

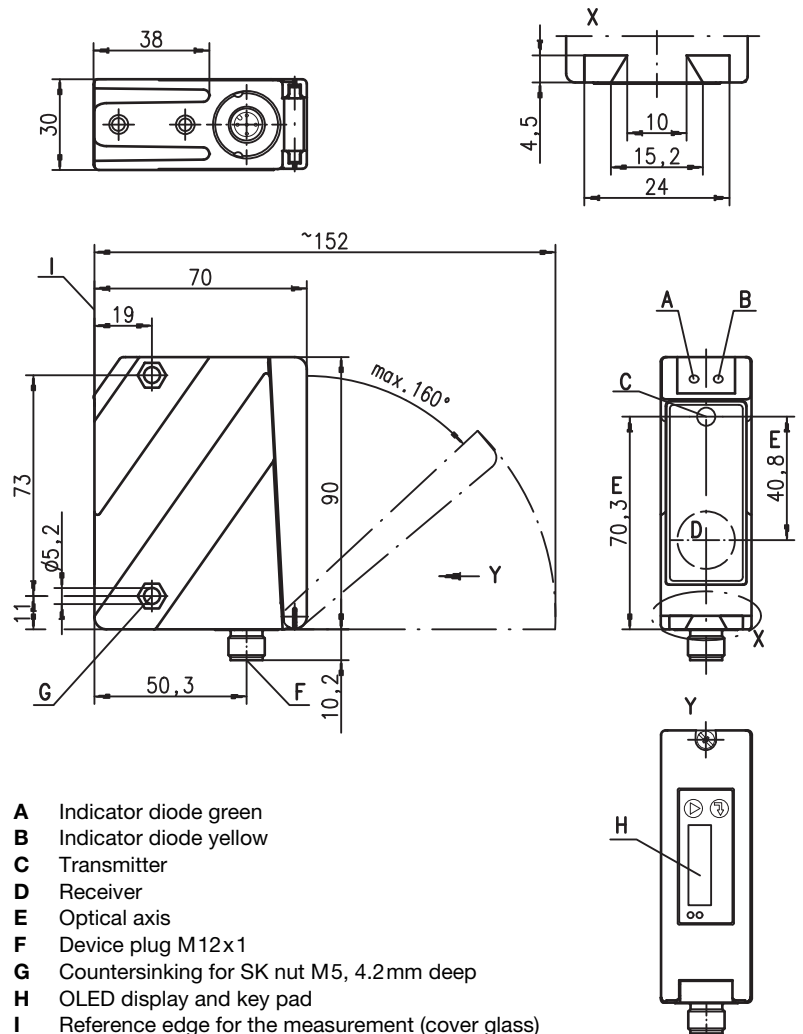
ODSL 96B

Optical laser distance sensors

en 02-2012/11 50112361



Dimensioned drawing

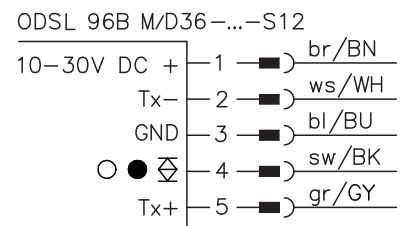
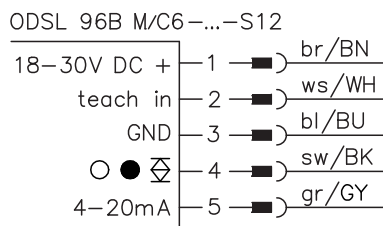
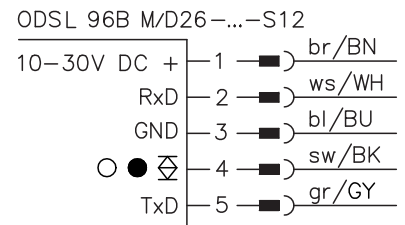
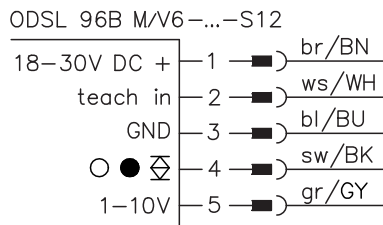


- A Indicator diode green
- B Indicator diode yellow
- C Transmitter
- D Receiver
- E Optical axis
- F Device plug M12x1
- G Countersinking for SK nut M5, 4.2mm deep
- H OLED display and key pad
- I Reference edge for the measurement (cover glass)

150 ... 800mm

- Small laser light spot for measurements on small, structured or metallic objects
- Reflection-independent distance information
- Highly insensitive to extraneous light
- PC/OLED display and key pad for configuration
- Measurement value is indicated in mm on OLED display
- Configurable measurement mode
- Configurable measurement data preprocessing and filter

Electrical connection



Accessories:

(available separately)

- Mounting systems
- Cable with M12 connector (K-D ...)
- Configuration software

We reserve the right to make changes • DS_ODSL96BS800_en_50112361.fm

Specifications

Optical data

| | |
|---------------------------------|--------------------------------------|
| Measurement range ¹⁾ | 150 ... 800mm |
| Resolution ²⁾ | 0.1 ... 0.8mm |
| Light source | laser |
| Wavelength | 655nm (visible red light) |
| Light spot | approx. 1x1 mm ² at 800mm |
| Laser warning notice | see remarks |

