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### **Model Number**

## OBG5000-R100-2EP1-IO-0,3M-V1

Retroreflective sensor (glass) with fixed cable and M12 connector, 4-pin

### **Features**

- 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

# **Product information**

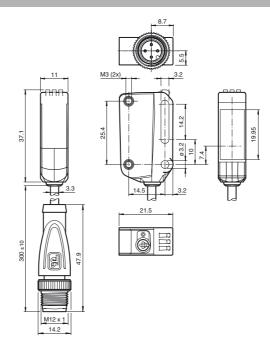
The R100 series miniature optical sensors are the first devices of their kind to offer an end-to-end solution in a small single standard design — from thru-beam sensor through to a distance measurement device. As a result of this design, the sensors are able to perform practically all standard automation tasks.

The entire series enables sensors to communicate via IO-Link.

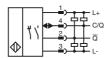
The DuraBeam laser sensors are durable and can be used in the same way as a standard sensor.

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**



## **Electrical connection**



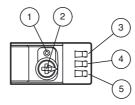
### **Pinout**

2

Wire colors in accordance with EN 60947-5-2

BN (brown WH (white) BU (blue) BK (black)

## Indicators/operating means



	0
	$\bigcirc$
L/D	N

1	Teach-in button
2	Mode rotary switch
3	Operating indicator / dark on
4	Signal indicator
5	Operating indicator / light on

	Ν	Normal mode
	ı	10 % contrast detection
	II	18 % contrast detection
Γ	$\blacksquare$	40 % contrast detection
	L/D	Switching type
	0	Keylock

