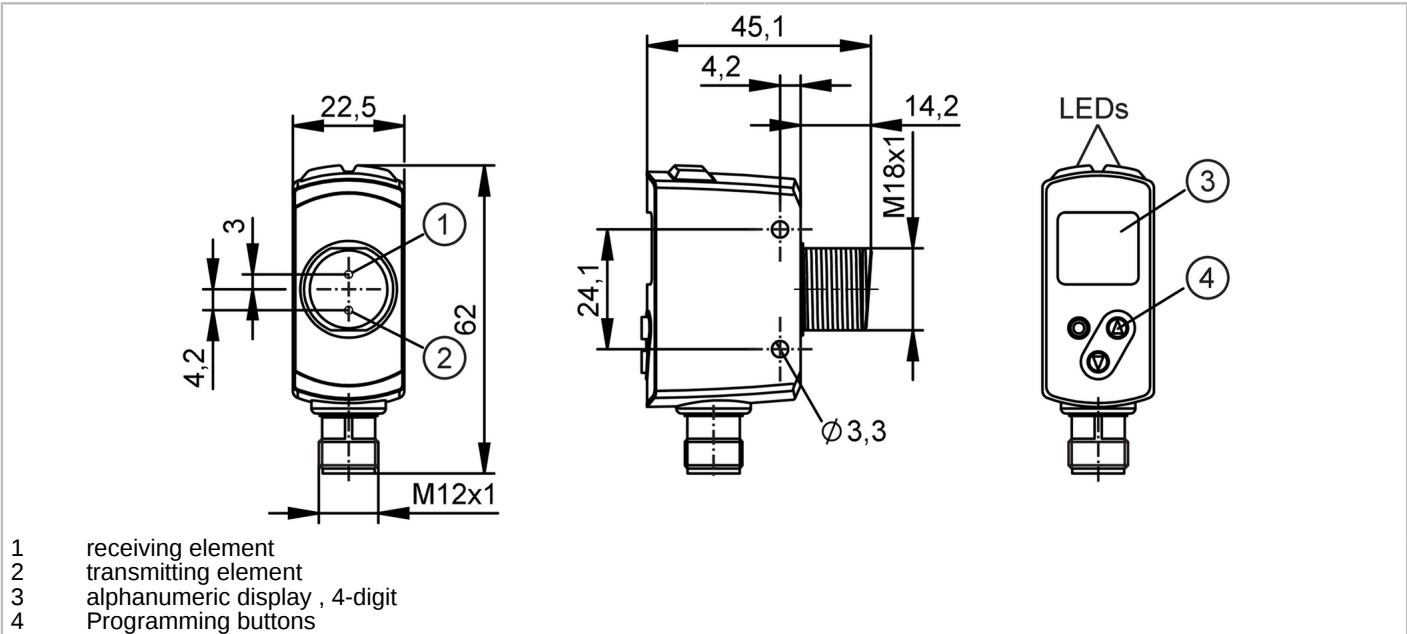


OGD540



Laser distance sensor

OGDLFCKG/IO-LINK/US



Product characteristics		
Type of light		red light
Laser protection class		1
Housing		rectangular with M18 thread
Application		
Application		Industrial applications
Electrical data		
Operating voltage	[V]	10...30 DC
Current consumption	[mA]	45; (24 V)
Protection class		III
Reverse polarity protection		yes
Type of light		red light
Wave length	[nm]	650
Inputs		
Inputs		Laser On/ Off
Outputs		
Electrical design		PNP/NPN; (configurable)
Output function		2 x normally open / normally closed; (configurable)
Max. current load per output	[mA]	100
Switching frequency DC	[Hz]	15
Short-circuit protection		yes
Type of short-circuit protection		yes (non-latching)
Overload protection		yes
Monitoring range		
Max. light spot diameter	[mm]	3



