

Panel mounting type

KS24 Three-phase Solid State Relay

-  Epoxy full encapsulation process with excellent flame retardant properties.
-  Optional phase loss protection function
-  Load current 25A~80A.



Application Scenarios:

Suitable for controlling three-phase motors, heaters, and other equipment.



DESCRIPTION

KS24 is a three-phase AC output panel mount type SSR (3PST-NO). It offers 4.5~32VDC input voltage option and three AC output voltage options 380VAC,480VAC and 600VAC as well as four output current ratings from 25A to 80A for selection. The SSR includes an LED indicator to display working status and provides photoelectric isolation between input and output with dielectric strength 4000V . Besides, the phase absence protection type is equipped with an additional neutral terminal to realize the corresponding function. KS24 can be used in the control of three-phase motors, heaters, etc.

- Photoelectric isolation
- Dielectric strength 4000V
- Removable protective cover
- LED status indicator
- Built-in RC snubber circuit
- Panel mount

SELECTION GUIDE

KS24/	D-	38	Z	25	-Y	L	P	(XXX)
Type	Control voltage	Load voltage	Switching mode	Load current	Overvoltage protection	LED indicator	Phase loss protection	Customer special code
	D:4.5~32VDC	38:380VAC 48:480VAC 60:600VAC	Z:Zero-cross	25:25A 40:40A 60:60A 80:80A	Y:Included Nil:Not included	L:Included Nil:Not included	P:Included Nil:Not included	

Note:available parts are:KS24/D-38Z25-□L□, KS24/D-38Z40-□L□, KS24/D-48Z60-L、KS24/D-48Z80-L、KS24/D-60Z60-L、KS24/D-60Z80-L.

SELECTION GUIDE (Ta=25°C)

Control voltage range	(4.5 ~ 32)VDC
Must turn-on voltage	4.5VDC
Must turn-off voltage	1VDC
Max. input current	35mA
Max. reverse protection voltage	-32VDC

OUTPUT SPECIFICATIONS (Ta=25°C)

Load voltage range	D-38: (48 ~ 440)VAC
	D-48: (48 ~ 530)VAC
	D-60: (48 ~ 660)VAC
Max. load current	D-38Z25: 25A
	D-38Z40: 40A
	D-48Z60、D-60Z60: 60A
	D-48Z80、D-60Z80: 80A
Max. transient voltage	D-38: 800Vpk
	D-48: 1200Vpk
	D-60: 1400Vpk
Frequency range	(47 ~ 63)Hz
Max. surge current (10ms)	D-38Z25: 250Apk
	D-38Z40: 420Apk
	D-48Z60、D-60Z60: 900Apk
	D-48Z80、D-60Z80: 1250Apk
Max. I ² t for fusing (10ms)	D-38Z25: 312A ² s
	D-38Z40: 882A ² s
	D-48Z60、D-60Z60: 4050A ² s
	D-48Z80、D-60Z80: 7800A ² s
Max. on-state voltage drop	1.7Vr.m.s.
Min. load current	100mA
Max. off-state leakage current	10mA
Min. o ff-state dv/dt	D-38: 200V/μs
	D-48、D-60: 500V/μs
Max. turn-on time	1/2 cycle + 1ms
Max. turn-off time	1/2 cycle + 1ms
Min. power factor	0.5

GENERAL SPECIFICATIONS (Ta=25°C)

Dielectric strength (input/output)	4000VAC, 50~60Hz, 1min
Insulation resistance	1000MΩ (500VDC)
Max. capacitance (input / output)	10pF
operating temperature	-30°C ~ 80°C
Storage temperature	-30°C ~ 100°C
Ambient humidity	45% ~ 85% RH
Termination	Screw
Installation method	Panel mount
Unit weight	Approx .315g

APPLICATION SPECIFICATIONS (Ta=25°C)

Relay load current	25A	40A	60A	80A
Motor power	1.5kW	3kW	4kW	5kW
Heatsink part number	HF92B-150C	HF92B-150D		
Cooling fan air flow	115 CFM			

