



**Model Number**

**VDM100-50-SSI/146**

Distance measurement device with three M12 x 1 connectors

**Features**

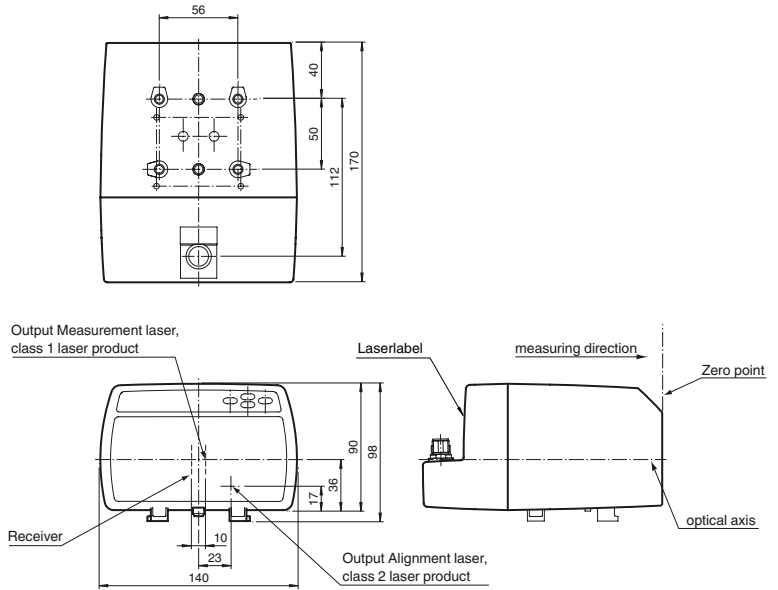
- Measuring method PRT (Pulse Ranging Technology)
- Version for low temperature applications
- Non-contact precision measurement
- Ultra-fast data acquisition
- Active dynamic control
- Modern lightweight design, extremely robust
- Simple programming with 4 keys and luminous display

**Product information**

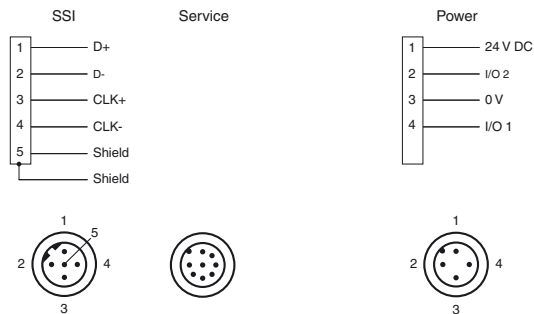
Series VDM 100 laser distance measurement devices are designed for high distances. They have a repeat accuracy of 0.5 mm. SSI and fieldbusses are used as value interfaces.

These devices are used for precise positioning of rack operating units, gantry cranes, rail-bound vehicles, elevators and other linear movable units.

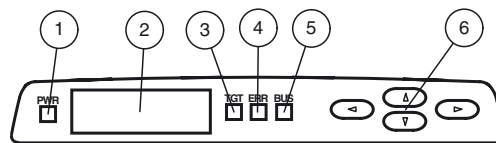
**Dimensions**



**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	

Release date: 2013-01-25 10:22 Date of issue: 2013-02-18 210113\_eng.xml

Subject to modifications without notice

Pepperl+Fuchs Group  
www.pepperl-fuchs.com

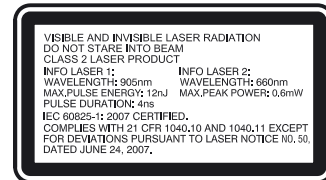
USA: +1 330 486 0001  
fa-info@us.pepperl-fuchs.com

Germany: +49 621 776-4411  
fa-info@pepperl-fuchs.com

Copyright Pepperl+Fuchs  
Singapore: +65 6779 9091  
fa-info@sg.pepperl-fuchs.com

