Mute R2 is a retro-reflective photoelectric sensor with polarizing filters.

Mute R2 can be used as muting sensor for the Orion light guards.

Mute R2 has a tubular M18 plastic housing and a PNP output, is equipped with a sensitivity adjustment trimmer and offers the possibility to choose between Dark-on and Light-on modes.

Mounting

The sensor can be fixed by means of the M18x1 threaded body using the provided hexagonal nuts (spanner width 24, 1.5 Nm maximum tightening torque) and/or low profile flare nut.

Connections

<table>
<thead>
<tr>
<th>Connector M12</th>
<th>1 (Brown): +12...30 VDC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2 (White): Mode selection</td>
</tr>
<tr>
<td></td>
<td>Dark-on: connection to 0 V (pin 3) or not connected</td>
</tr>
<tr>
<td></td>
<td>Light-on: connection to supply (pin 1)</td>
</tr>
<tr>
<td></td>
<td>3 (Blue): 0 V</td>
</tr>
<tr>
<td></td>
<td>4 (Black): PNP output</td>
</tr>
</tbody>
</table>

Colors according to ABB Jokab Safety standard cables

Note: If pin 2 is not connected, Mute R2 operates in Dark-on mode.

Dark-on mode:

(to be used when Mute R2 is used as muting sensor)

The output (pin 4) is activated when an object interrupts the light beam.

Light-on mode:

The output (pin 4) is activated when the light beam is not interrupted (no object).

Setting

Place the sensor and the reflector on opposite sides within the maximum operating distance. The operating distance is measured from the front surface of the sensor lens.

Turn the trimmer completely clockwise.

Move the sensor vertically and horizontally, define the points of switch-off and switch-on of the yellow LED (Output). Mount the sensor in the middle of the defined points and check that the green LED (Stability) is ON.

Controls

Output LED (yellow)

The yellow LED should be permanently ON or OFF: it indicates the status of the output. If the yellow LED is blinking, the short circuit protection of the output is activated.

Stability LED (green)

The green LED should be permanently ON: it indicates that the signal received has an acceptable safety margin in relation to the switching value of the output and the sensor is ready to function in a stable operating condition.

Sensitivity trimmer adjustment

Mono-turn trimmer to adjust the operating distance of the sensor. Turn the trimmer completely clockwise for maximum sensitivity/longest operating distance.

If the object to be detected has a reflecting surface (e.g. a shiny surface), reduce the sensitivity in order to detect the object. This also reduces the operating distance and you have to make sure that the reflector is still within the operating distance and that the green light is ON.

⚠️ Warning! The trimmer rotation is limited to 270° by a mechanical stop. Do not apply excessive torque when adjusting (max 40 Nmm).
Technical data

Power supply  +12…+30 VDC Class 2 UL508
Ripple  2 Vpp max
Current consumption  30 mA max (output current excluded)
Outputs  PNP open collector (overload and short circuit protection, indicated with LED indicators and LED emission blinking)
Output current  100 mA max
Output saturation voltage  2 V max
Response time  1 ms
Switching frequency  500 Hz
Settings  Mono-turn sensitivity adjustment trimmer
Operating temperature  -25 … +55 °C
Storage temperature  -25 … +70 °C
Insulating strength  500 VAC during 1 min between electronics and housing
Insulating resistance  >20 MΩ 500 VDC between electronics and housing
Operating distance (typical values)  0.1…4 m on REFLECT 1 (Ø 63 mm reflector)
                            0.1…5 m on REFLECT 2 (Ø 82 mm reflector)
Emission type  Red (660 nm)
Ambient light rejection  According to EN 60947-5-2
Vibrations  0.5 mm amplitude, 10 … 55 Hz frequency for every axis (EN60068-2-6)
Shock resistance  11 ms (30 G) 6 shock for every axis (EN60068-2-27)
Housing material  ABS TERLURAN
Lens material  PMMA
Mechanical protection  IP67, IP69K
Connections  M12-4 pole male connector (compatible with M12-5 pole female connector)
Weight  40 g max

Ordering information

<table>
<thead>
<tr>
<th>Type</th>
<th>Order code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mute R2</td>
<td>2TLA022044R0500</td>
<td>Retro-reflective photoelectric sensor, PNP output</td>
</tr>
<tr>
<td>REFLECT 1</td>
<td>2TLA022044R2000</td>
<td>Reflector diameter 63 mm</td>
</tr>
<tr>
<td>REFLECT 2</td>
<td>2TLA022044R3000</td>
<td>Reflector diameter 82 mm</td>
</tr>
<tr>
<td>JSM 64</td>
<td>2TLA040007R0200</td>
<td>Bracket with angle possibility for M18</td>
</tr>
</tbody>
</table>

Dimensions

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