



Triangulation sensor (BGS)

OBT20-R102-P1-IO-F



- Miniature design with versatile mounting options
- Best background suppressor in its class
- Precision object detection, almost irrespective of the color
- Extended temperature range
-40 °C ... 60 °C
- High degree of protection IP69K
- IO-Link interface for service and process data

Triangulation sensor with background suppression



IO-Link

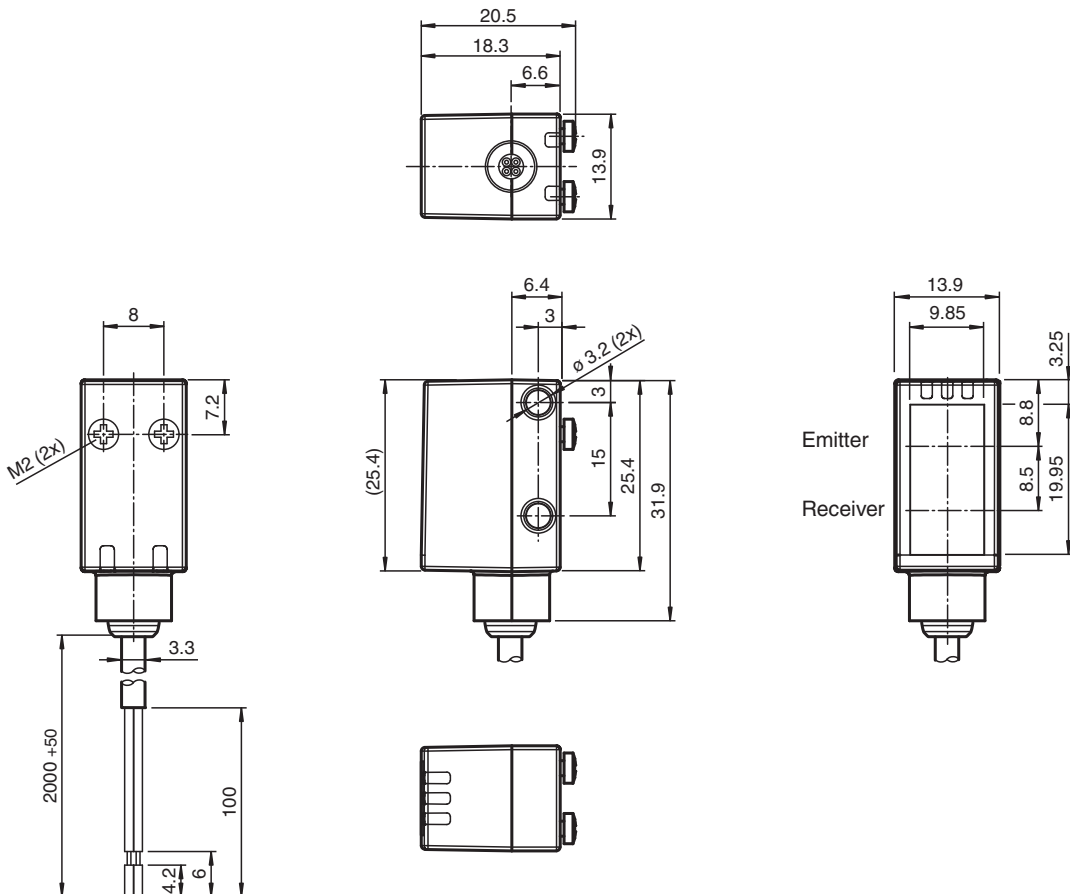
Function

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



Release date: 2023-03-28 Date of issue: 2023-03-28 Filename: 267075-100598_eng.pdf

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 1111
fa-info@de.pepperl-fuchs.com

