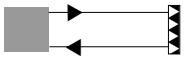
Series OM

Versatile – nifty – slim sensors with an outstanding profile

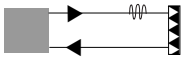
up to 9 m

Through-beam sensors OMS/OME



up to 6,2 m

Retro-reflective sensors OMR



up to 4,7 m

Retro-reflective sensors
with polarizing filters OMP

up to 65 cm

Diffuse-reflective sensors OMT

High functionality

Diverse operating principles
ELESTA's OM sensors are available as through-beam sensors, retro-reflective sensors with and without polarizing filters, as well as diffuse-reflective sensors. The OM sensors can also be used with fiber optic cables.

Light reserve warning indicator
All of the sensors in the OM series contain a light-reserve warning indicator (blinking function indicator) for controlling dirt build-up on the lenses and as an alignment aid.

High ambient temperature
These photoelectric sensors can be used for ambient temperatures up to +90° C (at reduced supply voltage).

High switching frequency
All OM sensors have a 1000 Hz switching frequency, allowing for the reliable detection of even fast moving objects.

Low power consumption
The OM sensors distinguish themselves with an extremely small power consumption of less than 15 mA.

Test input **as option**
As an option, the OM sensors are available with test input, for confirming that the sensor is operating properly. A sensor with test input has only one output, either light-on or dark-on.

Simple installation and operation

Adjustable range
The optical range of each OM sensor can be adjusted to meet the specific application.

Angle optics
The right angle optics version of this series has a special user-friendly design. The diameter of the optic head is no greater than that of the sensor housing. Therefore, also the angle optics versions of the OM sensors are easy to install, even in bore mounting applications.

Various connection versions
All OM sensors are available standard with a 2m cable or an M12 connector. As an option, the OM sensors are available with a right angle 2m cable, or a Torson connector.

Combined surface and bore mounting
The ELESTA OM sensors distinguish themselves with a special housing concept. They can be bore mounted or flat mounted on a surface with two M4 screws.

Reliable for the highest demands

Robust construction with IP 67 sealing
The OM photoelectric sensors are built with a glass-sphere reinforced polyamide housing, and are protected against water and dust. The sensors meet the sealing requirements of IP 67.

EMC-tested
The OM sensors are tested according to IEC 801, EN50081-1 and EN50082-2. This assures trouble free use even in high electromagnetically contaminated environments.

High ambient light rejection
Thanks to pulse modulation and a multilevel disturbance rejection, the OM sensors are extremely insensitive to foreign light sources.

Reverse polarity protection
All of the OM sensor's electrical connections are protected against reverse wiring.

Short-circuit protection
The OM sensor's transistor outputs are electronically protected against short circuit.

Power-up output suppression
During power-up the outputs of the OM sensors are blocked for typically 30 msec.

Glass-protected optics
Partially standard, but also as an option, the OM sensors are available with a glass window to protect the optics against aggressive chemicals and mechanical damage (scratching).

Designation code

OM x xxx xxx xx

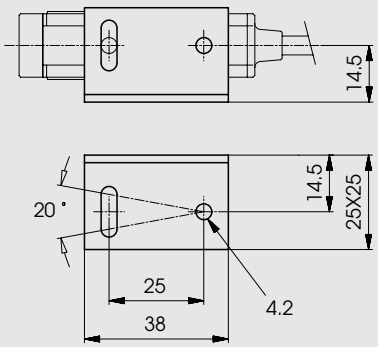
Principle	Supply	Outputs	Connection	Electr. option	Light	Range
E: Through-beam receiver P: Retro-reflective with polarizing filters R: Retro-reflective S: Through-beam emitter T: Diffuse-reflective Z: Accessory	1: 10-30 VDC	KA: No output NA: NPN light- and dark-on ND: NPN dark-on NH: NPN light-on PA: PNP light- and dark-on PD: PNP dark-on PH: PNP light-on	0: Cable special length 1: Cable 2 m 2: Angled cable 2 m 4: Connector M12 6: Connector Torson	00: Range adjustable 01: Range adjustable, test input 40: Range not adjustable 41: Range not adjustable, test input	A: Right angle optic, red G: Straight optic, infrared S: Straight optic, red W: Right angle optic, infrared	OMS/OME: 1: 9 m 2: 8 m OMP/OMR: 1: 2 m 2: 2 m 3: 3 m OMT: 1: 10 cm 2: 20 cm 3: 40 cm 4: 65 cm

