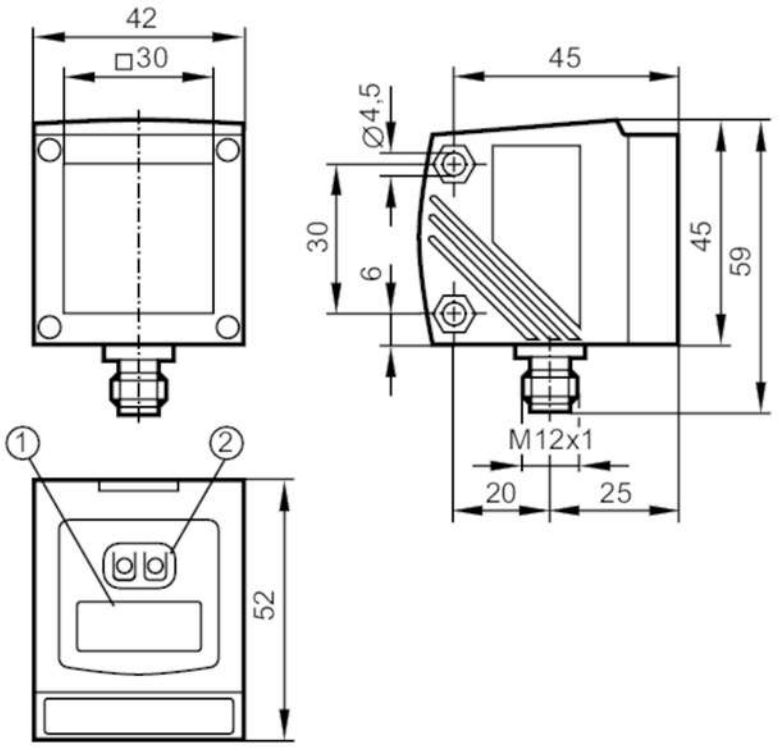
O1D103

Photoelectric distance sensor

O1DLF6KG/IO-LINK



1 alphanumeric display 4-digit
2 programming buttons

Product characteristics		
Laser protection class		2
Housing		rectangular
Electrical data		
Operating voltage	[V]	18...30 DC
Current consumption	[mA]	< 150
Protection class		III
Reverse polarity protection		yes
Typ. lifetime	[h]	50000
Inputs / outputs		
Number of inputs and outputs		Number of digital outputs: 2; Number of analogue outputs: 1
Outputs		
Total number of outputs		2
Electrical design		NPN
Number of digital outputs		2
Output function		normally open / normally closed; (programmable)
Max. current load per output	[mA]	200
Number of analogue outputs		1
Analogue current output	[mA]	4...20; (IEC 61131-2)

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Max. load	[Ω]	250	
Analogue voltage output	[V]	0...10; (IEC 61131-2)	
Min. load resistance	[Ω]	5000	
Short-circuit protection		yes	
Type of short-circuit protection		pulsed	
Overload protection		yes	
Detection zone			
Max. light spot width	[mm]	15	
Max. light spot height	[mm]	15	
Light spot dimensions refer to		10 m	
Background suppression	[m]	10...19	
Measuring/setting range			
Measuring range	[m]	0.2...10; (white paper 200 x 200 mm 90% remission)	
Sampling rate	[Hz]	1...50	
Interfaces			
Communication interface		IO-Link	
Transmission type		COM2 (38,4 kBaud)	
IO-Link revision		1.1	
SDCI standard		IEC 61131-9	
Profiles		Smart Sensor: Sensor Identification; Binary Data Channel; Process Value; Sensor Diagnosis	
SIO mode		yes	
Required master port type		A	
Process data analogue		2	
Process data binary		2	
Min. process cycle time	[ms]	6	
Supported DeviceIDs		**Type of operation**	**DeviceID**
		default	806
Operating conditions			
Ambient temperature	[°C]	-10...60	
Protection		IP 67	
Tests / approvals			
EMC		EN 60947-5-2	
Laser protection class		2	

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Notes on laser protection		Caution:	laser light
		Power:	<= 4 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 except for deviations pursuant to Laser Notice No. 50, dated June 2007.
MTTF	[years]	183	

Mechanical data		
Weight	[g]	313
Housing		rectangular
Dimensions	[mm]	59 x 42 x 52
Materials		housing: diecast zinc; front pane: glass; LED window: PC
Lens alignment		side lens

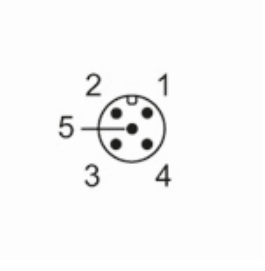
Displays / operating elements		
Display	switching status	2 x LED, yellow
	operation	LED, green
	distance value, programming	alphanumeric display, 4-digit

Accessories	
Accessories (optional)	Protective cover, E21133

Remarks	
Remarks	operating voltage "supply class 2" according to cULus
Pack quantity	1 pcs.

