

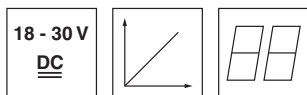
ODSL 9

Optical laser distance sensors

en 03-2012/11 50112185



50 ... 450mm



- Large measurement range
- Reflection-independent distance information
- Configuration via PC/LC display and control buttons
- Measurement value is indicated in mm on LC display
- Configurable measure mode and measurement range
- M12 turning connector input (pin 2) for deactivating the laser, triggering, offset correction, reference measurement or teach-in
- M12 turning connector
- Fieldbus connection (e.g. PROFINET, PROFIBUS, ...) with a MA2xxi modular interfacing unit for ODSL 9/D26...

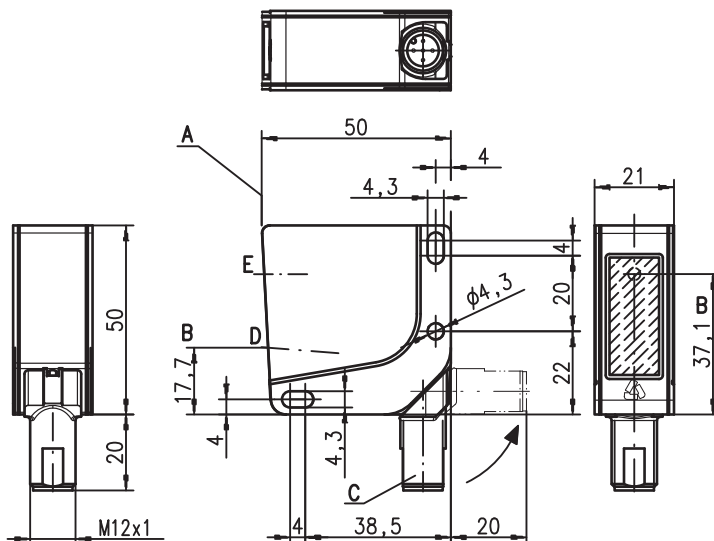


Accessories:

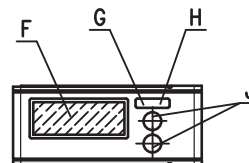
(available separately)

- Mounting systems
- Configuration software
- Cable with M12 connector (K-D ...)
- Connection cable for MA2xxi (K-DS M12A-MA-5P-3m-S-PUR, Part no. 50115049)

Dimensioned drawing

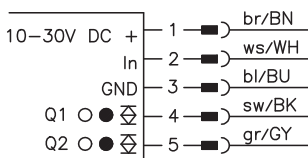


- A Reference edge for the measurement
- B Optical axis
- C Device plug M12
- D Receiver
- E Transmitter
- F LCD display
- G Indicator diode yellow
- H Indicator diode green
- J Control buttons

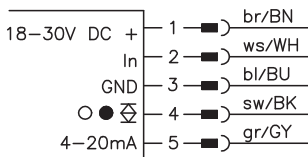


Electrical connection

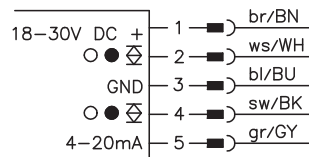
ODSL 9/66...



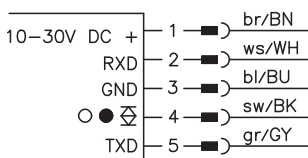
ODSL 9/C6...



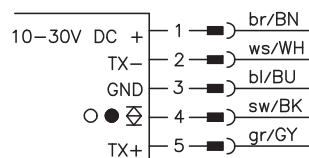
ODSL 9/C66...



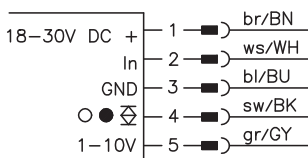
ODSL 9/D26...



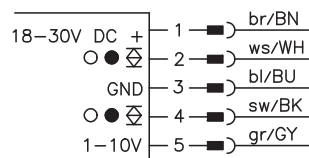
ODSL 9/D36...



ODSL 9/V6...



ODSL 9/V66...



We reserve the right to make changes • DS_ODSL9450_en_50112185.fm

Specifications

Optical data

| | |
|---------------------------------|--|
| Measurement range ¹⁾ | 50 ... 450mm |
| Resolution | 0.1mm |
| Light source | laser |
| Wavelength | 655nm |
| Light spot | divergent, 1x1mm ² at 450mm |
| Laser warning notice | see remarks |

Error limits (relative to measurement distance)

| | |
|---|-------------------|
| Absolute measurement accuracy ¹⁾ | ± 1% |
| Repeatability ²⁾ | ± 0.5% |
| B/W detection thresh. (6 ... 90% rem.) | ≤ 0.5% |
| Temperature compensation | yes ³⁾ |

Timing

| | |
|-----------------------|-------------------|
| Measurement time | 2ms ¹⁾ |
| Response time | ≤ 6ms |
| Delay before start-up | ≤ 300ms |

