

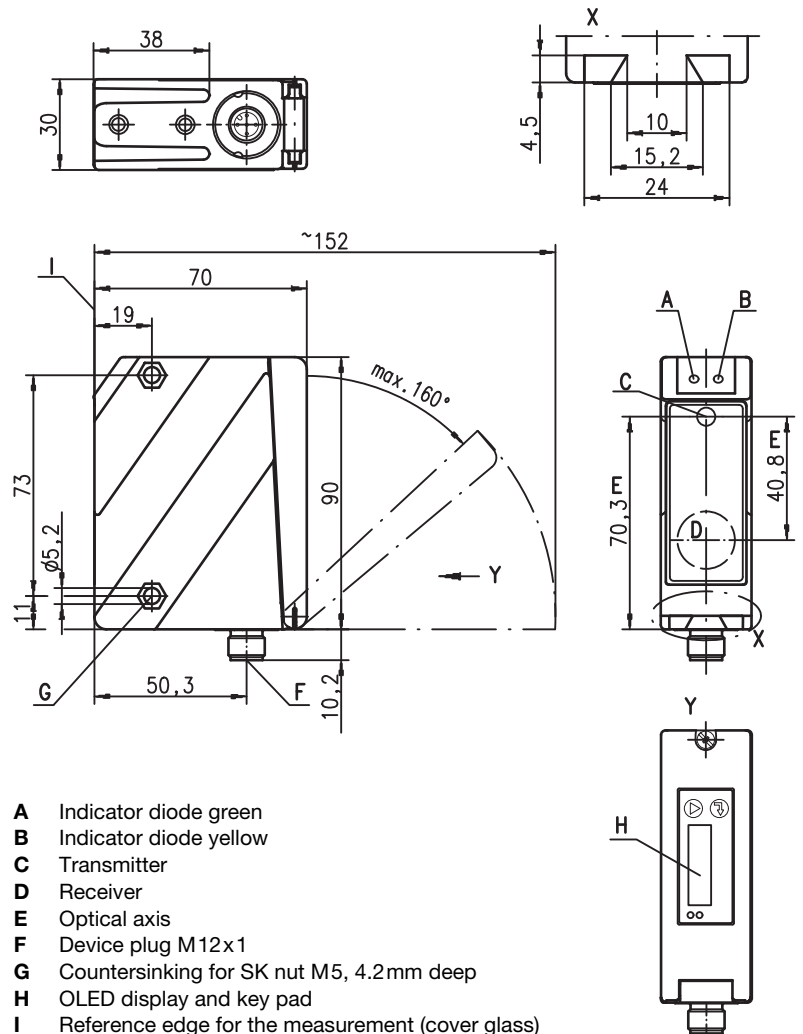
ODSL 96B

Optical laser distance sensors

en 02-2012/11 50112361



Dimensioned drawing



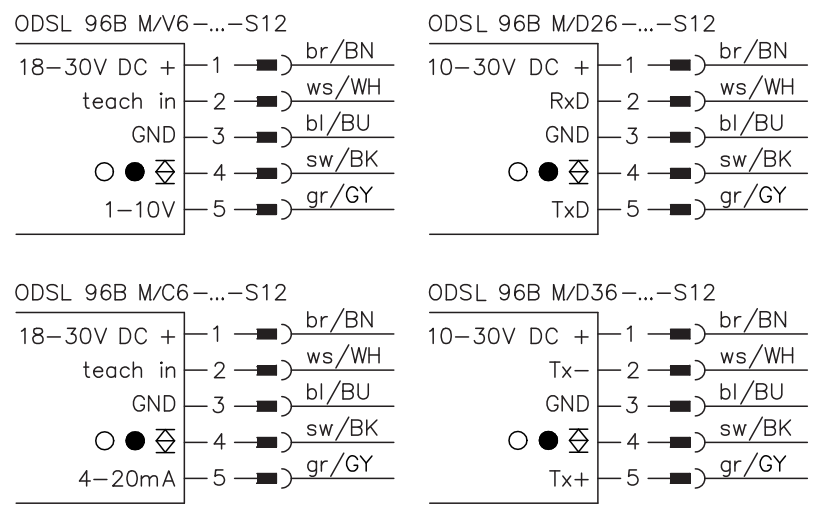
- A Indicator diode green
- B Indicator diode yellow
- C Transmitter
- D Receiver
- E Optical axis
- F Device plug M12x1
- G Countersinking for SK nut M5, 4.2mm deep
- H OLED display and key pad
- I Reference edge for the measurement (cover glass)

150 ... 800mm

10 - 30 V DC

- 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



CE CDRH

IEC 60947... IEC 60947... IP 69K IP 67

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

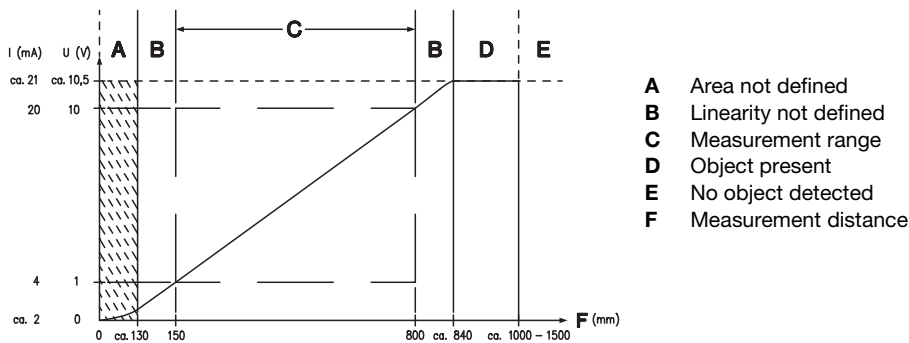
- Measurement time depends on the reflectivity of the measurement object and on the measurement mode.

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

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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".

