



Your Global Automation Partner

DR Product Series Radar Distance Sensors



Sensors for Harsh Environments

With the DR series, Turck offers robust radar sensors for distance measurement at a range of up to 30 meters for harsh environments in factory automation as well as in outdoor or mobile applications. The robust 122 GHz devices with protection class IP67/69K are shock resistant up to 100 g and are therefore suitable, for example, for distance measurement in port logistics, in which optical or ultrasonic sensors are often ruled out due to their limited range or interference factors such as dust, wind or light.

The browser-based Turck Radar Monitor parameter user interface is part of the Turck Automation Suite TAS and simplifies the setup of the DR sensors by means of the real-time display of the signal curve — especially when configuring filters to

suppress interfering signals or in complicated mounting situations. When mounted in direct proximity to each other, the FMCW measuring principle of the devices prevents any mutual interference between the signals.

All DR-M30-IOL sensors feature IO-Link as well as an analog and switching output, whereby the analog output can also be configured as a second switching output. In conventional applications, the devices can also be operated without IO-Link. Three different lens configurations enable optimum device selection according to the application, depending on whether a short and wide, a medium, or a long and narrow detection field is required.

Your Benefits

- Resistant to harsh environmental conditions
- Application-optimized with a range of opening angles
- Simple data visualization and sensor configuration using Turck's IO-Link master or with a PC via a USB IO-Link adapter
- Foreign object suppression using distance and signal intensity filters
- Three-stage signal amplification for improved sensor performance



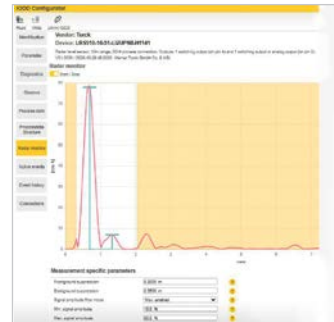
Products are linked with further information.

Technical Data



Application-optimized

With a range of lenses, the DR product series covers a wide variety of applications, from pure distance measurements with a focused lens to collision avoidance with a wide radar front.



Data visualization

The sensor data is visualized via the Turck Radar Monitor in the Turck Automation Suite TAS, which considerably simplifies the alignment process. All other sensor parameters and filters can be set directly and for specific applications.

General data

Radar data	
Frequency range	122...123 GHz
Resolution	1 mm
Minimum measuring range/ minimum switching range	500 mm
Linearity error	≤ ± 0.1 %
Edge lengths of the nominal actuator	100 mm
Output power	10 dBm (ERP), 20 dBm (EIRP)
Electrical data	
Operating voltage	18...33 VDC
Residual ripple	< 10 % U _{ss}
DC rated operational current	≤ 250 mA
No-load current	≤ 100 mA
Output function	NC/NO programmable, PNP/ NPN, analog output and IO-Link
Switching frequency	≤ 10 Hz
Typical response time	< 10 ms
IO-Link	
IO-Link specification	V 1.1, Class A
Communication mode	COM 2 (38.4 kBaud)
Process data width	32 bit
Minimum cycle time	3 ms
Profile support	Smart Sensor Profile

Mechanical data	
Design/dimensions	Threaded barrel, M30E/Ø 44.7 × 104.3 mm
Housing material	Stainless steel, 1.4401 (AISI 316) PFTE
Max. tightening torque of housing nut	75 Nm
Ambient temperature	-25...+65 °C
Type of protection	IP67, IP69K
Vibration resistance	20 g (10...2000 Hz), EN 60068- 2-6
Shock resistance	100 g (11 ms)
EMC	EN 61000-6-2:2019 ETSI EN 301489-3 v.1.6.1
Approvals	CE, ETSI, FCC, UL

Typical device data

Type designation	ID	Range	Opening angle	Output
DR15S-M30E-IOL8X2-H1141	100030148	15 m	15° (± 7,5°)	IO-Link, 4...20 mA/0...10 V, switching output
DR15S-M30E-2UPN8X2-H1141	100030149	15 m	15° (± 7,5°)	IO-Link, switching output
DR7.5WE-M30E-IOL8X2-H1141	100030150	7,5 m	45° x 15° (±22,5° x ±7,5°)	IO-Link, 4...20 mA/0...10 V, switching output
DR7.5WE-M30E-2UPN8X2-H1141	100030151	7,5 m	45° x 15° (±22,5° x ±7,5°)	IO-Link, switching output
DR30N-M30E-IOL8X2-H1141	100030152	30 m	5° (± 2,5°)	IO-Link, 4...20 mA/0...10 V, switching output
DR30N-M30E-2UPN8X2-H1141	100030153	30 m	5° (± 2,5°)	IO-Link, switching output

