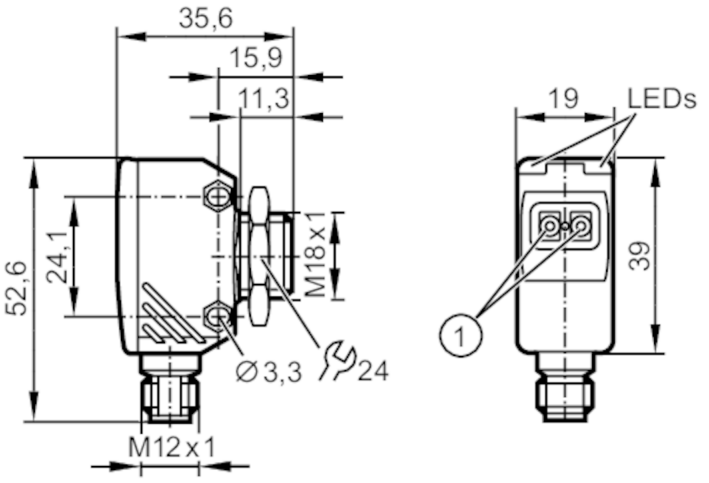
OGH581

Diffuse reflection sensor with background suppression

OGH-FNKG/US/CUBE



1 programming buttons
transmitter in lower lens
receiver in upper lens

Product characteristics		
Type of light		red light
Housing		rectangular with M18 thread
Application		
Special feature		Background suppression
Function principle		Diffuse reflection sensor
Electrical data		
Operating voltage	[V]	10...30 DC
Current consumption	[mA]	25
Protection class		III
Reverse polarity protection		yes
Type of light		red light
Wave length	[nm]	645
Outputs		
Electrical design		NPN
Output function		light-on/dark-on mode; (programmable)
Max. voltage drop switching output DC	[V]	2.5
Permanent current rating of switching output DC	[mA]	200
Switching frequency DC	[Hz]	1000
Short-circuit protection		yes
Type of short-circuit protection		pulsed
Overload protection		yes
Detection zone		
Range	[mm]	15...200; (white paper 200 x 200 mm 90% remission)

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Range on white object (90 % remission)	[mm]	15...200
Range on grey object (18 % remission)	[mm]	15...200
Range on black object (6 % remission)	[mm]	15...200
Range adjustable		yes
Max. light spot diameter	[mm]	13
Light spot dimensions refer to		at maximum range
Background suppression available		yes

Interfaces

Communication interface		IO-Link	
Transmission type		COM2 (38,4 kBaud)	
IO-Link revision		1.1	
SDCI standard		IEC 61131-9	
Profiles		Measuring Sensor, Identification and Diagnosis, Switching Signal Channel, Teach Channel	
SIO mode		yes	
Required master port type		A	
Min. process cycle time	[ms]	10	
IO-Link process data (cyclical)		**function**	**bit length**
		process value	16
		device status	4
		binary switching information	1
IO-Link functions (acyclical)		application specific tag; operating hours counter; switching cycles counter	
Supported DeviceIDs		**Type of operation**	**DeviceID**
		default	1165
Note		For further information please see the IODD PDF file under "Downloads"	

Operating conditions

Ambient temperature	[°C]	-25...60
Storage temperature	[°C]	-40...60
Protection		IP 65; IP 67

Tests / approvals

EMC		EN 60947-5-2	
MTTF	[years]	782	
UL approval		Ta	-25...60 °C
		Enclosure type	Type 1
		power supply	Class 2
		File number UL	E174191

Mechanical data

Weight	[g]	60
Housing		rectangular with M18 thread
Dimensions	[mm]	52.6 x 19 x 35.6
Thread designation		M18 x 1
Materials		diecast zinc; PEI
Lens material		PEI

