Model Number

VDM100-300-EIP/G2

Distance sensor
with three M12 x 1 connectors

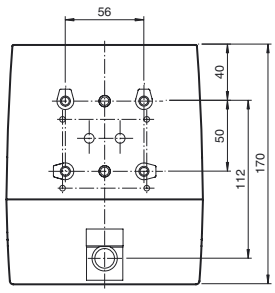
Features

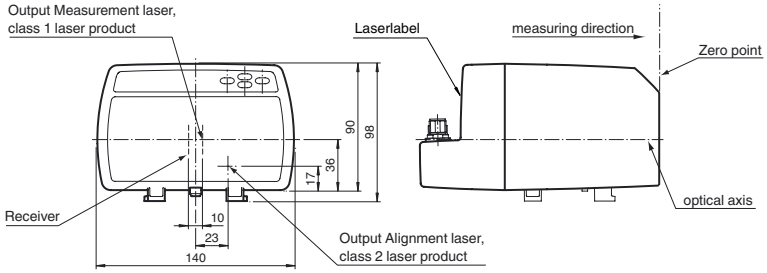
- Measuring method PRT (Pulse Ranging Technology)
- Non-contact precision measurement
- Ultra-fast data acquisition
- Active dynamic control
- Modern lightweight design, extremely robust
- EtherNet/IP

Product information

Series VDM 100 laser distance measurement devices are designed for high distances. They have a repeat accuracy of 0.5 mm. SSI and fieldbusses are used as value interfaces. These devices are used for precise positioning of rack operating units, gantry cranes, rail-bound vehicles, elevators and other linear movable units.

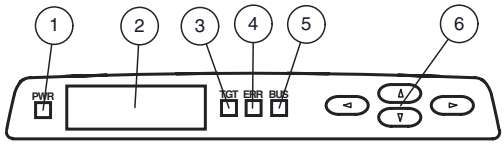
Dimensions





Electrical connection

Indicators/operating means



1	Power-LED	green
2	Display	
3	TARGET-LED	green
4	ERROR-LED	red
5	BUS-LED	green
6	Control keys	

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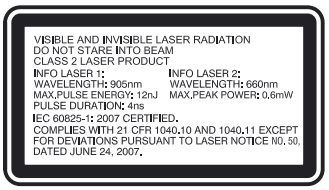
Technical data

General specifications		
Measurement range		0.3 ... 300 m
Reference target		Reflector VDM01
Light source		laser diode
Laser nominal ratings		
Note		VISIBLE AND INVISIBLE LASER RADIATION , DO NOT STARE INTO BEAM
Laser class		Measurement laser: 1 Alignment laser: 2
Wave length		Measurement laser: 905 nm Alignment laser: 660 nm
Beam divergence		Measurement laser: 2 mrad Alignment laser: 1 mrad
Pulse length		Measurement laser: 4 ns
Repetition rate		Measurement laser: 20 kHz
Maximum optical power output		Alignment laser: 0.6 mW
max. pulse energy		Measurement laser: 12 nJ
Measuring method		Pulse Ranging Technology (PRT)
Max. Motion velocity		15 m/s
Alignment aid		Laser pointer
Life span		> 100000 h
Diameter of the light spot		< 70 cm at 300 m
Ambient light limit		> 100000 Lux
Resolution		0.1 mm , adjustable
Temperature influence		0.03 mm/K
Functional safety related parameters		
$MTTF_d$		120 a
Mission Time (T_M)		20 a
Diagnostic Coverage (DC)		0 %
Indicators/operating means		
Diagnostics indicator		3 LEDs connection status: Link, speed, activity
Function indicator		4 LEDs
Control elements		Control panel (4 membrane keys) for setting parameters status
Parameterization indicator		Illuminated display for displaying measured values and parameterization
Electrical specifications		
Operating voltage	U_B	18 ... 30 V DC
No-load supply current	I_0	250 mA (18 V) ... 150 mA (30 V)
Protection class		III (operating voltage 50 V)
Time delay before availability	t_v	< 10 s
Interface		
Interface type		EtherNet/IP
Read out rate		1000/s @ 100 Mbit/s
Input/Output		
Input/output type		2 PNP inputs/outputs, independent configuration, short-circuit protected, reverse polarity protected
Input		
Switching threshold		low: Ue < 6 V, high: Ue > 16 V
Output		
Switching threshold		low: Ua < 1 V, high: Ua > Ub - 1 V
Switching current		200 mA per output
Measurement accuracy		
Measured value output		1 ms
Average data age		3 ms , 6 ms , 12 ms , 25 ms , 50 ms , adjustable
Offset		max. 2 mm (between two devices)
Absolute accuracy		± 2.5 mm (> 3 m); ± 3.5 mm (0.3 m to 3 m)
Repeat accuracy		< 0.5 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		
Degree of protection		IP65
Connection		4-pin, M12x1 connector, standard (supply) , 4-pin, M12x1 socket, D-coded (LAN) , 8-pin, M12x1 connector, service
Material		
Housing		ABS / PC
Optical face		PMMA , hard coated
Mass		approx. 700 g
Compliance with standards and directives		
Directive conformity		

Laserlabel



Accessories

V15-G-PG9
Female connector, M12, 5-pin, field attachable

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-2M-PUR-ABG-V1SD-G
Ethernet bus cable, M12 to M12, PUR cable 4-pin, CAT5e

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

OMH-LS610-01
Mounting bracket for optical data coupler

OMH-VDM100-01
Mounting bracket with deviation mirror for distance measurement devices

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

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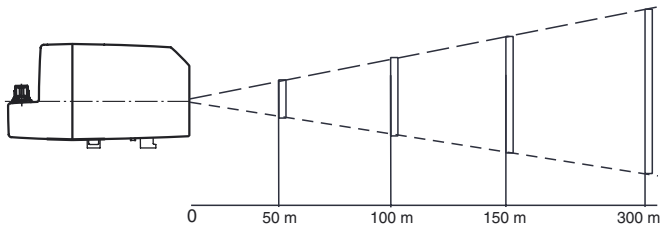
EMC Directive 2004/108/EC	EN 60947-5-2:2007
Standard conformity	
Product standard	EN 60947-5-2:2007
Laser class	IEC 60825-1:2007 Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007

Approvals and certificates	
UL approval	cULus Listed, Class 2 Power Source, Type 1 enclosure

Curves/Diagrams

Beam divergence VDM100



Beam diameter:	appr. 15 cm	appr. 25 cm	appr. 35 cm	appr. 65 cm

Reflector arrangement VDM100

Laser notice laser class 2

- Caution: visible and invisible laser radiation, do not look at the beam!
- 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!
- Attach the device so that the warning is clearly visible and readable.
- 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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