4.2 External wiring

The input terminals of the CL1X4-D1S-3 can be wired as positive common or negative common depending on the used sensor.

Positive common

Negative common

4.3 Connection to sensor

Positive common (PHN)

When using a two-wire type sensor, when using a three-wire type sensor

When using a three-wire type sensor

When using a three-wire type sensor

When using a three-wire type sensor

4.4 Wiring operation of cable

1) Installation of cable

2) Detaching of cable

The electric wire flaking off length is too long, an electric shock or product failure may occur in the case of contact. Care should be taken not to cause contact damage when the electric wire is being flaked off.

3) Acceptable electric wire

5. Specifications

5.1 General specifications

Input specifications

5.2 Performance specifications

6. Outside Dimensions
3.1 Installation

The module can be installed to DIN rail or directly using mounting screws.

3.1.1 Installation to DIN rail

When installing the module, make sure the DIN rail installation grooves on the module align with the rails on the DIN rail, then slide the module to DIN rail. Make sure the fixing holes of the module align with the fixing holes of DIN rail, then tighten the screws for fixing the module.

3.2 Direct installation

Remove the cover to install this module. Insert the module to the terminal block in the first latches, then slide the module to DIN rail. Finish tightening the screws of the DIN rail and the module to complete the installation.

---

4. Wiring

4.1 Wiring operation of cable

1) Installation of cable

When installing the cables, make sure to keep the terminal block outside the control panel. Make sure that the cables are properly terminated. Make sure to make sure that the power supply of the module is ON before wiring. Make sure to tighten the screws of the DIN rail and the module to complete the installation.

2) Outlining of cable

Perform correct wiring for the module according to the product's rated voltage. Make sure the power supply of the module is ON before wiring. Make sure to tighten the screws of the DIN rail and the module to complete the installation.

---

5. Specifications

5.2 Input specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td>24V DC±10%</td>
</tr>
<tr>
<td>Current</td>
<td>30mA</td>
</tr>
<tr>
<td>Ripple ratio</td>
<td>Within 5%</td>
</tr>
<tr>
<td>Resistance (R)</td>
<td>5.6(kΩ)</td>
</tr>
<tr>
<td>Leakage current (mA)</td>
<td>≤1.7mA</td>
</tr>
</tbody>
</table>

---

6. Outside Dimensions

- Module: 60(2.36") × 44(1.73") × 15.5(0.61")
- Terminal block: 6(0.24") × 5(0.20") × 0.7(0.03")

---

SAFETY PRECAUTIONS

In any case, it is important to follow the directions for usage.

Precautions.

Positive common (NPN)

Use the module in an environment that meets the general specifications. If the leakage current is more than 1.7mA, connect a bleeder resistor. If the leakage current is more than 1.5mA, the 24G DB module can be used.

If the leakage current is more than 1.5mA or less, the module can be used.

If the leakage current is more than 1.3mA, connect a bleeder resistor. If the leakage current is more than 1.1mA, the module can be used.

If the leakage current is more than 0.9mA, connect a bleeder resistor. If the leakage current is more than 0.7mA, the module can be used.

If the leakage current is more than 0.5mA, connect a bleeder resistor. If the leakage current is more than 0.3mA, the module can be used.

If the leakage current is more than 0.1mA, connect a bleeder resistor. If the leakage current is more than 0.0mA, the module can be used.

If the leakage current is more than 0.0mA or less, the module can be used.

Caution

1) The leakage current is defined as DIL-1510-0. The module must be operated in an environment that meets the general specifications. If the leakage current is more than 1.5mA or less, the module can be used.

2) The module must be operated in an environment that meets the general specifications. If the leakage current is more than 1.5mA or less, the module can be used.

3) The module must be operated in an environment that meets the general specifications. If the leakage current is more than 1.5mA or less, the module can be used.

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5) The module must be operated in an environment that meets the general specifications. If the leakage current is more than 1.5mA or less, the module can be used.

6) The module must be operated in an environment that meets the general specifications. If the leakage current is more than 1.5mA or less, the module can be used.

Notes

1) Bleeder resistor

When connecting a bleeder resistor, the circuit shown in Figure 5 will be applied using the input I/F.

2) Input capacitance

When connecting a bleeder resistor, the circuit shown in Figure 5 will be applied to the power supply for the sensor other than 24V DC.

3) Input capacitance

When connecting a bleeder resistor, the circuit shown in Figure 5 will be applied to the power supply for the sensor other than 24V DC.

4) Input capacitance

When connecting a bleeder resistor, the circuit shown in Figure 5 will be applied to the power supply for the sensor other than 24V DC.

5) Input capacitance

When connecting a bleeder resistor, the circuit shown in Figure 5 will be applied to the power supply for the sensor other than 24V DC.

6) Input capacitance

When connecting a bleeder resistor, the circuit shown in Figure 5 will be applied to the power supply for the sensor other than 24V DC.

---

5.3 Performance specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input specifications</td>
<td>Input power (V)</td>
</tr>
<tr>
<td>Current</td>
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<tr>
<td>Ripple ratio</td>
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- Terminal block: 6(0.24") × 5(0.20") × 0.7(0.03")

---

SAFETY PRECAUTIONS

In any case, it is important to follow the directions for usage.

Precautions.

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Use the module in an environment that meets the general specifications. If the leakage current is more than 1.7mA, connect a bleeder resistor. If the leakage current is more than 1.5mA, the 24G DB module can be used.

If the leakage current is more than 1.5mA or less, the module can be used.