Electrical data

| | | |
|----------------------------------|-----------------------------------|--|
| Operating voltage U _B | ...C6/C66/V6/V66 ...D26/D36/66 | 18 ... 30VDC (incl. residual ripple) 10 ... 30VDC (incl. residual ripple) |
| Residual ripple | | ≤ 15% of U _B |
| Open-circuit current | | ≤ 180mA |
| Switching output | | push-pull switching output ⁴⁾ , PNP light switching, NPN dark switching |
| Signal voltage high/low | | ≥ (U _B -2 V)/≤ 2V |
| Analog output | ...V6/V66 ...C6/C66 | voltage 1 ... 10V / 0 ... 10V / 1 ... 5V / 0 ... 5V, R _L ≥ 2kΩ current 4 ... 20mA, R _L ≤ 500Ω |
| Serial interface | ...D26/D36 | RS 232/RS 485, 9600 ... 57600Bd, 1 start bit, 8 data bits, 1 stop bit, no parity |
| Transmission protocol | | 14 bit, 16 bit, ASCII, Remote Control |

Indicators

| | | Teach-in on GND | Teach-in on +U _B |
|------------|-------------------------------------|---|-----------------------------|
| Green LED | continuous light flashing off | ready fault no voltage | teaching procedure |
| Yellow LED | continuous light flashing off | object inside teach-in measurement distance object outside teach-in measurement distance | teaching procedure |

Mechanical data

| | |
|-----------------|----------------------|
| Housing | plastic |
| Optics cover | glass |
| Weight | approx. 50g |
| Connection type | M12 connector, 5-pin |

Environmental data

| | |
|-----------------------------------|---|
| Ambient temp. (operation/storage) | -20°C ... +50°C / -30°C ... +70°C |
| Protective circuit ⁵⁾ | 1, 2, 3 |
| VDE safety class ⁶⁾ | II, all-insulated |
| Protection class | IP 67 |
| Laser class | 2 (according to EN 60825-1 and 21 CFR 1040.10 with Laser Notice No. 50) |
| Standards applied | IEC 60947-5-2 |

- 1) Luminosity coefficient 6% ... 90%, complete measurement range, "Standard" operating mode, at 20°C, medium range of U_B, measurement object ≥ 50x50mm²
 2) Same object, identical environmental conditions, measurement object ≥ 50x50mm²
 3) Typ. ± 0.02 %/K
 4) The push-pull switching outputs must not be connected in parallel
 5) 1=transient protection, 2=polarity reversal protection, 3=short circuit protection for all outputs
 6) Rating voltage 50VAC

Order guide

| | Designation | Part No. |
|-------------------------------|--------------------|----------|
| Analog current output | | |
| 1 teachable push/pull output | ODSL 9/C6-450-S12 | 50111157 |
| 2 push/pull outputs | ODSL 9/C66-450-S12 | 50111161 |
| Analog voltage output | | |
| 1 teachable push/pull output | ODSL 9/V6-450-S12 | 50111158 |
| 2 push/pull outputs | ODSL 9/V66-450-S12 | 50111162 |
| Serial digital output | | |
| RS 232, 1 push/pull output | ODSL 9/D26-450-S12 | 50111159 |
| RS 485, 1 push/pull output | ODSL 9/D36-450-S12 | 50111160 |
| Only switching outputs | | |
| 2 teachable push/pull outputs | ODSL 9/66-450-S12 | 50111163 |

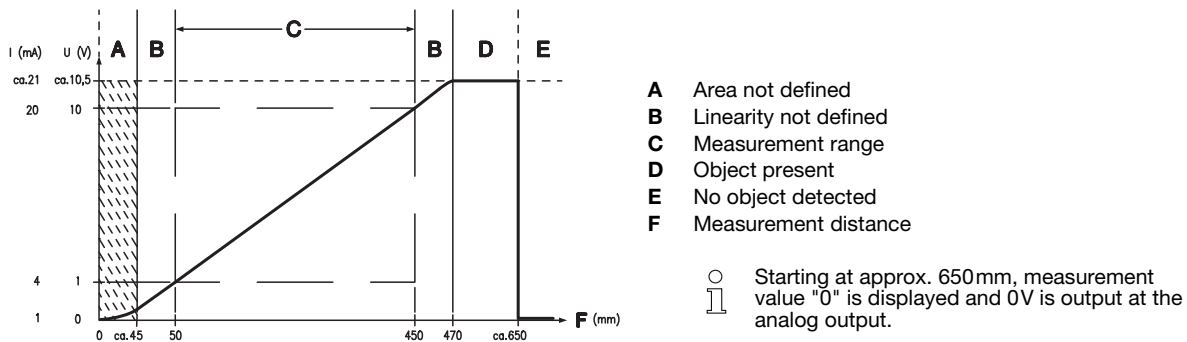
Tables

Diagrams

Remarks

- Measurement time depends on the reflectivity of the measurement object and on the measurement mode.
- **Approved purpose:** This product may only be used by qualified personnel and must only be used for the approved purpose. This sensor is not a safety sensor and is not to be used for the protection of persons.

Analog output: characteristic curve for factory setting



Serial output: transmission protocol for factory setting

9600Bd, 1 start bit, 8 data bits, 1 stop bit,
 transmission protocol ASCII measurement values

Transmission format: **MMMMM<CR>**

MMMMM = 5-digit measurement value in mm (resolution 0.1 mm)

<CR> = ASCII character "Carriage Return" (x0D)

Operation of ODSL 9/D26... with MA2xxi modular interfacing unit

Set **S4** rotary switch for device selection in MA 2xxi to switch position "**B**" (AMS)
 (see MA 2xxi Technical description).

Set the serial interface of the ODSL 9/D26... to:

- ASCII (factory setting)
- Baud rate: 38400Bd (see ODSL 9 Technical description...)

