3. Wiring

PRECAUTIONS

WARNING

Risk of damage to the product or injury due to incorrect wiring or installation: Ensure the following when setting up the wiring:

1. Do not mix AC and DC wires.
2. When using shielded twisted-pair wire, use separate wires for each signal.
3. Do not use the same cable for both power and signal wiring.
4. Use shielded cable for input/output signals.
5. Use grounding to prevent electromagnetic interference.

3.1 Terminal block (European type)

1) Wiring: a) Connect the ground wires and the ground terminal of the PLC to a separate ground wire. b) Check the wiring diagram for the correct connections.

3.2 Power Supply Wires

- Use wires with a cross-sectional area of at least 0.5 mm².
- Use shielded cables for input/output signals.

3.3 Wiring of Analog Input

- Use shielded cables for input/output signals.
- Use separate cables for power and signal wiring.

4.4 Performance Specifications

- Use shielded cables for input/output signals.
- Use separate cables for power and signal wiring.

For more information, refer to the respective PLC User's manual Hardware Edition.
3.1 Applicable Cable and Terminal Tightening Torque

3.1.1 Terminal block (European type)

<table>
<thead>
<tr>
<th>Type</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power</td>
<td>2.00</td>
<td>3.00</td>
</tr>
<tr>
<td>Signal</td>
<td>0.50</td>
<td>0.75</td>
</tr>
</tbody>
</table>

Termination of cable end:
- Screw the cable end of the main unit to the required terminal using an appropriate size screwdriver. However, do not exceed the recommended torque. Doing so might cause fire, equipment failures, or malfunctions.
- For the exact tightening torque, refer to the main unit manual (Hardware Edition).

3.2 Power Supply Wiring

When using a main terminal with a terminal cover, secure a main with paper cable cover as it may cause a short circuit. Use a terminal so that the main is not directly stressed.
- The tightening torque must be 0.20 to 0.25 Nm. Do not tighten terminal screws using aivet tools, and use the recommended terminal. To do so may cause fire, equipment failures, or malfunctions. Use an appropriate size screwdriver. However, do not exceed the recommended torque.
- For the exact tightening torque, refer to the main unit manual (Hardware Edition).

3.3 Wiring of Analog Input

- The input terminal configuration must be made when referring to the wiring diagram. The circuit as shown in the diagram must be used.
- This manual describes the analog input wiring to analog output lines. Do not attach any power supply or any other power sources to the analog input. Do not use an inductive element or a power source. Doing so may cause equipment failures or malfunctions.
- Use shielded cable or stranded wire at least No. 22 AWG. Use shielded cable at least No. 24 AWG. Do not use stranded wire. Doing so may cause equipment failures or malfunctions.
- Use 3V DC power source if analog input voltage is used.

4.4 Performance Specifications

Analog input 
- Voltage range:
  - Power supply voltage: ±100 mV
  - Analog input voltage: ±100 mV
- Current range:
  - Power supply current: ±2 ms
  - Analog input current: ±2 ms
- Accuracy:
  - Power supply accuracy: ±1.0 % of full scale
  - Analog input accuracy: ±0.5 % of full scale
- Resolution:
  - Power supply resolution: 10 mV
  - Analog input resolution: 10 mV
- Insulation resistance:
  - Power supply: 10 MΩ
  - Analog input: 10 MΩ
- Impedance:
  - Power supply: 10 kΩ
  - Analog input: 10 kΩ
- Frequency response:
  - Power supply: ±0.1 %
  - Analog input: ±0.1 %
- Temperature range:
  - Power supply: -25°C to 75°C
  - Analog input: -25°C to 75°C
- Humidity range:
  - Power supply: 95%
  - Analog input: 95%
- Failure to do so may cause fire, equipment failures, or malfunctions.
2. Wiring

Before reading analog values, EMC accuracy can be improved out by good cable shielding. When terminating the shield at Earth, be sure to use the method described in the “v. Operation of I/O, Wiring, and Specifications” section of the manual.

2.1 Terminal block (European type)

2.2 Applicable Cable and Terminal Tightening Torque

2.3 Wiring of Analog Input

3. Wiring

4.1 General Specifications

4.2 Power Supply Specifications

4.2.1 Models

4.2.2 Specifications

5. PRECAUTIONS

6. COMMON SPECIFICATIONS

7. COMMON SPECIFICATIONS

8. Precautions

9. Warranty

10. Citation

11. Notes

12. Warranty

13. Notes