Accessories

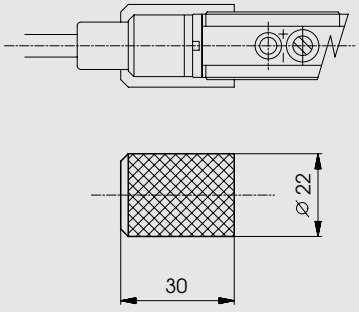
Retroreflectors: see page 130

Connector cables: see page 128

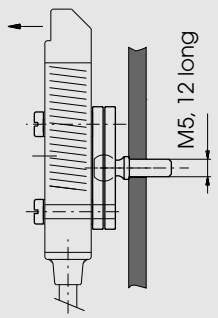
Mounting:



Mounting bracket OMZ 001



Nut for mounting fiber optic cable OMZ 002



Swivel bracket OMZ 003

JAXXEN incorporated 350 Milford Point Rd. Milford, CT 06460 P.203-878-0400 F.203-878-0458
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Through-beam sensors, straight optics, M18 housing

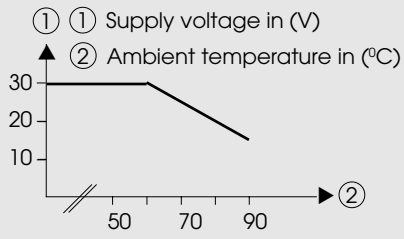
- **Combined surface and bore mounting**
- Light reserve warning indicator
- Dual transistor outputs, **NPN or PNP**
- Test input
- Short-circuit protection, reverse polarity protection, **and** power-up output suppression
- **Connections: Straight cable, 2 meter**
  Connector, M12
  Right angle cable, 2 meter (option)
  Connector, Torson (option)
- **EMC tested according to IEC 801 and EN50081-1/EN 50082-2**

CE

	Emitter		Receiver			
Product designation [1]	**OMS 1KA 141 G1**	**OMS 1KA 441 G1**	**OME 1NA 100 G1**	**OME 1NA 400 G1**	**OME 1PA 100 G1**	**OME 1PA 400 G1**
Output			NPN (light- and dark-on)		PNP (light- and dark-on)	
Connection	Cable 2 m	Connector M12	Cable 2 m	Connector M12	Cable 2 m	Connector M12
Range adjustment	No		Yes			
Optical data [2]						
Max. range	9 m					
Emitter	Infrared-LED, 880 nm, pulsed					
Electrical data [2]						
Supply voltage U_S	10...30 VDC					
Allowable ripple	+/- 10% of U_S					
Current consumption (without load)	< 25 mA		< 15 mA			
Max. load current I_L			200 mA			
Residual voltage			< 1,6 V			
Max. switching frequency			1000 Hz			
Test input: emitter on / emitter off	> 8 V or open / < 1,5 V					
Test input inverse: emitter on / emitter off	open or < 1,5 V / > 8 V					
Environmental data						
Sealing	IP 67					
Temperature T_A (operating and storage)	-20...+90 °C (☛ Tech. explanation)					
Weight	ca. 90 g	ca. 20 g	ca. 90 g	ca. 20 g	ca. 90 g	ca. 20 g

1) For product designation of sensors with options see designation code on page 47.
2) When not otherwise noted, all technical data at T_A = 25 °C and U_S = 24 V.

