OGH580

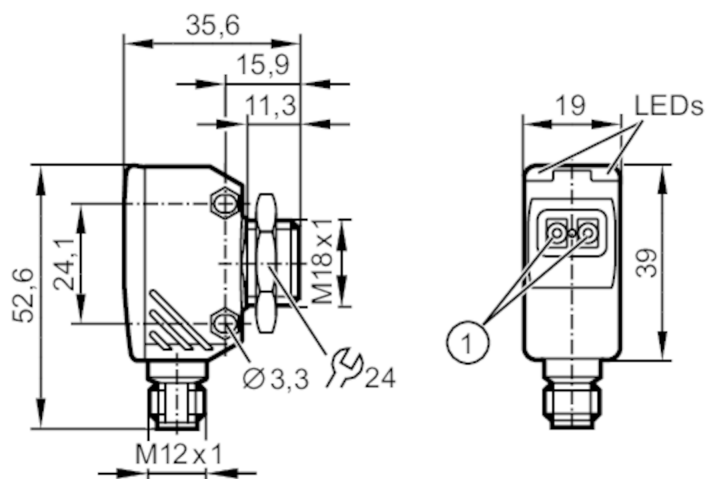### Diffuse reflection sensors with background suppression

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

System	Background suppression
Function principle	Diffuse reflection sensor

Electrical data

Operating voltage	[V]	10...30 DC; (cULus - Class 2 source required)
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		yes (non-latching)

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Monitoring range

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		Measuring Sensor, Identification and Diagnosis, Switching Signal Channel, 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	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	1132

Note	For further information please see the IODD PDF file at "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
	voltage supply	Class 2
	File number UL	E174191

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Mechanical data

Weight	[g]	60.5
Housing		rectangular with M18 thread
Dimensions	[mm]	52.6 x 19 x 35.6
Thread designation		M18 x 1
Material		diecast zinc; PEI
Lens material		PEI
Lens alignment		Side sensing

Displays / operating elements

Display	Switching status	1 x LED, yellow
	Power	1 x LED, green
Operating elements	Set point	pushbutton
	Output function	pushbutton

Accessories

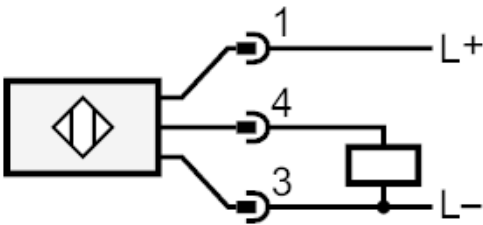|	
Items supplied	lock nut: 1 x

Remarks

Pack quantity	1 pcs.

Electrical connection

Connector: 1 x M12; coding: A
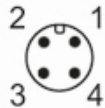
Connection

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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

a: sensor

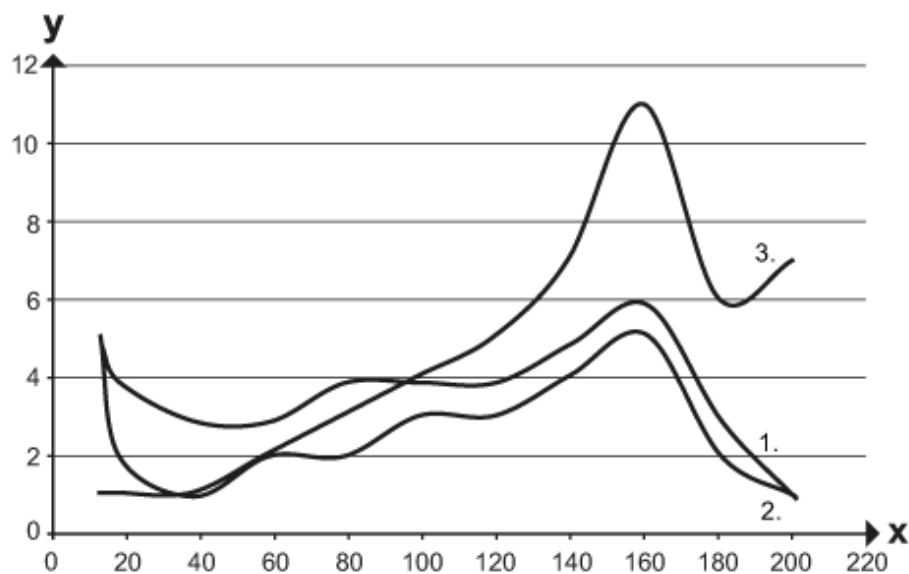b: object

c: background

x: distance sensor/object [mm]

y: min. distance object/background [mm]

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Background suppression chart

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)