Dimensions

Model Number

OBR7500-R101-P1-Y0429

Retroreflective sensor
with fixed cable and 3-pin, M8 connector

Features

- Miniature design with versatile mounting options
- Extended temperature range -40°C ... 60°C
- High degree of protection IP69K

Product information

The R101 series miniature optical sensors are the first devices of their kind to offer an end-to-end solution in a small single standard design — from thru-beam sensor through to a distance measurement device. As a result of this design, the sensors are able to perform practically all standard automation tasks.
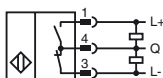
The DuraBeam laser sensors are durable and can be used in the same way as a standard sensor.

The use of Multi Pixel Technology gives the standard sensors a high level of flexibility and enables them to adapt more effectively to their operating environment.
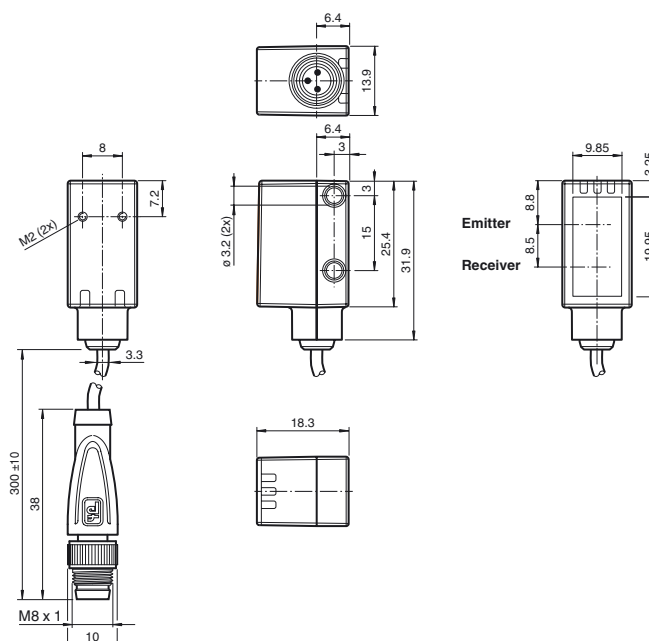
Electrical connection

Pinout

Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
3	BU	(blue)
4	BK	(black)

Indicators/operating means
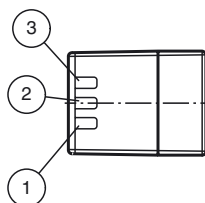
1	Operating indicator / dark on
2	Signal indicator
3	Operating indicator / light on

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

Pepperl+Fuchs Group
www.pepperl-fuchs.com

USA: +1 330 486 0001
fa-info@us.pepperl-fuchs.com

Germany: +49 621 776 4411
fa-info@de.pepperl-fuchs.com

Singapore: +65 6779 9091
fa-info@sg.pepperl-fuchs.com

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Technical data

General specifications

Effective detection range	0 ... 7.5 m
Reflector distance	0.03 ... 7.5 m
Threshold detection range	10 m
Reference target	H85-2 reflector
Light source	LED
Light type	modulated visible red light
LED risk group labelling	exempt group
Polarization filter	yes
Diameter of the light spot	approx. 65 mm at a distance of 1 m
Angle of divergence	3.7 °
Ambient light limit	EN 60947-5-2

Functional safety related parameters

$MTTF_d$		724 a
Mission Time (T_M)		20 a
Diagnostic Coverage (DC)		0 %

Indicators/operating means

Operation indicator	Green LED: Permanently lit - power on Flashing (4 Hz) - short circuit
Function indicator	Yellow LED: Permanently lit - light path clear Permanently off - object detected Flashing (4 Hz) - insufficient operating reserve

Electrical specifications

Operating voltage	U_B	10 ... 30 V DC
Ripple		max. 10 %
No-load supply current	I_0	< 25 mA at 24 V supply voltage
Protection class		III

Output

Switching type		The default setting is: Q - Pin4: NPN normally closed / light-on, PNP normally open / dark-on
Signal output		1 push-pull (4 in 1) output, short-circuit protected, reverse polarity protected, overvoltage protected
Switching voltage		max. 30 V DC
Switching current		max. 100 mA , resistive load
Usage category		DC-12 and DC-13
Voltage drop	U_d	≤ 1.5 V DC
Switching frequency	f	1000 Hz
Response time		0.5 ms

Conformity

Communication interface	IEC 61131-9
Product standard	EN 60947-5-2

Ambient conditions

Ambient temperature	-40 ... 60 °C (-40 ... 140 °F) , fixed cable -25 ... 60 °C (-13 ... 140 °F) , movable cable not appropriate for conveyor chains
Storage temperature	-40 ... 70 °C (-40 ... 158 °F)

Mechanical specifications

Housing width	13.9 mm
Housing height	33.8 mm
Housing depth	18.3 mm
Degree of protection	IP67 / IP69 / IP69K
Connection	300 mm fixed cable with M8 x 1, 3-pin connector
Material	
Housing	PC (Polycarbonate)
Optical face	PMMA
Mass	approx. 15 g
Cable length	0.3 m

Approvals and certificates

UL approval	E87056 , cULus Listed , class 2 power supply , type rating 1

Accessories

V3-WM-2M-PUR
Cable socket, M8, 3-pin, PUR cable

OMH-R101
Mounting Clamp

OMH-R101-Front
Mounting Clamp

OMH-4.1
Mounting Clamp

OMH-ML6
Mounting bracket

OMH-ML6-U
Mounting bracket

OMH-ML6-Z
Mounting bracket

OFR-100/100
Reflective tape 100 mm x 100 mm

REF-H33
Reflector with screw fixing

REF-H50
Reflector, rectangular 51 mm x 61 mm, mounting holes, fixing strap

REF-H85-2
Reflector, rectangular 84.5 mm x 84.5 mm, mounting holes

REF-VR10
Reflector, rectangular 60 mm x 19 mm, mounting holes

Other suitable accessories can be found at www.pepperl-fuchs.com

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Curves/Diagrams

Characteristic response curve

Offset Y [mm]

Relative received light strength (typical)

Reflector type:

H85-2	30 mm	10.5 m
C110-2	25 mm	10 m
H50	15 mm	8.5 m
VR10	10 mm	4.4 m
OFR-100/100	100 mm	4.2 m

Excess gain > 2

Excess gain < 2

Excess gain

Distance X [m]

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