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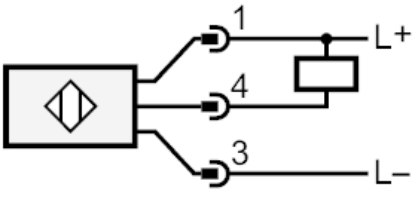
Lens alignment	side lens	
Displays / operating elements		
Display	switching status	1 x LED, yellow
	operation	1 x LED, green
Accessories		
Items supplied	lock nut: 1	
Remarks		
Pack quantity	1 pcs.	
Electrical connection		

Connector: 1 x M12; coding: A

Connection



4	OUT / IO-Link

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Other data

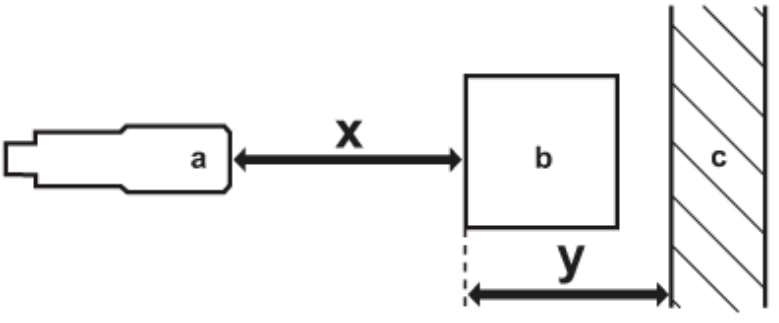
Repeatability / precision: 6 σ

	repeatability of the measured values	
Abstand	white (90 % remission)	black (6 %...90 % remission)
20 mm	0.5 mm	1.0 mm
50 mm	0.8 mm	2.0 mm
100 mm	1.5 mm	4.5 mm
150 mm	3.0 mm	9.0 mm
200 mm	6.0 mm	20.0 mm

	accuracy	
Abstand	white (90 % remission)	black (6 %...90 % remission)
20 mm	± 2.0 mm	± 2.5 mm
50 mm	± 3.5 mm	± 4.5 mm
100 mm	± 6.0 mm	± 7.5 mm
150 mm	± 7.5 mm	± 11.0 mm
200 mm	± 10.0 mm	± 17.0 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

Diagrams and graphs



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

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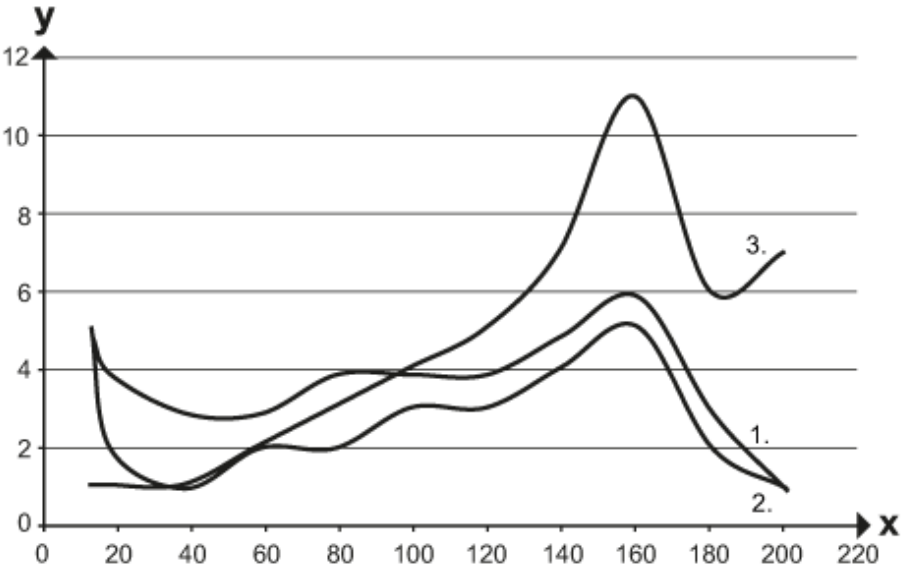
accuracy graph



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)