If the leakage current is more than 1.3mA, connect a bleeder resistor. If the leakage current is more than 1.1mA, the module can be used.

If the leakage current is more than 0.9mA, connect a bleeder resistor. If the leakage current is more than 0.7mA, the module can be used.

If the leakage current is more than 0.5mA, connect a bleeder resistor. If the leakage current is more than 0.3mA, the module can be used.

If the leakage current is more than 0.1mA, connect a bleeder resistor. If the leakage current is more than 0.0mA, the module can be used.

If the leakage current is more than 0.0mA or less, the module can be used.

Caution

1) The leakage current is defined as DIL-1510-0. The module must be operated in an environment that meets the general specifications. If the leakage current is more than 1.5mA or less, the module can be used.

2) The module must be operated in an environment that meets the general specifications. If the leakage current is more than 1.5mA or less, the module can be used.

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Notes

1) Bleeder resistor

When connecting a bleeder resistor, the circuit shown in Figure 5 will be applied using the input I/F.

2) Input capacitance

When connecting a bleeder resistor, the circuit shown in Figure 5 will be applied to the power supply for the sensor other than 24V DC.

3) Input capacitance

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4) Input capacitance

When connecting a bleeder resistor, the circuit shown in Figure 5 will be applied to the power supply for the sensor other than 24V DC.

5) Input capacitance

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6) Input capacitance

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---

5.3 Performance specifications

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</tr>
</tbody>
</table>
These precautions apply only to Mitsubishi equipment. Refer to the user's manual whenever necessary. Always forward it to the end user.

Depending on circumstances, procedures indicated by  may also apply.

### 1. Wiring operation of cable

1. **Installation of cable**
   - Use this product in Zone A *1 as defined in EN61131-2.
   - When connecting a two-wire type sensor or input equipment containing a bleeder resistor (24V DC), connect the bleeder resistor to the DC-24A terminal. (When using the power supply for a sensor other than 24V DC)
   - Set both the ON and OFF time of the input signal to 1.5 ms or more.

2. **Acceptable electric wire**
   - The electric wire flaking off length is too long, an electric shock or product failure may occur.
   - When installing a connecting cable, make sure that you check that the electric wire flaking off length is short enough.

3. **Caution**
   - When using a three-wire type sensor
   - Use a sensor other than 24V DC
   - Connect the sensor or input equipment containing the bleeder resistor to the DC24B terminal. (When using the power supply for a sensor other than 24V DC)

4. **Precautions for connection**
   - The module case is made of resin; do not drop it or subject it to strong shock.
   - When disposing of this product, treat it as industrial waste.
   - Perform cleaning the module or retightening of terminal screws after turning OFF the power supply.
   - Use this module carefully, otherwise, it may cause trouble or malfunction in the module.

5. **Over-voltage**
   - Voltage applied to each terminal is shown in Table 1.
   - Voltage applied to each terminal is shown in Table 2.

6. **Performance specification**
   - Voltage applied to each terminal is shown in Table 3.
   - Voltage applied to each terminal is shown in Table 4.

---

### 2. Name and Setting of Each Part and Terminal Arrangement

- **Main input/output points**
  - For safe use
  - The terminal number and the functions of the terminal are shown in Table 5.

### 3. Specifications

#### 1. General specifications

- **Port number**
  - The port number must be set to 1 or 2.

- **Specifications**
  - Port number 1
    - Input / output point
      - Input: 1
      - Output: 1
  - Port number 2
    - Input / output point
      - Input: 1
      - Output: 1

- **Input specifications**
  - Voltage: 20.4 to 28.8V DC (24V DC -15% to +20%)
  - Current: 4.5 mA or less

- **Output specifications**
  - Voltage: 24V DC ±10%
  - Current: 2.5 mA or less

---

### 4. Outside Dimensions

- **Wiring connections**
  - The module is a precision instrument. Doing so could cause trouble in the module.
  - Use this module correctly, otherwise, it may cause trouble or malfunction in the module.

---

### 5. Input specifications

- **Voltage**
  - Voltage applied to each terminal is shown in Table 1.

- **Current consumption**
  - Current consumption is shown in Table 2.

- **Input specifications**
  - Voltage: 20.4 to 28.8V DC (24V DC -15% to +20%)
  - Current: 4.5 mA or less

- **Output specifications**
  - Voltage: 24V DC ±10%
  - Current: 2.5 mA or less

---

### 6. Outside Dimensions

- **Input/output point**
  - The port number must be set to 1 or 2.

- **Specifications**
  - Port number 1
    - Input / output point
      - Input: 1
      - Output: 1
  - Port number 2
    - Input / output point
      - Input: 1
      - Output: 1

- **Input specifications**
  - Voltage: 20.4 to 28.8V DC (24V DC -15% to +20%)
  - Current: 4.5 mA or less

- **Output specifications**
  - Voltage: 24V DC ±10%
  - Current: 2.5 mA or less

---

### 7. Performance specification

- **Voltage**
  - Voltage applied to each terminal is shown in Table 3.

- **Current consumption**
  - Current consumption is shown in Table 4.

---

### 8. Information

- **Product identification**
  - The product identification number is shown in Table 5.

- **Equipment identification**
  - The equipment identification number is shown in Table 6.

---

### 9. Notice

- **Notice**
  - This module is for China only.

---

### 10. Declaration

- **Declaration**
  - The module has been manufactured under strict quality control. However, it may cause trouble or malfunction in the module.

---

### 11. References

- **References**
  - The references used in this manual are shown in Table 7.