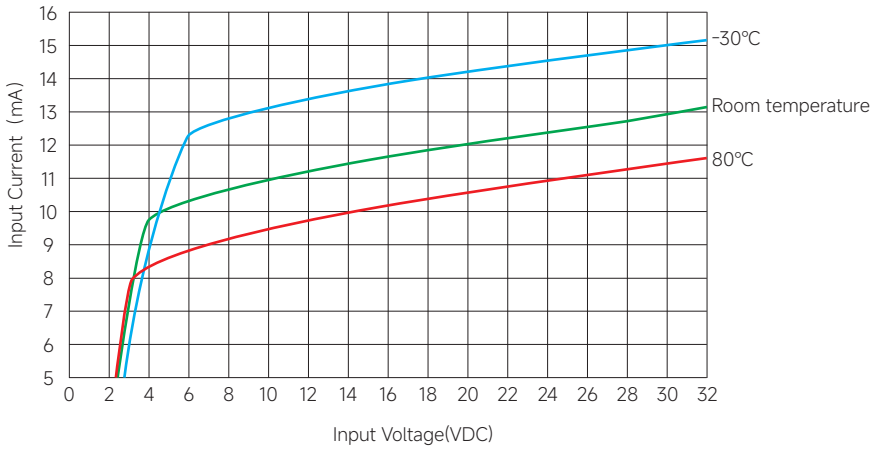
Wiring Diagram



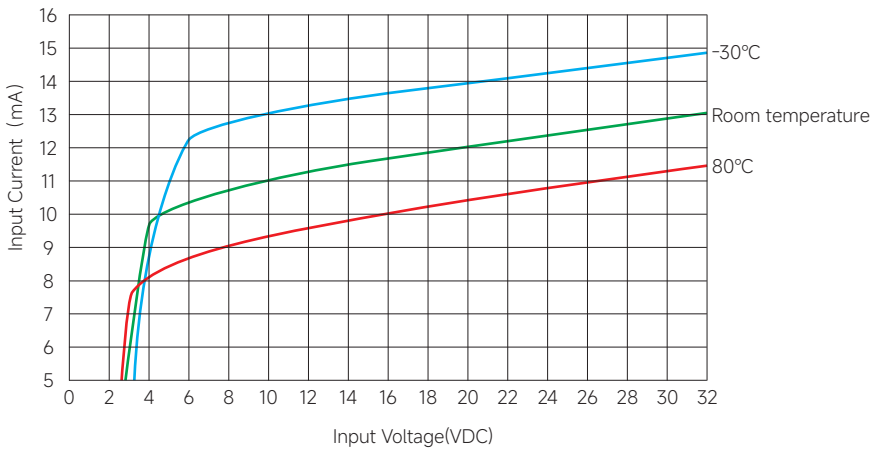
Note: For the KSK...D... series, the control signal is A1+&A2-, and for the KSK...E... series, the control signal is A1&A2.

Input Current vs. Input Voltage

KSK240D... Series



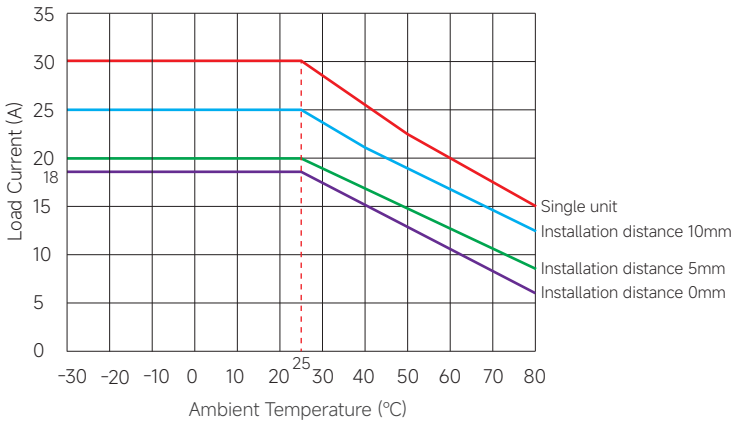
KSK600D... Series



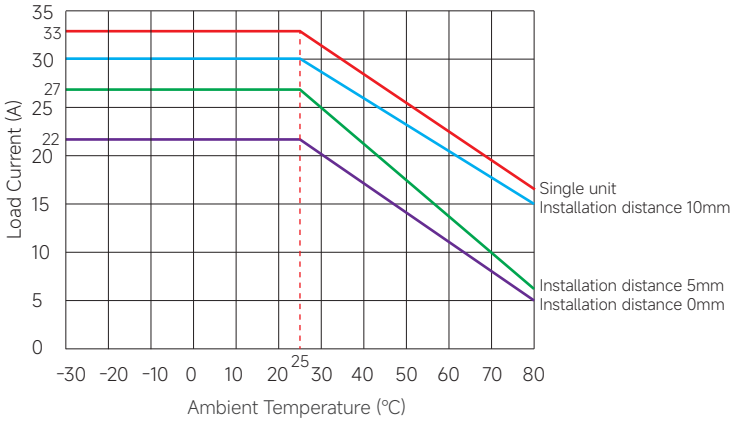
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Thermal Derating Curve