Reflector distance			
Reflector distance	General specifications		
Threshold detection range	Effective detection range		0 3.5 m in TEACH mode; 0 5 m at switch position "N"
Melirance target   H85-2 reflector   Light source   LED   Light source   LED   Light sproup labelling   modulated visible red light   LED risk group labelling   approx. 170 mm at a distance of 3.5 m   Angle of divergence   approx. 5"   Ambient light limit   EN 6904-5-2   Functional safety related parameters   MTTF4   600 a   Mission Tame (T <sub>M</sub> )   20 a   Diagnostic Coverage (DC)   0%   Mission Tame (T <sub>M</sub> )   20 a   Diagnostic Coverage (DC)   0%   Mission Indicator   LED green: constantly on - power on liashing (4Hz) - short circuit liashing with short break   Function indicator   Yellow LED: Permanently ilt- light path clear   Permanently int- Object detected   Function indicator   Tacch-in key   Control elements   Tacch-in key   Control elements   Tacch-in key   Control elements   Sesting to parameters   Electrical specifications   Departing voltage   U <sub>B</sub> 10 30 V DC   Ripple   max. 10 %   No-load supply current   I <sub>B</sub>   Colar plass bottles   Ill terface   Interface   Interface	Reflector distance		0 3.5 m in TEACH mode; 0 5 m at switch position "N"
Light source Light type modulated visible red light Light type modulated visible red light exempt group planeter of the light spot approx. 170 mm at a distance of 3.5 m approx. 5" Ambient light limit EN 600 a Angle of divergrence Ambient light limit EN 600 a Mission Time (T <sub>M</sub> ) Jo Diagnostic Coverage (DC) O% Mission Time (T <sub>M</sub> ) Jo Diagnostic Coverage (DC) O% Mission Time (T <sub>M</sub> ) Departation indicator  Control indicator  Control indicator  Control elements Control elements Control elements Control elements Trach-in key Control elements Control elements Trach-in key Trach-in ke	Threshold detection range		6 m
Light type	Reference target		H85-2 reflector
Diameter of the light spot   approx. 17 0m mat a distance of 3.5 m   approx. 17 0m mate of approx. 17 0m mate of approx. 18 0m material of 4.10 m   approx. 18 0m material approx. 18 0m materi	Light source		LED
Diameter of the light spot	Light type		modulated visible red light
Ambient light limit  EN 60947-5-2  EN 60947-5-2  EN 60947-5-2  MITTq  600 a  Mission Time (T <sub>M</sub> )  Departion indicator  Operation indicator  Operation indicator  Operation indicator  Operation indicator  Control elements  Electrical specifications  Up  10 % - clean, mater filled PET bottles  18 % - clear glass bottles  40 % - colored glass or opaque materials  Adjustable via rotary switch  Majustable via rotary switch  Protection class  Ill  max. 10 %  No-load supply current  Up  Ves  SiO mode support  Ve	LED risk group labelling		exempt group
Ambient light limit	Diameter of the light spot		approx. 170 mm at a distance of 3.5 m
### Control of Safety related parameters  ### MITF d	Angle of divergence		approx. 5 °
Mission Time (T <sub>M</sub> )	Ambient light limit		EN 60947-5-2
Diagnostic Coverage (DC)   0%	Functional safety related para	meters	
Diagnostic Coverage (DC)  Indicators/operating means Operation indicator  Operation indicator  Function in	MTTF <sub>d</sub>		600 a
Operation indicator  Operation indicator  Definition indicator  Constantly on - power on constantly on - power on liashing (HAz) - short circuit flashing with short break (f Hz) - IO-Link mode  Function indicator  Function indicator  Vellow LED: Permanently it: light path clear Permanently off - object detected Flashing (4 Hz) - insufficient operating reserve  Teach-In key  Control elements  Control elements  Set protary switch for operating modes selection  10 % - clean, water filled PET bottles 18 % - clear glass bottles 40 % - colored glass or opaque materials Adjustable via rotary switch  Electrical specifications  Operating voltage  Ug 10 30 V DC Ripple max. 10 %  No-load supply current 10 < 25 mA at 24 V supply voltage  Protection class  Ill  Interface  Interface  Interface type  OP-Link (via C/O = pin 4)  Transfer rate  COM 2 (38 4 kBaud)  IO-Link Revision  1.1  Min. cycle time 2.3 ms  Process data witch Process data input 2 Bit Process data output 2	Mission Time (T <sub>M</sub> )		20 a
Control indicator   Control indicator   Control indicator   Control indicator   Permanently it - light path clear permanently it - light pat	Diagnostic Coverage (DC)		0 %
