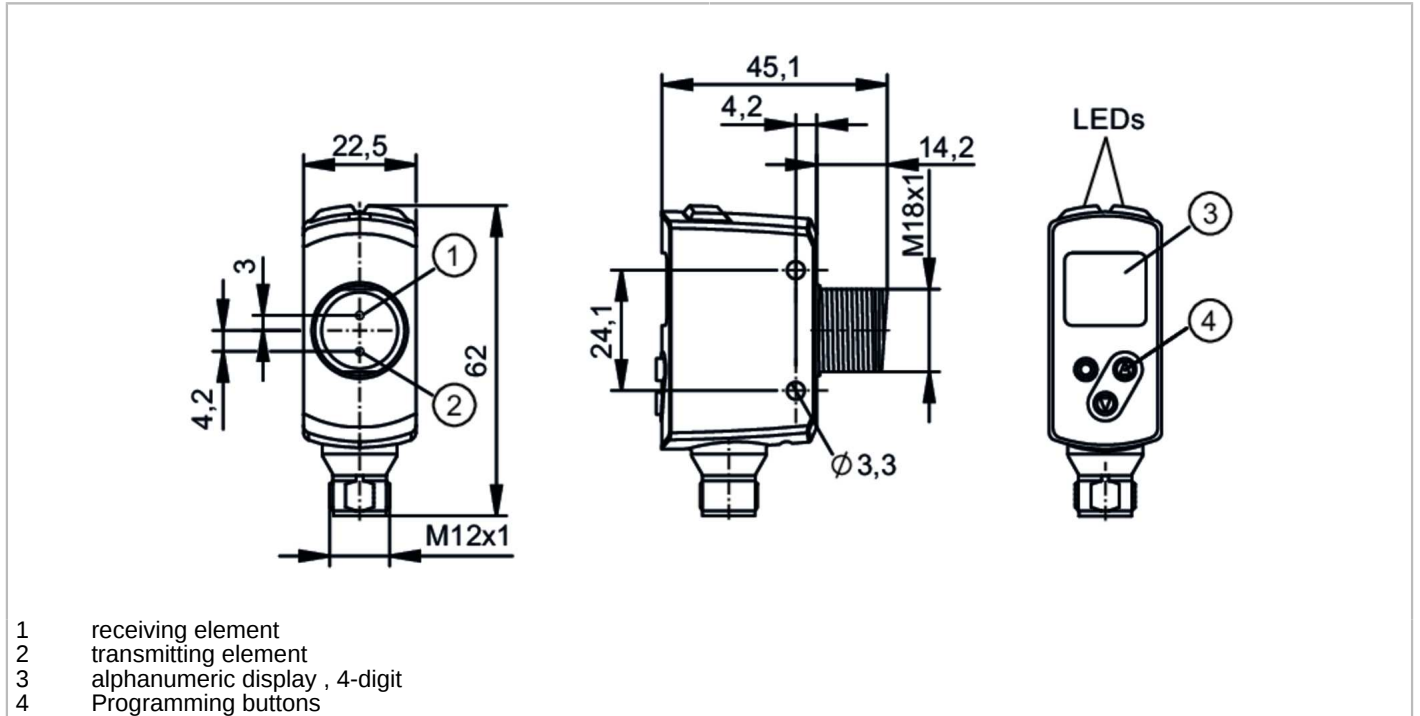


OGD250



Laser distance sensor

OGDLFCKG/IO-LINK/US



Product characteristics	
Type of light	red light
Laser protection class	1
Housing	rectangular with M18 thread
Electrical data	
Operating voltage [V]	10...30 DC; (cULus - Class 2 source required)
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
Short-circuit protection	yes
Type of short-circuit protection	yes (non-latching)
Overload protection	yes
Operating mode: FINE	
Switching frequency DC [Hz]	20

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Laser distance sensor

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Operating mode: STD		
Switching frequency DC	[Hz] 40	
Operating mode: FAST		
Switching frequency DC	[Hz] 60	
Monitoring range		
Max. light spot diameter	[mm] 5	
Light spot dimensions refer to	at maximum range	
Background suppression	[m] < 20	
Measuring/setting range		
Setting range object reflectivity	[%] 6...900; (reflectivity; 6 % black paper; 100 % white paper)	
Operating mode: FINE		
Measuring range	[m] 0.05...2	
Sampling rate	[Hz] 60	
Operating mode: STD		
Measuring range	[m] 0.05...2	
Sampling rate	[Hz] 120	
Operating mode: FAST		
Measuring range	[m] 0.05...1	
Sampling rate	[Hz] 180	
Software / programming		
Parameter setting options	Distance / reflectivity; hysteresis / window; Sensitivität; current/voltage output; Sequence modulation to avoid mutual interference by similar sensors	
Interfaces		
Communication interface	IO-Link	
Transmission type	COM2 (38,4 kBaud)	
IO-Link revision	1.1.3	
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	
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	1581
Note	For further information please see the IODD PDF file at "Downloads"	
Operating conditions		
Ambient temperature	[°C] -25...55	

