K7SR Series

Safety Relay

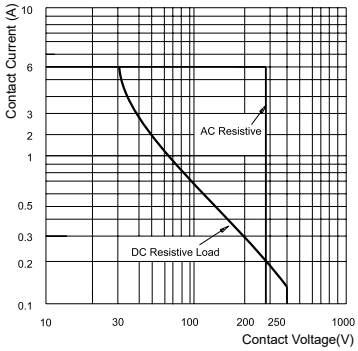
- Various contact configurations
- Forcibly guided contact type (IEC 61810-3)
- 6A switching capacity, Low power consumption
- Terminal layout for easy wiring of PWB patterns
- High insulation capacity (UL Insulation Class F)

Ordering Information

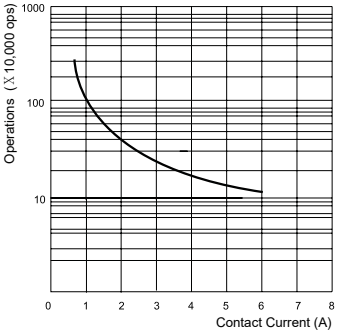
Safety Relay Part Number	Contact Form	Socket Part Number	Number of Terminals
K7SR-3A1B-24VDC	3NO + 1NC	K7SC-10FL-24VDC	10FL : 10 Terminal (4P Relay)
K7SR-2A2B-24VDC	2NO + 2NC		
K7SR-5A1B-24VDC	5NO + 1NC	K7SC-14FL-24VDC	14FL : 14 Terminal (6P Relay)
K7SR-4A2B-24VDC	4NO + 2NC		
K7SR-3A3B-24VDC	3NO + 3NC		

