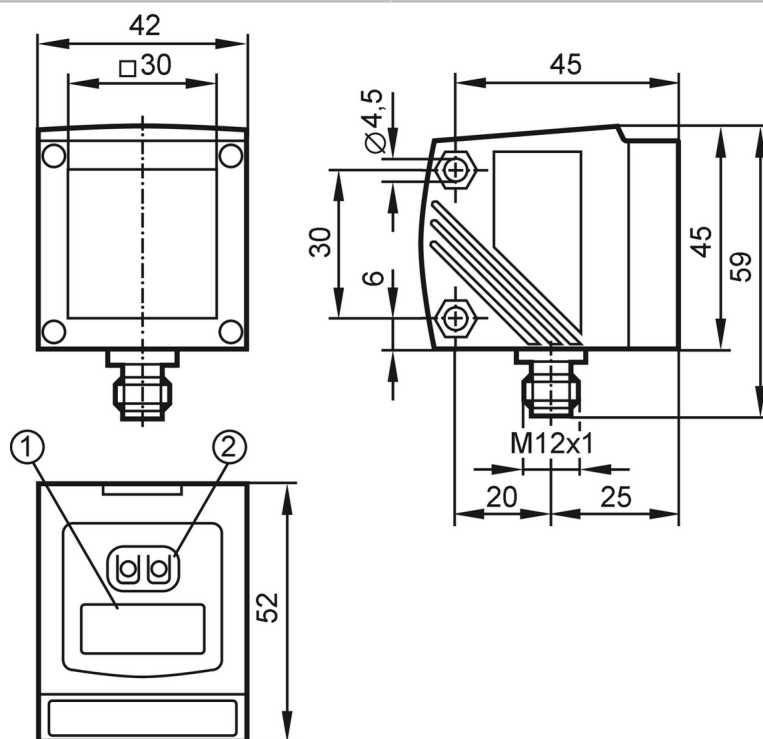


O1D120



Laser distance sensor

O1DLF3KG/IO-LINK



- 1 alphanumeric display 4-digit
- 2 Programming buttons



Product characteristics

Laser protection class	2
Housing	rectangular

Application

Special feature	Background suppression
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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 analog outputs: 1
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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
Analog current output [mA]	4...20

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Max. load	[Ω]	250
Analog voltage output	[V]	0...10
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 available		yes
Background suppression	[m]	0...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 - SSP 0	Generic Profiled Sensor
	Function	Device identification
	Function	Process data variable
	Function	Device diagnosis
	Function	Teach channel
SIO mode		yes
Required master port class		A
Process data analog		2
Process data binary		3
Min. process cycle time	[ms]	5
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:	$\leq 4,0$ 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.

Mechanical data

Weight [g]	317
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

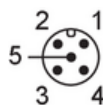
Accessories (optional)	Protective cover, E21133
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Remarks

Pack quantity	1 pcs.
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Electrical connection

Connector: 1 x M12; coding: A



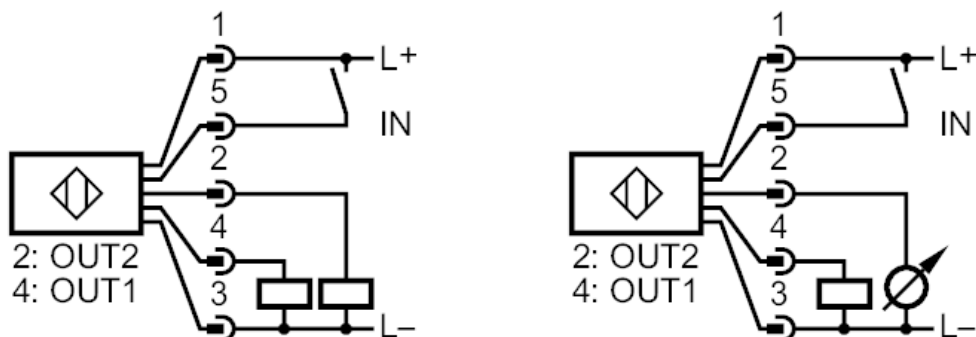
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Laser distance sensor

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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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Laser distance sensor

O1DLF3KG/IO-LINK

Repeatability / Accuracy

distance	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

distance	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

distance	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	—	± 47.0 mm	—
Sampling rate		1 Hz		
Extraneous light on the object		< 40 klx		

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Repeatability / Accuracy

distance	Repeatability of the measured values		Accuracy	
	white (90 % remission)	grey (18 % remission)	white (90 % remission)	grey (18 % remission)
200...1000 mm	± 10.0 mm	± 10.0 mm	± 20.0 mm	± 20.0 mm
1000...2000 mm	± 10.0 mm	± 10.0 mm	± 20.0 mm	± 20.0 mm
2000...4000 mm	± 17.0 mm	± 18.0 mm	± 27.0 mm	± 28.0 mm
4000...6000 mm	± 22.0 mm	± 25.0 mm	± 32.0 mm	± 35.0 mm
6000...10000 mm	± 37.0 mm	—	± 47.0mm	—
Range on black object (6 % remission) ≤ 4000 mm				
The values apply at				
Extraneous light on the object < 40...100 klx				
constant ambient conditions 23 °C / 960 hPa				
minimum power-on time in minutes 10				