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Note on ambient temperature	In ambient temperatures < -10 °C a warm-up time is necessary.
	Laser is off.
Storage temperature [°C]	-30...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 except for deviations pursuant to Laser Notice No. 50, dated June 2007.
MTTF [years]		319
UL approval	Ta	-25...60 °C
	Enclosure type	Type 1
	voltage supply	Class 2
	File number UL	E174191

Mechanical data

Weight [g]	52.06
Housing	rectangular with M18 thread
Dimensions [mm]	61.7 x 22.5 x 45.2
Thread designation	M18 x 1
Material	housing: PPSU; ABS; PMMA; PBT / PC; EPDM; front lens: PMMA
Lens alignment	Side sensing

Displays / operating elements

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

Accessories

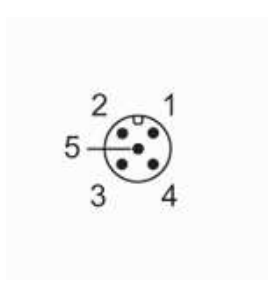
Items supplied	lock nuts: 2
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Remarks

Pack quantity	1 pcs.
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Electrical connection

Connector: 1 x M12; coding: A



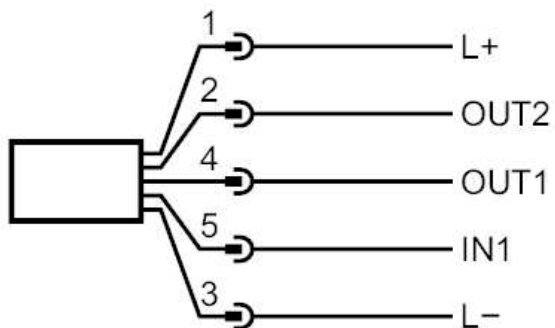
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Laser distance sensor

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Connection



- 1: L+
 - 2: OUT2 Switching output
 - 3: L-
 - 4: OUT1 switching output or IO-Link
 - 5: IN Laser On/ Off
- Further information is available in the manual.

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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...2000	1000
SP1 [%]	6...900	10
nSP1 [mm]	50...2000	900
FSP1 [cm]	50...2000	1100
SF1 [mm]	10...500	50
bSP1 [%]	6...900	40
dSP1 [%]	6...900	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...2000	2000
SP2 [%]	6...900	6
nSP2 [mm]	50...2000	1800
FSP2 [mm]	50...2000	2000
SF2 [mm]	10...500	50
bSP2 [%]	6...900	20
dSP2 [%]	6...900	10
SF2 [%]	1...100	10
dS2 [s]	0...0.01...5	0
dr2 [s]	0...0.01...5	0
dSO [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
OPEr (operating mode)	FINE,STD, FAST	FINE
SEQ	auto; S1...S5	auto

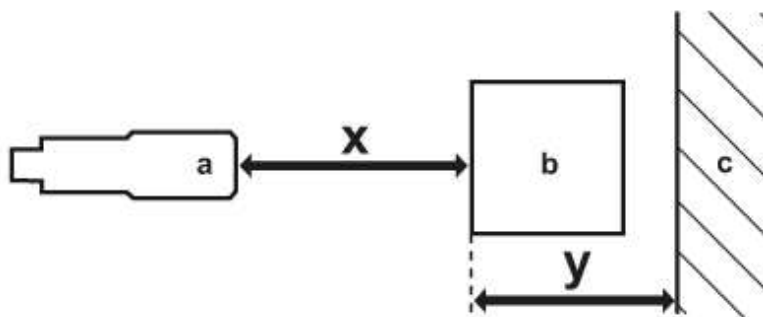
The values apply at	
Extraneous light on the object	< 10 klx
constant ambient conditions	23 °C / 960 hPa
minimum power-on time in minutes	15



Laser distance sensor

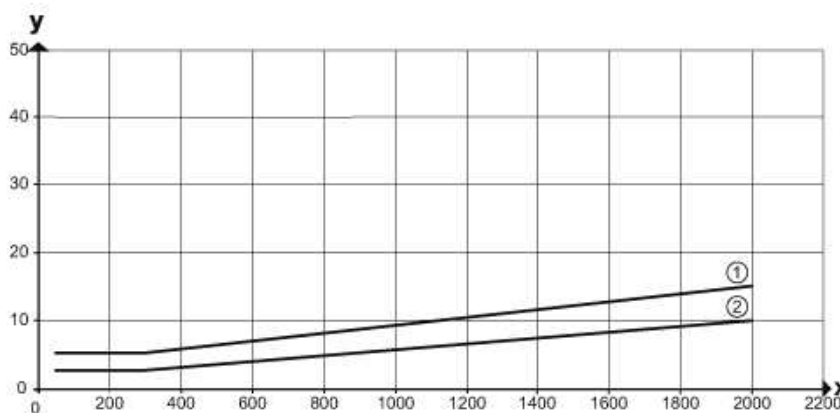
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Diagrams and graphs



