

Product data sheet

OndoSense *reach* D300

Distance radar sensor for harsh environments



ONDOSENSE
reach

Technical data

| General data | |
|--------------------------------|------------------|
| Radar frequency (FMCW) | 122.25 - 123 GHz |
| Radiation power | EIRP < 100 mW |
| MTTF | > 125 years |
| Opening angle | ±3° |
| Measurement range ¹ | 0.30 - 40.00 m |
| Measurement rate | 100 Hz |
| Linearity | up to ±5 mm |
| Repeatability | up to ±1 mm |

¹Maximum range was established using a 0.25 m corner reflector

| Mechanical data | |
|------------------|--------------------------------------|
| Width / Diameter | 30 mm |
| Length | 95.75 mm |
| Housing material | Stainless steel grade 1.4404 |
| Lens material | PTFE |
| Connection | M12, 8-pin, a-coded connector |
| Weight | 205 g (170 g sensor + 35 g M30 nuts) |

| Environmental data | |
|-----------------------|---|
| Protection class | IP67/IP69K |
| Operating temperature | -40 ...+70 °C |
| Storage temperature | -40 ...+85 °C |
| EMC | IEC 61496-1, IEC 61000-6-2, IEC 61000-6-4 |

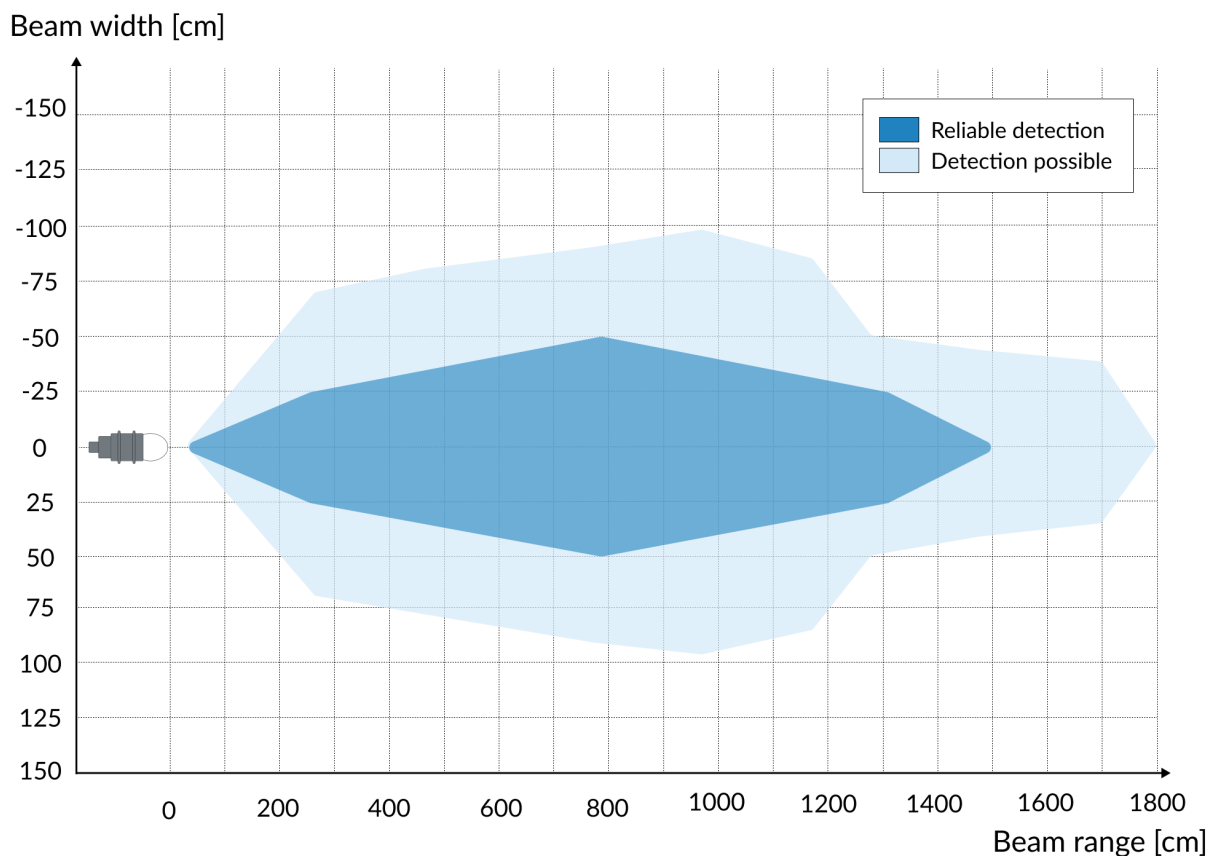
| Electrical data | |
|-----------------|-----------------------|
| Power supply | 24.0 V DC (12 - 36 V) |

Electrical data

| | |
|----------------------------|--------------------------|
| Power consumption | 80 mA (at 24 V DC) |
| Power dissipation | 2.4 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) |

Beam pattern

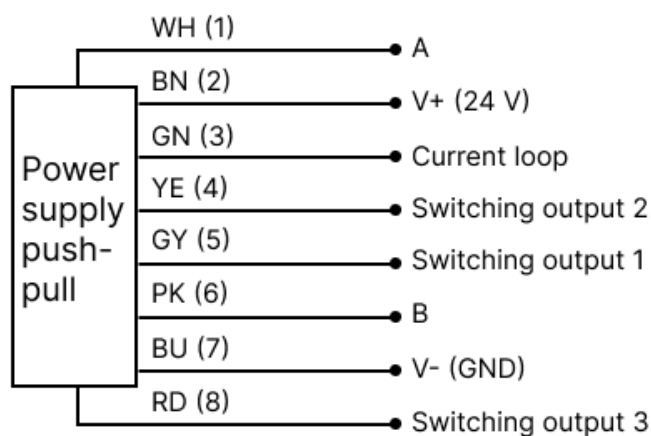
Typical beam pattern for a metal pipe (\varnothing : 0.025 m, RCS: 0.1 m²).



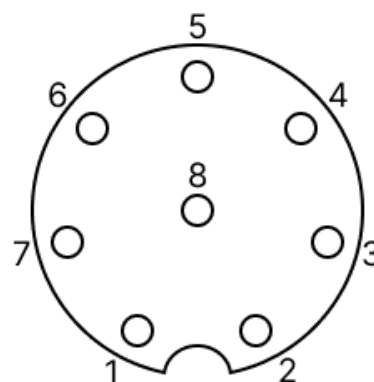
Note: The effective beam pattern depends on the sensitivity level, the target properties and the sensors measurement range.

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.

