**Model Number**

**VDM100-50-P/G2**

Distance sensor with four 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
- 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

![Dimensions Diagram](image)

### Electrical connection

<table>
<thead>
<tr>
<th>Bus IN</th>
<th>Bus Out/Termination</th>
<th>Service</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>n.c.</td>
<td>n.c.</td>
<td>n.c.</td>
<td>24 V DC</td>
</tr>
<tr>
<td>Po/Tx-N</td>
<td>Re/Tx-N</td>
<td>0 V</td>
<td>ID 2</td>
</tr>
<tr>
<td>n.c.</td>
<td>n.c.</td>
<td>0 V</td>
<td>ID 1</td>
</tr>
<tr>
<td>Po/Tx-N</td>
<td>Re/Tx-N</td>
<td>24 V DC</td>
<td></td>
</tr>
<tr>
<td>n.c.</td>
<td>n.c.</td>
<td>24 V DC</td>
<td></td>
</tr>
</tbody>
</table>

### Indicators/operating means

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power-LED</td>
<td>green</td>
<td>Display</td>
<td></td>
<td>TARGET-LED</td>
<td>green</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ERROR-LED</td>
<td>red</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>BUS-LED</td>
<td>green</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Control keys</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**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: 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 Laser class 2
- Life span: > 100000 h
- Diameter of the light spot: < 15 cm at 50 m
- Ambient light limit: > 100000 Lux
- Resolution: 0.01 mm, adjustable
- Temperature influence: 0.03 mm/K

**Functional safety related parameters**
- MTTFd: 89 a
- Mission Time (T_M): 20 a
- Diagnostic Coverage (DC): 0 %

**Indicators/operating means**
- Function indicator: 4 LEDs
- Control elements: Control panel (4 membrane keys) for setting parameters
- 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: \( t_y \) < 10 s

**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 protected

**Input**
- Switching threshold: low: \( U_e < 6 \) V, high: \( U_e > 16 \) V

**Output**
- Switching threshold: low: \( U_a < 1 \) V, high: \( U_a > U_b - 1 \) 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) ; 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**

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**Laserlabel**

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

**V15-W-PG9**
- Female connector, M12, 5-pin, field attachable

**V1-W**
- Female connector, M12, 4-pin, field attachable

**V1-G**
- Female connector, M12, 4-pin, field attachable

**V15SB-G-ABG-PG9**
- Cable connector, M12, for PROFIBUS, adjustable

**V15B-G-ABG-PG9**
- Cable socket, M12, for PROFIBUS, adjustable

**ICZ-TR-V15B**
- Terminal resistor for PROFIBUS

**Schutzkappe LS610 Zubehör**
- M12 protective cap set (connector + socket) for series LS610 / LS611

**Funktionserdung LS610/VDM100 Zubehör**
- Function grounding for LS610 / LS611 / VDM100 series

**OMH-VD100-01**
- 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-LS610-32**
- Mounting bracket for optical data coupler and distance measurement devices

**OMH-LS610-05**
- Mounting bracket for optical data coupler and distance measurement devices

**OFR-500/500**
- Reflective tape
**Distance sensor VDM100-50-P/G2**

- **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.

### 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**

### Curves/Diagrams

#### Beam divergence

![Beam divergence](image1)

- Beam diameter: appr. 15 cm
- Distance: 0 to 50 m

#### Reflector arrangement

![Reflector arrangement](image2)

- Reflector arrangement: 2° ± 0.5°
- VDM100

### Laser notice laser class 2

- **Caution:** 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.**