**GENERAL DESCRIPTION**

M12 cylindrical photoelectric sensors - DC

Digital sensitivity adjustment by teach-in feature is included.

Multifunction LED with signal indication.

Input signal: 10...30 Vdc

Nominal current: 100 mA

Housing material: nickel-plated brass

Output: NPN or PNP, 100 mA, with short circuit protection.

**CODE DESCRIPTION**

<table>
<thead>
<tr>
<th>Models</th>
<th>NPN - Receiver</th>
<th>PNP - Receiver</th>
<th>NPN - Polarized</th>
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</tr>
</thead>
<tbody>
<tr>
<td>WIRING COLORS</td>
<td>1/B : Brown</td>
<td>2/B : White</td>
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**SPECIFICATIONS**

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**OUTPUT TYPE**

- **NPN - Receiver**
- **PNP - Receiver**

**Sensitivity Adjustment**

Sensitivity adjustment can be made in the following way:

1. **Teach-in button / Trimmer**
   - Trim the unit and select the output position. Place the target object at the sensing distance warning. Check that the optical axis is perpendicular to the surface of the object.
   - Check that the sensitivity adjustment is not greater than that specified for the teach-in feature. If the teach-in feature is used, the sensor is placed in a stable position and selected the output position. To achieve the best alignment, use the following procedure: Press the Teach button, then press the white button to select the output position. Press the Teach button and then press the yellow button to select the output position. Press the Teach button and then press the yellow button to select the output position.

2. **Teach-in button / Trimmer**
   - Trim the unit and select the output position. Place the target object at the sensing distance warning. Check that the optical axis is perpendicular to the surface of the object.
   - Check that the sensitivity adjustment is not greater than that specified for the teach-in feature. If the teach-in feature is used, the sensor is placed in a stable position and selected the output position. To achieve the best alignment, use the following procedure: Press the Teach button, then press the white button to select the output position. Press the Teach button and then press the yellow button to select the output position. Press the Teach button and then press the yellow button to select the output position.

**INSTALLATION**

- Ensure that the device is firmly mounted to avoid vibration or rotation of the sensor.
- Ensure that the device is properly grounded to avoid EMI interference.
- Ensure that the device is protected from water and dust ingress.
- Ensure that the device is protected from mechanical damage.

**APPLICATIONS**

Use this device for applications where high sensitivity and precision are required.

- **Safety applications**
- **Polarized: red (660 nm)**
- **WARNING**
  - For applications where high sensitivity and precision are required.

**CONNECTIONS**

1. Make sure that the operating voltage is correctly stabilized with a maximum ripple being within the specified range as stated in the catalog.
2. When using a “switching” relay for the power source, be sure to earth both the frame round terminal and sensor.
3. In the event that the noise induced by the power lines is greater than that specified by the DC regulation (interference immunity), detach the sensor cables from the power and high voltage lines and insert the cable to an earthed metal conduit. Furthermore, it is advisable to connect the sensor to the supply source and not downstream of other devices.
4. To extend the supply cables, a cable with a minimum cross-section of 1 mm² must be used. The length of串联 suppressors is not to exceed 100 m (with a parallel capacitance of 100 m to avoid high voltage and load current of 100 m).
5. The sensor is designed to operate in the optimum conditions for detecting both solid and transparent objects. The sensor is designed to operate in the optimum conditions for detecting both solid and transparent objects.

**M12 CONNECTORS**

- Use the recommended bracket, previously install the emitter and receiver within the sensing distance. Position the components so that they coincide with the optical axes.