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Light spot dimensions refer to	at maximum range	
Background suppression [m]	< 20	
Measuring/setting range		
Measuring range [m]	0.03...0.55	
Setting range distance [m]	0.05...0.5	
Setting range object reflectivity [%]	6...200; (reflectivity; 6 % black paper; 100 % white paper)	
Sampling rate [Hz]	30	
Software / programming		
Parameter setting options	Distance / reflectivity; hysteresis / window; sequence modulation to avoid mutual interference between up to 5 similar devices	
Interfaces		
Communication interface	IO-Link	
Transmission type	COM2 (38,4 kBaud)	
IO-Link revision	1.1.3	
SDCI standard	IEC 61131-9	
Profiles	Common - I&D	Identification and Diagnosis
	Function	Locator
	Function	ProductURI
SIO mode	yes	
Required master port class	A	
Min. process cycle time [ms]	5	
IO-Link process data (cyclical)	Function	bit length
	process value	2 x 16
	device status	4
	binary switching information	2
IO-Link functions (acyclical)	application specific tag; operating hours counter; switching cycles counter	
Supported DeviceIDs	Type of operation	DeviceID
	default	2024
Note	For further information please see the IODD PDF file at "Downloads"	
Operating conditions		
Ambient temperature [°C]	-25...60	
Storage temperature [°C]	-35...80	
Protection	IP 65; IP 67	
Tests / approvals		
EMC	EN 60947-5-2	
Laser protection class	1	
Notes on laser protection	Caution:	Laser light
	laser class:	1
		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.

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Mechanical data		
Weight	[g]	133.13
Housing		rectangular with M18 thread
Dimensions	[mm]	62 x 22.5 x 45.1
Thread designation		M18 x 1
Material		housing: stainless steel (1.4404 / 316L); PPSU; ABS; PMMA; PBT / PC; EPDM; front lens: PMMA
Lens alignment		Side sensing
Tightening torque	[Nm]	7; (lock nuts)

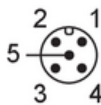
Displays / operating elements		
Display	Switching status	2 x LED, yellow
		1 x alphanumeric display, 4-digit
Operating elements	3	pushbuttons

Accessories	
Items supplied	lock nuts: 2

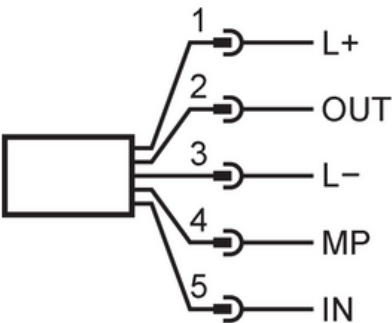
Remarks	
Pack quantity	1 pcs.

Electrical connection - plug

Connector: 1 x M12; coding: A; Contacts: 5



Connection



1	L+	
2	OUT	DO2 (NO/NC)
3	L-	
4	MP	DO1 (NO/NC), IO-Link
5	IN	DI (Laser On/ Off)

DI: digital input; DO: digital output; MP: multi-function connection; NC: normally closed; NO: normally open



Laser distance sensor

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Other data		
Parameter	Setting range	Factory setting
SEL1	Dist / Refl	Dist
OU1	Hno, Hnc, Fno, Fnc.OFF	Hno
SP1 [mm]	50...500	250
SP1 [%]	6...200	10
nSP1 [mm]	50...500	240
FSP1 [mm]	50...500	260
SF1 [mm]	4...200	20
bSP1 [%]	6...200	40
dSP1 [%]	6...200	30
SF1 [%]	1...100	10
dS1 [s]	0...0.1...5	0
dr1 [s]	0...0.1...5	0
SEL2	Dist / Refl	Dist
OU2	Hno, Hnc, Fno, Fnc, OFF	Hno
SP2 [mm]	50...500	500
SP2 [%]	6...200	6
nSP2 [mm]	50...500	480
FSP2 [mm]	50...500	500
SF2 [mm]	4...200	20
bSP2 [%]	6...200	20
dSP2 [%]	6...200	10
SF2 [%]	1...100	10
dS2 [s]	0...0.01...5	0
dr2 [s]	0...0.01...5	0
dFO [s]	0...0.01...5	0.1
diS	On / OFF	On
colr	rEd; GrEn; r1ou; G1ou; r2ou; G2ou; r-12; G-ou	G1ou
P-n	PNP,NPN	PNP
SEQ	auto; S1...S5	auto



Laser distance sensor

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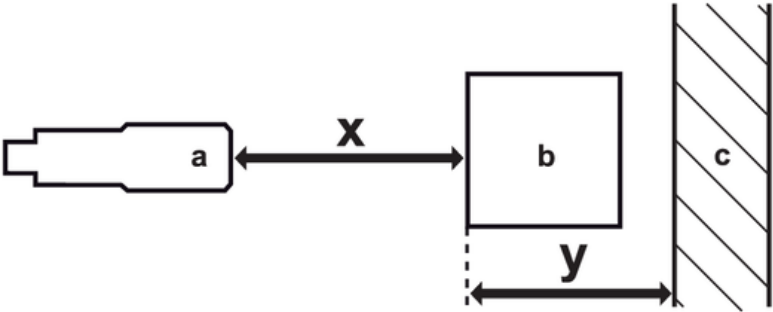
repeatability: $\pm 3 \sigma$

