



Retroreflective sensor (glass)

OBG5000-R101-PPF-IO-V31



- Miniature design with versatile mounting options
- Detects transparent objects, i.e., clear glass, PET and transparent films
- Two machines in one: clear object detection or reflection operating mode with long range
- High degree of protection IP69K
- IO-Link interface for service and process data

Retroreflective sensor with polarization filter for clear object detection



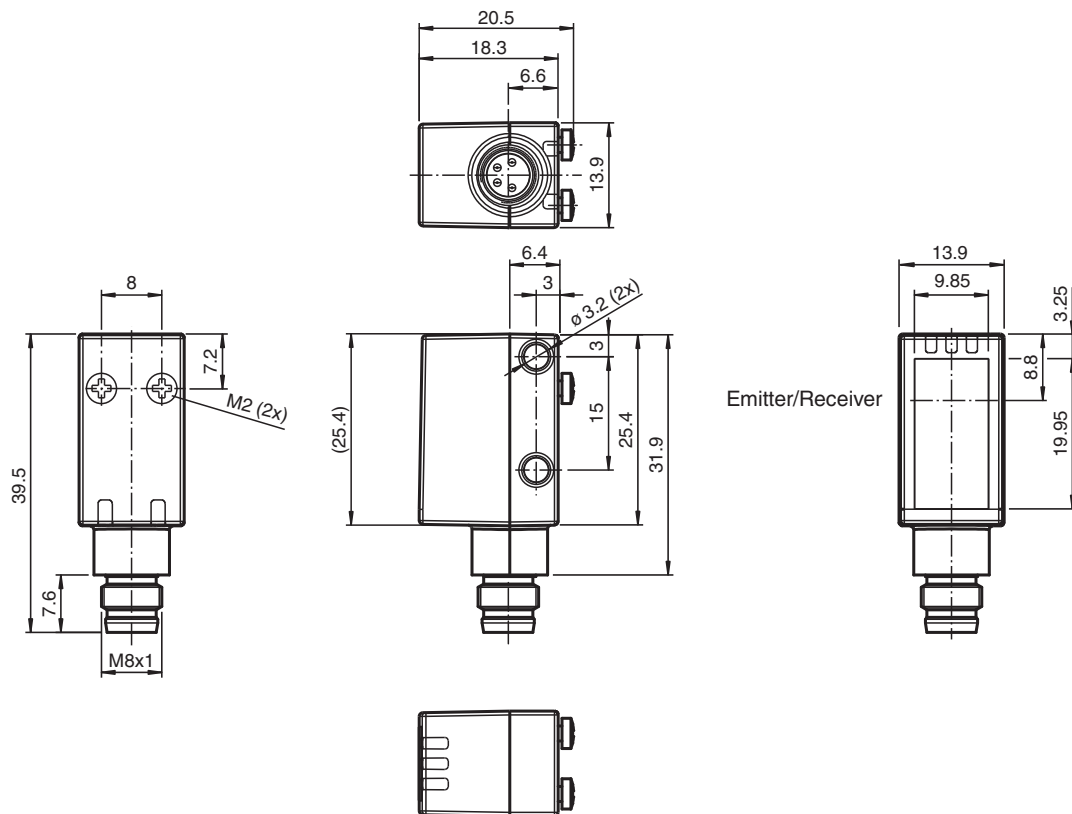
Function

The 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.

Dimensions



Technical Data

General specifications

Effective detection range	0 ... 5 m
Reflector distance	0 ... 5 m
Threshold detection range	6 m
Reference target	H85-2 reflector
Light source	LED
Light type	modulated visible red light
LED risk group labelling	exempt group
Diameter of the light spot	approx. 170 mm at a distance of 3.5 m
Opening angle	approx. 5 °
Ambient light limit	EN 60947-5-2

Functional safety related parameters

MTTF _d	600 a
Mission Time (T _M)	20 a
Diagnostic Coverage (DC)	0 %

Indicators/operating means

Operation indicator	LED green: constantly on - power on flashing (4Hz) - short circuit flashing with short break (1 Hz) - IO-Link mode
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

Interface

Interface type		IO-Link (via C/Q = pin 4)
IO-Link revision		1.1
Device ID		0x110A0A (1116682)
Transfer rate		COM2 (38.4 kBit/s)
Min. cycle time		2.3 ms
Process data width		Process data input 2 Bit Process data output 2 Bit
SIO mode support		yes
Compatible master port type		A

Output

Pre-fault indication output		1 push-pull (4 in 1) output, short-circuit protected, reverse polarity protected, overvoltage protected
Switching type		The default setting is: C/Q - Pin4: NPN normally open / dark-on, PNP normally closed / light-on, IO-Link Alarm output - Pin2: NPN normally open, PNP normally closed
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	500 Hz
Response time		1 ms

Conformity

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

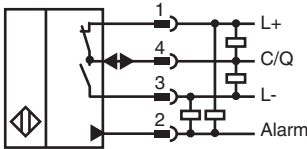
Approvals and certificates

Release date: 2022-08-03 Date of issue: 2022-08-03 Filename: 267075-100521_eng.pdf