Depreation indicator  LED green: constantly on - power on flashing (4Hz) - short circuit flashing with short break (1 Hz) - IO-Link mode  Function indicator  Function indicator  Function indicator  Yellow LED: Permanently it - light path clear Permanently of - object detected Flashing (4 Hz) - insufficient operating reserve  Control elements  Setep rotary switch for operating modes selection  10° - clean, water filled PET bottles  18° - clear glass bottles 40 % - colored glass or opaque materials Adjustable via rotary switch  Electrical specifications  Operating voltage  Ug  10 30 V DC  max. 10 %  No-load supply current  Interface  Interface bye  Interface bye  Interface condition  Interface type  IO-Link (via C/Q = pin 4)  Transfer rate  COM 2 (38.4 kBaud)  IO-Link Revision  1.1  Min. cycle time  2.3 ms  Process data input 2 Bit  Process data output 2 Bit  Pr	· · ·		
Constantly on - power on flashing (4Hz) - short circuit flashing (4Hz) - insufficient operating reserve  Permanently (if - light path clear Permanently (if - light path clear Permanently (if - light path clear Permanently (if - object detected Flashing (4 Hz) - insufficient operating reserve  Control elements 5-step rotary switch for operating modes selection  Contrast detection levels 10% - clear glass bottles 40% - colored glass or opaque materials Adjustable via rotary switch  Electrical specifications  Operating voltage Ug 10 30 V DC  Ripiple max. 10%  No-load supply current Io < 25 mA at 24 V supply voltage  Ill max. 10%  No-load supply current Protection class Ill  max. 10%  No-load supply current Protection class Ill  max. 10%  No-load supply current Io < 2.5 mA at 24 V supply voltage  Interface Verbrooks Ill  Min. cycle time 2.3 ms  Process data witch Process data input 2 Bit  Process data witch Process data output 2 Bit  Process data witch Process data output 2 Bit  Process data output 3 Bit  Process data output 4 Bit  Process data output 5 Bit  Process data output 6 Bit 1116679)  Compatible master port type  Octivate	· · · · · ·		LED green:
Function indicator  Permanently it: light path clear Permanently off - object detected Flashing (4 Hz) - insufficient operating reserve  Control elements  Control elements  Sestep rotary switch for operating modes selection  Contrast detection levels  10 % - clean, vater filled PET bottles  18 % - clear glass bottles  40 % - colored glass or opaque materials Adjustable via rotary switch  Permanently it is rotary switch  Departing voltage  Ug 10 30 V DC  Ripple  max. 10 %  No-load supply current  protection class  Ill  Ill  Interface  Interface bye  Interface VPC  Inter	Operation indicator		constantly on - power on flashing (4Hz) - short circuit
Flashing (4 Hz) - insufficient operating reserve  Control elements	Function indicator		Yellow LED: Permanently lit - light path clear
Control elements 5-step rotary switch for operating modes selection  Contrast detection levels 8-step rotary switch for operating modes selection  Ontrast detection levels 18 % - clear glass bottles 40 % - colored glass or opaque materials Adjustable via rotary switch  Electrical specifications  Operating voltage U <sub>B</sub> 10 30 V DC  Ripple max. 10 % No-load supply current   0			
Control elements  Contrast detection levels  10 % - clean, water filled PET bottles 18 % - clear glass bottles 40 % - colored glass or opaque materials Adjustable via rotary switch  Electrical specifications  Operating voltage UB 10 30 V DC Ripple No-load supply current II Volume Color Supply No-load supply current III No-load Revision III No-load Revision III No-load Revision III No-load supply load III No	Control elements		
Contrast detection levels 10 % - clean, water filled PET bottles 18 % - colear glass bottles 40 % - colored glass or opaque materials Adjustable via rotary switch  Electrical specifications  Operating voltage U <sub>B</sub> 10 30 V DC  Ripple max. 10 %  No-load supply current I <sub>0</sub> < 25 mA at 24 V supply voltage  Ill  Interface  Interface ype   O-Link (via C/Q = pin 4)  Transfer rate   COM 2 (38.4 kBaud)  IO-Link Revision 1.1  Min. cycle time 2.3 ms  Process data witdh Process data input 2 Bit Process data output 2 Bit Process data vibrous 2 ms Process data output 2 Bit Process data vibrous 2 ms Process data vibrous 3 ms Process data vibrous 2 ms Process data vibrous 3 ms Process data vibrous 4 ms Process data vibrous 5 ms Process data vibrous 6 ms Process data vibrous 9 ms Process 9 ms Process data vibrous 9 ms Process			•
18 % - clear glass bottles			
