This manual explains descriptions about the electromagnetic brake for the "2-phase stepping motor PKP Series with electromagnetic brake." Refer to the operating manual of the PKP Series for the motor itself.

Safety precautions

The precautions described below are intended to prevent danger or injury to the user and other personnel through safe, correct use of the product. Use the product only after carefully reading and fully understanding these instructions.

**WARNING**

Handling the product without observing the instructions that accompany a "WARNING" symbol may result in serious injury or death.

- Do not use the electromagnetic brake to reduce speed or as a safety brake. Do not use the electromagnetic brake as means to decelerate and stop the motor. The brake hub of the electromagnetic brake will wear significantly and the braking force will drop. Since the power off activated type electromagnetic brake is equipped, it helps maintain the position of the load when the power is cut off, but this brake cannot securely hold the load in place. Accordingly, do not use the electromagnetic brake as a safety brake. To use the electromagnetic brake to hold the load in place, do so after the motor has stopped.

Preparation

**Items included with the motor with electromagnetic brake**

- Varistor .......................................................... 1 pc.
- OPERATING MANUAL .......................... 1 copy (this document)

**How to identify the product model**

PKP243D23 M 2

- 2: Model A, Model B *1
- Blank: Model B *2
- With electromagnetic brake

*1 Motor frame size 28 mm (1.10 in.)
*2 Motor frame size 35 mm (1.38 in.), 42 mm (1.65 in.), 56.4 mm (2.22 in.)

Connection

**Notes about the connector type**

- When inserting the connector

Hold the connector main body, and insert it in straight securely. Inserting the connector in an inclined state may result in damage to connector or a connection failure.

- When unplugging the connector

Pull out the connector in straight while releasing the lock of the connector. Having the lead wires or pulling out the connector in a state of being locked may damage the connector.
**Specifications for electromagnetic brake connection cable**

**Connector pin assignments**

<table>
<thead>
<tr>
<th>Pin No</th>
<th>Lead wire color</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Red</td>
</tr>
<tr>
<td>2</td>
<td>Black</td>
</tr>
</tbody>
</table>

**Applicable connector and lead wire**

<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connector housing</td>
<td>DF62C-2S-2.2C (HIROSE ELECTRIC CO., LTD.)</td>
</tr>
<tr>
<td>Contact</td>
<td>DF62-22SCA (HIROSE ELECTRIC CO., LTD.)</td>
</tr>
<tr>
<td>Designated crimping tool</td>
<td>HT801/DF62-22(10) (HIROSE ELECTRIC CO., LTD.)</td>
</tr>
</tbody>
</table>

Applicable lead wire

- AWG22 (0.3 mm²)
- Outer sheath diameter: ø1.2 to 1.5 mm (±0.05 to 0.06 in.)
- Stripping length of wire insulation: 1.8 to 2.3 mm (0.07 to 0.09 in.)

**Specifications of a power supply for electromagnetic brake**

<table>
<thead>
<tr>
<th>Model</th>
<th>Motor type</th>
<th>Power supply voltage</th>
<th>Current capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (connector type)</td>
<td>PKP24</td>
<td>24 VDC±5%</td>
<td>0.07 A or more</td>
</tr>
<tr>
<td></td>
<td>PKP26</td>
<td></td>
<td>0.18 A or more</td>
</tr>
<tr>
<td>B (lead wire type)</td>
<td>PKP22</td>
<td></td>
<td>0.05 A or more</td>
</tr>
<tr>
<td></td>
<td>PKP23, PKP24</td>
<td></td>
<td>0.07 A or more</td>
</tr>
<tr>
<td></td>
<td>PKP26</td>
<td></td>
<td>0.23 A or more</td>
</tr>
</tbody>
</table>

**Connecting a power supply for electromagnetic brake and releasing the electromagnetic brake**

1. For the Model A (connector type), connect the electromagnetic brake connection cable to the electromagnetic brake connector.
2. Connect the varistor (included) in parallel between the 24 VDC terminal and GND terminal. The varistor does not have polarity.
3. Connect the electromagnetic brake lead wires to the 24 VDC power supply.
4. Turn on the 24 VDC power supply. The electromagnetic brake is released.

- Do not apply the voltage beyond its specifications. Doing so may increase heat generation in the electromagnetic brake, resulting in damage to the motor. Conversely, insufficient voltage may prevent the brake from releasing.
- Be sure to connect the varistor to protect the contact of the switch or to prevent electrical noise.
- The electromagnetic brake lead wires have polarities, so connect them in the correct polarities. If the lead wires are connected with their polarities reversed, the electromagnetic brake will not operate properly.