**Technical data****General specifications**

Measurement range	0.3 ... 50 m
Reference target	Foil reflector 500 mm x 500 mm
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	
max. pulse energy	Alignment laser: 0.6 mW Measurement laser: 12 nJ
Measuring method	Pulse Ranging Technology (PRT)
Max. Motion velocity	15 m/s
Alignment aid	Laserpointer Laser class 2
Life span	> 100000 h
Diameter of the light spot	< 15 cm at 50 m
Ambient light limit	> 100000 Lux
Resolution	0.1 mm , adjustable
Temperature influence	0.03 mm/K
<b>Functional safety related parameters</b>	
MTTF <sub>d</sub>	120 a
Mission Time (T <sub>M</sub> )	20 a
Diagnostic Coverage (DC)	0 %
<b>Indicators/operating means</b>	
Function display	4 LEDs
Controls	Control panel (4 membrane keys) for setting parameters
Parameterization display	Illuminated display for displaying measured values and parameterization
<b>Electrical specifications</b>	
Operating voltage	U <sub>B</sub> 18 ... 30 V DC
No-load supply current	I <sub>0</sub> 250 mA (18 V) ... 150 mA (30 V)
Protection class	III (operating voltage 50 V)
Time delay before availability	t <sub>v</sub> < 10 s (-30 °C after 5 min.)
<b>Interface</b>	
Interface type	SSI
Read out rate	4000/s Clock frequency: 100 kHz ... 1 MHz
<b>Input/Output</b>	
Input/output type	2 PNP inputs/outputs, independent configuration, short-circuit protected, reverse polarity protected
<b>Input</b>	
Switching threshold	low: U <sub>e</sub> < 6 V, high: U <sub>e</sub> > 16 V
<b>Output</b>	
Switching threshold	low: U <sub>a</sub> < 1 V, high: U <sub>a</sub> > U <sub>b</sub> - 1 V
Switching current	200 mA per output
<b>Measurement accuracy</b>	
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
<b>Ambient conditions</b>	
Ambient temperature	-30 ... 50 °C (-22 ... 122 °F) , For use in dry cold
Storage temperature	-30 ... 70 °C (-22 ... 158 °F)
Relative humidity	95 % , no moisture condensation
<b>Mechanical specifications</b>	
Protection degree	IP65
Connection	4-pin, M12x1 connector, standard (supply) , 5-pin, M12 x 1 connector, B-coded (SSI) , 8-pin M12x1 connector, service
<b>Material</b>	
Housing	ABS / PC
Optical face	PMMA , hard coated
Mass	approx. 700 g
<b>Compliance with standards and directives</b>	

**Laserlabel****Accessories****V15-G-PG9**

Cable socket, M12, 5-pin, ready for assembly

**V15-W-PG9**

Cable socket, M12, 5-pin, ready for assembly

**V1-G**

4-pin, M12 female field-attachable connector

**V1-W**

4-pin, M12 female field-attachable connector

**V15B-G-15M-LIHCH-TP**

SSI bus cable, B-coded M12, 5-pin cable

**Funktionserdung LS610/VDM100 Zubehör**

Function grounding for LS610 / LS611 / VDM100 series

**Schutzkappe LS610 Zubehoer**

M12 protective cap set (connector + socket) for series LS610 / LS611

**OMH-VDM100-01**

Mounting bracket with deviation mirror for distance measurement devices

**OMH-LS610-01**

Mounting bracket for optical data coupler

**OMH-LS610-02**

Direct mounting set consisting of 4 x M4 threaded inserts

**OMH-LS610-04**

Hood

**OMH-LS610-05**

Mounting bracket for optical data coupler and distance measurement devices

**OMH-LS610-32**

Mounting bracket for optical data coupler and distance measurement devices

**OFR-500/500**

Reflective tape

**OFR-1000/1000**

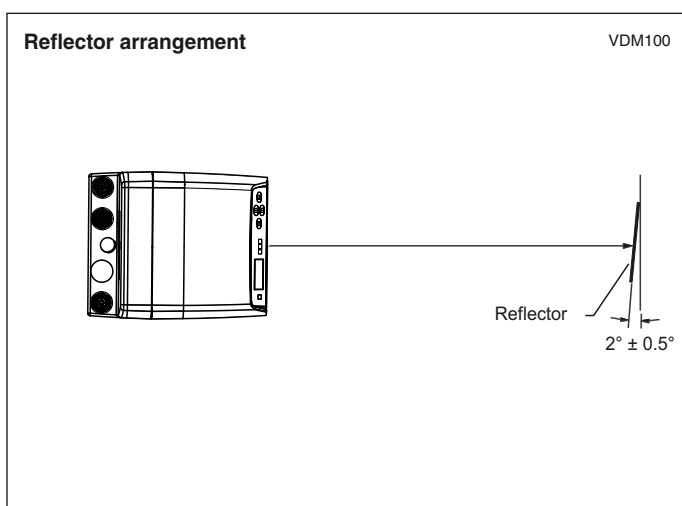
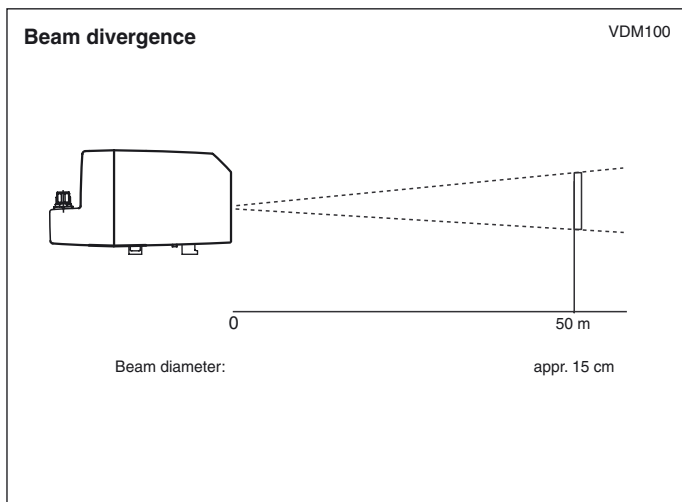
Reflective tape 1000 mm x 1000 mm

Other suitable accessories can be found at [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)

Directive conformity	EMC Directive 2004/108/EC
Standard conformity	
Product standard	EN 61326-1:2006
Laser class	IEC 60825-1:2007

**Approvals and certificates**

UL approval	cULus Listed
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**Curves/Diagrams****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.