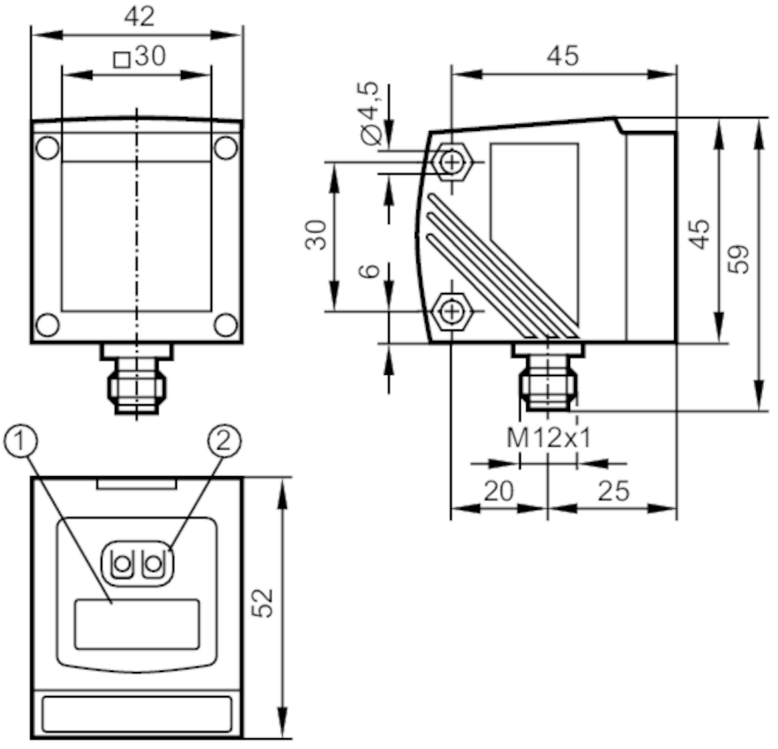
O1D300

Optical level sensor

O1DLF3KG/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; (cULus - Class 2 source required)
Current consumption	[mA]	< 150
Protection class		III
Reverse polarity protection		yes
Typ. lifetime	[h]	50000
Measuring principle		photoelectric
Inputs / outputs		
Number of inputs and outputs		Number of digital outputs: 2; Number of analog outputs: 1
Outputs		
Total number of outputs		2
Electrical design		PNP
Number of digital outputs		2
Output function		normally open / closed; (programmable)
Max. current load per output	[mA]	200
Number of analog outputs		1

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Analog current output	[mA]	4...20; (IEC 61131-2)	
Max. load	[Ω]	250	
Analog voltage output	[V]	0...10; (IEC 61131-2)	
Min. load resistance	[Ω]	5000	
Short-circuit protection		yes	
Type of short-circuit protection		yes (non-latching)	
Overload protection		yes	
Monitoring range			
Max. light spot width	[mm]	15	
Max. light spot height	[mm]	15	
Light spot dimensions refer to		10 m	
Background suppression	[m]	10...100	
Measuring/setting range			
Measuring range	[m]	0.2...10; (white paper 200 x 200 mm 90 % remission)	
Sampling rate	[Hz]	1...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: Sensor Identification; Binary Data Channel; Process Value; Sensor Diagnosis	
SIO mode		yes	
Required master port class		A	
Process data analog		2	
Process data binary		2	
Min. process cycle time	[ms]	6	
Supported DeviceIDs		**Type of operation**	**DeviceID**
		default	813
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:	<= 4,0 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 except for deviations pursuant to Laser Notice No. 50, dated June 2007.
MTTF	[years]	107	

Mechanical data

Weight	[g]	240
Housing		rectangular
Dimensions	[mm]	59 x 42 x 52
Material		housing: diecast zinc; front lens: glass; LED window: PC
Lens alignment		Side sensing

Displays / operating elements

Display	Switching status	2 x LED, yellow
	Power	LED, green
	Distance, programming	alphanumeric display, 4-digit

Accessories

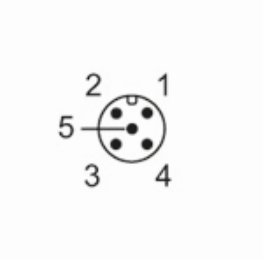
Accessories (optional)	Protective cover, E21133

Remarks

Remarks	cULus - Class 2 source required
Pack quantity	1 pcs.

