

Latching Relays Designed for Memory and Signaling Circuits

- Low changes in characteristics such as contact tracking and contact pressure for high durable.
- Excellent resistance to vibration and shock.
- Built-in operation indicators for simple operation verification.
- Same external shape with the MK Power Relays.



Refer to the *Common Relay Precautions*.

Ordering Information

List of Models

Encased Models and Models with Plug-in Terminals

Classification	Number of poles	2 poles	
	Model	Rated voltage (V)	
Standard models	MK2KP	6, 12, 24, 50, 100/(110), or 200/(220) VAC	

Classification	Number of poles	2 poles	
	Model	Rated voltage (V)	
Standard models	MK2KP	6, 12, 24, 48, 100, or 110 VDC	

Ratings and Specifications

Ratings

Operating Coil

Rated voltage (V)	Item	Set coil		Reset coil		Set voltage (V)	Reset voltage (V)	Maximum voltage (V)	Power consumption (W, VA)	
		Rated current (mA)	Resistance (Ω)	Rated current (mA)	Resistance (Ω)				Set coil	Reset coil
AC	6	286	4.8	29.0	78	80% max.	80% max.	110%	Approx. 1.5 to 2	Approx. 0.1 to 0.7
	12	128	25	14.4	325					
	24	66	105	10.8	965					
	50	31	440	3.2	8,450					
	100/(110)	17.8	1,670	3.6	13,350					
200/(220)	9.8	6,200	3.2	27,350						
DC	6	390	13	92.5	64	80% max.	80% max.	110%	Approx. 2.3 to 2.7	Approx. 0.5 to 1.2
	12	205	52	50	240					
	24	110	210	22.8	1,050					
	48	48.5	990	23.4	2,050					
	100	24	4,160	10.3	9,740					
110	26.4	4,160	11.3	9,740						

- Note:**
1. The rated current for AC is the value measured with a DC ammeter in 60 Hz half-wave rectification. The 100/(110) and 200/(220) VAC rated voltages are the values at 100 and 200 VAC.
 2. The rated current and coil resistance are measured at a coil temperature of 23°C with tolerances of +15%/-20% for the AC rated current and ±15% for the DC coil resistance.
 3. The AC coil resistance is a reference value only.
 4. Operating characteristics were measured at a coil temperature of 23°C.
 5. The maximum allowable voltage is the maximum value of the allowable voltage fluctuation range for the Relay coil operating power supply and was measured at an ambient temperature of 23°C. There is no continuous allowance.
 6. The initial reverse voltage of the built-in diode is 1,000 V. The initial reverse voltage of the built-in diode in some models is 2,000 V. (MK2KPD)

Contact Ratings

Item	Load	Resistive load	Inductive load (cos φ = 0.4, L/R = 7 ms)
Contact structure		Single	
Contact materials		Ag	
Rated load		5 A at 220 VAC, 3 A at 24 VDC	2 A at 220 VAC, 2.5 A at 24 VDC
Rated carry current		5 A	
Maximum contact voltage		250 VAC, 250 VDC	
Maximum contact current		5 A	
Maximum switching capacity (reference value)		1,100 VA, 72 W	440 VA, 60W

Characteristics

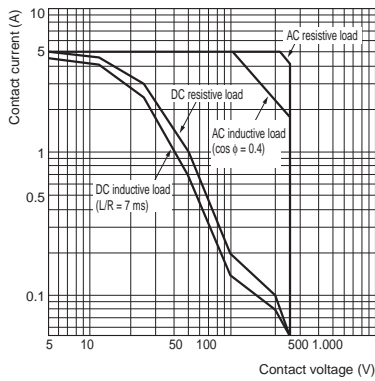
Contact resistance*1		50 mΩ max.	
	Set	Time	30 ms max. (when rated operating power is applied, not including contact bounce.)
		Minimum pulse width	60 ms
Reset	Time	30 ms max. (when rated operating power is applied, not including contact bounce.)	
	Minimum pulse width	60 ms	
Maximum operating frequency	Mechanical	1,800 operations/hr	
	Rated load	1,800 operations/hr	
Insulation resistance		100 MΩ min. for 500 VDC applied to the same location as for dielectric strength measurement	
Dielectric strength	Between coil and contacts	2,000 VAC at 50/60 Hz for 1 min.	
	Between contacts of different polarity		
	Between contacts of the same polarity	1,000 VAC at 50/60 Hz for 1 min.	
	Between set/reset coils		
Vibration resistance	Destruction	10 to 55 to 10 Hz, 0.75-mm single amplitude (1.5-mm double amplitude)	
	Malfunction	10 to 55 to 10 Hz, 0.5-mm single amplitude (1.0-mm double amplitude)	
Shock resistance	Destruction	500 m/s ²	
	Malfunction	100m/s ²	
Endurance	Mechanical	5,000,000 operations min. (operating frequency: 1,800 operations/hr)	
	Electrical*2	500,000 operations min. (rated load, switching frequency: 1,800 operations/h)	
Failure rate P value (reference value*3)		10 mA at 1 VDC	
Weight		Approx. 85 g	

- Note:** The above values are initial values.
- *1. Measurement conditions: 1 A at 5 VDC using the voltage drop method
 - *2. Ambient temperature condition: 23°C
 - *3. This value was measured at a switching frequency of 60 operations per minute.

