**Model Number**

**VDM100-150-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.

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**Dimensions**

![Dimensions Diagram](image)

- **Output Measurement laser, class 1 laser product**
- **Output Alignment laser, class 2 laser product**
- **Zero point measuring direction**
- **Optical axis Laserlabel**
- **Receiver**

**Electrical connection**

![Electrical Connection Diagram](image)

**Indicators/operating means**

![Indicators Diagram](image)

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 ... 150 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
  - Reflection laser: 2
- Wave length: Measurement laser: 905 nm
- Beam divergence: Measurement laser: 2 mrad
- Pulse length: Measurement laser: 4 ns
- Repetition rate: Measurement laser: 20 kHz
- Maximum optical power output: Measurement 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: < 35 cm at 150 m
- Ambient light limit: > 100000 Lux
- Temperature influence: 0.03 mm/K
- Absolute accuracy: ± 2.5 mm (> 3 m); ± 3.5 mm (0.3 m to 3 m)
- Average data age: 3 ms , 6 ms , 12 ms , 25 ms , 50 ms , adjustable
- Transfer rate: 9.6 kbit/s ... 12 Mbit/s , adjustable
- Protection class: III (operating voltage 50 V)
- Diagnostic Coverage (DC): 0 %
- Temperature: -10 ... 50 °C (14 ... 122 °F)
- Material: ABS / PC
- Relative humidity: max. 2 mm (between two devices)
- Measuring method: Laser Ranging Technology (PRT)
- Interface: PROFIBUS DP acc. to EN 50170
- Transfer rate: 9.6 kbit/s ... 12 Mbit/s , adjustable
- 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) , 5-pin, M12x1 connector, B-coded (Bus In) , M12x1 socket, 5-pin, B-coded (Bus Out) , 8-pin M12x1 connector, service
  - Housing: ABS / PC
  - Optical face: PMMA , hard coated
  - Mass: approx. 700 g
- Compliance with standards and directives:

### Laserlabel
- Visible and Invisible Laser Radiation
- Do Not Stare Into Beam
- Class 2 Laser Product

### Accessories
- 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
- V15B-G-ABG-PG9: Cable socket, M12, for PROFIBUS, adjustable
- V15SB-G-ABG-PG9: Cable connector, M12, for PROFIBUS, adjustable
- ICZ-TR-V15B: Terminal resistor for PROFIBUS
- Schutzkappe LS610 Zubeheer: M12 protective cap set (connector + socket) for series LS610 / LS611
- Funktionserdung LS610/VDM100 Zubeheer: Function grounding for LS610 / LS611 / VDM100 series

### Release date:
Dated June 24, 2007.

FOR DEVIATIONS PURSUANT TO LASER NOTICE NO. 50, COMPLIES WITH 21 CFR 1040.10 AND 1040.11 EXCEPT IEC 60825-1: 2007 CERTIFIED.

PULSE DURATION: 4ns
MAX. PULSE ENERGY: 12nJ
WAVELENGTH: 905nm
INFO LASER 1:
CLASS 2 LASER PRODUCT
DO NOT STARE INTO BEAM

L’EXCEPTION DES ÉCARTS CONFORMÉMENT À LA NOTICE
DURÉE D’IMPULSION: 4ns
MAX.ÉNERGIE D’IMPULSION: 12nJ
LONGUEUR D’ONDE: 905nm
INFO LASER 1:
PRODUIT LASER CLASSE 2
NE PAS REGARDER LE FAISCEAU
RAYONNEMENT LASER VISIBLE ET INVISIBLE
Distance sensor VDM100-150-P/G2

Directive conformity
- EMC Directive 2004/108/EC

Standard conformity
- Laser class: IEC 60825-1:2007

Approvals and certificates
- UL approval: cULus Listed

Curves/Diagrams

- Beam divergence
- Reflector arrangement

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.