Product data sheet OndoSense *apex* ST

Distance radar sensor for harsh environments

ONDOSENSE
apex

Technical Data

General data	
Radar frequency (FMCW)	119 - 125 GHz (selectable) 122 - 123 GHz
Radiation power	EIRP < 100 mW
MTTF	> 105 years
Opening angle	± 1.5° (3°)
Measurement range	0.10 - 6.00 m*
Measurement rate	300 Hz
Output rate via RS485	100 Hz
Lineatity	< ± 1 mm*
Repeatability	± 100 µm*

*for calibrated range up to 1.4m

Mechanical data	
Dimensions (W x H x D)	80.0 mm x 79.2 mm x 75.0 mm
Housing material	Die-cast aluminum, painted
Lens material	PTFE
Connection	M12, 8-pin, a-coded male connector
Weight	415 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	24.0 V DC (3.5 - 40 V)[1]
Power consumption	60 mA (at 24 V DC)
Power dissipation	1.44 W
Reverse voltage protection	yes
Communication interface	RS485 (half-duplex mode)
Switching outputs	3x push-pull (PNP/NPN)
Analog outputs	Current loop (4 - 20 mA)

[1]Switching outputs (10 V - 40 V) and Analog output (8 V - 40 V)

Connection

V+ (24 V) and V- (GND) are used for the power supply. The pins A and B are used for RS485 data exchange. These 4 pins are needed for operating the sensor with RS485 communication. The sensor can be connected with an 8-pin a-coded M12 cable. Additional pins are the 3 switching outputs and the current loop.
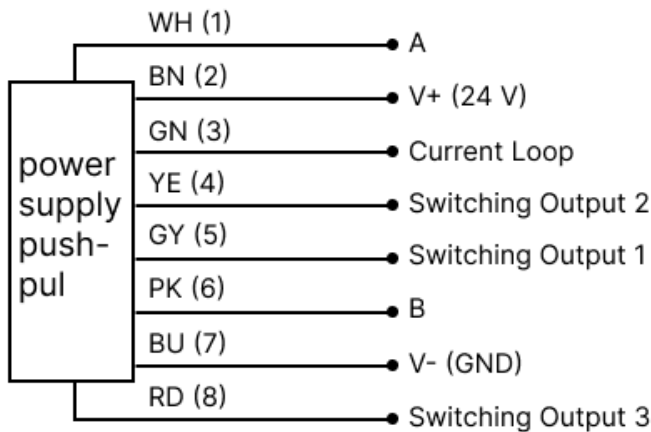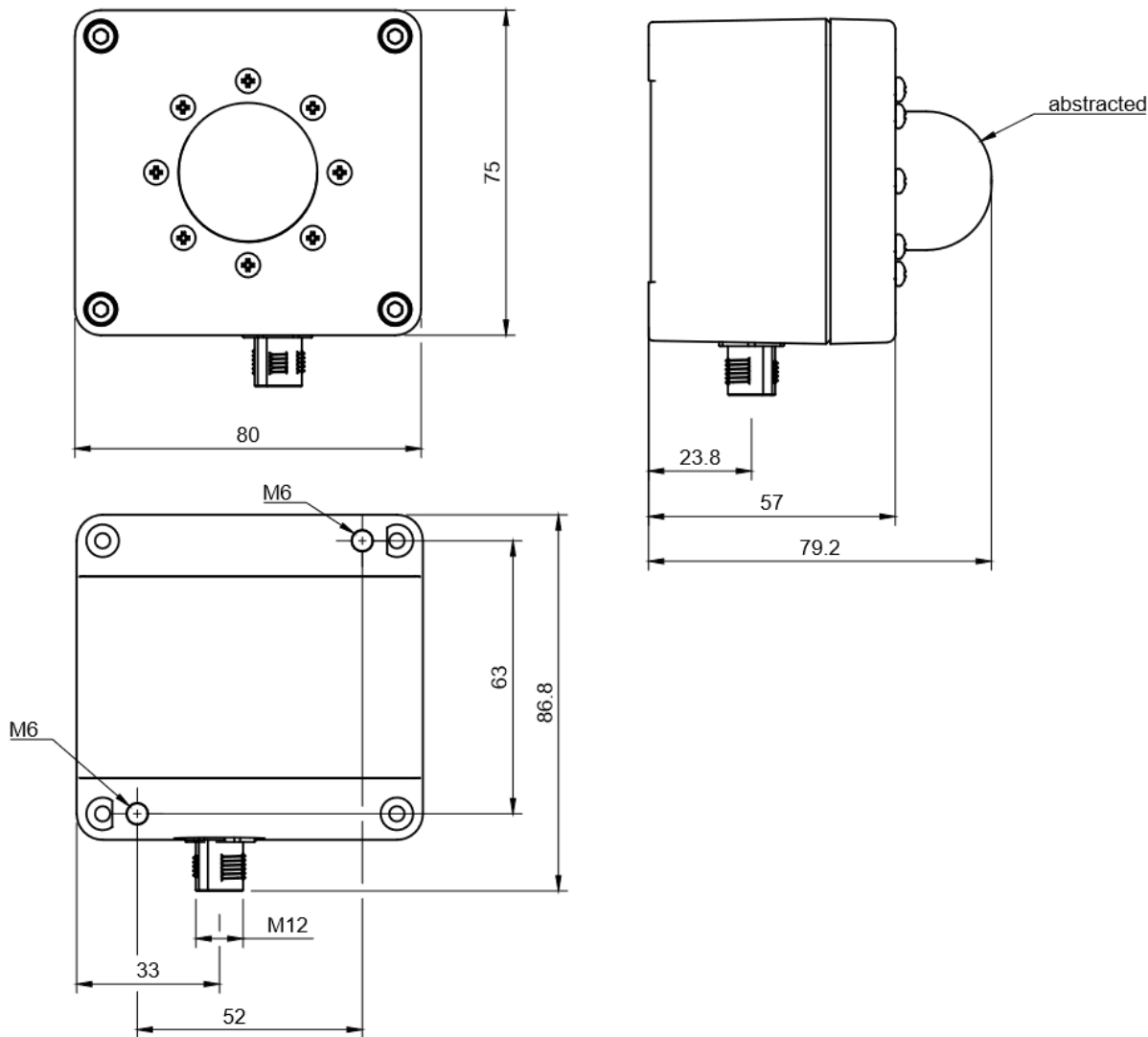

