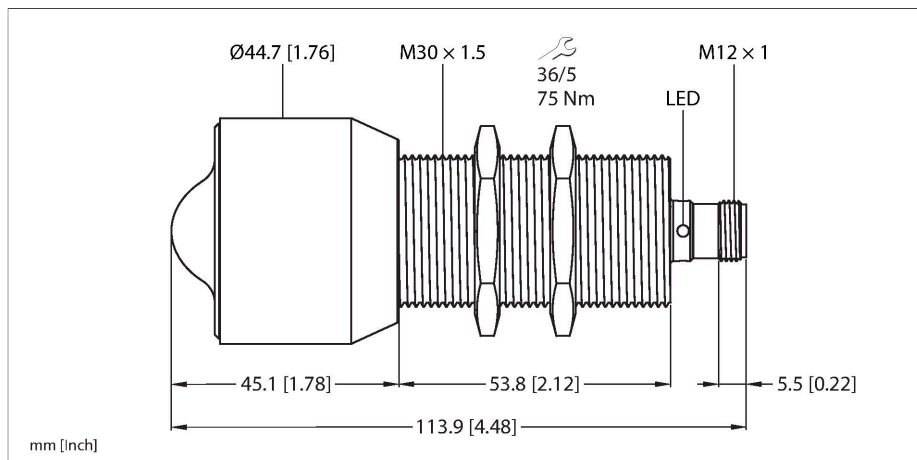


# DR15S-M30E-2UPN8X2-H1141

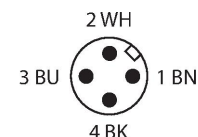
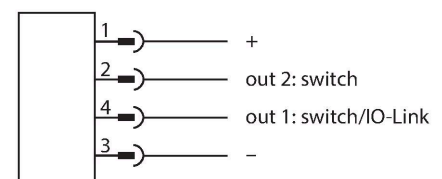
## Radar – Distance/Object Detection



### Features

- Blind zone: 35 cm
- Range: 15 m
- Resolution: 1 mm
- Cone angle of the radar beam: Standard  $\pm 7.5^\circ$
- Approved acc. to ETSI 305550-2
- Approved acc. to FCC/CFR 47 Part 15.
- M12 × 1 male connector, 4-pin
- Operating voltage 18...33 VDC
- Switching output switchable between PNP/NPN
- IO-Link
- M30 cylindrical design, stainless steel

### Wiring diagram



### Functional principle

FMCW radar stands for frequency modulated continuous wave radar. FMCW is the English abbreviation for Frequency Modulated Continuous Wave. Non-modulated continuous wave radars have the disadvantage that they cannot measure distances due to lack of time reference. Such a time reference for distance measurement of stationary objects can be

### Technical data

Type	DR15S-M30E-2UPN8X2-H1141
ID	100030149
<b>Radar data</b>	
Function	Radar scanner
Frequency range	122 - 123 GHz
Range	350...15000 mm
Resolution	1 mm
Minimum measuring range	500 mm
Minimum switching range	50 mm
Linearity error	$\leq \pm 0.1 \%$
Edge lengths of the nominal actuator	100 mm
Output power ERP	10 dBm
Output power EIRP	20 dBm
Cone angle	15 °
Repeatability	2 mm
Hysteresis	$\leq 50$ mm
<b>Electrical data</b>	
Operating voltage	18...33 VDC
Residual ripple	$< 10 \%$ $U_{ss}$
DC rated operational current	$\leq 250$ mA
No-load current	$\leq 150$ mA
Residual current	$\leq 0.1$ mA
Short-circuit protection	yes / Cyclic
Reverse polarity protection	yes
Communication protocol	IO-Link
Output function	NO/NC programmable, PNP/NPN
Output 2	Switching output

## Technical data

Load resistance current output	≤ 0.5 kΩ
Load resistance voltage output	≥ 2 kΩ
Voltage drop at I <sub>e</sub>	≤ 2 V
Switching frequency	≤ 10 Hz
Readiness delay	≤ 450 ms
Response time typical	< 10 ms

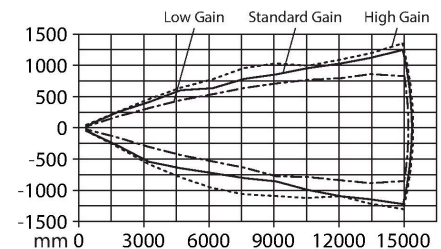
### IO-Link

IO-Link specification	V 1.1
IO-Link port type	Class A
Communication mode	COM 2 (38.4 kBaud)
Process data width	48 bit
Measured value information	32 bit
Switchpoint information	2 bit
Frame type	2.2
Minimum cycle time	5 ms
Function pin 4	IO-Link
Function Pin 2	DI
Maximum cable length	20 m
Profile support	Smart Sensor Profile

### Mechanical data

Design	Threaded barrel, M30E
Dimensions	Ø 44.7 x 113.9 mm
Housing material	Stainless steel, 1.4401 (AISI 316) PTFE
Lens	plastic, PTFE
Max. tightening torque of housing nut	75 Nm
Electrical connection	Connector, M12 × 1
Ambient temperature	-25...+65 °C
Storage temperature	-40...+85 °C
Protection class	IP67 IP69K  Not assessed by UL
Power-on indication	LED, Green
Switching state	2-color LED, Yellow
MTTF	187 years
Vibration resistance	20 g (10...2000 Hz), EN 60068-2-6
Shock test	EN 60068-2-27
Shock resistance	100 g (11 ms)
EMV	EN 61000-6-2:2019 ETSI EN 301489-3 v.1.6.1
Approvals	CE, ETSI, FCC, UL, UKCA

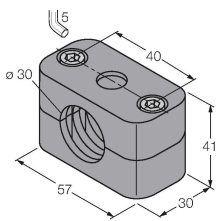
generated by means of frequency modulation. Using this method, a signal is emitted which continually changes the frequency. A periodic, linear frequency which varies upwards and downwards is used to limit the frequency range and to simplify the signal evaluation. The factor for the rate of change  $df/dt$  remains constant. If an echo signal is received, then this has a runtime delay as with the pulse radar, and thus a different frequency that is proportional to the distance.



## Accessories

BSS-30

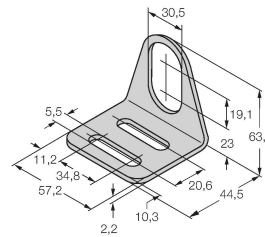
6901319



Mounting clamp for smooth and threaded barrel sensors; material: Polypropylene

MW-30

6945005



Mounting bracket for threaded barrel sensors; material: Stainless steel A2 1.4301 (AISI 304)

## Accessories

Dimension drawing



Type

TBEN-S2-4IOL

ID

6814024

Compact multiprotocol I/O module, 4 IO-Link Master 1.1 Class A, 4 universal PNP digital channels 0.5 A