

# Product data sheet

## *OndoSense apex* L300

Distance radar 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	< $\pm 1$ mm*
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 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	IEC 61496-1, IEC 61000-6-2, IEC 61000-6-4

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### 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	3x push-pull (PNP/NPN)
Analog output	Current loop (4 - 20 mA)

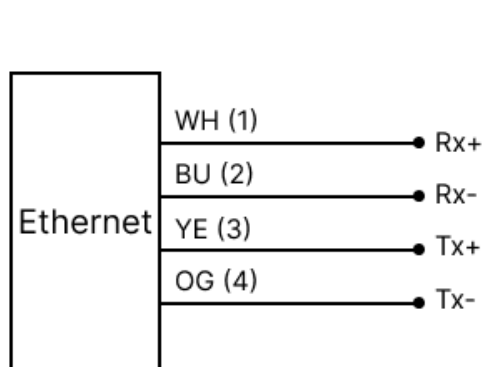
\* Switching outputs (10 V - 40 V) and analog output (8 V - 40 V)

### Profinet Data

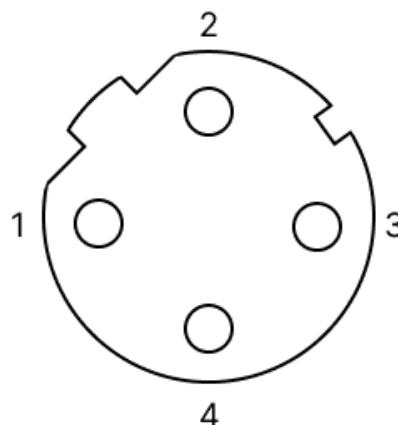
Communication interface	Profinet RT
Cycle time	1 ms
Data transfer	100 MBit/s
Line length	100 m
Classifications	<ul style="list-style-type: none"><li>• RT Class 1</li><li>• Conformance Class B</li><li>• Netload Class III</li></ul>
Adjustable parameters	<ul style="list-style-type: none"><li>• IP address</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.

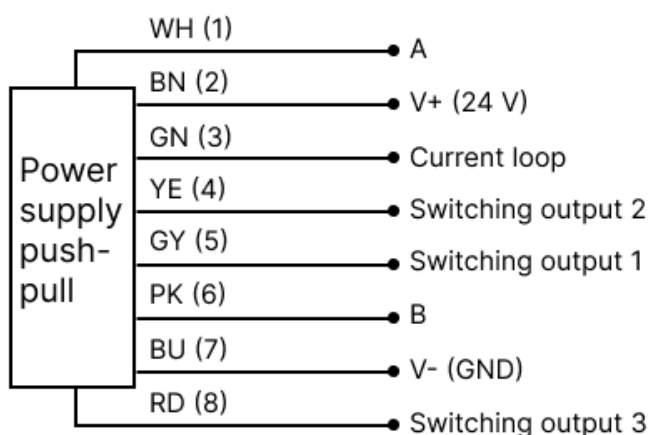


Pinout diagram sensor

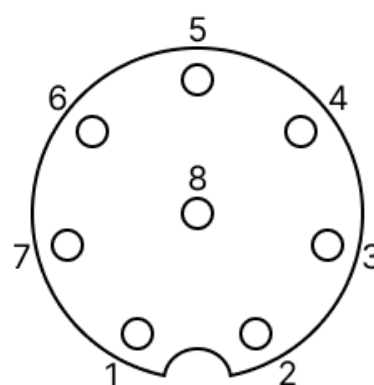


M12 4-pin d-coded female layout

**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. Additional pins are the 3 switching outputs and the current loop.



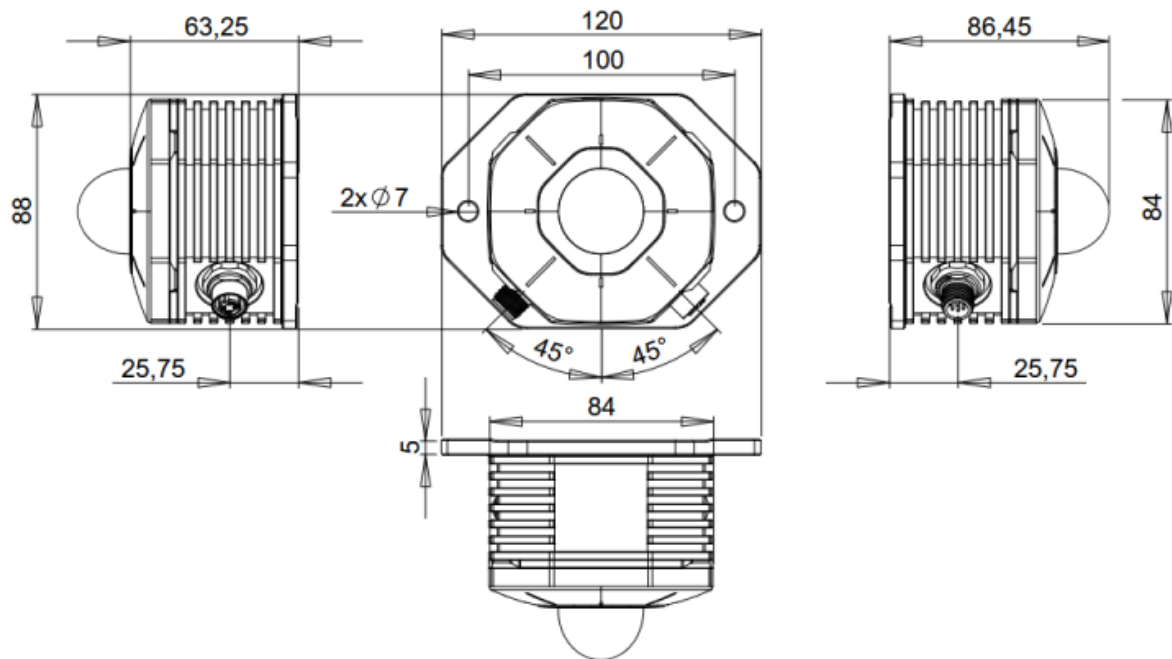
Pinout diagram sensor



M12 8-pin a-coded male layout

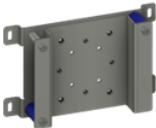
### Dimensional drawings

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