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

Hysteresis graph for distance measurement / operating mode: FINE



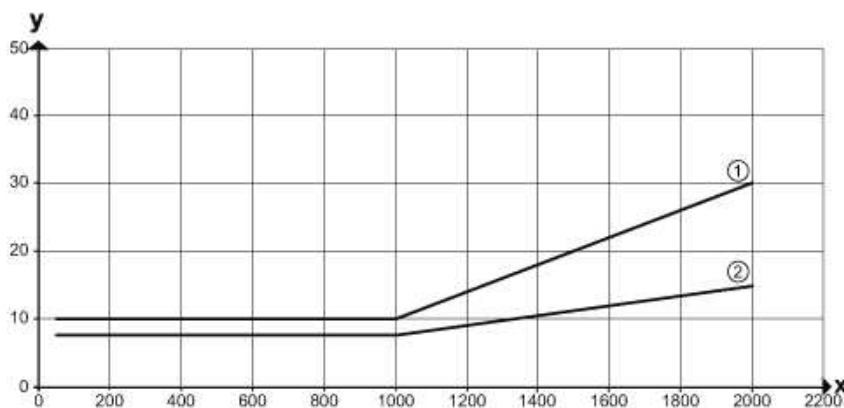
- 1: Background any (6...90 % remission)
- 2: Background white (90 % remission)



Laser distance sensor

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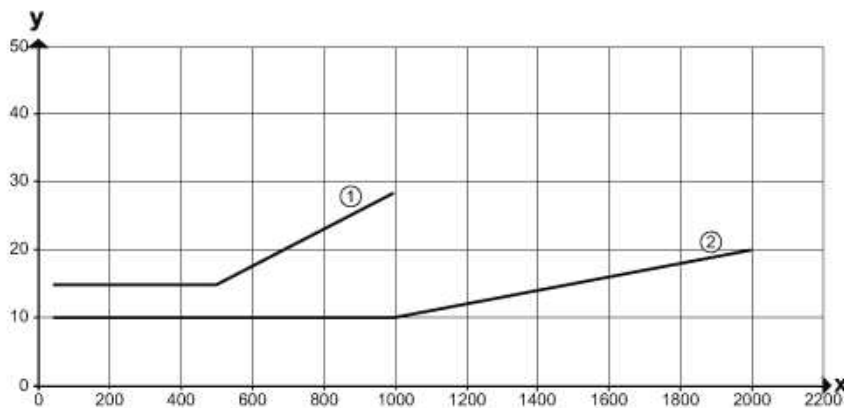
Hysteresis graph for distance measurement / operating mode: STD



1: Background any (6...90 % remission)

2: Background white (90 % remission)

Hysteresis graph for distance measurement / operating mode: FAST



1: Background any (6...90 % remission)

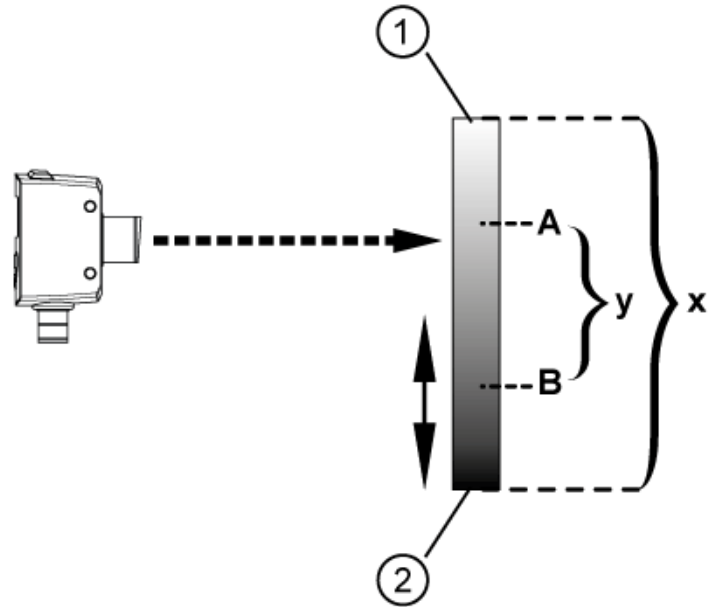
2: Background white (90 % remission)

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Laser distance sensor

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

Hysteresis curve for object reflectivity

