

# Product data sheet

## *OndoSense apex* L500

Radar level sensor for harsh environments



**ONDOSENSE**  
**apex**

### Technical data

| General data           |  |
|------------------------|--|
| Radar frequency (FMCW) | 122 - 123 GHz , 119 - 125 GHz (selectable) |
| Radiation power        | EIRP < 100 mW                              |
| MTTF                   | > 105 years                                |
| Opening angle          | $\pm 1.5^\circ$ (3°)                       |
| Measurement range      | 0.10 - 6.00 m*                             |
| Measurement rate       | 500 Hz                                     |
| Linearity              | < $\pm 700 \mu\text{m}^*$                  |
| Repeatability          | $\pm 100 \mu\text{m}^*$                    |

\*for calibrated range up to 1.4m

| Mechanical data        |   |
|------------------------|---|
| Dimensions (W x H x D) | 120 mm x 100 mm x 87 mm   |
| Housing material       | Aluminum  |
| Lens material          | PTFE  |
| Connection             | M12, 4-pin d-coded female connector<br>M12, 8-pin, a-coded male connector |
| Weight                 | 740 g   |

| Environmental data    |   |
|-----------------------|---|
| Protection class      | IP67                                      |
| Operating temperature | -40 ...+ 70 °C                            |
| Storage temperature   | -40 ...+ 85 °C                            |
| EMC                   | EN 301 489-1 v2.2.3, EN 301 489-03 v2.3.2 |

# Product data sheet

## OndoSense apex L500



### Electrical data

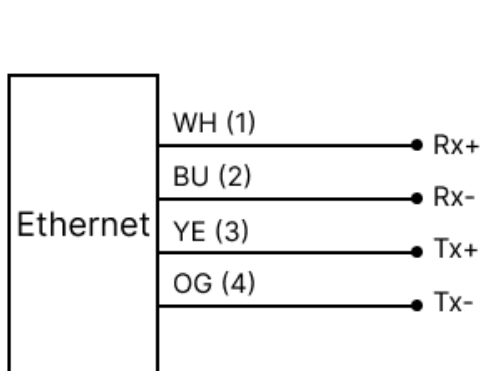
|                            |                      |
|----------------------------|----------------------|
| Power supply               | 24.0 V DC (9 - 36 V) |
| Operation current          | 125 mA               |
| Power dissipation          | 3 W                  |
| Reverse voltage protection | yes                  |
| Switching outputs          | -                    |
| Analog output              | -                    |

### Profinet Data

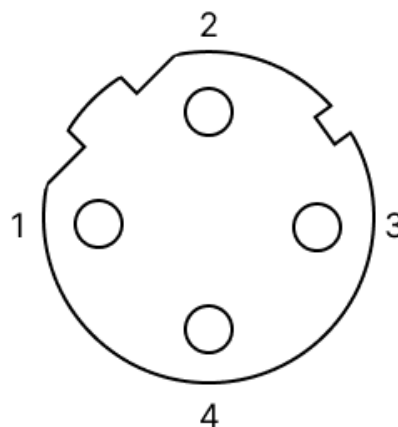
|                          |  |
|--------------------------|--|
| Communication interface  | Profinet RT  |
| Cycle time               | 1 ms   |
| Data transfer            | 100 MBit/s   |
| Line length              | 100 m  |
| Classifications          | <ul style="list-style-type: none"><li>• RT Class 1</li><li>• Conformance Class B</li><li>• Netload Class III</li></ul>     |
| Adjustable parameters    | <ul style="list-style-type: none"><li>• IP address</li><li>• Device name</li><li>• I&amp;M 0...3 Parameter</li></ul>       |
| Profinet characteristics | <ul style="list-style-type: none"><li>• I&amp;M 0...3</li><li>• MRP</li><li>• LLDP</li><li>• PDEV</li><li>• SNMP</li></ul> |
| Process data             | <ul style="list-style-type: none"><li>• Distance</li><li>• Peak</li><li>• Ramp Count</li></ul>                             |

## Connection

**M12 4-pin d-coded female Profinet connector:** The pins Tx+ and Tx- are used for transmitting data, while Rx+ and Rx- are used for receiving data.

