Latching Relay
MKK

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.

Ordering Information

List of Models
Encased Models and Models with Plug-in Terminals

<table>
<thead>
<tr>
<th>Number of poles</th>
<th>2 poles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classification</td>
<td></td>
</tr>
<tr>
<td>Standard models</td>
<td>MK2KP</td>
</tr>
<tr>
<td>6, 12, 24, 48, 100/(110), or 200/(220) VAC</td>
<td></td>
</tr>
</tbody>
</table>

Ratings and Specifications

Ratings
Operating Coil

<table>
<thead>
<tr>
<th>Item</th>
<th>Rated voltage (V)</th>
<th>Set coil</th>
<th>Reset coil</th>
<th>Set voltage (V)</th>
<th>Reset voltage (V)</th>
<th>Maximum voltage (V)</th>
<th>Power consumption (W, VA)</th>
<th>Contact resis- tance (Ω)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC</td>
<td>6</td>
<td>286</td>
<td>4.9</td>
<td>29.0</td>
<td>78</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>128</td>
<td>25.5</td>
<td>14.4</td>
<td>32.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>60</td>
<td>105</td>
<td>12.9</td>
<td>38.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>31</td>
<td>440</td>
<td>3.2</td>
<td>8.430</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18(16)</td>
<td>17.8</td>
<td>13.03</td>
<td>3.6</td>
<td>13.300</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20(16)</td>
<td>8.8</td>
<td>2600</td>
<td>9.2</td>
<td>27.300</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DC</td>
<td>6</td>
<td>286</td>
<td>4.9</td>
<td>29.0</td>
<td>78</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>205</td>
<td>52</td>
<td>50</td>
<td>240</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>110</td>
<td>210</td>
<td>22.8</td>
<td>1,050</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>48</td>
<td>48.5</td>
<td>390</td>
<td>22.4</td>
<td>2,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>24</td>
<td>4,160</td>
<td>10.3</td>
<td>9,740</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>110</td>
<td>26.4</td>
<td>4,160</td>
<td>11.3</td>
<td>9,740</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note:
1. The rated current for AC is the value measured with a DC ammeter in 60 Hz half-wave rectification.
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.
6. There is no continuous allowance.

Characteristics

<table>
<thead>
<tr>
<th>Contact resistance (Ω)</th>
<th>50 mA max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set Time</td>
<td>60 ms</td>
</tr>
<tr>
<td>Minimum pulse width</td>
<td>60 ms</td>
</tr>
<tr>
<td>Insulation resistance</td>
<td>100 mA min. for 500 VDC applied to the same location as for dielectric strength measurement</td>
</tr>
</tbody>
</table>

Contact Ratings

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

Note:
1. The above values are initial values.
2. ambient temperature condition: 23°C
3. The maximum value was measured at a switching frequency of 60 operations per minute.

Ambient operating temperature

-10 to 45°C (with no icing or condensation)

Ambient operating humidity

5% to 85%
**Engineering Data**

**Maximum Switching Capacity**

**Endurance Curve**

**Malfunctioning Shock**

**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

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**Ambient Temperature and the Set and Reset Voltages**

**MK2KP 100/(110) VAC**

**MK2KP 24 VDC**

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**Ambient Temperature vs. Coil Temperature Rise**

**MK2KP 100/(110) VAC**

**MK2KP 24 VDC**

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**Changes in Operation Characteristics Due to External Magnetic Fields**

**MK2KP 100 VAC (Average Value)**

**Degradation in Latching Ability Over Time**

**MK2KP 200 VAC**
### Connection Sockets
(Refer to Common Socket and DIN Track Products for external dimensions.)

<table>
<thead>
<tr>
<th>Front-mounting Sockets</th>
<th>Back-mounting Sockets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Track or screw mounting</td>
<td>Solder terminals</td>
</tr>
<tr>
<td>PF113A(-E)</td>
<td>PL11</td>
</tr>
</tbody>
</table>

**Note:** Details about the Relay Hold-down Clips are the same as for the standard MK Relays. Refer to Common Sockets and DIN Tracks.

### Mounting Height with Sockets

The mounting height is the same as the MK. Refer to the information on the MK for details.

### Safety Precautions

Refer to the Common Relay Precautions for precautions that apply to all Relays.

**Precautions for Correct Use**

**Circuit Conditions**
- Do not apply a voltage to the set and reset coils at the same time.
  - If you apply a voltage to both coils simultaneously, the Relay will be set.
- There is usually no reason to use a Latching Relay with a constant current flow because the Relay can be latched with a single pulse. Using only a single pulse is also beneficial to reduce power consumption.

**Minimum Pulse Width**
- The minimum pulse width in the performance column is the value for the following measurement conditions: an ambient temperature of 23°C with the rated operating voltage applied to the coil. The performance values given here may not be satisfied due to use over time and a reduction in latching performance due to changes in the ambient temperature or in the conditions of the application circuit.
  - For actual use, apply the rated operating voltage with a pulse width based on the actual load and reset the Relay at least once per year to prevent degradation over time.
  - If the Relay is used in an environment with strong magnetic fields, the surrounding magnetic field can demagnetize the magnetic body and cause unintended operation. Therefore, do not use these Relays in environments with strong magnetic fields.
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