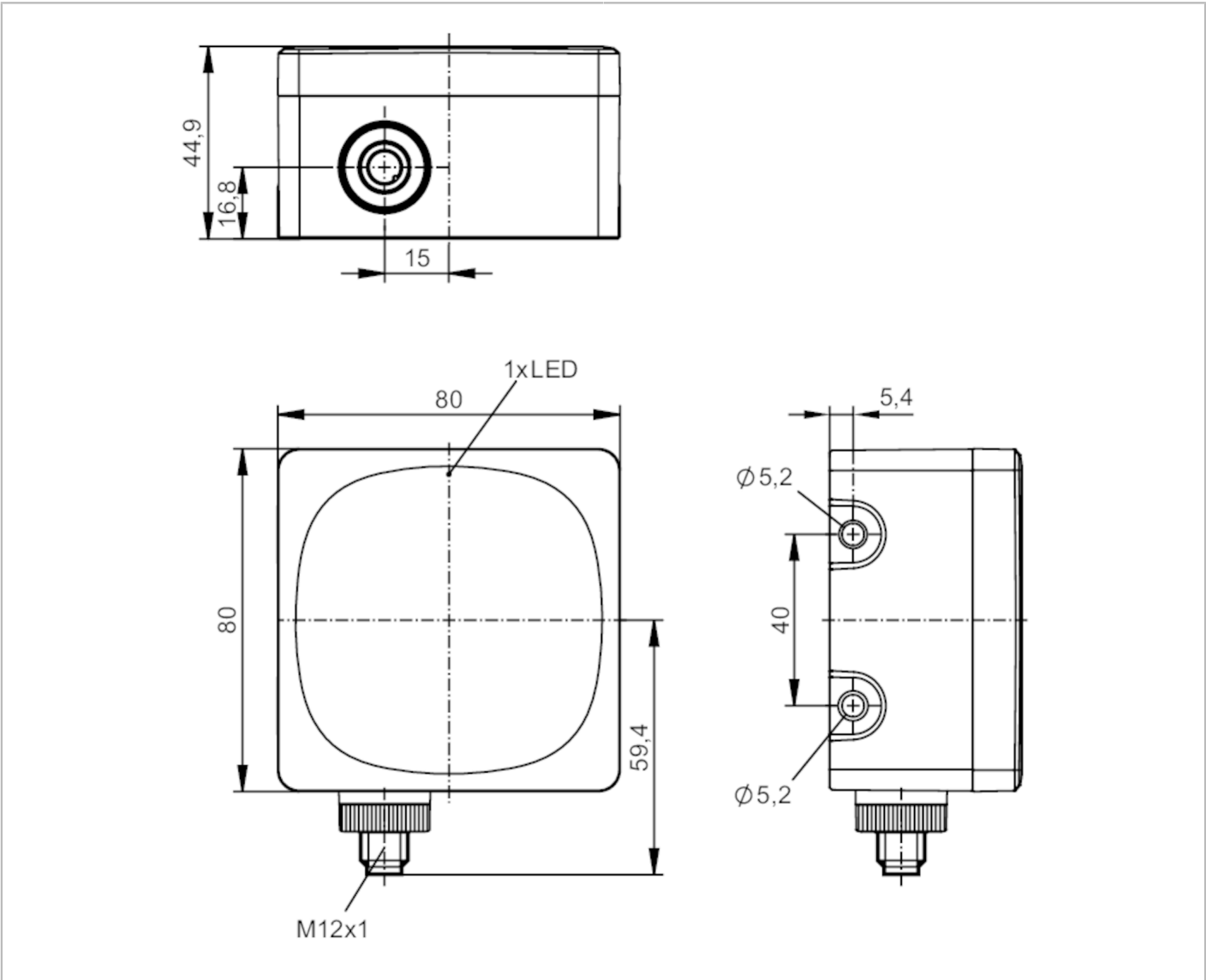


R1D101



Radar distance sensor

R1DAAOOKG/US/CAN



Product characteristics		
Communication interface		CAN
Housing		rectangular
Dimensions	[mm]	80 x 80 x 45
Application		
Note on radio approval	The list of countries applying the European Radio Equipment Directive 2014/53/EU (RED) can be found under “Downloads”.	
Electrical data		
Operating voltage	[V]	9...32 DC; (to SELV/PELV ; energy-limited circuits according to IEC/UL 61010-1 3rd ed. cl. 9.4)
Current consumption	[mA]	< 300; (mean value: 150 mA)
Power consumption	[W]	9; (maximum)
Protection class		III
Reverse polarity protection		yes

R1D101



Radar distance sensor

R1DAAOOKG/US/CAN

Max. power-on delay time	[ms]	1000
Operating frequency	[GHz]	60...64
Mean power spectral density EIRP	[dBm/MHz]	-10
Mean radiated power EIRP	[dBm]	20

Detection zone		
Range	[m]	0.1...50; (referred to E23014)
Angle of aperture cylindrical	horizontal	40
	vertical	30

Measuring/setting range		
Measuring range	[m]	0.1...50; (see diagram:)
Sampling rate	[Hz]	20

Software / programming	
Parameter setting options	via PC with ifm Vision Assistant