Operating voltage         UB in the control of the sensor is adjustable. The default setting is: C/O - Pin4; NPN normally closed / light-on, PNP normally closed / selfing current Usage category         Ub in the sensor is adjustable. The default setting current Product standard Respondent of the max. 10 °%           Oberating voltage         United the control of the sensor is adjustable. The default setting is: C/O - Pin4; NPN normally closed / light-on, PNP normally closed / selfing current           Switching voltage         The switching type of the sensor is adjustable. The default setting is: C/O - Pin4; NPN normally closed / light-on, PNP normally closed / light-on           Switching voltage         The switching type of the sensor is adjustable. The default setting is: C/O - Pin4; NPN normally closed / light-on, PNP normally closed / light-on, PNP normally closed / light-on           Signal output         2 push-pull (4 in 1)outputs, short-circuit protected, reverse polarity protected, overvoltage protected           Switching voltage         max. 100 mA, resistive load           Switching current         max. 30 V DC           Usage category         Ud ≤ 1.5 V DC           Voltage drop         Ud ≤ 1.5 V DC           Switching frequency         f 500 Hz           Response time         l ms           Conformity         EC 61131-9           Conformity         EC 61131-9           Conformity         EC 61131-9           Conformity         20 60 °C (-4 140 °F), movable cable no	Contrast detection levels		18 % - clear glass bottles 40 % - colored glass or opaque materials
Operating voltage         UB in the control of the sensor is adjustable. The default setting is: C/O - Pin4; NPN normally closed / light-on, PNP normally closed / selfing current Usage category         Ub in the sensor is adjustable. The default setting current Product standard Respondent of the max. 10 °%           Oberating voltage         United the control of the sensor is adjustable. The default setting is: C/O - Pin4; NPN normally closed / light-on, PNP normally closed / selfing current           Switching voltage         The switching type of the sensor is adjustable. The default setting is: C/O - Pin4; NPN normally closed / light-on, PNP normally closed / light-on           Switching voltage         The switching type of the sensor is adjustable. The default setting is: C/O - Pin4; NPN normally closed / light-on, PNP normally closed / light-on, PNP normally closed / light-on           Signal output         2 push-pull (4 in 1)outputs, short-circuit protected, reverse polarity protected, overvoltage protected           Switching voltage         max. 100 mA, resistive load           Switching current         max. 30 V DC           Usage category         Ud ≤ 1.5 V DC           Voltage drop         Ud ≤ 1.5 V DC           Switching frequency         f 500 Hz           Response time         l ms           Conformity         EC 61131-9           Conformity         EC 61131-9           Conformity         EC 61131-9           Conformity         20 60 °C (-4 140 °F), movable cable no	Electrical specifications		
Ripple max. 10 % No-load supply current   Io   < 25 mA at 24 V supply voltage   Protection class   III   Interface   III	· · · · · · · · · · · · · · · · · · ·	Up	10 30 V DC
No-load supply current   Io		- 6	max. 10 %
Protection class	• •	lo	
Interface Interface type Interface Interface type Interface Interface type Interface Interface Interface Interface type Interface Interf		.0	
Interface type			
Transfer rate IO-Link Revision 1.1  Min. cycle time 2.3 ms  Process data witdh Process data input 2 Bit Process data output 3 Process data output 4 Process data output 5 Process data output 6 Process data output 6 Process data output 6 Process data output 6 Process data output 9 Process data output 2 Bit Process da			$IO_{-1}$ ink ( via $C/O = pin 4$ )
IO-Link Revision	• •		
Min. cycle time			,
Process data input 2 Bit Process data output (110679)  A 10407 (1116679)  A 10407 (1116			
Process data output 2 Bit  SIO mode support  Device ID  Compatible master port type  Switching type  The switching type of the sensor is adjustable. The default setting is:  C/O - Pin4: NPN normally closed / light-on, PNP normally or dark-on, IO-Link /O - Pin2: NPN normally open / dark-on, PNP normally obsellight-on  Signal output  2 push-pull (4 in 1)outputs, short-circuit protected, reverse polarity protected, overvoltage protected  Switching voltage  max. 30 V DC  Switching current  Usage category  DC-12 and DC-13  Voltage drop  Ud  ≤ 1.5 V DC  Switching frequency  f 500 Hz  Response time  1 ms  Conformity  Communication interface  Product standard  EN 60947-5-2  Ambient conditions  Ambient temperature  -20 60 °C (-4 140 °F) , movable cable not appropriate from conveyor chains  Storage temperature  -40 70 °C (-40 158 °F)  Mechanical specifications  Housing width  11 mm  Housing height  37.1 mm  Degree of protection  10x110A07 (1116679)  Nox110A07 (1116679)  Another Connection  Material  Housing  PC (Polycarbonate)	•		<del></del>