Technical explanation

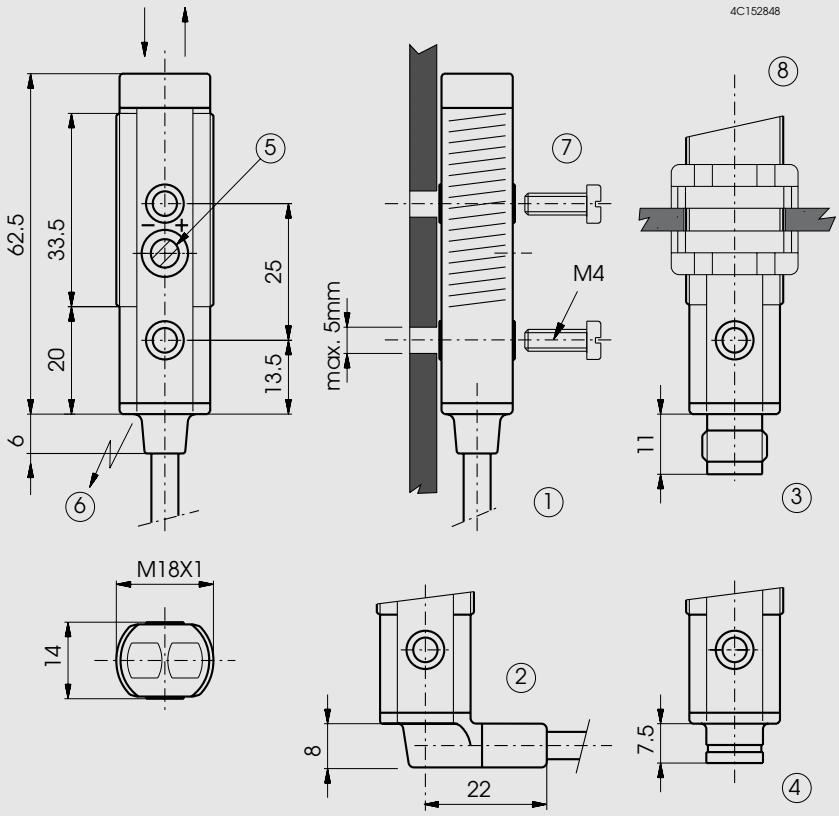


Allowable supply voltage/ Ambient temperature

Allowable supply voltage as a function of ambient temperature

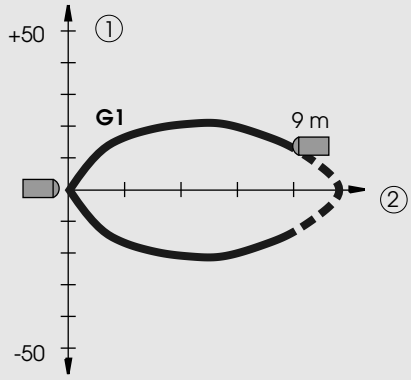
The specified operating temperature is only usable if the supply voltage is reduced at higher temperatures (☛ Diagram "Allowable supply voltage/Ambient temperature").

Dimensions (62,5 mm, M18 x 1)



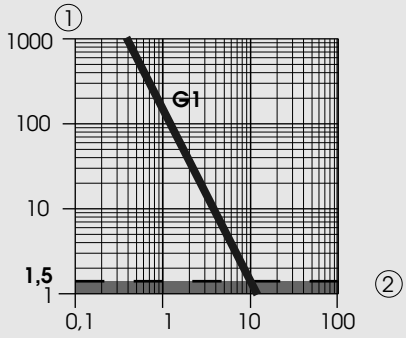
① Cable connection (straight)
② Cable connection (angled)
③ Connector M12
④ Connector Torson
⑤ Range adjustment
⑥ Emitter: operation indicator
Receiver: function indicator
⑦ Surface mounting
⑧ Bore mounting

Optical diagrams



Typical beam diameter

① Diameter in (cm)
② Range in (m)

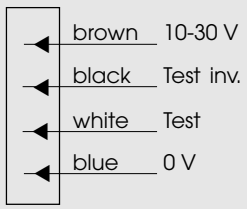


Typical excess gain curve

① Gain factor
② Range in (m)

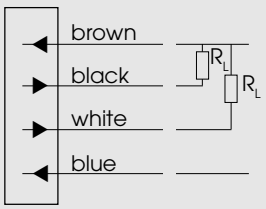
Wiring diagram

Emitter



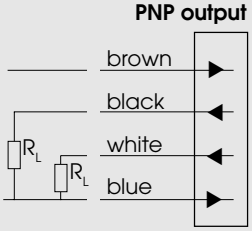
Receiver

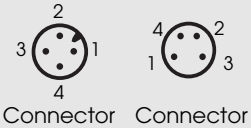
NPN output



⊕ Supply voltage 10...30 V
Light-on output
Dark-on output
⊖ Supply voltage

PNP output





Connector M12 | Connector Torson

Connection for M12/Torson	Wire color
1	brown
2	white
3	blue
4	black

Light-on output:
Output energized when no object is present.

Dark-on output:
Output energized when object is present.