Interfaces	
Communication interface	CAN
Number of CAN interfaces	1
Transmission rate	250 (125...1000) kBaud
Protocol	SAE J1939
Factory settings	Baud rate: 250 kBit/s
	device address (ECU): 126
	UDS interface: 1000 kBaud
Usage type	parameter setting; data transmission
Note	For further information please refer to the software manual available under "Downloads"

Operating conditions		
Ambient temperature	[°C]	-40...85
Storage temperature	[°C]	-40...85
Protection	IP 65; IP 66; IP 67; IP 69K; (with mounted connectors or protective caps)	

Tests / approvals		
EMC	DIN EN 61000-4-2 ESD	4 kV CD / 8 kV AD
	DIN EN 61000-4-3 HF radiated	10 V/m
	DIN EN 61000-4-4 Burst	2 kV
	DIN EN 61000-4-6 HF conducted	10 V
	DIN EN 61000-6-2	immunity / industrial environments
	EN 55032 emission	Class A
Impact resistance	IEC 62262	IK06 (1J)
Vibration resistance	DIN EN 60068-2-6 Fc	10 g 10 frequency cycles, 1 octave/minute, in 3 axes
Shock resistance	DIN EN 60068-2-27 Ea	50 g 11 ms half-sine; 10 shocks each in every direction along the 3 coordinate axes
Continuous shock resistance	DIN EN 60068-2-29 Eb	40 g 6 ms half-sine; 4,000 shocks each in every direction along the 3 coordinate axes
Fast temperature change	DIN EN 60068-2-14 Na	TA = -40°C; TB = 85°C; t1 = 30 min; t2 = < 30 s; 300 cycles
Salt spray test	DIN EN 60068-2-11 Ka	8 test cycles
Electrical safety	DIN EN 61010-2-201	electric shock / electrical supply only via SELV/PELV circuits

R1D101



Radar distance sensor

R1DAAOOKG/US/CAN

UL approval	Ta	-40...65 °C
	Enclosure type	Type 1
	power supply	Limited Energy
	File number UL	E205959

Mechanical data

Weight	[g]	0.001
Housing		rectangular
Mounting		flush mountable
Dimensions	[mm]	80 x 80 x 45
Materials		housing: PA; radome: PEI; Sealing: HNBR

Displays / operating elements

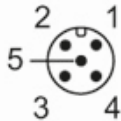
Display	operation	1x LED, green
	errors	1x LED, red

Remarks

Pack quantity	1 pcs.
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Electrical connection

Connector: 1 x M12; coding: A



- 1: Screen
- 2: Operating voltage
- 3: GND
- 4: CAN-H
- 5: CAN-L

Other data

Operating mode	standard	Long range, high velocity	
max. distance	0.1...20 m	0.25...50 m	
distance resolution	100 mm	370 mm	
distance accuracy	± 5 mm	± 15 mm	
max. velocity	± 6 m/s	± 15 m/s	
velocity resolution	0.15 m/s	0.38 m/s	
speed accuracy	± 0.01 m/s	± 0.04 m/s	
Sampling rate	20 Hz	20 Hz	
distance	referred to E23013		
Resolution	for the detection of two objects of the same size		
accuracy	for a strong, point-shaped target		

R1D101

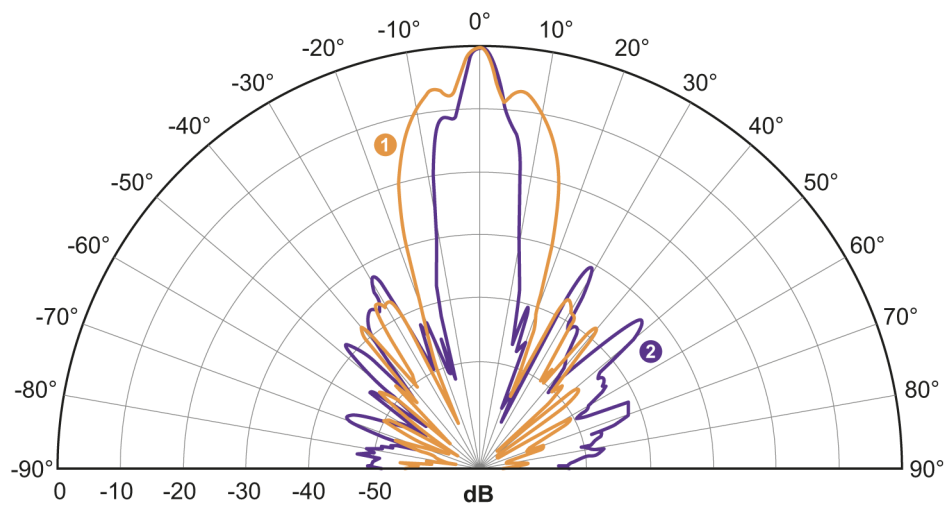
Radar distance sensor

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Diagrams and graphs

Detection zone



1: azimuth

2: elevation

conditions

Reflector: 4.3" Trihedral Corner Reflector (SAJ043-S1)

RCS: 8 dBm²

distance: 5 m

operating frequency: 62 GHz