2.1 Connection with PLC

The FX2N-1PG-E is an extension block for the PLC to control the motor. It is designed to connect the PLC and the motor via a synchronous belt or a belt with a flexible coupling. The specifications are shown in the table below:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor power</td>
<td>0.2 to 3.7 kW</td>
</tr>
<tr>
<td>Motor speed</td>
<td>0 to ±999.999 rpm</td>
</tr>
<tr>
<td>Motor rotation</td>
<td>CW or CCW</td>
</tr>
<tr>
<td>Motor current</td>
<td>0 to ±200 mA</td>
</tr>
</tbody>
</table>

3. Installation

3.1 Applicable PLC

The FX2N-1PG-E can be used with the FX2N, FX3S, FX3G, FX3GC, FX3UC, FX3U, or FX3UC Series PLCs. The PLC must be mounted on a DIN rail and connected to the extension block using a 3 to 7 meter long extension cable. The maximum number of extension blocks that can be connected is 7 units. The DO output signals are controlled by the PLC, while the DI input signals are independent of the PLC.

3.2 Precautions

- Always turn off the power before connecting or disconnecting the DO output signals.
- Never remove the top cover while the power is on.
- Use the correct voltage and current ratings.
- Do not connect the DO output signals to the PLC's power supply terminals.
- Do not connect the DI input signals to the PLC's power supply terminals.
- Do not connect the DO output signals to the PLC's power supply terminals.

3.3 Performance Specifications

- Motor power: 0.2 to 3.7 kW
- Motor speed: 0 to ±999.999 rpm
- Motor rotation: CW or CCW
- Motor current: 0 to ±200 mA

4. Operation

4.1 Operation

The FX2N-1PG-E is controlled by the PLC through the DO output signals. The DO output signals are controlled by the PLC, while the DI input signals are independent of the PLC. The operation is similar to that of an external motor controller.

4.2 Communication

The FX2N-1PG-E communicates with the PLC using the FX3C-CNV-01 or FX3U-CNV-02 serial interface. The communication speed is 9600 bps, and the communication protocol is RS-422A/485.

4.3 Application

The FX2N-1PG-E can be used in a variety of applications, such as motor control, conveyor systems, and robotics. It can be connected to a variety of devices, such as motors, sensors, and actuators.

5. Conclusion

The FX2N-1PG-E is a versatile extension block that can be used in a variety of applications. It is designed to be easy to use and to be compatible with a wide range of PLCs. With proper planning and installation, it can provide reliable and efficient motor control for a variety of industrial applications.
2. Connections with PLC

2.1 Specifications

- Not to be used with the following serial cables: unable to use the PLC in serial communication
- Connect the DC input terminals to the PLCs.

2.2 Mounting

- Direct mounting (screwing 10 mm screws)
- Slot mounting (screwing 12 mm screws)
- Use the mounting parts supplied with the main unit (Option 085180).

3. Specifications

3.1 Input specifications

- Input terminal types: 24 V DC, 7 mA
- Response lag: 1 ms
- Connected to 24 V DC service power supply

3.2 General Specifications

- The general specifications are independent of the input unit type.

3.3 Performance specifications

- Operation range: 0°C to 55°C
- Storage range: -20°C to 60°C
- Humidity range: 5% to 95%
- Other specifications: refer to the manual of the main unit.
Manual No.

1. Outline

1.1 Scope

The FX 2N-1PG-E connects on the right side of an PLC main unit or extension model to control devices such as servo or stepper motors. The FX 2N-1PG-E requires that the voltage output power supply is 12 or less.

1.2 Electrical Specifications

- Power supply: +24V (for input signals): 24 V DC ±10%
  - Current consumption: 40 mA or less
- Drive power: 5W (max)
  - Motorized frequency: 100 kHz, 20 mA or less (5 to 24 V DC)
- Pulse output: 20 ms
  - Direction (DIR) can be selected.
- Setting pulse
  - Command unit can be selected among pulse, absolute position specification or relative travel specification.
- Absolute position specification or relative travel specification
  - Operations are enabled at pulse speed of 10 Hz to 100 kHz.
- Interrupt single-speed operation: INTERRUPT input has occurred (from OFF to ON).
- Communication with PLC
  - Communication with PLC is possible with the FX 2N-1PG-E using a serial communication method.
  - The communication protocol used is MODBUS RTU/ASCII.
  - The communication speed is set in the range of 4800 to 115200 baud.

1.3 External Dimensions, Port Names

- Dimensions: [Figure 1]
- Port names: COM0, COM1, DOG, PG0+, PG0-, S/S, CLR

1.4 Status LED

- Description: [Table 1]

2. Installation

2.1 Connection with PLC

The FX 2N-1PG-E can be connected on the right side of an PLC main unit or extension model. It is a universal connector which can be used with any PLC. A DIN rail or mounting screws are required for installation. Read the manual for details.

2.2 Mounting

- The product is protected by the following methods:
  - Direct mounting (mounting screw: M4 screw)
  - DIN rail mounting (DIN rail: DIN46277, 35 mm)
  - Grounding with heavy electrical systems.

2.3 Precautions

- Install the product securely using a DIN rail or mounting screws.
- Failure to do so may cause electric shock or damage to the product.
- Never use the product in areas with excessive dust, oily smoke, conductive dusts, corrosive gas (salt air, Cl2, H2S, SO2, or NO2), flammable gas, etc.
- Never use the product in areas that may cause breakage, malfunctions, or damage to the product.

3. Specifications

3.1 Input specifications

- Name [Table 2]
- Specifications [Table 3]

3.2 General Specifications

- General specifications are required to meet the requirements of the PLC.
- For general specifications, refer to the manual of the PLC which uses the FX 2N-1PG-E.

3.3 Performance specifications

- Drive power supply:
  - Output power: 5W
  - Pulse output: 20 ms

3.4 Input specifications and Wiring Example

- Refer to the FX 2N-1PG-E User’s Manual.

5. Output Specifications and Wiring Example

5.1 Input specifications

- Name [Table 4]
- Specifications [Table 5]

5.2 Wiring example

- Refer to the FX 2N-1PG-E User’s Manual.

For safe use

This product has been manufactured as a general-purpose product for general use. It should be used in a suitable environment where the equipment is required to provide safety to users or third parties. Furthermore, this product should not be used in an environment where it could cause serious injury or damage to property. Mitsubishi Electric does not warrant the suitability of this product for any specific application. The user is responsible for ensuring that the product is suitable for their intended use.