Reference Data

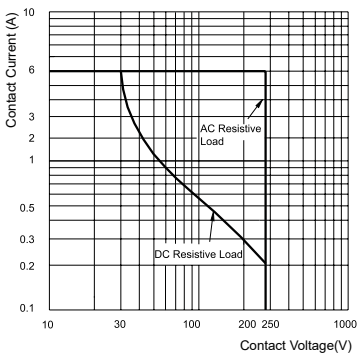
Maximum Switching Power for 4P



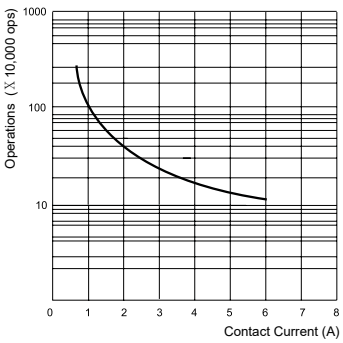
Endurance Curve for 4P



Maximum Switching Power for 6P



Endurance Curve for 6P



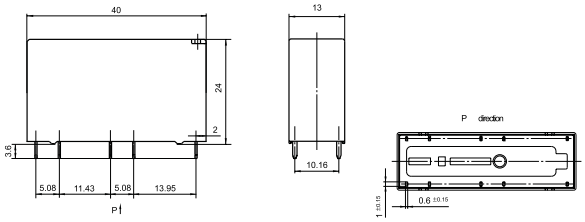
Specifications

Contact Ratings	Contact Form	4P	6P
		2NO + 2NC, 3NO + 1NC	5NO + 1NC, 4NO + 2NC, 3NO + 3NC
	Forcibly Guided Contact Type (Based on IEC 61810-3)	Type A	
	Contact resistance	100mΩ max. (at 1A 6VDC)	
	Material	AgSnO2	
	Rating	6A 250VAC / 30VDC (1circuit)	
	Max Switching voltage	400VAC / 30VDC	
	Max Switching current	6A	
	Max Switching power	1500VA / 180W	
	Mechanical Life*	10,000,000	
	Electrical Life*	100,000 (1NO : 6A 30VDC, resistance load, 1sec ON 1sec OFF)	
		100,000 (1NO : 6A 250VAC, resistance load, 1sec ON 1sec OFF)	
Coil Ratings	Coil Consumption	Approx. 360mW	Approx. 500mW
	General voltage	24VDC	
	Min Operating voltage	18.0VDC	
	Maximum Drop-out Voltage	2.4VDC	
	Minimum Pick Up Voltage**	31.2VDC	26.4VDC
	Coil resistance (Ω)	1600 x (1±10%)	1152 x (1±10%)
Safety Relay General Ratings	Insulation Resistance	1000MΩ at 500VDC (It was measured at the same locations as the dielectric strength was measured.)	
	Grade of insulation	Class F	
	Withstand voltage***	Between Coil & Contacts : 4000VAC 1 min	
		Between Open Contacts : 1500VAC 1 min	
		Between Contact sets : 2500VAC 1 min (34-33/44-43) 4000VAC 1 min (Other)	Between Contact sets : 2500VAC 1 min (54-53/64-63) 4000VAC 1 min (Other)
	Surge voltage	Between Coil & Contacts : 10kV (1.2 / 50μs)	
		Between Contact sets : 5kV (1.2 / 50μs)	
	Operating time (at rated voltage)	20ms max. (The ambient temperature was 23 ° C. Contact bounce time is not included.)	
	Breaking time (at rated voltage)	20ms max. (The ambient temperature was 23 ° C. Contact bounce time is not included.)	
	Vibration resistance	NO/NC : 10Hz to 55Hz 1.5mm DA NO : 55Hz to 200Hz, 98m/s^2 NC : 55Hz to 200Hz, 49m/s^2	
	Shock Resistant	Malfunction : 980m/s^2	Destruction : 100m/s^2
	Ambient temperature****	-40° C to 85° C	
	Ambient Humidity	5% to 85% RH	
	Wiring	PCB board / Dedicated socket	
	Weight	Approx. 20g	Approx. 23g
Socket General Ratings	Rated voltage	250VAC	
	Rated Current	6A	
	Applicable relay coil voltage	6 ~ 24 VDC	
	Ambient temperature	-25° C to 55° C	
	Specification Torque	1.0N . m	
	Wire thickness	1.5mm 16AWG	
	Stripping Length	7mm^2	
	Remarks	With LED	

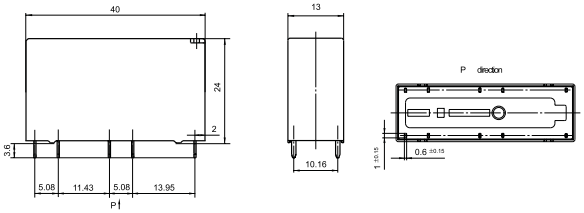
Caution: The above figures are the initial values.
Specifications and materials are subject to change without prior notice for quality improvement.
*The Life is for an ambient temperature of 15 to 35°C and an ambient humidity of 25% to 75%.
**This is the maximum voltage of the relay coil that can be stably operated.
***When using Socket, the dielectric strength between coil contacts/different poles is 2,500VAC, for 1 min.
****When operating at a temperature between 50 and 70°C, reduce the rated carry current by 0.3A/°C.

Relay Dimensions

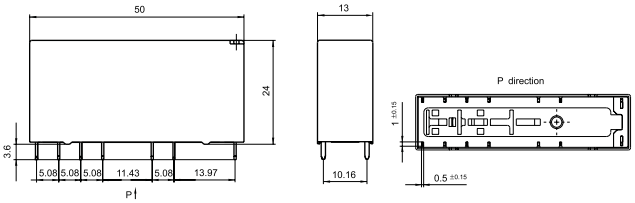
3A1B (unit: mm)



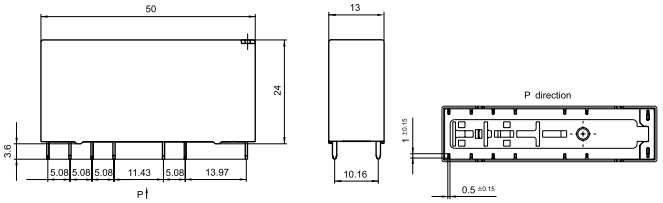
2A2B (unit: mm)



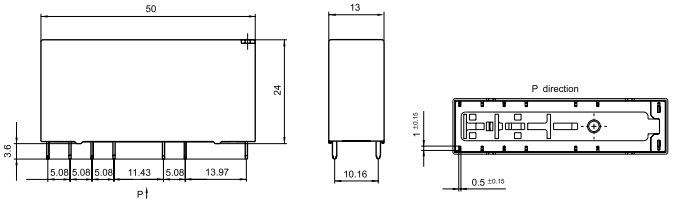
5A1B (unit: mm)



