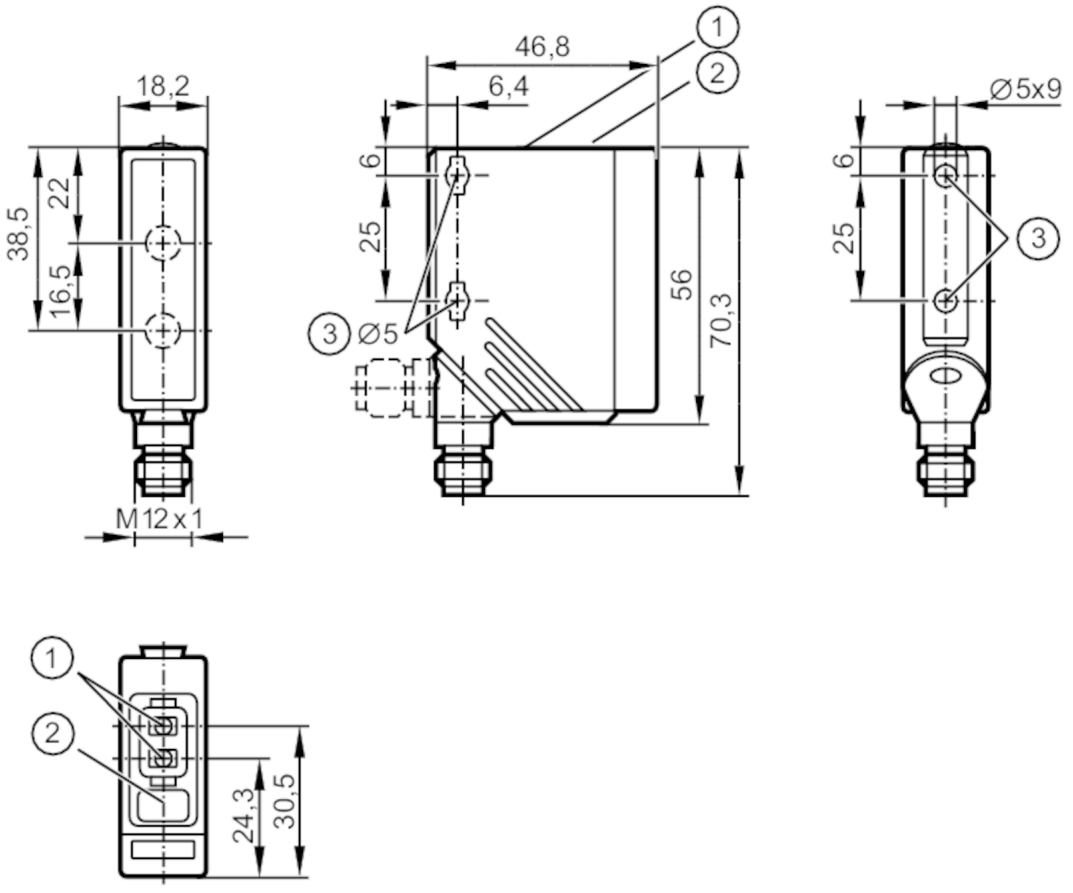
O5D101

Laser distance sensor

O5DLCPKG/US



1: setting pushbuttons
2: alphanumeric display 3-digit
3: Tightening torque < 2 Nm when using a mounting screw M5

Receiver in upper lens
transmitter in lower lens

Product characteristics		
Type of light		red light
Laser protection class		2
Housing		rectangular
Application		
System		Background suppression
Electrical data		
Operating voltage	[V]	10...30 DC; (cULus - Class 2 source required)
Current consumption	[mA]	< 75; (@ 24 V DC)
Protection class		III
Reverse polarity protection		yes
Type of light		red light
Wave length	[nm]	650
Typ. lifetime	[h]	50000

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Inputs / outputs			
Number of inputs and outputs		Number of digital outputs: 2	
Outputs			
Total number of outputs		2	
Electrical design		PNP	
Number of digital outputs		2	
Output function		normally open / closed; (complementary)	
Max. current load per output	[mA]	100	
Switching frequency DC	[Hz]	11	
Short-circuit protection		yes	
Type of short-circuit protection		yes (non-latching)	
Overload protection		yes	
Monitoring range			
Max. light spot diameter	[mm]	5	
Light spot dimensions refer to		2 m	
Detection range hysteresis	[%]	< 2.5	
Note on monitoring range hysteresis		black 6 % remission	
Background suppression available		yes	
Background suppression	[m]	< 20	
Measuring/setting range			
Measuring range	[m]	0.03...2	
Sampling rate	[Hz]	33	
Interfaces			
Communication interface		IO-Link	
Transmission type		COM2 (38,4 kBaud)	
IO-Link revision		1.1	
SDCI standard		IEC 61131-9	
Profiles		Smart Sensor - SSP 0	Generic Profiled Sensor
		Function	Multiple switching signal
		Function	Process data variable
SIO mode		yes	
Process data analog		1	
Process data binary		1	
Min. process cycle time	[ms]	6.4	
Supported DeviceIDs		**Type of operation**	**DeviceID**
		default	393
Operating conditions			
Ambient temperature	[°C]	-25...60	
Note on ambient temperature		at ta < -10 °C warm-up is necessary, laser is off	
Protection		IP 65; IP 67	
Max. immunity to extraneous light	[klx]	10; (on the object)	

