ODSL 9

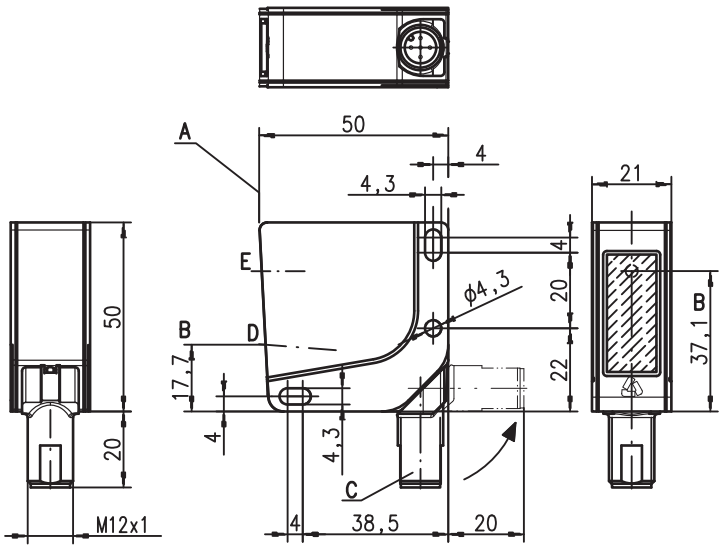
Optical laser distance sensors

en 01-2011/03 50115534

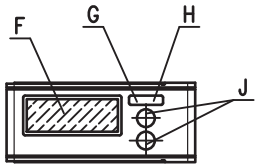
50 … 650mm

- Large measurement range
- Reflection-independent distance information
- Highly insensitive to extraneous light
- Measurement value is indicated in mm on LC display
- Configurable measurement mode
- Configurable measurement data preprocessing and filter
- Input (pin 2) for deactivating the laser, triggering, offset correction, reference measurement or teach-in
- M12 turning connector

Dimensioned drawing

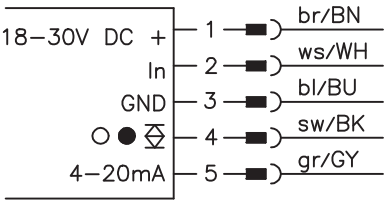


A Reference edge for the measurement
B Optical axis
C Device plug M12
D Receiver
E Transmitter
F LCD display
G Indicator diode yellow
H Indicator diode green
J Control buttons

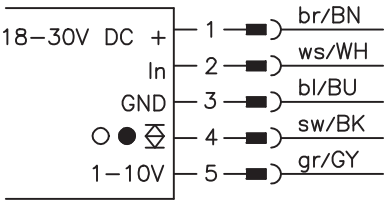


Electrical connection

ODSL 9/C6…



ODSL 9/V6…



IEC 60947... IEC 60947... IP 67

Accessories:

(available separately)

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

We reserve the right to make changes • DS_ODSL9_650_en.fm

Specifications

Optical data

Measurement range [1]		50 … 650mm
Resolution [2]		0.1 … 0.5mm
Light source		laser (red light, pulsed)
Wavelength		655nm
Max. output power		< 1.2mW
Pulse duration		22ms
Light spot		divergent, 1x1mm² at 450mm

Error limits (relative to measurement distance)

Absolute measurement accuracy [1]		± 1%
Repeatability [3]		± 0.5%
B/W detection thresh. (6 … 90% rem.)		≤ 0.5%
Temperature compensation		yes [4]

Timing

Measurement time		2ms [1]
Response time		≤ 6ms
Delay before start-up		≤ 300ms

Electrical data

Operating voltage U_B [5]	...C6/V6	18 … 30VDC (incl. residual ripple)
Residual ripple		≤ 15% of U_B
Open-circuit current		≤ 180mA
Switching output		push-pull switching output [6], PNP light switching, NPN dark switching
Signal voltage high/low		≥ (U_B-2 V)/≤ 2V
Analog output	...V6	voltage 1 … 10V / 0 … 10V / 1 … 5V / 0 … 5V, R_L ≥ 2kΩ
	...C6	current 4 … 20mA, R_L ≤ 500Ω

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

Mechanical data

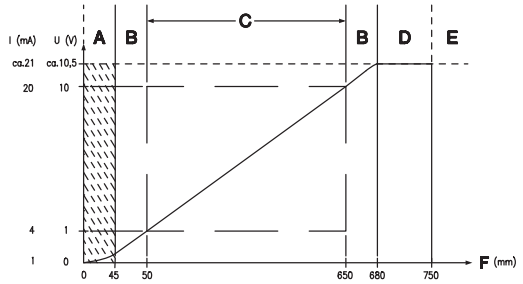
Housing	plastic
Optics cover	glass
Weight	approx. 50g
Connection type	M12 connector, 5-pin

Environmental data

Ambient temp. (operation/storage)	-20°C … +50°C / -30°C … +70°C
Protective circuit [7]	1, 2, 3
VDE safety class [8]	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/EN 60947-5-2, UL 508 [5]

1) Luminosity coefficient 6% … 90%, complete measurement range, "Standard" operating mode, at 20°C, medium range of U_B, measurement object ≥ 50x50mm²
2) Minimum and maximum value depend on measurement distance
3) Same object, identical environmental conditions, measurement object ≥ 50x50mm²
4) Typ. ± 0.02 %/K
5) For UL applications: for use in class 2 circuits according to NEC only
6) The push-pull switching outputs must not be connected in parallel
7) 1=transient protection, 2=polarity reversal protection, 3=short circuit protection for all outputs
8) Rating voltage 50VAC

Analog output: characteristic curve for factory setting



A Area not defined
B Linearity not defined
C Measurement range
D Object present
E No object detected
F Measurement distance

Order guide

	Designation	**Part no.**
Analog current output, 1 teachable push/pull output	ODSL 9/C6-650-S12	50113583
Analog voltage output, 1 teachable push/pull output	ODSL 9/V6-650-S12	50114627

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.