Thank you for purchasing our proximity switch. This manual contains information for ensuring correct and safe use of this product. Please read and understand the manual thoroughly before using this product, and keep the manual nearby after installation for handy reference.

Please read the "Terms and Conditions" from the following URL before ordering or use:
https://www.azbil.com

Thank you for purchasing our proximity switch.

### Specifications

**Model number**
- FL7M-
  - 1P, 2P, 5P, 10P,
- Size (M8, M12, M18, M30)
- Sensing distance (1.5 mm, 2 mm, 5 mm, 10 mm)
- Setting distance (8 x 8 x 1 mm, 12 x 12 x 1 mm, 18 x 18 x 1 mm, 30 x 30 x 1 mm)
- Standard target (steel) (8 x 8 x 1 mm, 12 x 12 x 1 mm, 18 x 18 x 1 mm, 30 x 30 x 1 mm)
- Temperature
- Current consumption (13 mA max.)
- Dielectric strength (1000 V AC 1min)

**Withstand voltage**: 30 V max.

**Applications**
- For use in various industrial environments.

### Circuit and Wiring

**Pre-wired type (NPN)**
- Model number: FL7M-1P5A-
  - Connector face view
  - A load must be used when power is applied to the switch.
  - A combination of short circuit and wrong wiring will cause permanent damage, regardless of short-circuit protection.
  - When connecting a connector fasten tightly by hand.

**Dimensions**
- FL7M-1PS_6
- FL7M-2_6
- FL7M-5_6
- FL7M-10_6

**Operating Chart for Output and Indicator**

**Mutual Interference**
- Erroneous operation due to mutual interference is caused when switches are installed in parallel or facing each other.

**Influence from Nearby Metal Objects**
- If a metal object other than the work piece is located nearby, this switch sensing distance characteristics will change.
  - Keep the minimum distances between the switch and metal objects shown in the table below.

<table>
<thead>
<tr>
<th>A (mm)</th>
<th>B (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FL7M-1P, 6</td>
<td>9</td>
</tr>
<tr>
<td>FL7M-2_6</td>
<td>8</td>
</tr>
<tr>
<td>FL7M-5_6</td>
<td>35</td>
</tr>
<tr>
<td>FL7M-10_6</td>
<td>70</td>
</tr>
</tbody>
</table>

**Points to be Aware of When Handling**
- Do not pull the cable with excessive force.
- Do not use the switch outdoors, or where it is surrounded by chemicals (solvents, acids, alkalies, etc.).
- When using a commercial switching regulator, ground the FG (Frame Ground) and G (Ground) terminals. Otherwise, switching noise may cause faulty operation.
- Route the wires of the switch separately from power lines or through an exclusive conduit. Otherwise, electrical noise or a surge may cause faulty operation or damage.
- If an extension of the cable is necessary, use at least a 0.3 mm² wire of 100 m maximum length.
- When using a load to generate a transient current, connect a current limit resistor between the load and the output terminal.

**Wiring Precautions**
- Do not pull the cable with excessive force.
- Do not do the switch outdoors, or where it is surrounded by chemicals.
- Do not use the switch outdoors, or where it is surrounded by chemicals.
- Do not use the switch outdoors, or where it is surrounded by chemicals.
- Use a short-circuit protection.
- Do not pull the cable with excessive force.

**Handling Precautions**
- Do not touch the body by applying torque to the indicator unit (plastic unit).
- Do not mount the body using a setscrew. Doing so might damage the switch.

**AND Connection (Serial Connection)**
- When connecting two switches in series, please pay attention to the following:
  - Maximum output current (100 mA) ≥ 2 load current + current consumption (13 mA)
  - Supply voltage ≥ operation voltage of a load + 2 x voltage drop (2 V)
  - If target moves too quickly, switch may operate incorrectly.
- In series, switch A may operate incorrectly on startup, because switch A is supplied power from switch B's output.

**OR Connection (Parallel Connection)**
- Up to three of these switches may be connected in parallel.