K50RPF-8060-LDQ
Radar Sensor
With Switching Outputs

mm [Inch]
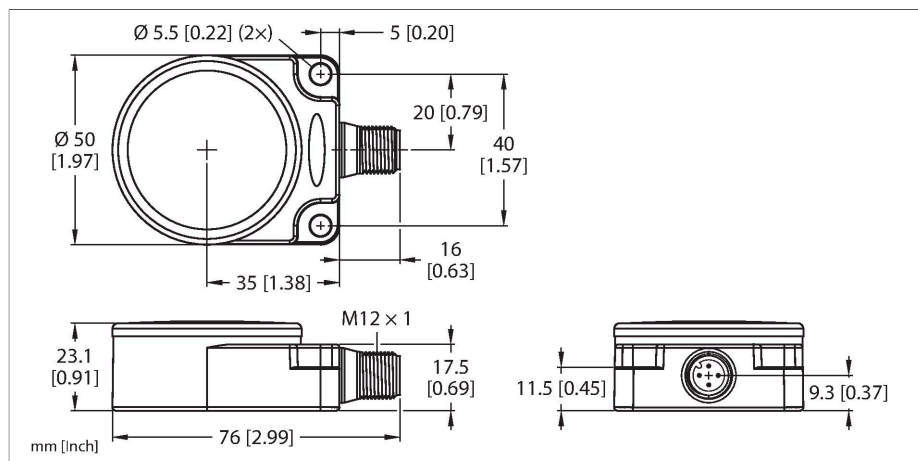
Technical data

Type	K50RPF-8060-LDQ
ID	3813810
Radar data	
Function	Proximity switch
Operating mode	Time-of-Flight
Frequency band	F band, ISM region
Frequency range	60.5 GHz
Modulation	PCR (Pulse Coherent Radar)
Range	100…2500 mm
Number of radio channels	1
Duty cycle	100 %
Antenna connection	Internal, planar
Electrical data	
Operating voltage U_B	10…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	≤ 1000 ms
Response time typical	< 200 ms
Setting option	Remote Teach Vision Software and Firmware
Mechanical data	
Design	Rectangular, K50RF
Dimensions	76 x 50 x 23.1 mm
Housing material	Plastic, PC

Features

- ■ Protection class IP67
- ■ M12 × 1 connector, 5-pin
- ■ Pulse Coherent Radar (PCR) for detecting moving and stationary objects
- ■ 60 GHz frequency band
- ■ Max. range 2.5 m
- ■ Configuration via software
- ■ Configurable RGB LEDs for additional display and animation options on the front surface
- ■ Operating voltage 12…30 VDC
- ■ 2 PNP/NPN switching outputs

Wiring diagram
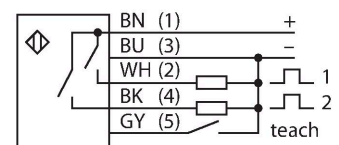
Functional principle

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.
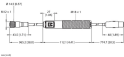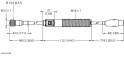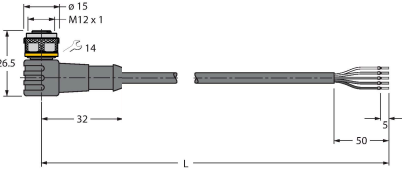Conformity
CE, UKCA
ISM defined in ITU-R 5.138, 5.150 and 5.280
ETSI/EN 300 440
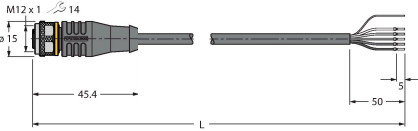
Technical data

Electrical connection	Connector, M12 × 1
Number of cores	5
Ambient temperature	-40…+60 °C
Protection class	IP67
Power-on indication	LED, Green
Switching state	LED, Yellow
Tests/approvals	
Approvals	CE, UKCA, FCC

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	
	PRO-KIT	3805818	USB serial converter kit, contains MQDC-506-USB converter cable, Y-splitter and AC/DC power supply for external supply, for parameterizing PRO indicator lights or sensors via PC, female connector, M12 × 1, 5-pin to connector, 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
	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
	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