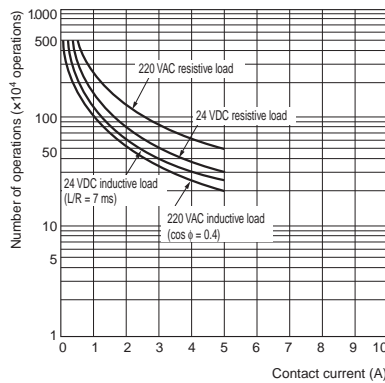
Ambient operating temperature	-10 to 40°C (with no icing or condensation)
Ambient operating humidity	5% to 85%

Engineering Data

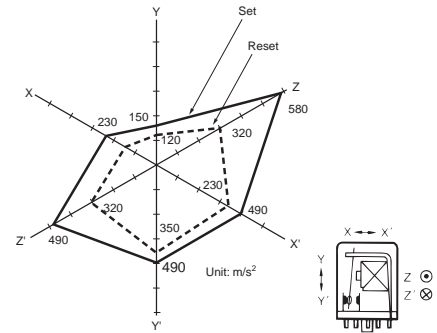
Maximum Switching Capacity



Endurance Curve

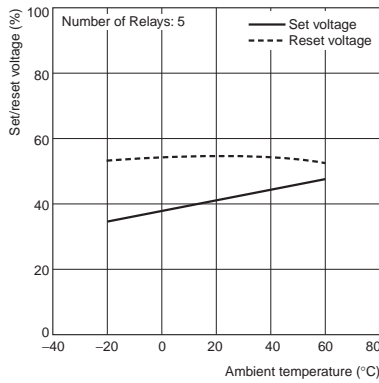


Malfunctioning Shock MK2KP 24 VDC

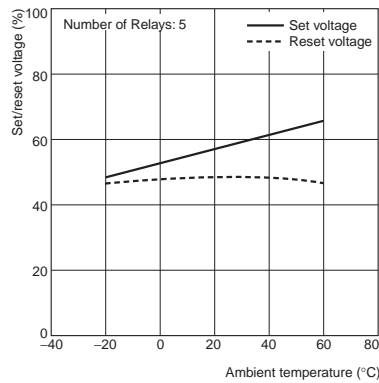


Ambient Temperature and the Set and Reset Voltages

MK2KP 100/(110) VAC



MK2KP 24 VDC

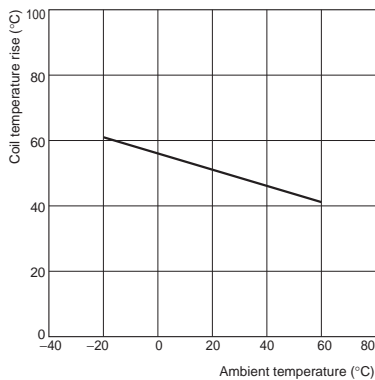


Measurement: Measurement: Shock was applied 3 times each in 6 directions along 3 axes with the Relay set and reset to check the shock values that cause the Relay to malfunction.

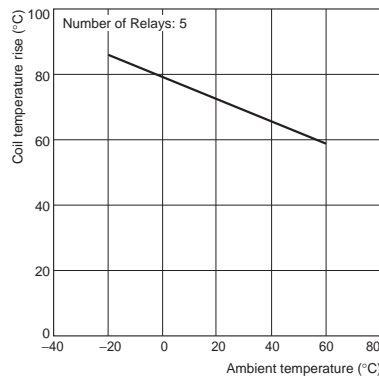
Criteria: 100m/s²

Ambient Temperature vs. Coil Temperature Rise

MK2KP 100/(110) VAC

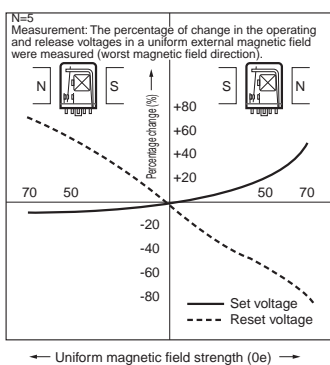


MK2KP 24 VDC



Changes in Operation Characteristics Due to External Magnetic Fields

MK2KP 100 VAC (Average Value)



Degradation in Latching Ability Over Time

MK2KP 200 VAC

