Thank you very much for purchasing Panasonic products. Read this Instruction Manual carefully and thoroughly for the correct and optimum use of this product. Kindly keep this manual in a convenient place for quick reference.

### WARNING
- Never use this product as a sensing device for personnel protection.
- In case of using sensing devices for personnel protection, use products which meet laws and standards, such as OSHA, ANSI or IEC etc., for personnel protection applicable in each region or country.

#### 1 INTENDED PRODUCTS FOR CE MARKING
This product complies with the following standards / regulations.

[<EU Directive>]
EMC Directive

**Importer**
Panasonic Electric Works Europe AG
Rudolf-Diesel-Ring2, D-83607 Holzkirchen, Germany

**Contact for CE**
Panasonic Marketing Europe GmbH
Panasonic Testing Center
Winsberggring 15, 22525 Hamburg, Germany

#### 2 I/O CIRCUIT DIAGRAM

**NPN output type**

Main circuit
- (Brown) +V
- (Black) Output 1 (Note)
- (White) Output 2 (Note)
- Load
- 50mA max.
- (Blue) 0V
- 50mA max.

**PNP output type**

Main circuit
- (Brown) +V
- (Black) Output 1 (Note)
- (White) Output 2 (Note)
- Load
- 50mA max.
- (Blue) 0V
- 50mA max.

**Note:** Ensure to insulate the unused output wire.

#### 3 CAUTIONS
- This product has been developed / produced for industrial use only.
- Since the sensor is intended for use inside machines, no special countermeasures have been taken against extraneous light. Please take care that extraneous light is not directly incident on the beam receiving section.
- If the sensor is used in a place having excessive dust, periodically clean the emitting and receiving sections with a dry, soft cloth.
- Cable extension is possible up to an overall length of 100m with a 0.3mm², or more, cable. However, since a voltage drop shall occur due to the cable extension, ensure that the power supply voltage at the end of the cable attached to the sensor or at the sensor terminals is within the rating.
- But, when the overall cable length, including the cable attached to the sensor, is as given below, there is no need to confirm the voltage.

<table>
<thead>
<tr>
<th>Wire conductor cross-section area</th>
<th>Overall cable length</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.06 to 0.1mm²</td>
<td>Up to 5m</td>
</tr>
<tr>
<td>0.2mm²</td>
<td>Up to 10m</td>
</tr>
<tr>
<td>0.3mm²</td>
<td>Up to 20m</td>
</tr>
</tbody>
</table>

- The extension of a power supply line and the output line of less than 10m is acceptable in case using this product as conforming to S-mark.
- If there is a large surge generating equipment, such as, motor, solenoid, electromagnetic valve, etc., in the vicinity of the micro-photosensor, use a surge absorber on that equipment. Further, do not run the sensor cables along power lines and use a capacitor between +V and 0V, if required. Use the sensor after confirming that the surge has been eliminated.
- In case the sensor is fixed with screws, strictly observe the following conditions.

#### 4 WIRING (PM-□65)

**Connection method**
- Insert the cable with connector CN-14A-C / CN-14A-R-C in the connector part of this product as shown in the figure below.

**<Connector pin position>**

<table>
<thead>
<tr>
<th>Terminal designation</th>
<th>Terminal No.</th>
<th>CN-14A-C</th>
<th>CN-14A-R-C</th>
</tr>
</thead>
<tbody>
<tr>
<td>+V</td>
<td>1</td>
<td>Output 1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>Output 2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>0V</td>
<td></td>
</tr>
</tbody>
</table>

**Disconnection method**
- Pressing the release lever attached to the cable with connector, pull out the connector.

**Note:** Do not pull by holding the cable without pressing the release lever, as this can cause cable break or connector break.

#### 5 RoHS DIRECTIVE
- This equipment complies with RoHS (EC and Chinese directive).
- Chinese RoHS indicates inclusion despite regulation value. (Refer Chinese part.)

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