



Model Number

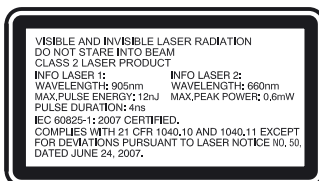
VDM100-50-P/146

Distance measurement device
with four 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

Laserlabel

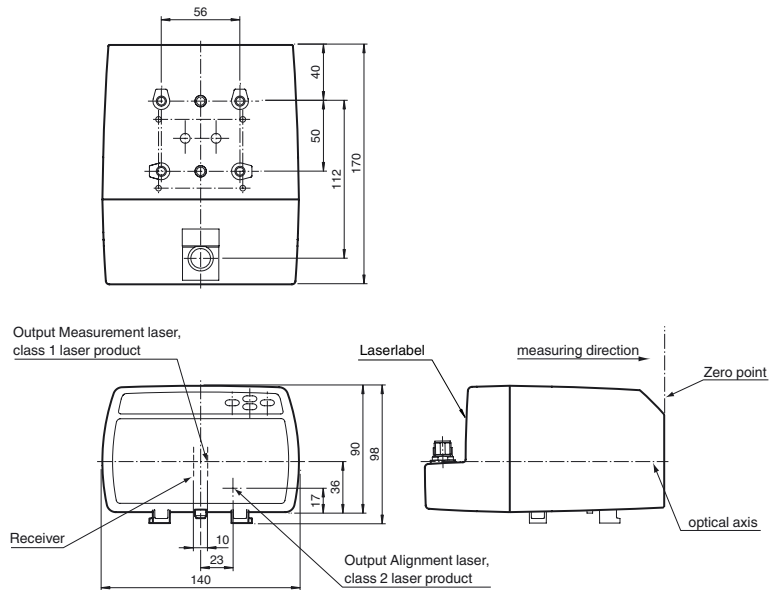


Product information

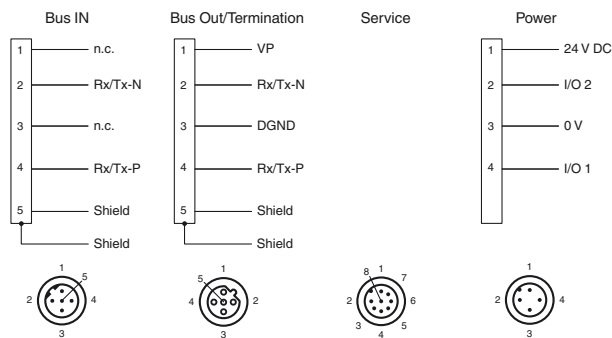
Series VDM 100 laser distance measurement devices are designed for high distances. They have a repeat accuracy of 0.5 mm. SSI and fieldbuses are used as value interfaces.

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

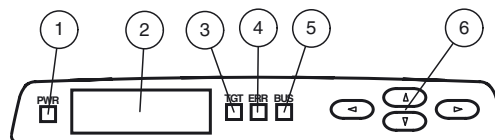
Dimensions



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	

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

Functional safety related parameters

MTTF _d	89 a
Mission Time (T _M)	20 a
Diagnostic Coverage (DC)	0 %

Indicators/operating means

Function display	4 LEDs
Controls	Control panel (4 membrane keys) for setting parameters
Parameterization display	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 (-30 °C after 5 min.)

Interface

Interface type	PROFIBUS DP acc. to EN 50170
Transfer rate	9.6 kbit/s ... 12 Mbit/s , adjustable

Input/Output

Input/output type	2 PNP inputs/outputs, independent configuration, short-circuit protected, reverse polarity protection
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Input

Switching threshold	low: U _e < 6 V, high: U _e > 16 V
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Output

Switching threshold	low: U _a < 1 V, high: U _a > U _b - 1 V
Switching current	200 mA per output

Performance characteristics

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	-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

Mechanical specifications

Protection degree	IP65
Connection	4-pin, M12x1 connector, standard (supply) , 5-pin, M12x1 connector, B-coded (Bus In) , M12x1 socket, 5-pin, B-coded (Bus Out) , 8-pin M12x1 connector, service
Material	
Housing	ABS / PC
Optical face	PMMA , hard coated
Mass	approx. 700 g

Compliance with standards and directives**Accessories****V15-G-PG9**

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

V15-W-PG9

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

V15B-G

Cable socket, M12, for PROFIBUS, adjustable

V15SB-G

Cable connector, M12, for PROFIBUS, adjustable

V1-W

Field attachable female cordset

V1-G

4-pin, M12 female field-attachable connector

ICZ-TR-V15B

Terminal resistor for PROFIBUS

V15-G-15M-LIHC-TP

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

Funktionserdung LS610/VDM100 Zubehör

Function grounding for LS610 / LS611 / VDM100 series

Schutzkappe LS610 Zubehör

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**OMH-LS610-32**

Mounting bracket for optical data coupler and distance measurement devices

OFR-1000/1000

Reflective tape 1000 mm x 1000 mm

OFR-500/500

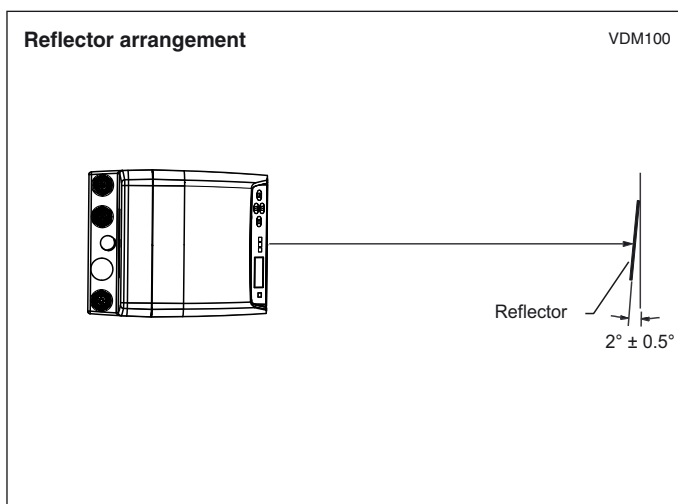
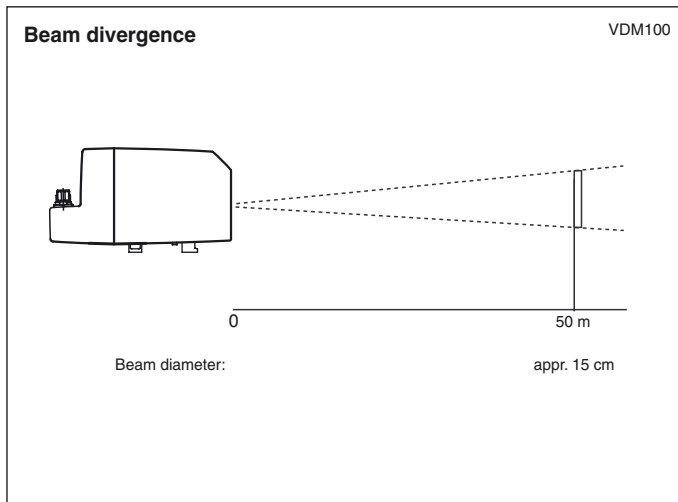
Reflective tape

Suitable reflectors and cable sockets can be found in the Internet

Directive conformity	EMC Directive 2004/108/EC
Standard conformity	
Product standard	EN 60947-5-2:2007
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.