Technical Data

EAC conformity	TR CU 020/2011
UL approval	E87056 , cULus Listed , class 2 power supply , type rating 1
Ambient conditions	
Ambient temperature	-20 ... 60 °C (-4 ... 140 °F)
Storage temperature	-40 ... 70 °C (-40 ... 158 °F)
Mechanical specifications	
Housing width	13.9 mm
Housing height	39.5 mm
Housing depth	18.3 mm
Degree of protection	IP67 / IP69 / IP69K
Connection	M8 x 1 connector, 4-pin
Material	
Housing	PC (Polycarbonate)
Optical face	PMMA
Mass	approx. 10 g

Connection



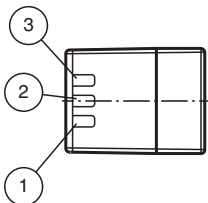
Connection Assignment



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

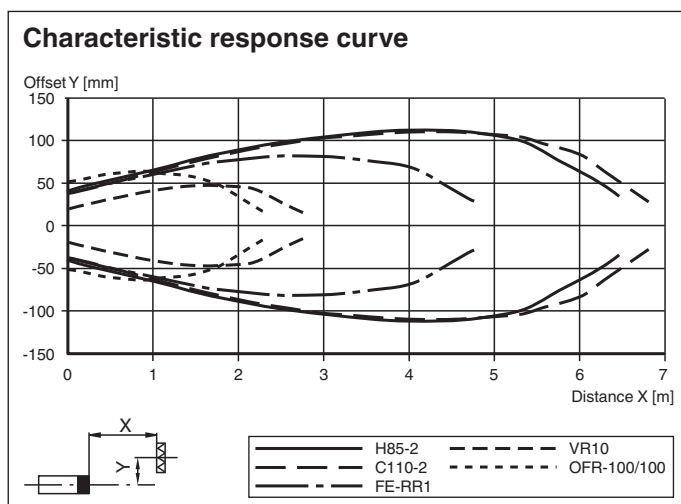
Assembly



1	Operating indicator / dark on
2	Signal indicator
3	Operating indicator / light on

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Characteristic Curve



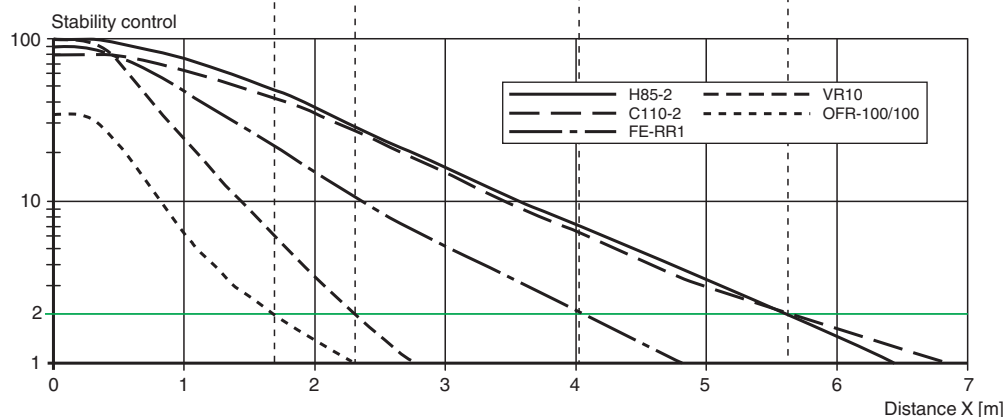
Relative received light strength

Reflector type:

H85-2	0 m	5.6 m	6.4 m
C110-2	0 m	5.6 m	6.8 m
FE-RR1	0 m	4.0 m	4.8 m
VR10	0 m	2.3 m	2.8 m
OFR-100/100	0 m	1.7 m	2.2 m

Stability control > 2

Stability control < 2



Accessories

	REF-ORR50G-2	Reflector
	OMH-R101	Mounting Clamp
	OMH-R101-Front	Mounting Clamp
	OMH-4.1	Mounting Clamp
	OMH-ML6	Mounting bracket

Accessories

	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-H32G-2	Reflector
	ICE2-8IOL-G65L-V1D	EtherNet/IP IO-Link master with 8 inputs/outputs
	ICE3-8IOL-G65L-V1D	PROFINET IO IO-Link master with 8 inputs/outputs
	ICE1-8IOL-G30L-V1D	Ethernet IO-Link module with 8 inputs/outputs
	ICE1-8IOL-G60L-V1D	Ethernet IO-Link module with 8 inputs/outputs
	ICE2-8IOL-K45P-RJ45	EtherNet/IP IO-Link master with 8 inputs/outputs, DIN rail, push-in connectors
	ICE2-8IOL-K45S-RJ45	EtherNet/IP IO-Link master with 8 inputs/outputs, DIN rail, screw terminal
	ICE3-8IOL-K45P-RJ45	PROFINET IO IO-Link master with 8 inputs/outputs, DIN rail, push-in terminals
	ICE3-8IOL-K45S-RJ45	PROFINET IO IO-Link master with 8 inputs/outputs, DIN rail, screw terminal
	IO-Link-Master02-USB	IO-Link master, supply via USB port or separate power supply, LED indicators, M12 plug for sensor connection
	V31-GM-2M-PUR	Female cordset single-ended M8 straight A-coded, 4-pin, PUR cable grey
	V31-WM-2M-PUR	Female cordset single-ended M8 angled A-coded, 4-pin, PUR cable grey