

# Product data sheet

## *OndoSense apex* D500

Radar distance sensor for harsh environments



## Technical data

General data	
Radar frequency (FMCW)	122 - 123 GHz , 119 - 125 GHz (selectable)
Radiation power	EIRP < 100 mW
MTTF	> 105 years
Opening angle	± 1.5° (3°)
Measurement range	0.10 - 6.0 m
Measurement rate	500 Hz
Linearity for distances up to 2 m	±0.7 mm
Linearity for distances above 2 m	±0.035 % of MR
Repeatability for distances up to 2 m	±70 µm
Repeatability for distances above 2 m	±0.0035 % of MR

Mechanical data	
Dimensions (W x H x D)	120 mm x 86.5 mm x 88 mm
Housing material	Aluminum
Lens material	PTFE
Connection	M12, 4-pin d-coded female connector M12, 8-pin, a-coded male connector
Weight	800 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

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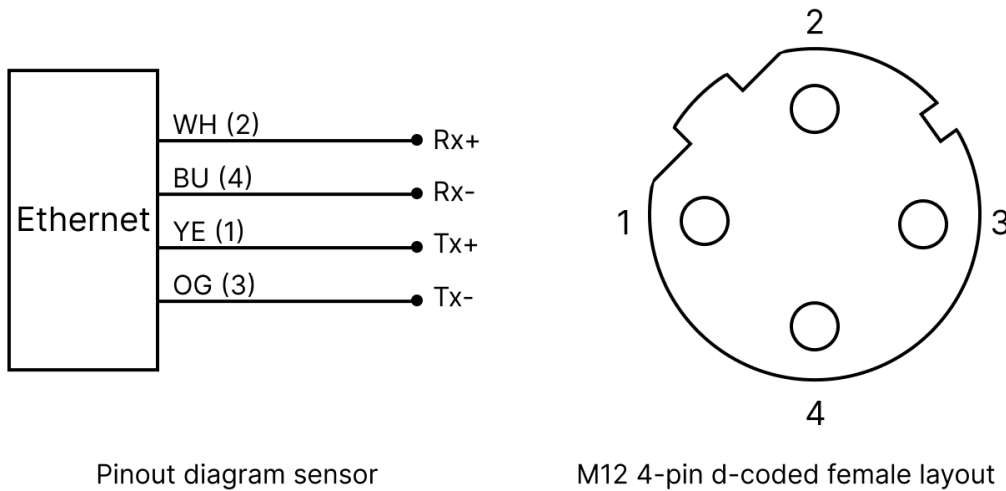
Electrical data	
Power supply	24 V DC $\pm$ 15 % *
Power dissipation	< 4.5 W
Operation current	125 mA
Reverse voltage protection	yes
Switching outputs	3x push-pull (PNP/NPN)
Analog output	Current loop (4 - 20 mA)

\*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><li>• Sensor Temperature</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.