PRECAUTIONS

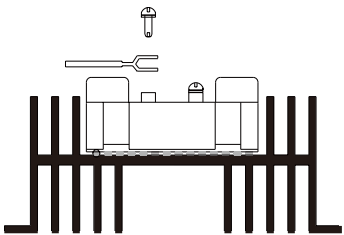
1. The surge current value shown on this datasheet is the non-repetitive peak value of the surge current of the SSR. Normally 1/2 of the non-repetitive peak value of the surge current is considered as standard value. If the actual surge current flowing through the SSR exceeds the standard value, a semiconductor fuse is required to connect to the output terminal in series in order to prevent any damage caused to the SSR.
2. Please ensure that the SSR can withstand the transient voltage in case the output load (e.g. motors) may generate the high shock voltage.
3. The transient voltage value shown on this datasheet is the non-repetitive peak value of the transient voltage. If the transient voltage applied to the output terminal of the SSR exceeds the nominal value, a varistor is required to connect to the output terminal in parallel in order to prevent any damage caused to the SSR. And the recommended varistor voltage is 750~1000V.
4. When the phase absence or phase failure problem occurs to the three-phase power supply, the phase absence protection type SSR will rapidly stop all the output and turn off the LED indicator and then run into self-lock mode till the input power supply is cut off and re-electrified. The terminals L1, L2, L3 and N must connect to the three-phase power supply, and the terminals U, V and W must connect to the three-phase load, otherwise the phase absence protection function will not be able to work.
5. Please pay special attention to the actual load current and the ambient temperature when doing the type selection. And the SSR requires proper heat sinking for heat dissipation in full load. When the ambient temperature is high, the load current must be derated. Please refer to the curve of Max. Load Current vs. Ambient Temperature for derating.
6. Tighten the SSR screw terminals properly. If the screws are loose, the SSR would be damaged by heat generated from connection. Also excessive screw mounting torque may damage the SSR's internal components. Please refer to the

PRECAUTIONS

- recommended screw mounting torque as follows: the M4 screw mounting torque range is 0.98~1.37N·m, and the M3 screw mounting torque range is 0.58~ 0.98N·m.
7. It is recommended to use the matched heatsink made by Keysolu. If the user needs to use the home-made heatsinks, please ensure that the temperature of the SSR base must not exceed 85°C.
8. Because all the electronic components inside the SSR have become solid after encapsulation with epoxy resin, the excessive baseplate mounting torque may cause damage to the internal components. Thus the recommended mounting torque is 0.98~1.37N·m.
9. Please do not use the SSR exceeding the limitation which is specified on this datasheet.