Pinout diagram sensor
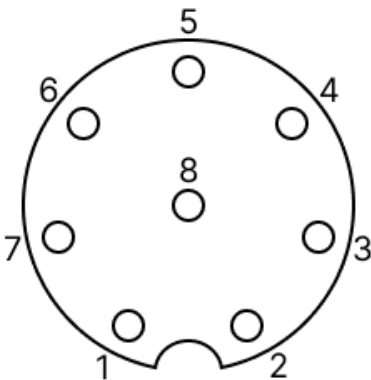
M12 8-pin a-coded male layout

Dimensional Drawings

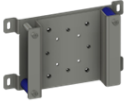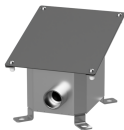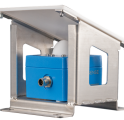The lens geometry has been abstracted. All offered lenses will fit within the envelope.

Accessories:

	Name	Description	Ordering Nr.
Install			
	OndoSense Mounting Plate	Static front-mounting of OndoSense apex	MB.A000.1000

	Name	Description	Ordering Nr.
	OndoSense AngleControl	Precise alignment of OndoSense apex	MB.X200.1000
Protect			
	OndoSense AirChill	Engineered with a sealed, air-cooled housing for extreme radiant heat environments, such as from molten metal, with resistance up to 1600°C. Short-term exposure tolerance up to 700°C, suitable for ambient temperatures up to 120°C	PS.2110.1000
	OndoSense HeatShield	Optimized for high radiant heat environments, like molten metal, with a built-in shield against thermal radiation, as long as ambient temperatures stay within sensor limits.	PS.1110.1000
Reflect			
	CornerCube - 100	Increases the signal strength and the possible angle between sensor and target. RCS: 70 m²	CC.0100.1000
	CornerCube - 250	Increases the signal strength and the possible angle between sensor and target. RCS: 2732 m²	CC.0250.1000