Through-beam sensors, right angle optics, M18 housing

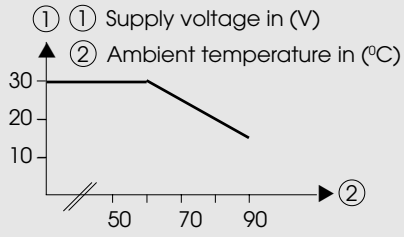
- **Combined surface and bore mounting**
- Light reserve warning indicator
- Dual transistor outputs, **NPN or PNP**
- Test input
- Short-circuit protection, reverse polarity protection, **and** power-up output suppression
- **Connections: Straight cable, 2 meter**
  Connector, M12
  Right angle cable, 2 meter (option)
  Connector, Torson (option)
- **EMC tested according to IEC 801 and EN50081-1/EN 50082-2**

CE

	Emitter		Receiver			
Product designation [1]	**OMS 1KA 141 W2**	**OMS 1KA 441 W2**	**OME 1NA 100 W2**	**OME 1NA 400 W2**	**OME 1PA 100 W2**	**OME 1PA 400 W2**
Output			NPN (light- and dark-on)		PNP (light- and dark-on)	
Connection	Cable 2 m	Connector M12	Cable 2 m	Connector M12	Cable 2 m	Connector M12
Range adjustment	No		Yes			
Optical data [2]						
Max. range	8 m					
Emitter	Infrared-LED, 890 nm, pulsed					
Electrical data [2]						
Supply voltage U_S	10...30 VDC					
Allowable ripple	+/- 10% of U_S					
Current consumption (without load)	< 25 mA		< 15 mA			
Max. load current I_L			200 mA			
Residual voltage			< 1,6 V			
Max. switching frequency			1000 Hz			
Test input: emitter on / emitter off	> 8 V or open / < 1,5 V					
Test input inverse: emitter on / emitter off	open or < 1,5 V / > 8 V					
Environmental data						
Sealing	IP 67					
Temperature T_A (operating and storage)	-20...+90 °C (☛ Tech. explanation)					
Weight	ca. 95 g	ca. 25 g	ca. 95 g	ca. 25 g	ca. 95 g	ca. 25 g

1) For product designation of sensors with options see designation code on page 47.
2) When not otherwise noted, all technical data at T_A = 25 °C and U_S = 24 V.

Technical explanation

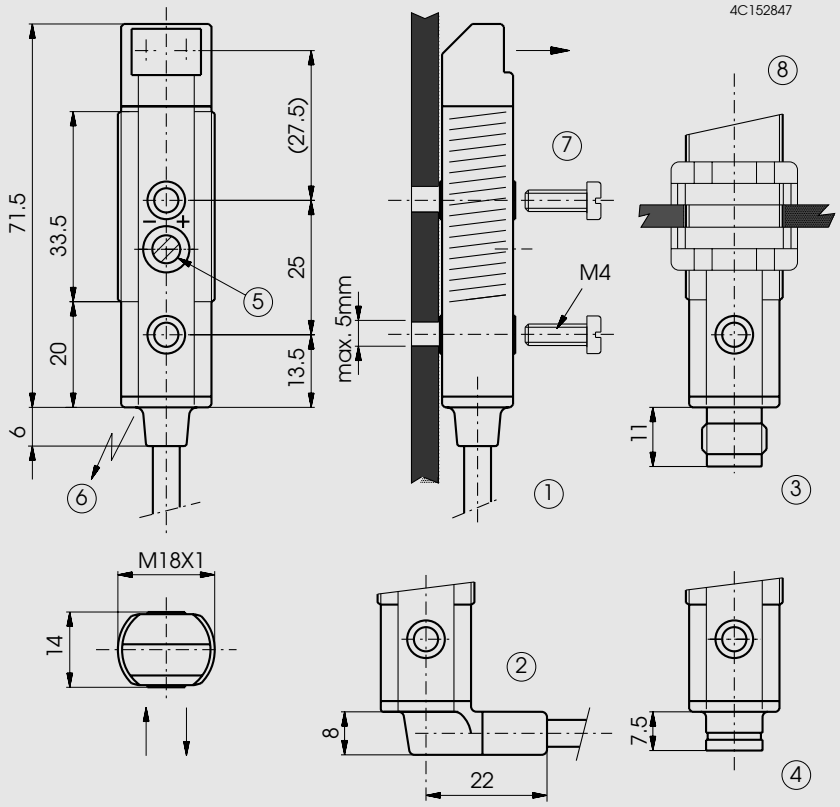


Allowable supply voltage/ Ambient temperature

Allowable supply voltage as a function of ambient temperature

The specified operating temperature is only usable if the supply voltage is reduced at higher temperatures (☛ Diagram "Allowable supply voltage/Ambient temperature").

