Dimensions

Emitter range and receiver range

Electrical connection

Ethernet

1	TD+
2	RD+
3	TD-
4	RD-
	Shield

Multiport

1	DNC
2	DNC
3	DNC
4	I/Q3
5	I/Q4
6	DNC
7	DNC
8	DNC

Power

1	24 V DC
2	I/Q2
3	0 V DC
4	I/Q1

DNC = Do not connect

Indicators/operating means

1	Operating status	green
2	Fault indication	red
3	Menu button	
4	Menu button	
5	Q2 signal indicator	yellow
6	Q1 signal indicator	yellow
7	Laser outlet	

Model Number

OBD10M-R2000-4EP-V1V17

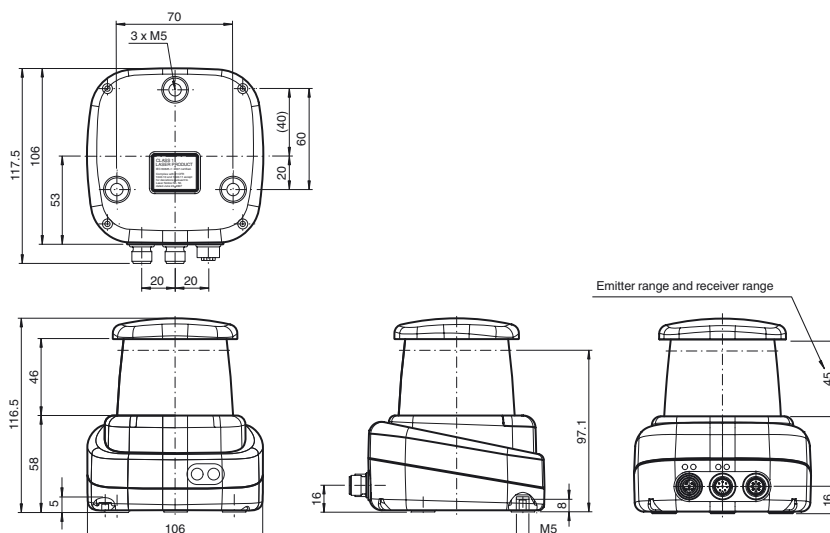2-D LiDAR Sensor

with three M12 x 1 connectors

Features

- 4 freely programmable monitoring fields
- 4 inputs/outputs (selectable)
- High angle resolution
- 360°-angle of measurement
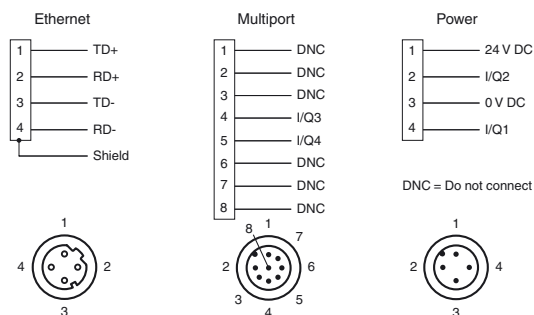- Measuring method PRT (Pulse Ranging Technology)

Product information

Based on Pulse Ranging Technology (PRT), the sensor is powerful for measurements with a long range and a small light spot. The device scans its environment over the complete measuring angle of 360°. Due to the high scanning frequency, this sensor type is suitable for advanced applications. The device meets laser class 1 and is eye safe. Additional precautions to protect the operating personnel are not required. The interactive all-round display integrated in the optical surface can freely display individual texts and graphics. A wide range of accessories enables the sensor to be used in different applications. A PACTware device type manager (DTM) specially developed for this series offers extensive configuration and diagnostic options.
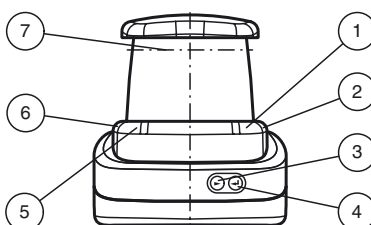
Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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| www.pepperl-fuchs.com | fa-info@us.pepperl-fuchs.com | fa-info@de.pepperl-fuchs.com | fa-info@sg.pepperl-fuchs.com | | |

Technical data

General specifications

Measurement range	0.2 ... 3 m (bk 10%)
	0.2 to 10 m (wh 90%)
	0.2 to 30 m (reflector)
Light source	laser diode
Light type	modulated visible red light
Laser nominal ratings	
Note	LASER LIGHT , DO NOT STARE INTO BEAM
Laser class	1
Wave length	660 nm
Beam divergence	1 mrad
Pulse length	5 ns
Repetition rate	54 kHz
max. pulse energy	< 4 nJ
Measuring method	Pulse Ranging Technology (PRT)
Scan rate	10 Hz, 20 Hz, 30 Hz
Scanning angle	360°
Diameter of the light spot	< 20 mm at 10 m
Ambient light limit	> 80000 Lux

