4. Wiring

4.1 Mounting

The input terminals of the CL1X2-D1D3S operate while using the power supplied from the input terminal. Use a sensor of the MNP open collector transistor type.

4.2 Connection to sensor

- When using a transistor type sensor: When using a transistor type sensor

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Resistance</th>
<th>Maximum current</th>
</tr>
</thead>
<tbody>
<tr>
<td>5V DC</td>
<td>100Ω</td>
<td>10mA</td>
</tr>
<tr>
<td>24V DC</td>
<td>100Ω</td>
<td>10mA</td>
</tr>
</tbody>
</table>

Replace the sensor with a new one in case of a current overload.

- When using a sensor with a transistor: When using a sensor with a transistor

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Resistance</th>
<th>Maximum current</th>
</tr>
</thead>
<tbody>
<tr>
<td>5V DC</td>
<td>100Ω</td>
<td>10mA</td>
</tr>
<tr>
<td>24V DC</td>
<td>100Ω</td>
<td>10mA</td>
</tr>
</tbody>
</table>

Replace the sensor with a new one in case of a current overload.

5. Specifications

5.1 General specifications

- Specifications:
  - Operating voltage: 5V DC (±10%)
  - Operating current: Max. 10mA
  - Power consumption: Max. 250mW

- Environment:
  - Operating temperature: 0°C to +55°C
  - Operating humidity: 5% to 95% RH
  - Maximum acceleration: 10 m/s²
  - Operating shock: 0.035m/s²

- Communication:
  - Communication interface: CC-Link/LT
  - Communication speed: 1500 kbps
  - Communication protocol: CC-Link/LT

- Power supply:
  - Power supply: 24V DC
  - Power consumption: Max. 250mW

- Relays:
  - Output type: NO
  - Contact resistance: Max. 150Ω
  - Contact capacity: 2A, 250V AC/DC

- Dimensions:
  - Dimensions: 48mm x 56mm x 17mm
  - Weight: 50g

6. Outside Dimensions

- Dimensions:
  - CL1X2-D1D3S: 48mm x 56mm x 17mm
  - Weight: 50g

- Connections:
  - Power supply: Flat cable
  - Communication: Flat cable

- Mounting:
  - DIN rail

- Notes:
  - Use this product in Zone A*1 as defined in EN61131-2.
  - *1: Zone defined in EN61131-1
  - *2: Zone defined in EN61131-2
  - *3: Zone defined in EN61131-3

- Safety Precautions:
  - Do not use in Zone A*1 as defined in EN61131-2.
  - *1: Zone defined in EN61131-1
  - *2: Zone defined in EN61131-2
  - *3: Zone defined in EN61131-3
In case of a two-wire type sensor or input equipment having 4-20mA output, please check that the current leakage is within the limit. When connected to the CL1-HLD, the leakage current leakage of the load is limited to 0.5mA. Also, the current leakage of the output terminal is 0.5mA. Furthermore, please make sure to keep the current leakage within 1mA at any time when using the I/O module.


c) The leakage current of the output terminal must be kept within 1mA. When using the I/O module, please make sure to keep the leakage current below 1mA.
**SAFETY PRECAUTIONS**

- Do not install or remove the module while it is powered on. Use the on/off terminal (+5V) to power off the module before installing or removing it. If done improperly, it may cause a malfunction or damage.

- When connecting a sensor to the input terminal, use a sensor of the NPN supplied from the interface.

- For continuous vibration, the vibration frequency should be 10 to 57Hz and 57 to 150Hz.

- When applying force, wire breakage or failure may be caused. Place the cables away from the main circuit and power cables. Wire those cables in case the data link falls into a communication problem.

**PREPARATIONS**

- You must install and wire the module according to the instructions in this manual. Otherwise, operational results may differ or may not function properly.

- If a force is applied, wire breakage or failure may be caused.

**EXECUTION PRECAUTIONS**

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

- When the input is OFF, make sure to select all OFF positions.

- When using a sensor with a maximum input of 19 V or more, use it at 19 V or less. The module may not work correctly if used at 20 V or more.