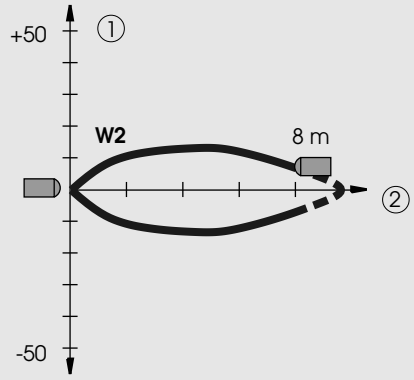
Dimensions (71,5 mm, M18 x 1)



① Cable connection (straight)
② Cable connection (angled)
③ Connector M12
④ Connector Torson

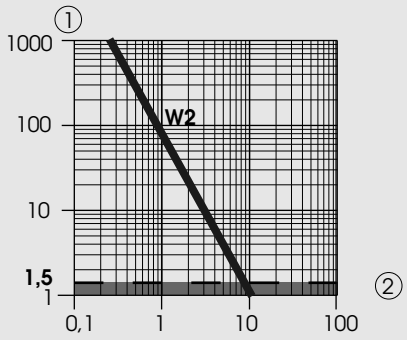
⑤ Range adjustment
⑥ Emitter: operation indicator
Receiver: function indicator
⑦ Surface mounting
⑧ Bore mounting

Optical diagrams



Typical beam diameter

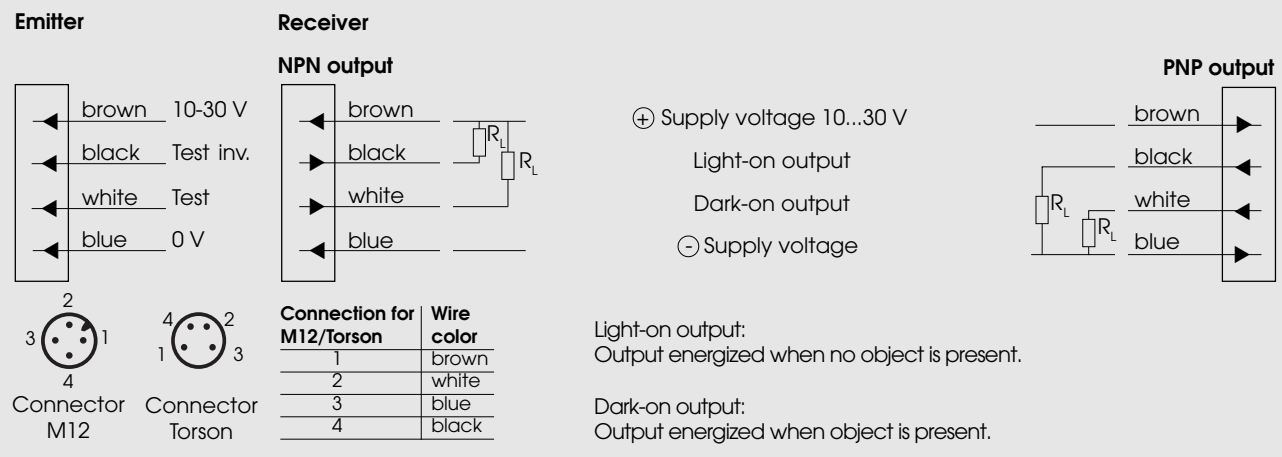
① Diameter in (cm)
② Range in (m)



Typical excess gain curve

① Gain factor
② Range in (m)

Wiring diagram



Connection for M12/Torson	Wire color
1	brown
2	white
3	blue
4	black

Light-on output:
Output energized when no object is present.

Dark-on output:
Output energized when object is present.

Retro-reflective sensors, straight optics, M18 housing

- **Combined surface and bore mounting**
- Light reserve warning indicator
- Dual transistor outputs, **NPN or PNP**
- Test input **(option)**
- Short-circuit protection, reverse polarity protection, **and** power-up output suppression
- **Connections: Straight cable, 2 meter**
  Connector, M12
  Right angle cable, 2 meter (option)
  Connector, Torson (option)
- **EMC tested according to IEC 801 and EN50081-1/EN 50082-2**