Device ID  Compatible master port type  Dutput  Switching type  The switching type of the sensor is adjustable. The default setting is:  C/Q - Pin4: NPN normally closed / light-on, PNP normally of dark-on, Io-Link  //Q - Pin2: NPN normally open / dark-on, PNP normally closed light-on  Signal output  2 push-pull (4 in 1) outputs, short-circuit protected, reverse polarity protected, overvoltage protected  Switching voltage  Switching current  max. 30 V DC  Switching current  max. 100 mA , resistive load  Usage category  Voltage drop  Ud ≤ 1.5 V DC  Switching frequency  f 500 Hz  Response time  Conformity  Communication interface  Product standard  EN 60947-5-2  Ambient conditions  Ambient temperature  -20 60 °C (-4 140 °F) , movable cable not appropriate from conveyor chains  Storage temperature  -40 70 °C (-40 158 °F)  Mechanical specifications  Housing width  11 mm  Housing depth  21.5 mm  Degree of protection  Naterial  Housing  PC (Polycarbonate)			Process data output 2 Bit
Compatible master port type  Output  Switching type  The switching type of the sensor is adjustable. The default setting is:  C/Q - Pin4: NPN normally closed / light-on, PNP normally op dark-on, IO-Link //Q - Pin2: NPN normally open / dark-on, PNP normally open / gark-on, PNP			,
Switching type  The switching type of the sensor is adjustable. The default setting is:  C/Q - Pin4: NPN normally closed / light-on, PNP normally op dark-on, IO-Link //Q - Pin2: NPN normally open / dark-on, PNP normally op dark-on, IO-Link //Q - Pin2: NPN normally open / dark-on, PNP normally open / dark-on, IO-Link //Q - Pin2: NPN normally open / dark-on, PNP			
Switching type  The switching type of the sensor is adjustable. The default setting is:  C/Q - Pin4: NPN normally closed / light-on, PNP normally or dark-on, IO-Link //Q - Pin2: NPN normally open / dark-on, PNP normally open / dark-on, IO-Link //Q - Pin2: NPN normally closed / light-on, PNP normally open / dark-on, PNP normally open			A
setting is:  C/Q - Pin4: NPN normally closed / light-on, PNP normally op dark-on, IO-Link /Q - Pin2: NPN normally open / dark-on, PNP normally close light-on  Signal output  2 push-pull (4 in 1)outputs, 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  Ud <instructional dc-13="" drop="" td="" umax<="" voltage=""><td>•</td><td></td><td></td></instructional>	•		
light-on  2 push-pull (4 in 1) outputs, 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 <sub>d</sub> ≤ 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  Ambient conditions  Ambient temperature -20 60 °C (-4 140 °F) , movable cable not appropriate f conveyor chains  Storage temperature -40 70 °C (-40 158 °F)  Mechanical specifications  Housing width 11 mm  Housing height 37.1 mm  Housing depth 21.5 mm  Degree of protection IP67 / IP69 / IP69K  Connection 300 mm fixed cable with M12 x 1, 4-pin connector  Material  Housing PC (Polycarbonate)	Switching type		setting is: C/Q - Pin4: NPN normally closed / light-on, PNP normally open
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 <sub>d</sub> ≤ 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  Ambient conditions  Ambient temperature -20 60 °C (-4 140 °F) , movable cable not appropriate from the conveyor chains  Storage temperature -40 70 °C (-40 158 °F)  Mechanical specifications  Housing width 11 mm  Housing height 37.1 mm  Housing depth 21.5 mm  Degree of protection IP67 / IP69 / IP69K  Connection 300 mm fixed cable with M12 x 1, 4-pin connector  Material  Housing PC (Polycarbonate)	0		light-on
$ \begin{array}{llllllllllllllllllllllllllllllllllll$			polarity protected, overvoltage protected
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Switching frequency f 500 Hz Response time 1 ms  Conformity  Communication interface IEC 61131-9 Product standard EN 60947-5-2  Ambient conditions  Ambient temperature -20 60 °C (-4 140 °F) , movable cable not appropriate from conveyor chains  Storage temperature -40 70 °C (-40 158 °F)  Mechanical specifications  Housing width 11 mm  Housing height 37.1 mm  Housing depth 21.5 mm  Degree of protection IP67 / IP69 / IP69K  Connection 300 mm fixed cable with M12 x 1, 4-pin connector  Material  Housing PC (Polycarbonate)		Uء	