Error limits (relative to measurement distance)

| | |
|---|-------------------|
| Absolute measurement accuracy ¹⁾ | ± 1.5% |
| Repeatability ³⁾ | ± 0.5% |
| b/w detect. thresholds (6 ... 90% rem.) | ≤ 1% |
| Temperature compensation | yes ⁴⁾ |

Timing

| | |
|-----------------------------|--------------------------|
| Measurement time | 1 ... 5 ms ¹⁾ |
| Response time ¹⁾ | ≤ 15ms |
| Delay before start-up | ≤ 300ms |

Electrical data

| | | |
|----------------------------------|------------|---|
| Operating voltage U _B | ...C6/V6 | 18 ... 30VDC (incl. residual ripple) |
| | ...D26/D36 | 10 ... 30VDC (incl. residual ripple) |
| Residual ripple | | ≤ 15% of U _B |
| Open-circuit current | | ≤ 150mA |
| Switching output | | push-pull switching output ⁵⁾ , PNP light switching, NPN dark switching |
| Signal voltage high/low | | ≥ (U _B -2 V)/≤ 2V |
| Analogue output | ...V6 | voltage 1 ... 10V, R _L ≥ 2kΩ |
| | ...C6 | 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

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

Mechanical data

| | |
|-----------------|---------------|
| Housing | diecast zinc |
| Optics cover | glass |
| Weight | 380g |
| Connection type | M12 connector |

Environmental data

| | |
|-----------------------------------|-----------------------------------|
| Ambient temp. (operation/storage) | -20°C ... +50°C / -30°C ... +70°C |
| Protective circuit ⁶⁾ | 1, 2, 3 |
| VDE safety class ⁷⁾ | II, all-insulated |
| Protection class | IP 67, IP 69K ⁸⁾ |
| Laser class | 2 (acc. to EN 60825-1) |
| Standards applied | IEC 60947-5-2 |

- 1) Reflectivity 6% ... 90%, complete measurement range, at 20°C, medium range U_B, measurement object ≥ 50x50mm², depending on the measurement transmission type and the baud rate
- 2) Minimum and maximum value depend on measurement distance
- 3) Same object, identical environmental conditions, measurement object ≥ 50x50mm²
- 4) Typ. ± 0.02 %/K
- 5) The push-pull switching outputs must not be connected in parallel
- 6) 1=transient protection, 2=polarity reversal protection, 3=short circuit protection for all outputs
- 7) Rating voltage 250VAC, with cover closed
- 8) IP 69K test acc. to DIN 40050 part 9 simulated, high pressure cleaning conditions without the use of additives. Acids and bases are not part of the test.

Order guide

| | Designation | Part No. |
|-------------------------|--------------------------|----------|
| RS 232 interface | ODSL 96B M/D26.S-800-S12 | 50111035 |
| RS 485 interface | ODSL 96B M/D36.S-800-S12 | 50112065 |
| Analogue current output | ODSL 96B M/C6.S-800-S12 | 50106728 |
| Analogue voltage output | ODSL 96B M/V6.S-800-S12 | 50106729 |

Tables

Diagrams

Remarks

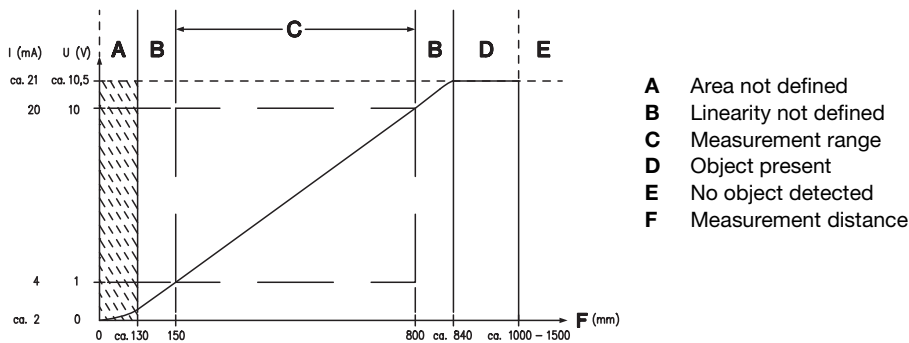
- Measurement time depends on the reflectivity of the measurement object and on the measurement mode.

| | |
|--|-------|
| LASER LIGHT DO NOT STARE INTO BEAM | |
| Maximum Output: | 1.2mW |
| Pulse duration: | 22ms |
| Wavelength: | 655nm |
| CLASS 2 LASER PRODUCT EN60825-1:2003-10 | |

| | |
|---|-------|
| LASER LIGHT DO NOT STARE INTO BEAM | |
| Maximum Output: | 1.2mW |
| Pulse duration: | 22ms |
| Wavelength: | 655nm |
| CLASS 2 LASER PRODUCT IEC 60825-1:1993+A2:2001 Complies with 21 CFR 1040.10 | |

- **Approved purpose:**
The ODSL 96B distance sensors are optoelectronic sensors for the optical, contactless measurement of the distance to objects.
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 1 mm)

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

- Further information about available transmission protocols may be found in the technical description "Optical distance sensors ODSL9/ODS96B".