Electrical connection

Connector: 1 x M12; coding: A

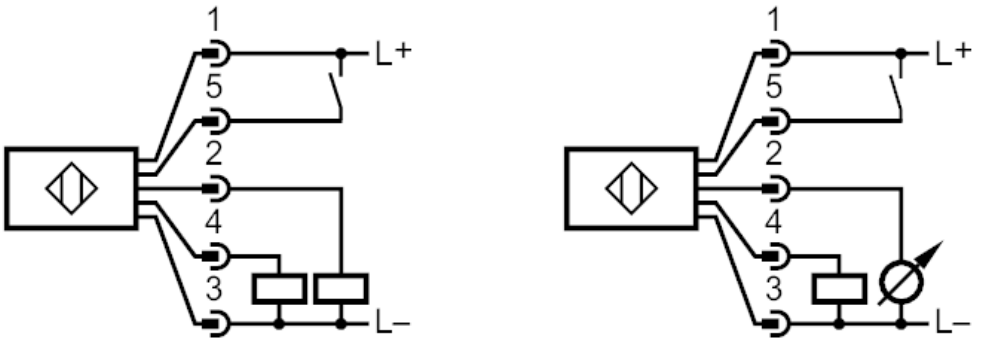


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Connection



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	cm, m, inch	cm
OU1	Hno, Hnc, Fno, Fnc	Hno
SP1 [cm]	20.0...999.5	100.0
rP1 [cm]	20.0...999.5	80.0
OU2	Hno, Hnc, Fno, Fnc, I, U	I
SP2 [cm]	20.0...999.5	200.0
rP2 [cm]	20.0...999.5	180.0
ASP [cm]	20.0...999.5	0
AEP [cm]	20.0...999.5	979.5
dr1 [s]	0...0.1...5	0
dr2 [s]	0...0.1...5	0
FOU1	ON ; OFF	OFF
FOU2	ON ; OFF	OFF
dFO [s]	0...0.1...5	0
EMP [cm]	20.0...999.5	20.0
cMEd [cm]	20.0...999.5	-
dIS	ON ; OFF	ON
mEAn [s]	OFF ; 1...60	OFF
rATE [Hz]	1...33	15

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Repeatability / Accuracy

	Repeatability of the measured values		Accuracy	
	white (90 % remission)	grey (18 % remission)	white (90 % remission)	grey (18 % remission)
20.0...100.0 cm	± 0.45 cm	± 0.6 cm	± 1.5 cm	± 1.6 cm
100.0...200.0 cm	± 0.5 cm	± 0.8 cm	± 1.5 cm	± 1.8 cm
200.0...400.0 cm	± 1.6 cm	± 1.9 cm	± 2.5 cm	± 3.0 cm
400.0...600.0 cm	± 2.4 cm	± 3.3 cm	± 3.5 cm	± 4.5 cm
600.0...1000.0 cm	± 5.0 cm		± 6.5 cm	
Sampling rate		15Hz		
Extraneous light on the object		< 40 klx		

Repeatability / Accuracy

	Repeatability of the measured values		Accuracy	
	white (90 % remission)	grey (18 % remission)	white (90 % remission)	grey (18 % remission)
20.0...200.0 cm	± 1.4 cm	± 1.4 cm	± 2.4 cm	± 2.4 cm
200.0...400.0 cm	± 2.5 cm	± 3.0 cm	± 3.5 cm	± 4.0 cm
400.0...600.0 cm	± 3.1 cm	± 4.5 cm	± 4.1 cm	± 5.5 cm
600.0...1000.0 cm	± 6.0 cm		± 7.0 cm	
Sampling rate		15Hz		
Extraneous light on the object		40...100 klx		

Repeatability / Accuracy

	Repeatability of the measured values		Accuracy	
	white (90 % remission)	grey (18 % remission)	white (90 % remission)	grey (18 % remission)
20.0...100.0 cm	± 0.4 cm	± 0.45 cm	± 1.4 cm	± 1.5 cm
100.0...200.0 cm	± 0.45 cm	± 0.6 cm	± 1.5 cm	± 1.6 cm
200.0...400.0 cm	± 1.35 cm	± 1.4 cm	± 2.3 cm	± 2.4 cm
400.0...600.0 cm	± 1.9 cm	± 2.1 cm	± 2.9 cm	± 3.1 cm
600.0...1000.0 cm	± 3.7 cm		± 4.7 cm	
Sampling rate		1 Hz		
Extraneous light on the object		< 40 klx		

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Repeatability / Accuracy

	Repeatability of the measured values		Accuracy	
	white (90 % remission)	grey (18 % remission)	white (90 % remission)	grey (18 % remission)
20.0...200.0 cm	± 1.0 cm	± 1.0 cm	± 2.0 cm	± 2.0 cm
200.0...400.0 cm	± 1.8 cm	± 1.9 cm	± 2.8 cm	± 2.9 cm
400.0...600.0 cm	± 2.3 cm	± 2.7 cm	± 3.3 cm	± 3.7 cm
600.0...1000.0 cm	± 3.8 cm		± 4.8 cm	

Sampling rate	1 Hz
Extraneous light on the object	40...100 klx
Range on black object (6 % remission)	<= 4000 mm
The values apply at	
constant ambient conditions	23 °C / 960 hPa
minimum power-on time in minutes	10