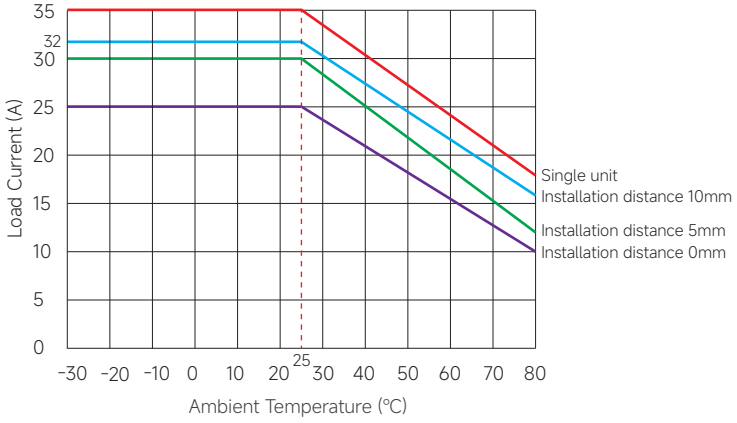
KSK…25…-K Series



KSK…25…-L Series

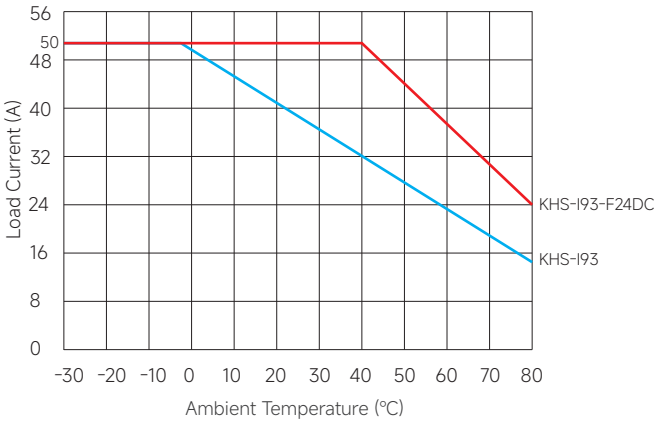


KSK…50…-L Series

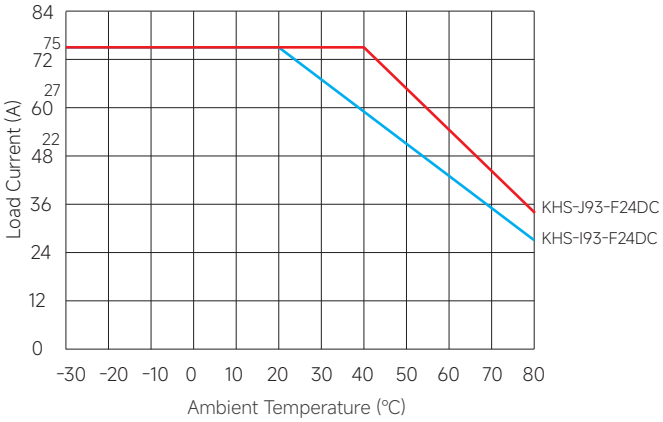


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KSK…50…-I Series



KSK…75… Series



Note: 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.

General Notes

1. When the temperature of the product is high, please refer to the temperature curve.
2. The recommended mounting torque for the input M3 terminal, when using screw driver head of PH2, is (0.35~0.5)N·m or (3.1~4.4) in.-lbs. For the output M4 terminal, when using screw driver heads of PZ2, the recommended torque is (0.98~1.37)N·m or (8.7~12.1)in.-lbs.
3. The relay terminal should ensure a reliable connection, poor connection may lead to the product overheating and damaging it.
4. The cabinet where the product is installed should be equipped with a fan, and the air duct should be optimized to effectively cool the solid-state relay product. Sufficient space should be reserved for product installation to prevent overheating and ensure proper ventilation.
5. If a thermal protector is required, please contact us for technical support.

! Warnings

1. The product may be hot during use, 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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