Electrical connection

Connector: 1 x M12; coding: A

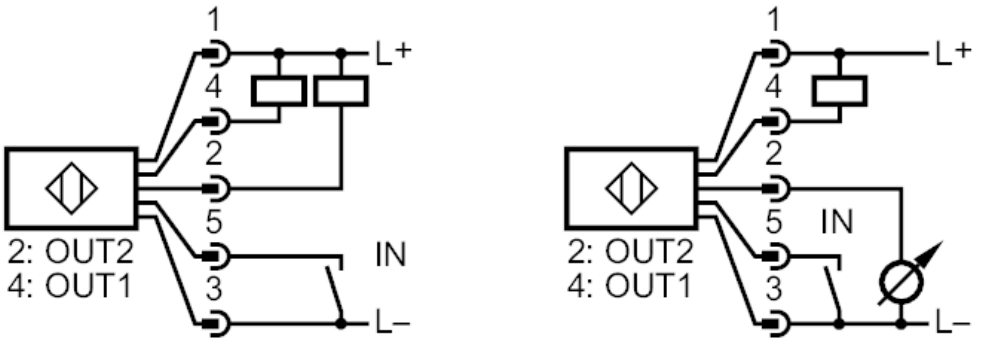


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Connection



2:	OUT2 switching output or 4...20 mA / 0...10 V
4:	OUT1 switching output or IO-Link
5:	IN Laser On/ Off Ein / Aus

Other data

Parameter	Setting range	Factory setting
Uni	mm, m, inch	mm
OU1	Hno, Hnc, Fno, Fnc	Hno
SP1 [mm]	200...9999	1000
nSP1 [mm]	200...9999	800
FSP1 [mm]	200...9999	1200
OU2	Hno, Hnc, Fno, Fnc, I, U	I
SP2 [mm]	200...9999	2000
nSP2 [mm]	200...9999	1800
FSP2 [mm]	200...9999	2200
ASP [mm]	0...9999	0
AEP [mm]	0...9999	9999
rATE [Hz]	1...50	5
dS1 [s]	0...0.1...5	0
dr1 [s]	0...0.1...5	0
dS2 [s]	0...0.1...5	0
dr2 [s]	0...0.1...5	0
dFo [s]	0...0.1...5	0
dIS	d1...3 ; rd1...3; OFF	d3

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repeatability/accuracy

read/write distance (mm)	repeatability of the measured values		accuracy	
	white (90 % remission)	grey (18 % remission)	white (90 % remission)	grey (18 % remission)
200...1000 mm	± 5.0 mm	±7.5 mm	± 15.0 mm	± 18.0 mm
1000...2000 mm	± 5.5 mm	±10.0 mm	± 15.0 mm	± 20.0 mm
2000...4000 mm	± 17.5 mm	±22.5 mm	± 25.0 mm	± 32.0 mm
4000...6000 mm	± 27.5 mm	±40.0 mm	± 35.0 mm	± 50.0 mm
6000...10000 mm	± 60.0 mm		± 70.0mm	
Sampling rate		50 Hz		
Extraneous light on the object		< 40 klx		

repeatability/accuracy

read/write distance (mm)	repeatability of the measured values		accuracy	
	white (90 % remission)	grey (18 % remission)	white (90 % remission)	grey (18 % remission)
200...1000 mm	± 16.5 mm	±16.5 mm	± 26.5 mm	± 26.5 mm
1000...2000 mm	± 16.5 mm	±16.5 mm	± 26.5 mm	± 26.5 mm
2000...4000 mm	± 30.0 mm	±37.0 mm	± 40.0 mm	± 47.0 mm
4000...6000 mm	± 37.0 mm	±57.0 mm	± 47.0 mm	± 67.0 mm
6000...10000 mm	± 75.0 mm	—	± 85.0mm	—
Sampling rate		50 Hz		
Extraneous light on the object		40...100 klx		

repeatability/accuracy

read/write distance (mm)	repeatability of the measured values		accuracy	
	white (90 % remission)	grey (18 % remission)	white (90 % remission)	grey (18 % remission)
200...1000 mm	± 4.0 mm	±4.5 mm	± 14.0 mm	± 15.0 mm
1000...2000 mm	± 4.5 mm	±6.0 mm	± 14.5 mm	± 16.0 mm
2000...4000 mm	± 13.5 mm	±14.5 mm	± 23.5 mm	± 24.0 mm
4000...6000 mm	± 19.0 mm	±21.0 mm	± 29.0 mm	± 31.0 mm
6000...10000 mm	± 37.0 mm	–	± 47.0mm	–
Sampling rate		1 Hz		
Extraneous light on the object		< 40 klx		