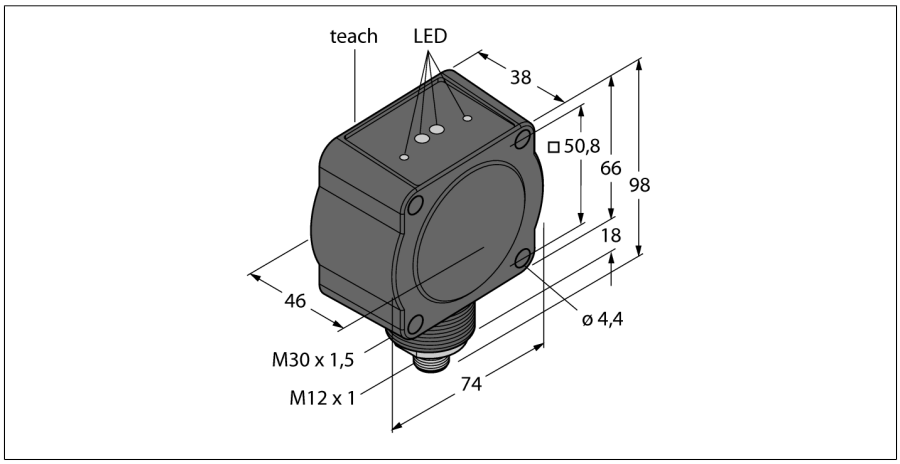
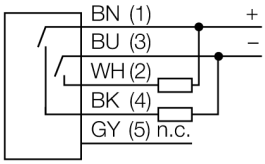
Radar Sensor
Retroreflective Sensor
QT50R-EU-AFSQ



Type designation	QT50R-EU-AFSQ
Ident no.	3054271
Operating mode	Radar scanner
Range	1000…3750 mm
Ambient temperature	-40…+65 °C
Operating voltage	12…30 VDC
No-load current I_0	≤ 100 mA
Short-circuit protection	yes/ Cyclic
Reverse polarity protection	yes
Output function	NC/NO programmable, PNP/NPN
Approvals	CE
Design	Rectangular, QT50
Dimensions	46.1 mm x 74.1 mm x 99.7 mm
Housing material	Plastic, ABS, Black
Electrical connection	Connector, M12 -⊂— 1
Protection class	IP67
MTTF	100 years acc. to SN 29500 (Ed. 99) 40 °C
Power-on indication	LED green
Switching state	LED yellow
Excess gain indication	LED red

- **FMCW radar (frequency-modulated continuous wave radar), detects stationary and moving objects**
- **Max. range 3.75 m**
- **Configuration via DIP switch**
- **FMCW radar (frequency-modulated continuous wave radar) for detection of stationary and moving objects**
- **Approved for Europe (except UK), Australia, New Zealand, Japan and China**
- **Max. range 18 m**
- **With focusing attachment**
- **Configuration via DIP switch**
- **Operating voltage 12…30 VDC**
- **PNP/NPN switching output**
- **4…20 mA analog output**

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 generated by means of frequency modulation. Using this method, a signal is emitted that 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. A received echo signal has a runtime delay just as a pulse radar, and thus a differing frequency proportional to the distance.

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/RRA
NCC

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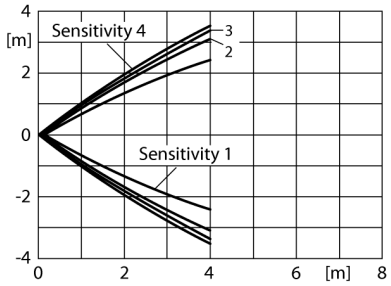
Industrial Automation

Excess Gain Curve



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