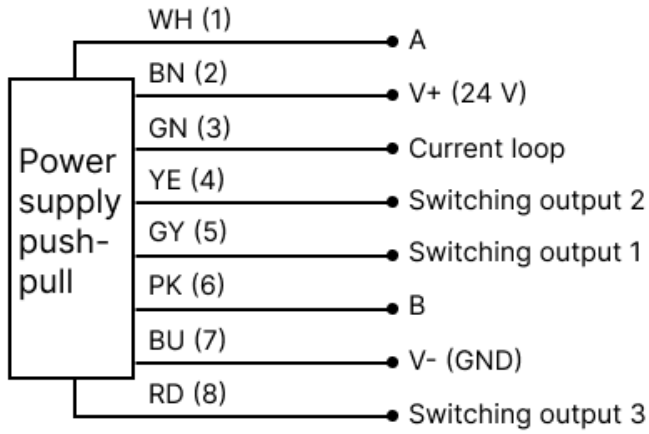
Pinout diagram sensor

M12 4-pin d-coded female layout

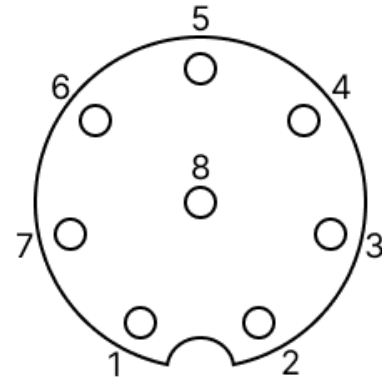
**M12 8-pin a-coded male connector:** V+ (24 V) and V- (GND) are used for the power supply. The pins A and B are used for RS485 connection to the ConfigBox. The sensor can be connected with an 8-pin a-coded M12 cable. Additional pins are the 3 switching outputs and the current loop.

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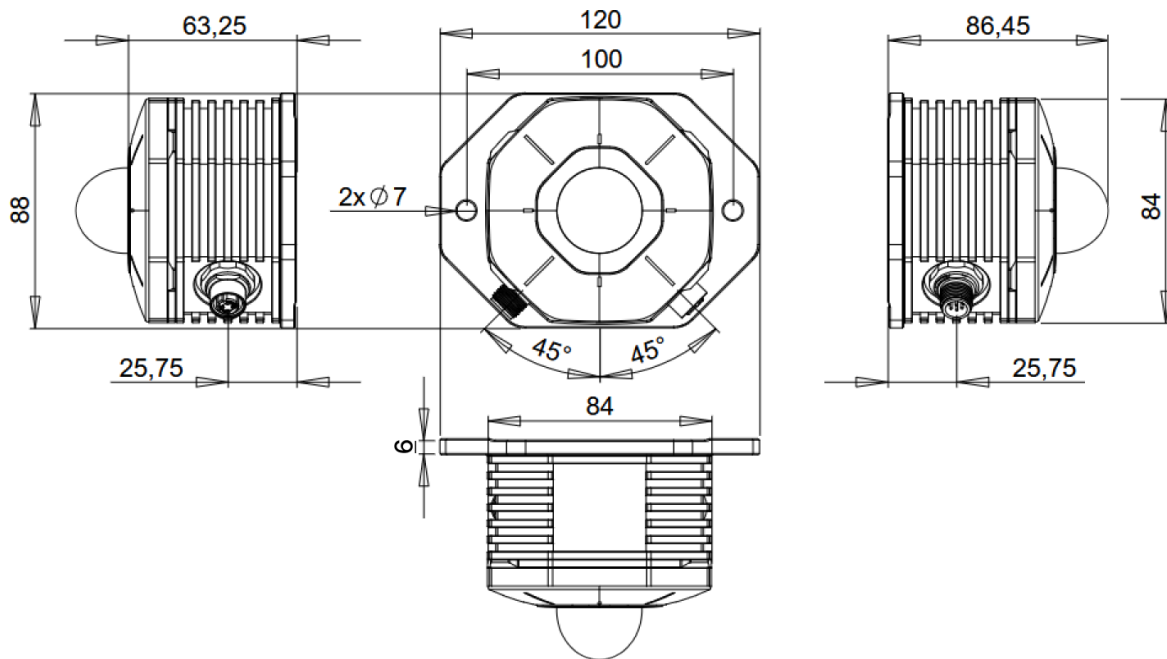
Pinout diagram sensor



M12 8-pin a-coded male layout

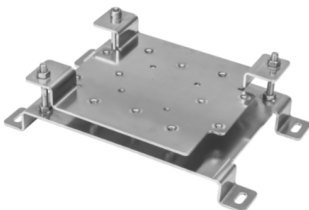

### Dimensional drawings

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





### Accessories:

	Name	Description	Ordering
	OndoSense AngleControl	Precise alignment of OndoSense apex	MB.S200.1000
	OndoSense AirChill	Protection housing for OndoSense apex for high temperature environments.	PS.2200.1000