Response time 1 ms  Conformity  Communication interface IEC 61131-9 Product standard EN 60947-5-2  Ambient conditions  Ambient temperature -20 60 °C (-4 140 °F) , movable cable not appropriate from conveyor chains  Storage temperature -40 70 °C (-40 158 °F)  Mechanical specifications  Housing width 11 mm  Housing height 37.1 mm  Housing depth 21.5 mm  Degree of protection IP67 / IP69 / IP69K  Connection 300 mm fixed cable with M12 x 1, 4-pin connector  Material  Housing PC (Polycarbonate)	= :	•	
Comformity  Communication interface IEC 61131-9 Product standard EN 60947-5-2  Ambient conditions  Ambient temperature -20 60 °C (-4 140 °F) , movable cable not appropriate f conveyor chains  Storage temperature -40 70 °C (-40 158 °F)  Mechanical specifications  Housing width 11 mm  Housing height 37.1 mm  Housing depth 21.5 mm  Degree of protection IP67 / IP69 / IP69K  Connection 300 mm fixed cable with M12 x 1, 4-pin connector  Material  Housing PC (Polycarbonate)	- : :	'	
Communication interface IEC 61131-9 Product standard EN 60947-5-2  Ambient conditions  Ambient temperature -20 60 °C (-4 140 °F) , movable cable not appropriate from conveyor chains  Storage temperature -40 70 °C (-40 158 °F)  Mechanical specifications  Housing width 11 mm  Housing height 37.1 mm  Housing depth 21.5 mm  Degree of protection IP67 / IP69 / IP69K  Connection 300 mm fixed cable with M12 x 1, 4-pin connector  Material  Housing PC (Polycarbonate)	•		TINO
Product standard EN 60947-5-2  Ambient conditions  Ambient temperature -20 60 °C (-4 140 °F) , movable cable not appropriate f conveyor chains  Storage temperature -40 70 °C (-40 158 °F)  Mechanical specifications  Housing width 11 mm  Housing height 37.1 mm  Housing depth 21.5 mm  Degree of protection IP67 / IP69 / IP69K  Connection 300 mm fixed cable with M12 x 1, 4-pin connector  Material  Housing PC (Polycarbonate)	•		IEC 61101 0
Ambient conditions  Ambient temperature  -20 60 °C (-4 140 °F) , movable cable not appropriate f conveyor chains  Storage temperature  -40 70 °C (-40 158 °F)  Mechanical specifications  Housing width  11 mm  Housing height  37.1 mm  Housing depth  21.5 mm  Degree of protection  IP67 / IP69 / IP69K  Connection  300 mm fixed cable with M12 x 1, 4-pin connector  Material  Housing  PC (Polycarbonate)			
Ambient temperature  -20 60 °C (-4 140 °F) , movable cable not appropriate f conveyor chains  Storage temperature  -40 70 °C (-40 158 °F)  Mechanical specifications  Housing width  11 mm  Housing height  37.1 mm  Housing depth  21.5 mm  Degree of protection  IP67 / IP69 / IP69K  Connection  300 mm fixed cable with M12 x 1, 4-pin connector  Material  Housing  PC (Polycarbonate)			EN 60947-5-2
conveyor chains Storage temperature -40 70 °C (-40 158 °F)  Mechanical specifications Housing width 11 mm Housing height 37.1 mm Housing depth 21.5 mm Degree of protection IP67 / IP69 / IP69K Connection 300 mm fixed cable with M12 x 1, 4-pin connector Material Housing PC (Polycarbonate)			
Mechanical specifications       Housing width     11 mm       Housing height     37.1 mm       Housing depth     21.5 mm       Degree of protection     IP67 / IP69 / IP69K       Connection     300 mm fixed cable with M12 x 1, 4-pin connector       Material     PC (Polycarbonate)	·		conveyor chains
Housing width  11 mm  Housing height  37.1 mm  Housing depth  21.5 mm  Degree of protection  IP67 / IP69 / IP69K  Connection  300 mm fixed cable with M12 x 1, 4-pin connector  Material  Housing  PC (Polycarbonate)	- ·		-40 70 °C (-40 158 °F)
Housing height 37.1 mm  Housing depth 21.5 mm  Degree of protection IP67 / IP69 / IP69K  Connection 300 mm fixed cable with M12 x 1, 4-pin connector  Material  Housing PC (Polycarbonate)	•		
Housing depth 21.5 mm  Degree of protection IP67 / IP69 / IP69K  Connection 300 mm fixed cable with M12 x 1, 4-pin connector  Material  Housing PC (Polycarbonate)	=		
Degree of protection IP67 / IP69 / IP69K  Connection 300 mm fixed cable with M12 x 1, 4-pin connector  Material  Housing PC (Polycarbonate)	Housing height		37.1 mm
Connection 300 mm fixed cable with M12 x 1, 4-pin connector  Material  Housing PC (Polycarbonate)	Housing depth		21.5 mm
Material Housing PC (Polycarbonate)	Degree of protection		IP67 / IP69 / IP69K
Housing PC (Polycarbonate)			300 mm fixed cable with M12 x 1, 4-nin connector
	- :		occiminated earlie with with x 1, 1 pin connector
Optical force	Connection		330 mm nace seals with thright, it pur sommotion
Optical face PMMA	Connection Material		

