

O1D108

Laser distance sensor

O1DLF3KG/IO-LINK



- 1 alphanumeric display 4-digit
2 Programming buttons



Product characteristics		
Laser protection class		2
Housing		rectangular
Application		
Application	[m]	0.2...100
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
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

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Number of analog outputs	1
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]	25
Max. light spot height [mm]	25
Light spot dimensions refer to	18 m
Background suppression [m]	< 100

Measuring/setting range	
Measuring range [m]	0.2...18; (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	<table><tr><th>Type of operation</th><th>DeviceID</th></tr><tr><td>default</td><td>811</td></tr></table>	Type of operation	DeviceID	default	811
Type of operation	DeviceID				
default	811				

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.
MTTF [years]	106

Mechanical data

Weight [g]	305
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

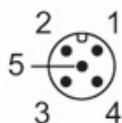
Accessories (optional)	Protective cover, E21133
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Remarks

Pack quantity	1 pcs.
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Electrical connection

Connector: 1 x M12; coding: A



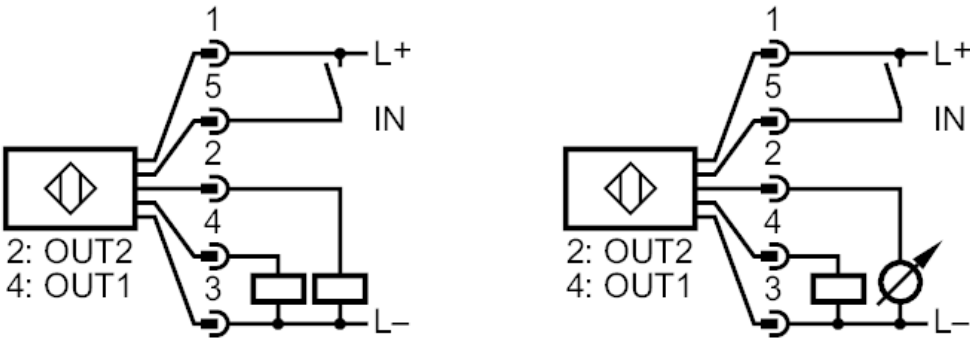
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Connection



- 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	m, inch	m
OU1	Hno, Hnc, Fno, Fnc	Hno
SP1	0.20...18.00	1.00
nSP1	0.20...18.00	0.80
FSP1	0.20...18.00	1.20
OU2	Hno, Hnc, Fno, Fnc, I, U	I
SP2	0.20...18.00	2.00
nSP2	0.20...18.00	1.80
FSP2	0.20...18.00	2.20
ASP	0...18.00	0
AEP	0...18.00	18.00
rATE [Hz]	1...15	15
dS1	0...0.1...5	0
dr1	0...0.1...5	0
dS2	0...0.1...5	0
dr2	0...0.1...5	0
dFo	0...0.1...5	0
dIS	d1...3 ; rd1...3; OFF	d3

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Repeatability / Accuracy

	Repeatability of the measured values		Accuracy	
	white (90 % remission)	grey (18 % remission)	white (90 % remission)	grey (18 % remission)
0.20...1.0 m	± 0.45 cm	± 0.6 cm	± 1.5 cm	± 1.6 cm
1.00...2.00 m	± 0.5 cm	± 0.8 cm	± 1.5 cm	± 1.8 cm
2.00...4.00 m	± 1.25 cm	± 1.9 cm	± 2.25 cm	± 3.0 cm
4.00...6.00 m	± 2.0 cm	± 3.0 cm	± 3.0 cm	± 4.0 cm
6.00...10.00 m	± 3.5 cm	± 5.0 cm	± 4.5 cm	± 6.0 cm
10.00...18.00 m	± 5.0 cm		± 6.0 cm	
Sampling rate	15 Hz			
Extraneous light on the object	< 10 klx			
The values apply at				
constant ambient conditions	23 °C / 960 hPa			
minimum power-on time in minutes	10			

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1.00...2.00 m	± 0.5 cm	± 0.8 cm	± 1.5 cm	± 1.8 cm
2.00...4.00 m	± 1.6 cm	± 1.9 cm	± 2.5 cm	± 3.0 cm
4.00...6.00 m	± 2.4 cm	± 3.3 cm	± 3.5 cm	± 4.5 cm
6.00...10.00 m	± 5.0 cm		± 6.5 cm	
Sampling rate	15 Hz			
Extraneous light on the object	< 40 klx			
The values apply at				
constant ambient conditions	23 °C / 960 hPa			
minimum power-on time in minutes	10			

In case of higher extraneous light on the object (up to 40 klx) the following specifications apply:

	white (90 % remission)	grey (18 % remission)	black (6 % remission)	
Measuring range	0.2...10 m	0.2...6 m	0.2...4 m	