4A2B (unit: mm)

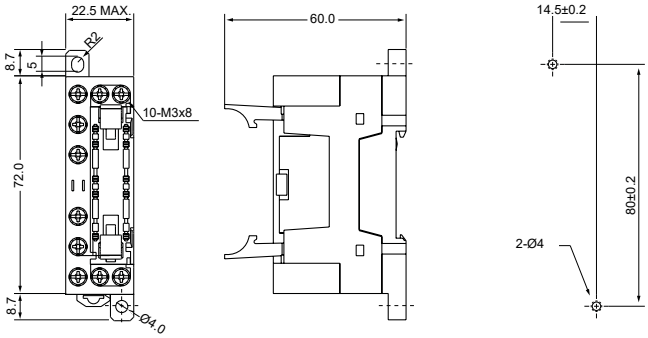


3A3B (unit: mm)

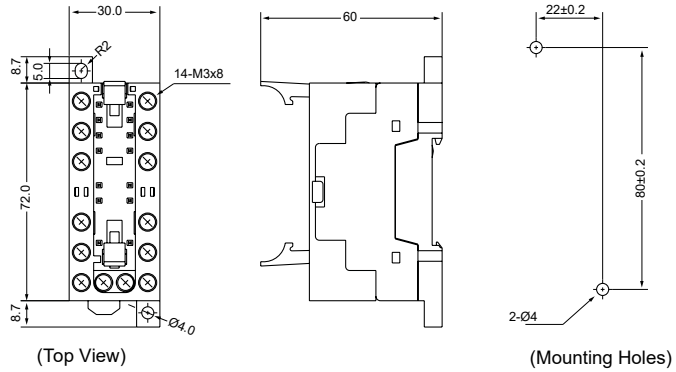


Socket Dimensions

Socket 4P (unit: mm)



Socket 6P (unit: mm)

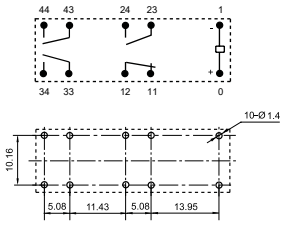


(Top View)

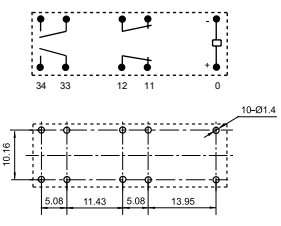
(Mounting Holes)

Relay Wiring Diagram

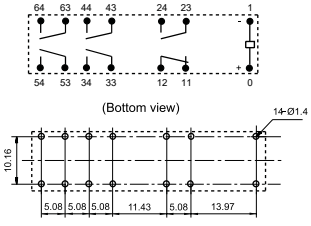
3A1B (unit: mm)



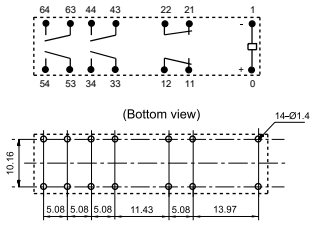
2A2B (unit: mm)



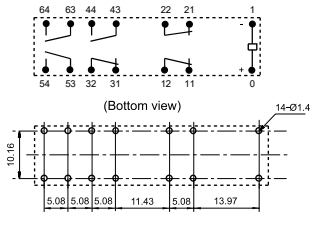
5A1B (unit: mm)



4A2B (unit: mm)

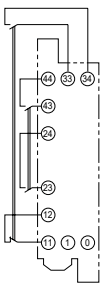


3A3B (unit: mm)

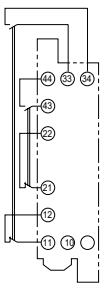


Socket Terminal Layout & Internal Connection Diagram

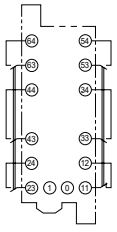
3A1B



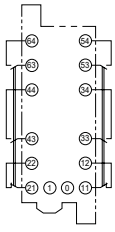
2A2B



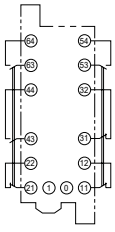
5A1B



4A2B



3A3B



With LED