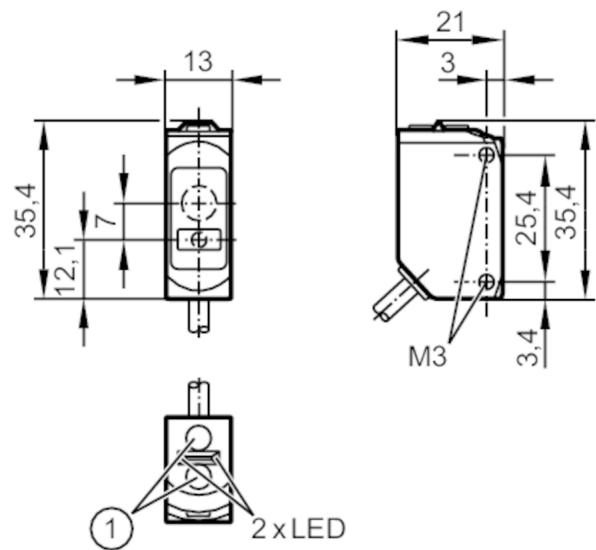




Diffuse reflection sensors with background suppression

O6HLFNKG



- 1 Programmiertaste
Receiver in upper lens
transmitter in lower lens



Product characteristics		
Type of light		red light
Laser protection class		1
Housing		rectangular
Application		
Function principle		Diffuse reflection sensor
Electrical data		
Operating voltage	[V]	10...30 DC
Current consumption	[mA]	16; (24 V)
Protection class		III
Reverse polarity protection		yes
Type of light		red light
Wave length	[nm]	650
Outputs		
Electrical design		NPN
Output function		light-on/dark-on mode; (selectable)
Max. voltage drop switching output DC	[V]	2.5
Permanent current rating of switching output DC	[mA]	100
Switching frequency DC	[Hz]	1000
Short-circuit protection		yes
Type of short-circuit protection		yes (non-latching)



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Monitoring range		
Range	[mm]	1...100; (white paper 200 x 200 mm)
Range on white object (90 % remission)	[mm]	1...100
Range on grey object (18 % remission)	[mm]	8...100
Range on black object (6 % remission)	[mm]	12...100
Range adjustable		yes
Max. light spot diameter	[mm]	2
Light spot dimensions refer to		at maximum range
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	Multiple switching signal
	Function	Process data variable
	Function	Device diagnosis
	Function	Teach channel
SIO mode		yes
Required master port class		A
Min. process cycle time	[ms]	10
IO-Link process data (cyclical)	Function	bit length
	process value	32
	device status	4
	binary switching information	1
IO-Link functions (acyclical)		application specific tag; operating hours counter; switch-on cycle counter
Supported DeviceIDs	Type of operation	DeviceID
	default	526
Operating conditions		
Ambient temperature	[°C]	-10...60
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.
MTTF	[years]	513

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UL approval	Ta	-25...60 °C
	Enclosure type	Type 1
	voltage supply	Class 2

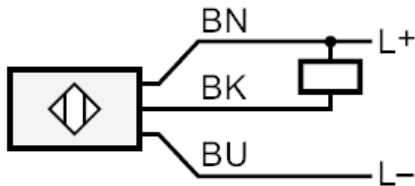
Mechanical data		
Weight	[g]	60.1
Housing		rectangular
Dimensions	[mm]	35.4 x 13 x 21
Material		housing: ABS; PPSU; sealing: EPDM
Lens material		PMMA
Lens alignment		Side sensing
Tightening torque	[Nm]	0.5; (screws)

Displays / operating elements		
Display	Switching status	1 x LED, yellow
	Power	1 x LED, green

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

Electrical connection
Cable: 2 m, PUR, black, Ø 3.7 mm; 3 x 0.25 mm²

Connection



BK	OUT / IO-Link
Core colors :	
BN =	brown
BK =	black
BU =	blue



Diffuse reflection sensors with background suppression

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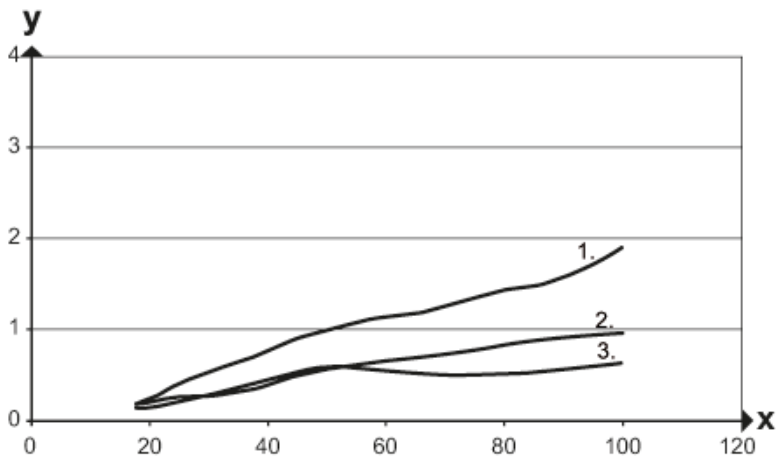
Other data

Repeatability / precision: 6 σ

	Repeatability of the measured values	
Abstand	white (90 % remission)	black (6 %...90 % remission)
20 mm	0.1 mm	0.5 mm
50 mm	0.2 mm	1.0 mm
100 mm	0.5 mm	2.0 mm
	Accuracy	
Abstand	white (90 % remission)	black (6 %...90 % remission)
20 mm	± 0.6 mm	± 0.9 mm
50 mm	± 1.5 mm	± 2.0 mm
100 mm	± 3.0 mm	± 4.0 mm

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

Diagrams and graphs

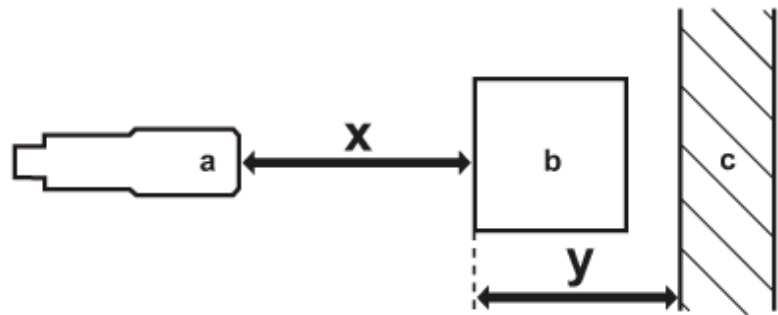


- x: distance sensor/object [mm]
y: min. distance object/background [mm]
1 = object black (6 % remission) , Background white (90 % remission)
2 = object grey (18 % remission) , Background white (90 % remission)
3 = object white (90 % remission) , Background white (90 % remission)



Diffuse reflection sensors with background suppression

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a: sensor

b: object

c: background

x: distance sensor/object [mm]

y: min. distance object/background [mm]