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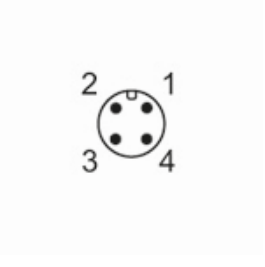
Tests / approvals			
EMC		EN 60947-5-2	
Vibration resistance		DIN EN 60068-2-6	10 g (10...55 Hz) / 120 min. per axis (x, y, z)
Shock resistance		DIN EN 60068-2-27	50 g 6 shocks / 11 ms half-sine (x, y, z)
Laser protection class		2	
Notes on laser protection		Caution:	Laser light
		Power:	<= 4,0 mW
		Wave length:	650 nm
		pulse:	1,3 ns
		Do not stare into beam.	
		Avoid exposure to the laser light.	
		laser class:	2
			EN / IEC60825-1:2007
			EN / IEC60825-1:2014
			Complies with 21 CFR 1040.10 except for conformance with IEC 60825-1 Ed. 3, as described in Laser Notice No. 56, dated May 8, 2019.
MTTF	[years]	151	
Mechanical data			
Weight	[g]	60	
Housing		rectangular	
Dimensions	[mm]	56 x 18.2 x 46.8	
Material		housing: PA; Front framework: stainless steel; operator interface: TPU (urethane); lens: PMMA	
Lens alignment		Side sensing	
Displays / operating elements			
Display		Switching status	LED, yellow Switching output PIN 4
		Power	LED, green
		Display	alphanumeric display, 3-digit
Display unit		inch	
Remarks			
Pack quantity		1 pcs.	

Electrical connection

Connector: 1 x M12; coding: A



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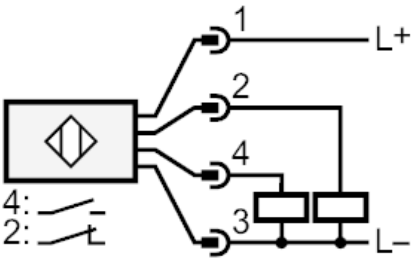
Connection



4: OUT / IO-Link

Other data

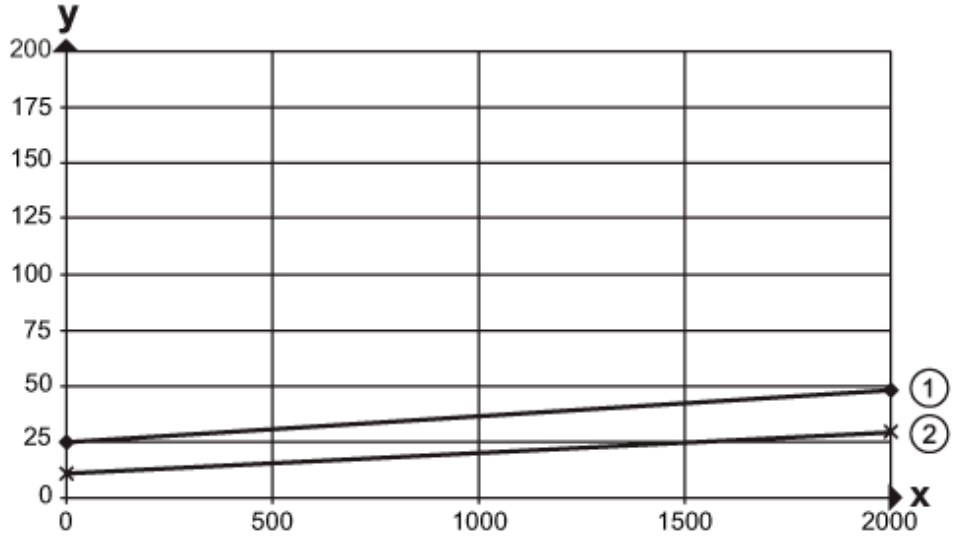
Accuracy

	Accuracy			
distance	black (6 % remission)	white (90 % remission)		
0 mm	± 15 mm	± 15 mm		
500 mm	± 15 mm	± 15 mm		
1000 mm	± 15 mm	± 15 mm		
1500 mm	± 20 mm	± 20 mm		
2000 mm	± 30 mm	± 20 mm		

Extraneous light on the object < 10 klx

Diagrams and graphs

Hysteresis graph



x: distance [mm]

y: Hysteresis [mm]

1 = background black 6 % remission

2 = background white 90 % remission