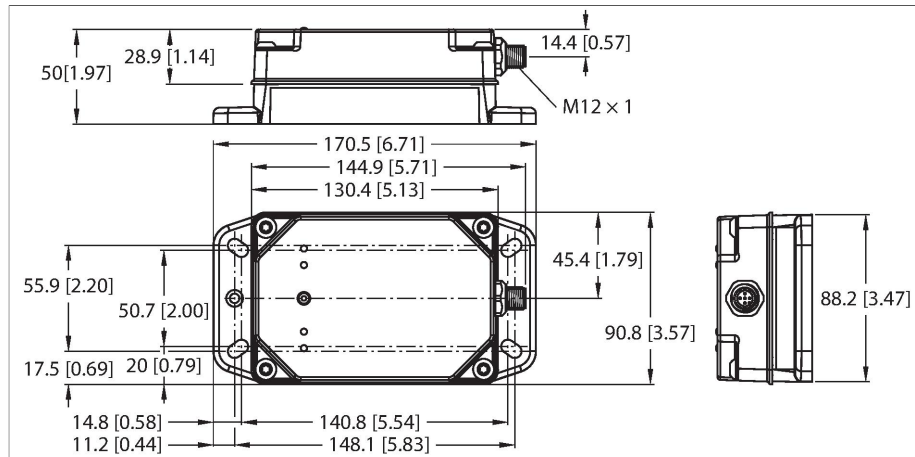


Q130RA-2450-AFQ

Radar Sensor

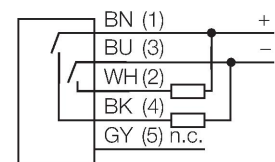
With Switching Output



Features

- Protection class IP67
- M12 × 1 connector, 5-pin
- Operating voltage 12...30 VDC
- PNP/NPN switching output

Wiring diagram



Technical data

Type	Q130RA-2450-AFQ
ID	3806646
Radar 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	1000...40000 mm
Number of radio channels	1
Duty cycle	100 %
Antenna connection	Internal, planar
Output power ERP	5 dBm/3.3 mW ERP
Output power EIRP	20 dBm/100 mW ERP
Electrical data	
Operating voltage U_B	12...30 VDC
No-load current	≤ 100 mA
Short-circuit protection	yes/Cyclic
Reverse polarity protection	yes
Output function	NO/NC programmable, PNP/NPN
Readiness delay	≤ 3000 ms
Response time typical	< 50 ms
Mechanical data	
Design	Rectangular, Q130
Dimensions	50 x 90.8 x 170.5 mm

Functional principle

An FMCW radar is a Frequency Modulated Continuous Wave radar. FMCW is the English abbreviation for Frequency Modulated Continuous Wave. Unmodulated continuous wave radars have the disadvantage that they cannot measure distances due to the lack of a time reference. Such a time reference for measuring the distance of stationary objects can be generated by means of frequency modulation. Using this method, a signal is emitted which continually changes frequency. A periodic frequency that increases and decreases linearly 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. As a result, unlike with unmodulated Continuous Wave (CW) radars, both stationary and moving objects can be detected.

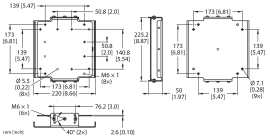
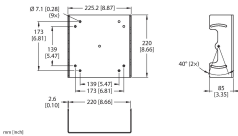
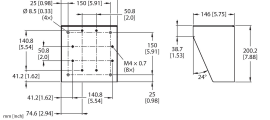
Conformity

CE
 ISM defined in ITU-R 5.138, 5.150 and 5.280
 ETSI/EN 300 440
 FCC part 15
 RSS-210
 ANATEL Category II
 CMIIT Category G
 ARIB STD T-73
 KC mark — MSIP/RRR
 NCC

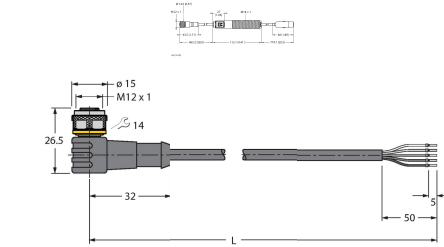
Technical data

Housing material	Plastic, ABS/Polycarbonate, Grey
Electrical connection	Connector, M12 × 1
Number of cores	5
Ambient temperature	-40...+65 °C
Storage temperature	-40...+65 °C
Protection class	IP67
Power-on indication	LED, Green
Switching state	LED, Yellow, 1 LED each for output 1 and 2
Excess gain indication	LED, red
Tests/approvals	
Approvals	CE

Accessories

SMBQ240SS1	3093811		Mounting panel for wall-mounting Q130RA and Q240RA radar sensors, frame can be tilted up to 20°, stainless steel
SMBQ240SS2	3092485		Mounting bracket for wall-mounting Q130RA and Q240RA radar sensors, can be tilted up to 20° on two axes, stainless steel
SMBWSQ120	3026881		Protective cap prevents water film or ice formation on the face, needed for rain or snow

Accessories

Dimension drawing	Type	ID	
	MQDC-506-USB	3803770	USB serial converter, for parameterizing PRO indicator lights or sensors via PC, female connector, M12 × 1, 5-pin to plug, USB type A, length 0.7 m, can be extended to a maximum of 30 m, supplies the connected device with 20 V, supports Windows 7 (driver required) and Windows 10
	WKC4.5T-2/TEL	6625028	Connection cable, M12 female connector, angled, 5-pin, cable length: 2 m, jacket material: PVC, black; cULus approval