**AREAscan™**

**DS1 SERIES INSTRUCTION MANUAL**

OUT LED on receiver (RX)

The yellow LED ON indicates the presence of the object inside the controlled area.

**POWER ON LED on receiver (RX)**

The green LED ON indicates the correct device functioning. The fast blinking of the green LED indicates a critical device alignment. Please refer to “DIAGNOSTICS” paragraph for other indications.

**POWER ON LED on emitter (TX)**

The green LED ON indicates the correct device functioning. Please refer to “DIAGNOSTICS” paragraph for other indications.

**INSTALLATION MODES**

General information on device positioning:

- Align the two receiver (RX) and emitter (TX) units, verifying that their distance is inside the device operating distance, in a parallel manner, placing the sensitive sides one in front of the other, with the connections oriented on the same side. The critical alignment of the unit will be signalled by the fast blinking of the green receiver LED.

- Shielded cables are not foreseen in the standard connection.

- Ground connection of the two units is not necessary. If desired, this connection can be accomplished replacing the screw provided in the packaging with the one indicated in the drawing, which blocks the lid of the connector side of each unit. It is necessary to respect the connection shown in the drawing if ground connection of the entire system is requested.

**FUNCTIONING AND PERFORMANCES**

The beam interruption due to the passage of an object inside the controlled area causes the closing of the switching output and the variation of the device analogue output signal. Small objects can be detected (measuring dimensions of only 5 mm) and determine linear measurements with a ±3 mm error in best cases.

In particular:

- The switching output is always activated when at least one beam is obstructed. The status variation is signalled by the yellow receiver LED that turns on.

- The analogue output value (-0.1 V) is proportional to the number of obstructed beams (0V means that no beam is interrupted, 1V, all beams interrupted)

- The device does not require calibration; periodic checks of the resolution and / or measurement are however suggested.

- The blinking of the green receiver LED (stabilly functioning) signals the critical alignment of the units and / or the functioning outside or near the maximum operating distance. In optimal conditions the LED remains continuously lit.

- The beam does not function, and the LED is not powered.

General information on humidity and temperature:

- Humidity: 0 - 95% RH (0 - 95% relative humidity)
- Storage temperature: -25...+ 70 °C
- Operating temperature: 0...+ 70 °C
- Response time: ≤1 ms (refer to "Specifications" table)
- Shock resistance: 11 ms (30 G) 6 shock for every axis (EN60068-2-27)
- Vibration: 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: Black electro-chemical aluminium
- Lens material: PMMA
- Mechanical protection: IP65 (EN 60529)

**DIAGNOSTICS**

**SEGMENT STATUS**

<table>
<thead>
<tr>
<th>Status</th>
<th>Cause</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switching OFF</td>
<td>No beam</td>
<td>Switch ON the power supply.</td>
</tr>
<tr>
<td>Switching OFF</td>
<td>Wrong connections</td>
<td>Verify the connections and right functioning of the device.</td>
</tr>
<tr>
<td>Switching OFF</td>
<td>Unit malfunctioning</td>
<td>Switch ON and switch OFF the device.</td>
</tr>
<tr>
<td>OFF</td>
<td>Unit malfunctioning</td>
<td>Verify the connections and right value of power supply.</td>
</tr>
</tbody>
</table>

**EMITTING UNIT**

- The presence of smoke, fog and suspended dust in the working environment can reduce the operating distance of the device;
- Reflecting or absorbent surfaces near the luminous beam of the AREAscan™ device (above, under or lateral) can cause passive reflections able to compromise object detection inside the controlled area.
- For a correct object detection and / or measurement, the object has to pass completely through the controlled area, testing the correct detection before the process is suggested.

**TECHNICAL DATA**

- Power supply: 24 Vdc ± 15%
- Consumption on emitting unit (TX): 150 mA max.
- Consumption on receiving unit (RX): 50 mA max without load
- Switching output: 1 PNP output
- Minimum resolution: 0.15 mm (30 G) 6 shock for every axis (EN60068-2-27)
- Response time: 1 ms (refer to "Specifications" table)
- Storage temperature: -25...+ 70 °C
- Emission type: Infrared (880 nm)
- Mechanical protection: IP65 (EN 60529)
- Lens material: PMMA
- Housing material: Black electro-chemical aluminium

**DIMENSIONS**

www.idec-ds.com

800-262-4332

DECLARATION OF CONFORMITY

IDEC USA DATASENSOR USA solely under their sole responsibility that these products conform to the 2004/108/EC, 2006/95/EC Directives, and subsequent amendments.

IDEC USA DATASENSOR reserve the right to make modifications and improvements without prior notice.