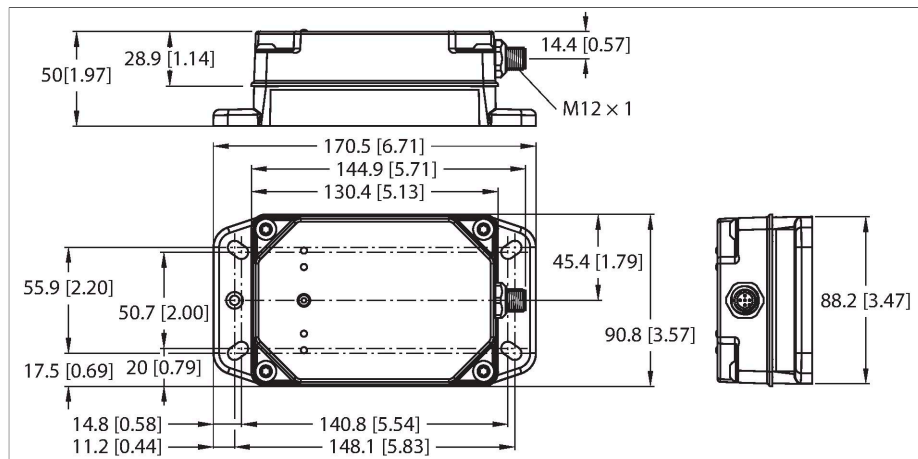


Q130RA-2450-AFQ

Radar Sensor

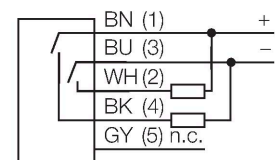
With Switching Output



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

