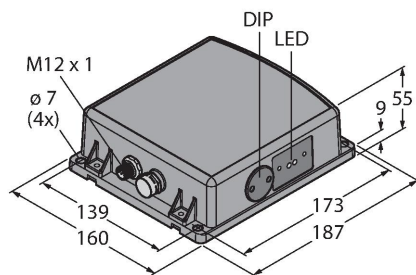


Q240RA-EU-ILQ

Radar Sensor

With Switching and Analog Output



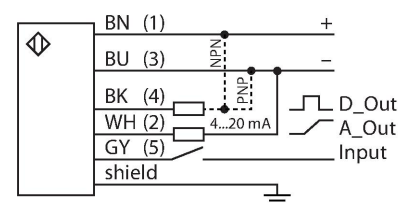
Technical data

Type	Q240RA-EU-ILQ
ID	3801993
Radars data	
Function	Proximity switch
Operating mode	Time-of-Flight
Frequency band	K band, ISM region
Frequency range	24.05...24.25 GHz
Modulation	FMCW (Frequency Modulated Continuous Wave)
Range	3500...100000 mm
Edge lengths of the nominal actuator	500 mm
Number of radio channels	1
Duty cycle	100 %
Antenna connection	Internal, planar
Antenna gain	17.5 dBi
Antenna pattern	120 (Azimuth) / 250 (Elevation)
Side-lobe suppression	15 dB (azimuth) / 15 dB (elevation)
Output power ERP	-0.5 dBm/0.9 mW ERP
Output power EIRP	20 dBm/100 mW EIRP
Field strength max.	88-20log(m) dBuA/m or 24-20log(m) dBmW/m2
Electrical data	
Operating voltage	12...30 VDC
No-load current	≤ 100 mA
Short-circuit protection	yes / Cyclic
Reverse polarity protection	yes

Features

- M12 × 1 male, 5-pin
- Protection class IP67
- FMCW radar (frequency-modulated continuous wave radar), detects stationary and moving objects
- Approved for Europe (incl. UK), Australia, New Zealand, Japan and China
- Max. range 100 m
- Configuration via DIP switch
- Operating voltage 12...30 VDC
- PNP/NPN switching output
- 4...20 mA analog output

Wiring diagram



Functional principle

A PCR (Pulse Coherent Radar) device transmits a short, powerful pulse lasting a few microseconds and receives the reflected echo from objects. In contrast to continuously transmitting wave radars, the transmitter is already switched off before the end of the measurement process. The distance measurement to the object is carried out using a transit time method. As a result, unlike Continuous Wave (CW) radars, both stationary and moving objects can be detected.

Conformity

CE

ISM defined in ITU-R 5.138, 5.150 and 5.280

Technical data

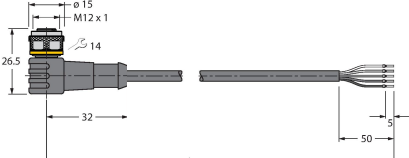
Output function	NO/NC programmable, PNP/NPN
Output 2	Analog current
Current output	4...20 mA
Readiness delay	≤ 2000 ms
Response time typical	< 15 ms
Setting option	DIP switch Vision Software and Firmware

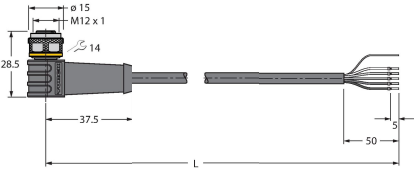
Mechanical data	
Design	Rectangular, Q240
Dimensions	55 x 158 x 186.9 mm
Housing material	Plastic, PC, Grey
Electrical connection	Connector, M12 × 1, PVC
Number of cores	5
Ambient temperature	-40...+65 °C
Protection class	IP67
Power-on indication	LED, Green
Switching state	LED, Yellow
Excess gain indication	LED, red

Tests/approvals	
MTTF	98 years acc. to SN 29500 (Ed. 99) 40 °C
Approvals	CE

ETSI/EN 300 440
FCC Part 15
RSS-210
ANATEL Category II
CMIIT Category G
ARIB STD T-73
KC mark — MSIP/RRA
NCC

Accessories

Dimension drawing	Type	ID	
	RKC4.5T-2/TEL	6625016	Connection cable, M12 female connector, straight, 5-pin, cable length: 2 m, jacket material: PVC, black; cULus approval
	WKC4.5T-2/TEL	6625028	Connection cable, M12 female connector, angled, 5-pin, cable length: 2 m, jacket material: PVC, black; cULus approval
	RKS4.5T-2/TEL	6626361	Connection cable, M12 female connector, straight, 5-pin, cable length: 2 m, jacket material: PVC, black; shielded; cULus approval

Dimension drawing	Type	ID	
	WKS4.5T-2/TEL	6626364	Connection cable, M12 female connector, angled, 5-pin, cable length: 2 m, jacket material: PVC, black; shielded; cULus approval