	Repeatability of the measured values	
distance	Background any (6...90 % remission)	
50...500	$\pm 3 \text{ mm}$	
reflectivity	Repeatability of the measured values	
6 %	$\pm 3 \%$	
50 %	$\pm 5 \%$	
90 %	$\pm 8 \%$	

The values apply at

Extraneous light on the object	$< 10 \text{ klx}$
constant ambient conditions	$23 \text{ }^{\circ}\text{C} / 960 \text{ hPa}$
minimum power-on time in minutes	15

Diagrams and graphs



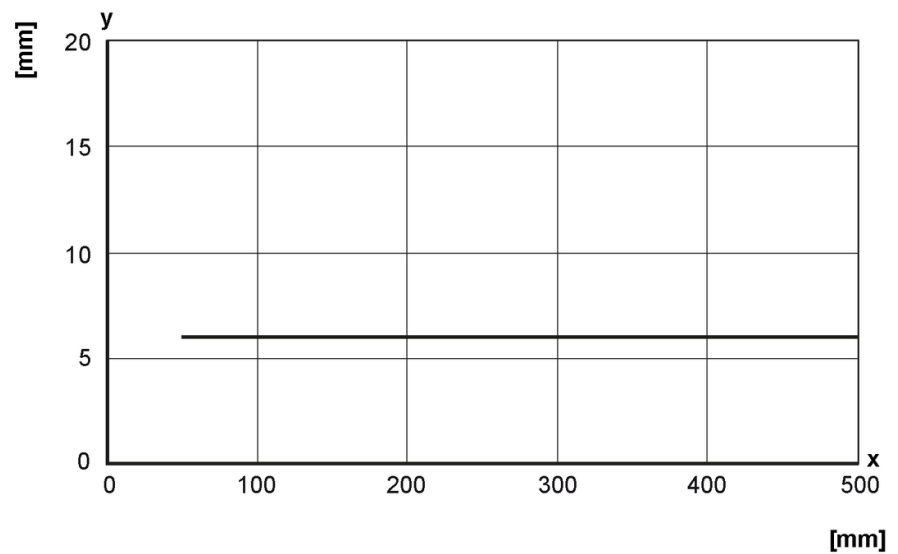
- a: sensor
- b: object
- c: background
- x: distance sensor/object [mm]
- y: min. distance object/background [mm]



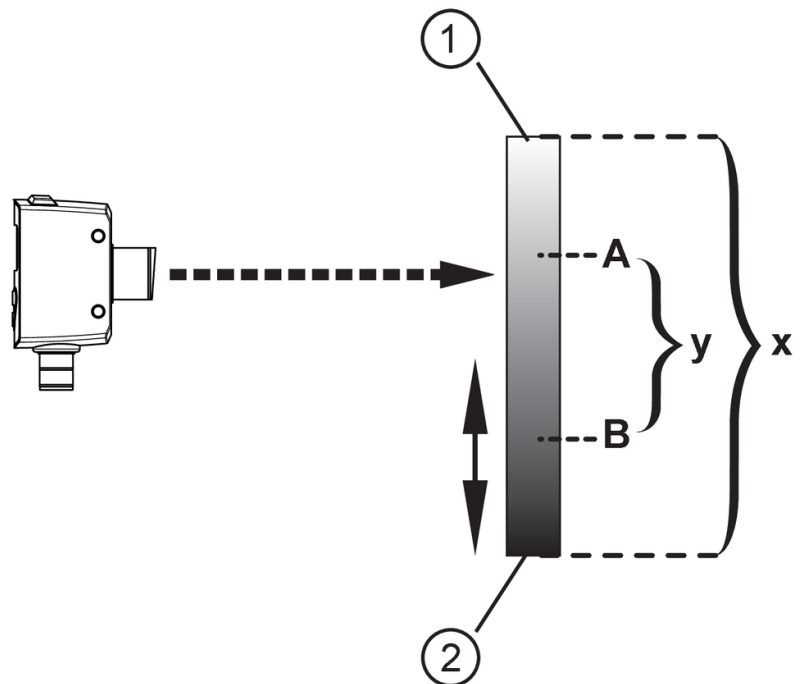
Laser distance sensor

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Hysteresis curve for distance measurement



Background any (6...90 % remission)



- 1: bright
- 2: dark
- A: Set point
- B: Reset point
- x: object brightness (Object reflectivity)
- y: min. reflectivity difference to be detected safely

OGD540



Laser distance sensor

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Hysteresis curve for object reflectivity