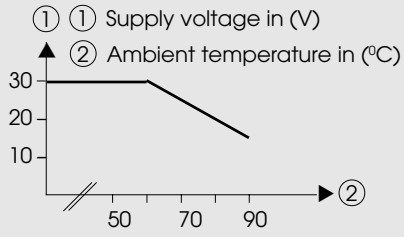
CE

Product designation [1]	**OMR 1NA 100 G3**	**OMR 1NA 400 G3**	**OMR 1PA 100 G3**	**OMR 1PA 400 G3**
Output	NPN (light- and dark-on)		PNP (light- and dark-on)	
Connection	Cable 2 m	Connector M12	Cable 2 m	Connector M12
Range adjustment	Yes			
Optical data [2]				
Range	0,1...3 m (retroreflector OZR 001)			
Emitter	Infrared-LED, 890 nm, pulsed			
Electrical data [2]				
Supply voltage U_S	10...30 VDC			
Allowable ripple	+/- 10% of U_S			
Current consumption (without load)	< 15 mA			
Max. load current I_L	200 mA			
Residual voltage	< 1,6 V			
Max. switching frequency	1000 Hz			
Environmental data				
Sealing	IP 67			
Temperature T_A (operating and storage)	-20...+90 °C (☛ Tech. explanation)			
Weight	ca. 90 g	ca. 20 g	ca. 90 g	ca. 20 g

Option [1]		
Test input:	emitter on	+ U_S or open
	emitter off	< 1,5 V / < U_S - 8 V

1) For product designation of sensors with options see designation code on page 47.
2) When not otherwise noted, all technical data at T_A = 25 °C and U_S = 24 V.

Technical explanation



Allowable supply voltage/ Ambient temperature

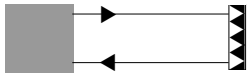
← Allowable supply voltage as a function of ambient temperature
The specified operating temperature is only usable if the supply voltage is reduced at higher temperatures (☛ Diagram "Allowable supply voltage/Ambient temperature").

Retro-reflector ●	Range	Retro-reflector ▬	Range	Retro-reflective tape	Range
OZR 001	0.08 – 3.0 m	OZR 101	0.04 – 4.7 m	OZR 201*	0.15 – 0.9 m
OZR 002	0.03 – 2.6 m	OZR 102	0.05 – 1.7 m	OZR 202	0.20 – 2.3 m
OZR 003	0.05 – 1.0 m	OZR 103	0.03 – 3.7 m	OZR 203	0.20 – 1.7 m
		OZR 104	0.03 – 6.2 m	OZR 204*	0.20 – 1.4 m
				OZR 205*	0.20 – 2.0 m

* 30 cm long

10...30 VDC

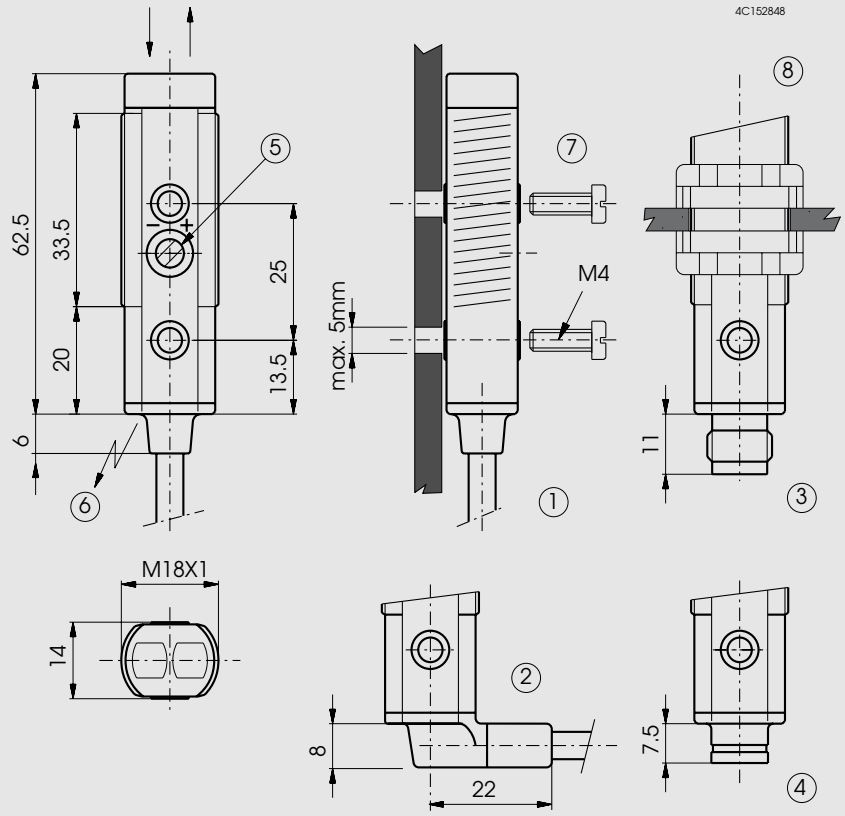
NPN / PNP
light-on and
dark-on output



up to 6,2 m

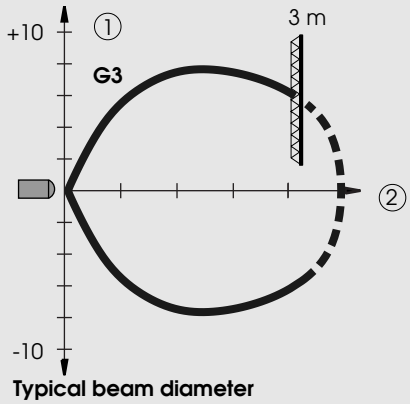
OMR
straight optics

Dimensions (62,5 mm, M18 x 1)