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

PF PEPPERL+FUCHS

Technical Data

General specifications		
Detection range		7 ... 20 mm
Detection range max.		5 ... 25 mm
Background suppression		starts from 25 mm
Reference target		standard white, 100 mm x 100 mm
Light source		LED
Light type		modulated visible red light
LED risk group labelling		exempt group
Black-white difference (6%/90%)		approx. 1 mm
Diameter of the light spot		approx. 1.5 mm at 20 mm
Opening angle		approx. 3 °
Ambient light limit		EN 60947-5-2 : 40000 Lux
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		LED yellow: constantly on - object detected constantly off - object not detected
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 = BK)
IO-Link revision		1.1
Device profile		Smart Sensor
Device ID		0x11051D (1115421)
Transfer rate		COM2 (38.4 kBit/s)
Min. cycle time		2.3 ms
Process data width		Process data input 1 Bit Process data output 2 Bit
SIO mode support		yes
Compatible master port type		A
Output		
Switching type		C/Q - BK: NPN normally closed / dark-on, PNP normally open / light-on, IO-Link n.c. - WH: open
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	SIO mode: 1800 Hz IO-Link mode: 900 Hz
Response time		SIO mode: 260 μs IO-Link mode: 520 μs
Conformity		
Communication interface		IEC 61131-9
Product standard		EN 60947-5-2

Release date: 2023-03-28 Date of issue: 2023-03-28 Filename: 267075-100598_eng.pdf

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 1111
fa-info@de.pepperl-fuchs.com

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

 PEPPERL+FUCHS

Technical Data

Approvals and certificates

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

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 31.9 mm

Housing depth 18.3 mm

Degree of protection IP67 / IP69 / IP69K

Connection 2 m fixed cable

Material

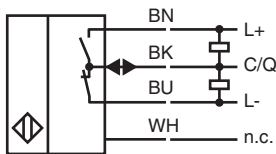
Housing PC (Polycarbonate)

Optical face Float glass

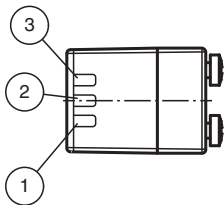
Mass approx. 36 g

Cable length 2 m

Connection

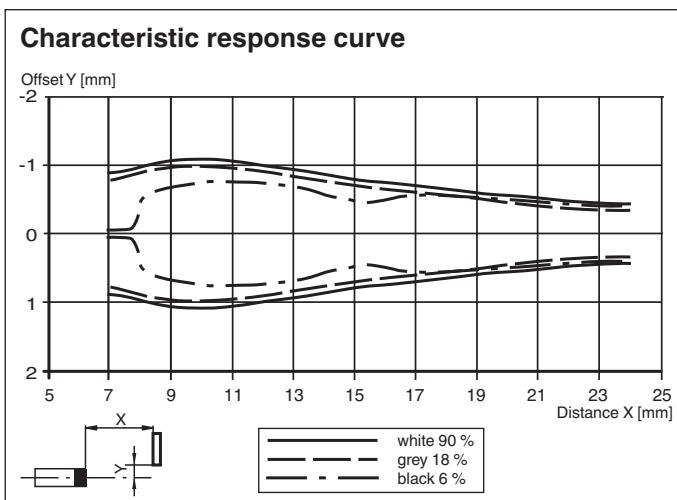


Assembly



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

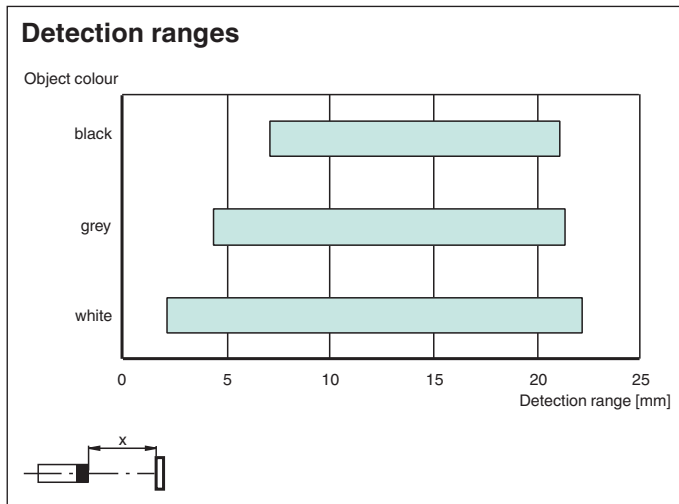
Characteristic Curve



Release date: 2023-03-28 Date of issue: 2023-03-28 Filename: 267075-100598_eng.pdf

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

Characteristic Curve



Accessories

	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
	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
	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

Release date: 2023-03-28 Date of issue: 2023-03-28 Filename: 267075-100598_eng.pdf