Installation

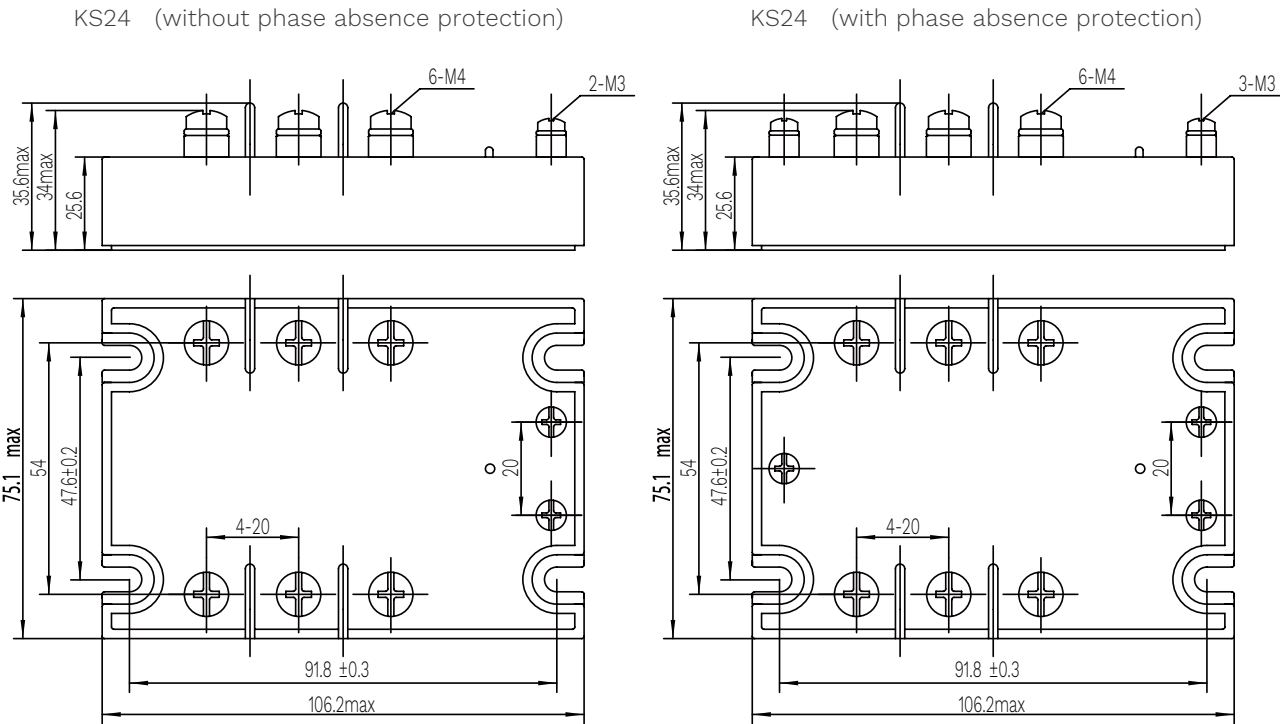
1. Please make sure that the heatsink surface is clean and smooth.
2. Please coat the SSR metal base with some thermal grease or a thermal pad, and firmly press the SSR against the heatsink to ensure the full adherence, and then screw the SSR to the heatsink.
3. Please wire the screw terminals and tighten the screws properly.
- The recommended screw mounting torque is 0.98~1.73N·m.



OUTLINE DIMENSIONS, WIRING DIAGRAMOUTLINE

Unit: mm

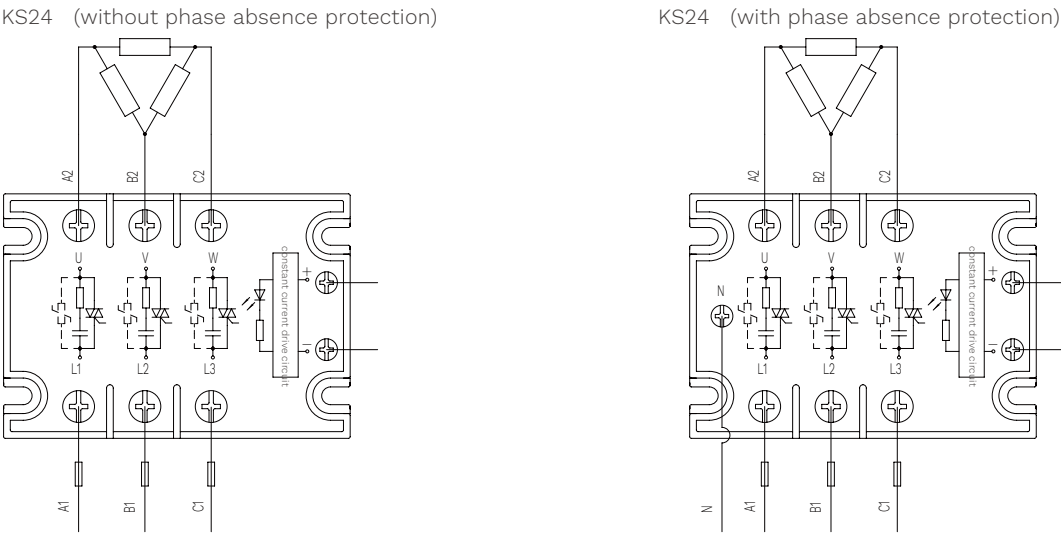
Outline Dimensions



OUTLINE DIMENSIONS, WIRING DIAGRAMOUTLINE

Unit: mm

Wiring Diagram



Notes: F1,F2,F3 should be semiconductor fuses

CHARACTERISTIC CURVES