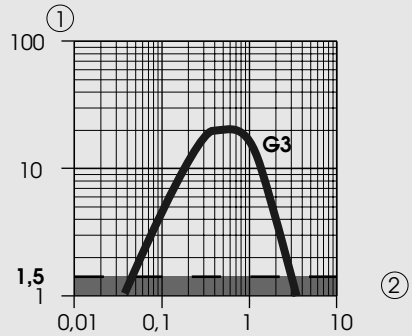
① Cable connection (straight)
② Cable connection (angled)
③ Connector M12
④ Connector Torson
⑤ Range adjustment
⑥ Function indicator
⑦ Surface mounting
⑧ Bore mounting

Optical diagrams



Typical beam diameter
(with retroreflector OZR 001)

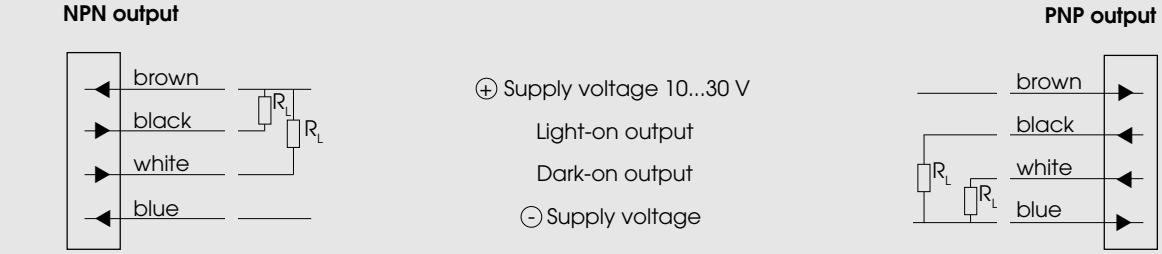
① Diameter in (cm)
② Range in (m)

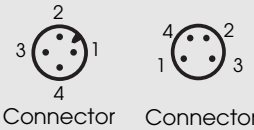


Typical excess gain curve
(with retroreflector OZR 001)

① Gain factor
② Range in (m)

Wiring diagram





Connection for M12/Torson	Wire color	Connection for test input
1	brown	Supply+
2	white	Test input
3	blue	Supply-
4	black	Output

Light-on output:
Output energized when no object is present.

Dark-on output:
Output energized when object is present.

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www.jaxxeninc.com info@jaxxeninc.com

Retro-reflective sensors, right angle optics, M18 housing

- **Combined surface and bore mounting**
- Light reserve warning output
- Dual transistor outputs, **NPN or PNP**
- Test input **(option)**
- Short-circuit protection, reverse polarity protection, **and** power-up output suppression
- **Connections: Straight cable, 2 meter**
  Connector, M12
  Right angle cable, 2 meter (option)
  Connector, Torson (option)
- **EMC tested according to IEC 801 and EN50081-1/EN 50082-2**

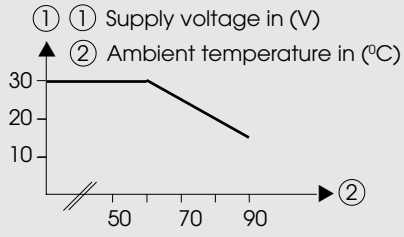
CE

Product designation [1]	**OMR 1NA 100 W3**	**OMR 1NA 400 W3**	**OMR 1PA 100 W3**	**OMR 1PA 400 W3**
Output	NPN (light- and dark-on)		PNP (light- and dark-on)	
Connection	Cable 2 m	Connector M12	Cable 2 m	Connector M12
Range adjustment	Yes			
Optical data [2]				
Range	0,1...3 m (retroreflector OZR 001)			
Emitter	Infrared-LED, 890 nm, pulsed			
Electrical data [2]				
Supply voltage U_S	10...30 VDC			
Allowable ripple	+/- 10% of U_S			
Current consumption (without load)	< 15 mA			
Max. load current I_L	200 mA			
Residual voltage	< 1,6 V			
Max. switching frequency	1000 Hz			
Environmental data				
Sealing	IP 67			
Temperature T_A (operating and storage)	-20...+90 °C (☛ Tech. explanation)			
Weight	ca. 95 g	ca. 25 g	ca. 95 g	ca. 25 g