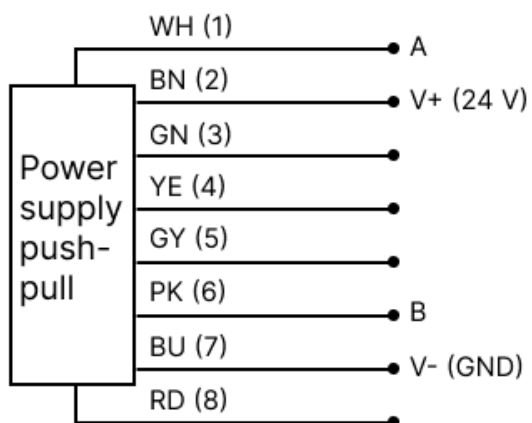


Pinout diagram sensor

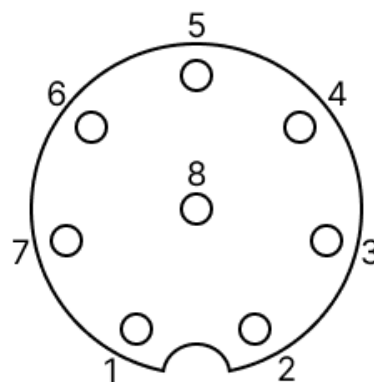


M12 4-pin d-coded female layout

**M12 8-pin a-coded male connector:** V+ (24 V) and V- (GND) are used for the power supply. The pins A and B are used for RS485 connection to the ConfigBox. The sensor can be connected with an 8-pin a-coded M12 cable.



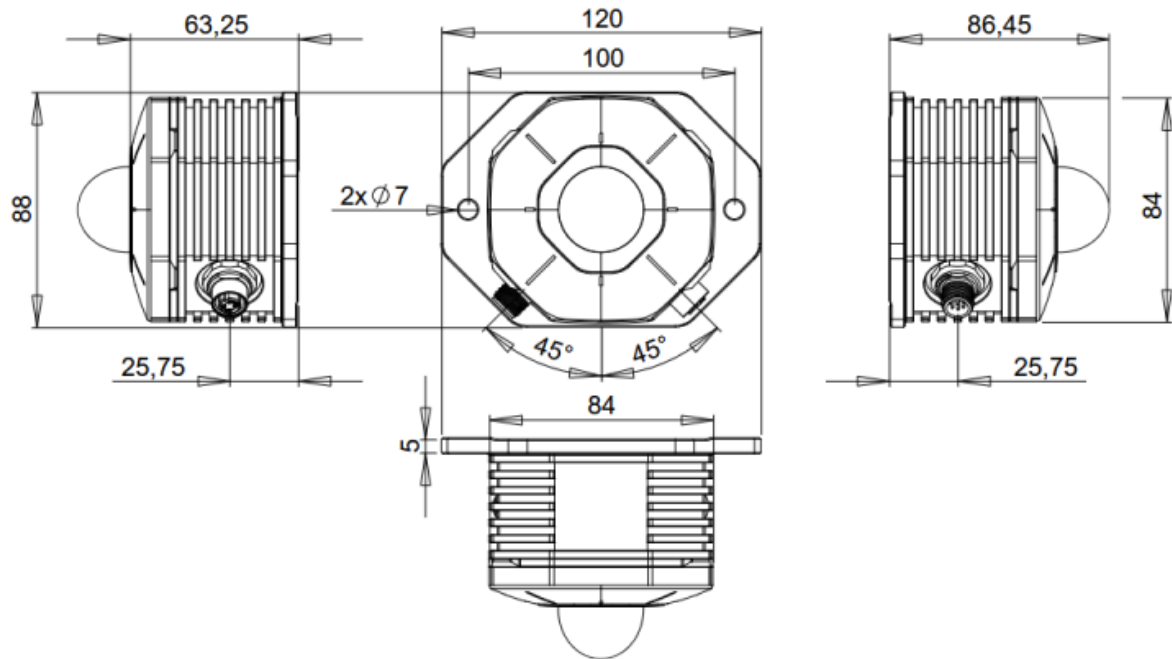
Pinout diagram sensor



M12 8-pin a-coded male layout

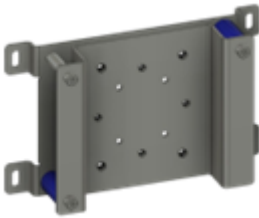
### Dimensional drawings

The lens geometry has been abstracted. All offered lenses will fit within the envelope.





Accessories:

| Name  | Description   | Ordering     |
|---|---|--------------|
| Install   |   |              |
|  | OndoSense AngleControl    Precise alignment of OndoSense apex | MB.X200.1000 |