Functional safety related parameters

$MTTF_d$	75 a
Mission Time (T_M)	20 a
Diagnostic Coverage (DC)	0 %

Indicators/operating means

Operation indicator	LED green
Data flow indicator	LED yellow: active ethernet
	LED green: Ethernet link
Function indicator	LED red: fault
	Yellow LED: I/Q1 + I/Q2
Control elements	2 Button
Parameterization indicator	24 x 252 pixels , red

Electrical specifications

Operating voltage	U_B	10 ... 30 V DC
Ripple		10 % within the supply tolerance
No-load supply current	I_0	≤ 400 mA / 24 V DC
Protection class		III (operating voltage 50 V)
Power consumption	P_0	< 10 W
Time delay before availability	t_v	< 40 s

Integrated application

Application	Field monitoring
Number of fields	4
Response time	30 ms + 1 Scan duration
Detectable object shape	Almost any
Object size	> 1 mm
Linking fields	Up to 4 x 3 levels

Interface

Interface type	4 x switching inputs/outputs (selectable)

Input/Output

Input/output type	4 Inputs/Outputs , Independently configurable , short circuit/reverse polarity protected

Input

Switching threshold	low: Ue < 5 V,
	high: Ue > 10 V

Output

Switching threshold	low: Ua < 1 V,
	high: Ua > Ub - 1 V
Switching current	100 mA per output

Conformity

Laser safety	EN 60825-1:2014

Measurement accuracy

Measuring speed	54000 measurements per second
Angle resolution	0,071°; 0,15°; 0,2°
Repeat accuracy	< 12 mm

Ambient conditions

Ambient temperature	-10 ... 50 °C (14 ... 122 °F)
Storage temperature	-20 ... 70 °C (-4 ... 158 °F)
Relative humidity	95 % , no moisture condensation

Mechanical specifications

Housing width	106 mm
Housing height	116.5 mm
Degree of protection	IP65
Connection	4-pin, M12x1 connector, A-coded (supply) ,
	8-pin, M12x1 connector, A-coded (MultiPort) ,
	4-pin, M12x1 socket, D-coded (LAN)

Laserlabel

CLASS 1
LASER PRODUCT
IEC 60825-1: 2007 certified.
Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007

Accessories

V1SD-G-2M-PUR-ABG-V45-G
Connection cable, M12 to RJ-45, PUR cable 4-pin, CAT5e

V1SD-G-5M-PUR-ABG-V45-G
Connection cable, M12 to RJ-45, PUR cable 4-pin, CAT5e

V1SD-G-ABG-PG9
Cable connector, M12, 4-pin, D-coded, shielded, non pre-wired

V1-G-2M-PUR
Female cordset, M12, 4-pin, PUR cable

V1-G-5M-PUR
Female cordset, M12, 4-pin, PUR cable

V1-G-BK5M-PUR-U
Female cordset, M12, 4-pin, PUR cable

V1-W-2M-PUR
Female cordset, M12, 4-pin, PUR cable

V1-W-BK5M-PUR-U
Female cordset, M12, 4-pin, PUR cable

V17-G-2M-PUR
Female cordset, M12, 8-pin, shielded, PUR cable

V17-G-5M-PUR
Female cordset, M12, 8-pin, shielded, PUR cable

V1S-B
Blind plug for M12 sockets

MH-R2000
Mounting aid for R2000 series, Quick clamp and adjustment system

PACTware 4.1
FDT Framework

Other suitable accessories can be found at www.pepperl-fuchs.com

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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PEPPERL+FUCHS

Release date: 2019-04-26 15:23   Date of issue: 2019-04-26   253403_eng.xml

Material	
Housing	ABS + PC + Aluminum
Optical face	PMMA
Mass	approx. 0.8 kg

Compliance with standards and directives	
Standard conformity	
Product standard	IEC 60947-5-2

Approvals and certificates	
UL approval	cULus Listed, Class 2 Power Source, Type 1 enclosure
CCC approval	CCC approval / marking not required for products rated ≤36 V

Laser notice laser class 1

- The irradiation can lead to irritation especially in a dark environment. Do not point at people!
- Maintenance and repairs should only be carried out by authorized service personnel!
- Caution – Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

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