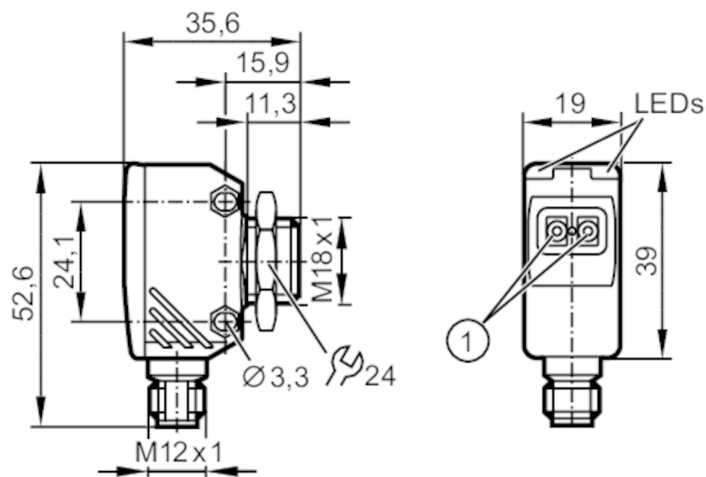




Diffuse reflection sensor with background suppression

OGH-FPKG/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; ("supply class 2" to cULus)
Rated insulation voltage	[V]	32
Current consumption	[mA]	25
Protection class		III
Reverse polarity protection		yes
Max. power-on delay time	[ms]	300
Type of light		red light
Wave length	[nm]	645

Outputs

Electrical design		PNP
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



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Detection zone		
Range	[mm]	15...200; (white paper 200 x 200 mm 90% remission)
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	Smart Sensor - SSP 3.1	Measuring Sensor
	Common - I&D	Identification and Diagnosis
	Function	Multiple switching signal
	Function	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	1164
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]	60.5
Housing		rectangular with M18 thread



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Dimensions	[mm]	52.6 x 19 x 35.6
Thread designation		M18 x 1
Materials		diecast zinc; PEI
Lens material		PEI
Lens alignment		side lens

Displays / operating elements		
Display	switching status	1 x LED, yellow
	operation	1 x LED, green
Operating elements	switch point	pushbutton
	Output function	pushbutton

Accessories	
Items supplied	lock nut: 1

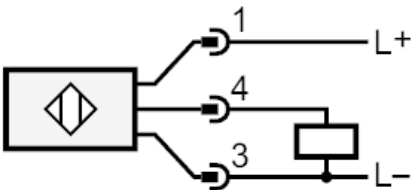
Remarks	
Pack quantity	1 pcs.

Electrical connection

Connector: 1 x M12; coding: A



Connection





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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

The diagram illustrates the sensor's field of view. A sensor (a) is positioned at a distance x from an object (b). The object (b) is a square with a width y. A background (c) is located behind the object. The distance y is the minimum distance between the object and the background.

a: sensor

b: object

c: background

x: distance sensor/object [mm]

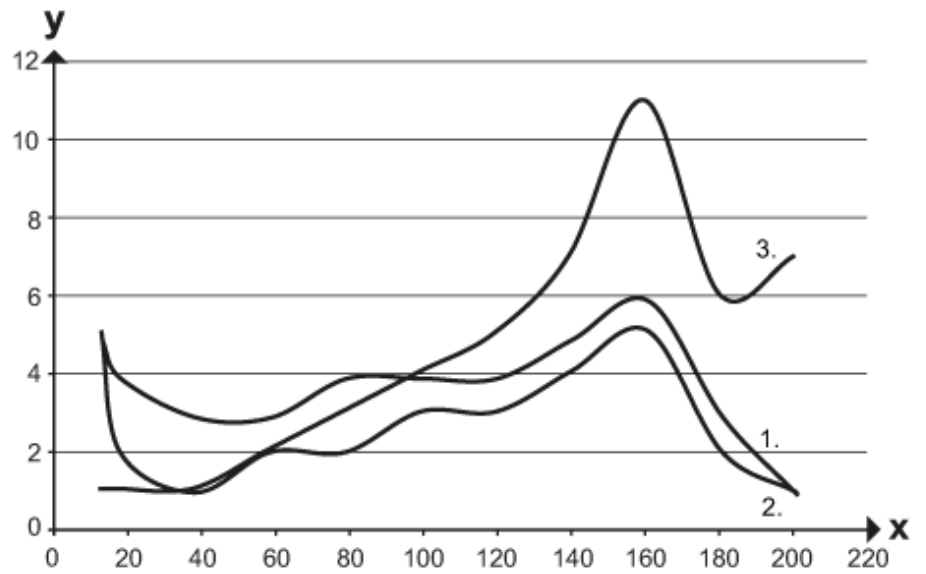
y: min. distance object/background [mm]



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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)