- When using a sensor with a maximum input of 3 mA or more, use it at 3 mA or less. The module may not work correctly if used at 3.5 mA or more.

**SPECIFICATIONS**

- When connecting a sensor to the input terminal, use a sensor of the NPN supplied from the interface.

- When connecting a sensor to the input terminal, use a sensor of the NPN supplied from the interface.

**PREPARATIONS**

- You must install and wire the module according to the instructions in this manual. Otherwise, operational results may differ or may not function properly.

- The power capacity W of the bleeder resistor R is as follows:

  \[
  W = 0.035 mm/1.5 ms (at 24V DC) 
  \]

**INPUTS**

- The ON voltage/ON current is as follows:

  \[
  0.5 ms/1.5 ms or less (at 24V DC) 
  \]

**OUTPUTS**

- The OFF voltage/OFF current is as follows:

  \[
  0.5 ms/1.5 ms or less (at 24V DC) 
  \]

**EXHAUSTIVE PRECAUTIONS**

- When using a sensor with a maximum input of 19 V or more, use it at 19 V or less. The module may not work correctly if used at 20 V or more.

- When using a sensor with a maximum input of 3 mA or more, use it at 3 mA or less. The module may not work correctly if used at 3.5 mA or more.

**INDICATION POWER SUPPLY**

- The module requires 20.4 to 28.8V DC (24V DC -15% to +20%) as input power.

**CIRCUIT》SENSE」**

- The circuit sense line shall be cut out when the module is used with a sensor whose leakage current is 1 nA or less. When using a sensor whose leakage current is more than 1 nA, connect a bleeder resistor to the circuit sense line.

- Circuit sense line shall be cut out when the module is used with a sensor whose leakage current is 1 nA or less. When using a sensor whose leakage current is more than 1 nA, connect a bleeder resistor to the circuit sense line.

**MODULATION WITH THE CL1-HLD (MODULE HOLDER)**

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

- Make sure to select all OFF positions.

**APPLICATION**

- The input method is as follows:

  \[
  \begin{align*}
  \text{ON} & \quad \text{OFF} \\
  0.5 ms & \quad 1.5 ms \\
  \end{align*} 
  \]

**NOTIFICATION OF CE-MARKING**

- The notification of CE-marking is as follows:

  \[
  (Hg) 
  \]

**MARKS」**

- The mark shall be placed on the main circuit and power cords. The module shall not be removed from the main circuit and power cords.

- When the input is OFF, make sure to select all OFF positions.

**DIRECTIONS FOR USAGE」**

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

- Make sure to select all OFF positions.

**SAFETY PRECAUTIONS」**

- Do not install or remove the module while it is powered on. Use the on/off terminal (+5V) to power off the module before installing or removing it. If done improperly, it may cause a malfunction or damage.

**PREPARATIONS」**

- You must install and wire the module according to the instructions in this manual. Otherwise, operational results may differ or may not function properly.

**EXECUTION PRECAUTIONS」**

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

**SPECIFICATIONS」**

- The main circuit and power cords shall not be removed from the main circuit and power cords.

**INPUTS」**

- The ON voltage/ON current is as follows:

  \[
  0.5 ms/1.5 ms or less (at 24V DC) 
  \]

**OUTPUTS」**

- The OFF voltage/OFF current is as follows:

  \[
  0.5 ms/1.5 ms or less (at 24V DC) 
  \]

**INDICATION POWER SUPPLY」**

- The module requires 20.4 to 28.8V DC (24V DC -15% to +20%) as input power.

**CIRCUIT」SENSE」**

- The circuit sense line shall be cut out when the module is used with a sensor whose leakage current is 1 nA or less. When using a sensor whose leakage current is more than 1 nA, connect a bleeder resistor to the circuit sense line.

- Circuit sense line shall be cut out when the module is used with a sensor whose leakage current is 1 nA or less. When using a sensor whose leakage current is more than 1 nA, connect a bleeder resistor to the circuit sense line.