## **Accessories**

## V31-WM-2M-PUR

Female cordset, M8, 4-pin, PUR cable

# V31-GM-2M-PUR

Female cordset, M8, 4-pin, PUR cable

## REF-H85-2

Reflector, rectangular 84.5 mm x 84.5 mm, mounting holes

#### REF-H50

Reflector, rectangular 51 mm x 61 mm, mounting holes, fixing strap

### REF-H33

Reflector with screw fixing

### IO-Link-Master02-USB

IO-Link master, supply via USB port or separate power supply, LED indicators, M12 plug for sensor connection

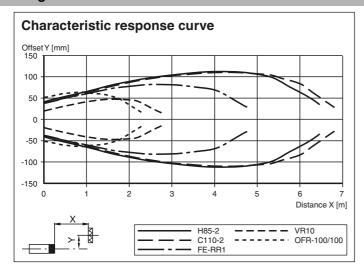
#### OFR-100/100

Reflective tape 100 mm x 100 mm

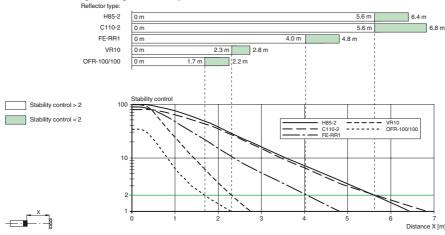
Other suitable accessories can be found at www.pepperl-fuchs.com

Mass Cable length	approx. 17 g 0.3 m
Approvals and certificates	
UL approval	E87056, cULus Listed, class 2 power supply, type rating 1

### **Curves/Diagrams**



## Relative received light strength in switch position "N'



## **Settings**

267075-100480\_eng.xml

2018-12-13

Date of

2018-12-13 13:03

Release date:

### Teach-in:

Use the rotary switch to select the required operating mode: Normal mode (N) or contrast level I – III.

To teach in a threshold or activate an operating mode, press the "TI" button until the yellow and green LEDs flash in phase (approx. 1 s).

Release the "TI" button. Teach-in starts.

Successful teach-in is indicated by alternating flashing (2.5 Hz) of the yellow and green LEDs. The sensor will now operate in the selected operating mode with the taught-in threshold.

An unsuccessful teach-in is indicated by rapidly alternating flashing (8 Hz) of the yellow and green LEDs. After an unsuccessful teach-in, the sensor continues to operate with the previous valid setting after the relevant visual fault signal is issued.

Every taught-in switching threshold can be re-taught (overwritten) by pressing the "TI" button again.

Note: To ensure that the device functions reliably in Contrast mode, the device must be powered on at least 30 s before Teach-in.

Setting the Device to Maximum Sensitivity

Use the rotary switch to select the Normal mode (N) position.

Press the "TI" button for > 4 s. The yellow and green LEDs will go out.

Release the "TI" button.

The settings will be reset to maximum sensitivity. After successfully resetting, the yellow and green LEDs will flash alternately (2.5 Hz).

Switching between light on/dark on

Use the rotary switch to select the light on/dark on (L/D) position.

Press the "TI" button for > 1 s.

The respective operating indicator LED (L/D) will illuminate green and the switching type will change.

To reset the switching type, press the "TI" button for > 4 s.

The respective operating indicator LED (L/D) will illuminate green and the operating indicator will be reset to the most recently active switching



type.

### **Reset to Default Settings**

Use the rotary switch to select the O position.

Press the "TI" button for > 10 s. The yellow and the green LEDs will both switch off.

Release the "TI" button. The yellow LED is on.

After resetting, the sensor will operate with the following default settings:

- Normal mode (N)
- · Maximum sensitivity adjustment
- Dark on
- Pin 2 (white core): antivalent switching output