Option [1]		
Test input:	emitter on	+ U_S or open
	emitter off	< 1,5 V / < U_S - 8 V

1) For product designation of sensors with options see designation code on page 47.
2) When not otherwise noted, all technical data at T_A = 25 °C and U_S = 24 V.

Technical explanation



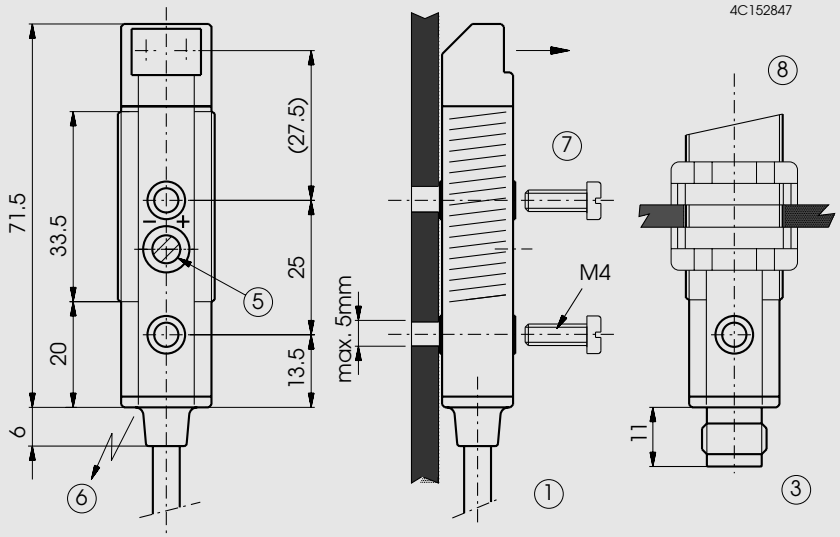
Allowable supply voltage/ Ambient temperature

← Allowable supply voltage as a function of ambient temperature
The specified operating temperature is only usable if the supply voltage is reduced at higher temperatures (☛ Diagram "Allowable supply voltage/Ambient temperature").

Retro-reflector ●	Range	Retro-reflector ▬	Range	Retro-reflective tape	Range
OZR 001	0.08 – 3.0 m	OZR 101	0.05 – 4.6 m	OZR 201*	0.15 – 1.0 m
OZR 002	0.06 – 2.7 m	OZR 102	0.06 – 1.6 m	OZR 202	0.25 – 2.3 m
OZR 003	0.06 – 1.4 m	OZR 103	0.05 – 3.7 m	OZR 203	0.20 – 1.7 m
		OZR 104	0.05 – 6.0 m	OZR 204*	0.20 – 1.0 m
				OZR 205*	0.20 – 1.7 m

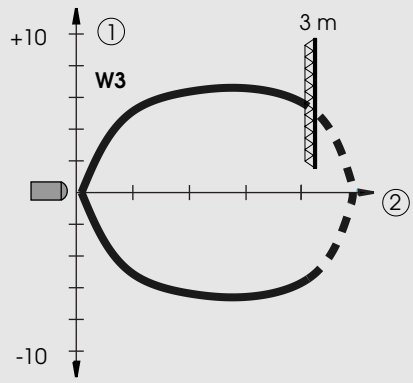
* 30 cm long

Dimensions (71,5 mm, M18 x 1)



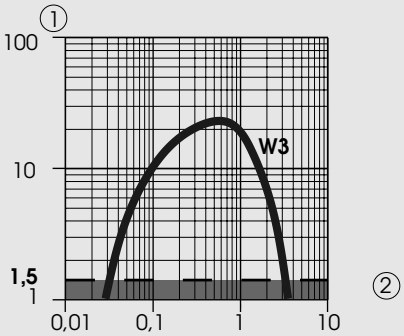
① Cable connection (straight)
② Cable connection (angled)
③ Connector M12
④ Connector Torson
⑤ Range adjustment
⑥ Function indicator
⑦ Surface mounting
⑧ Bore mounting

Optical diagrams



Typical beam diameter
(with retroreflector OZR 001)

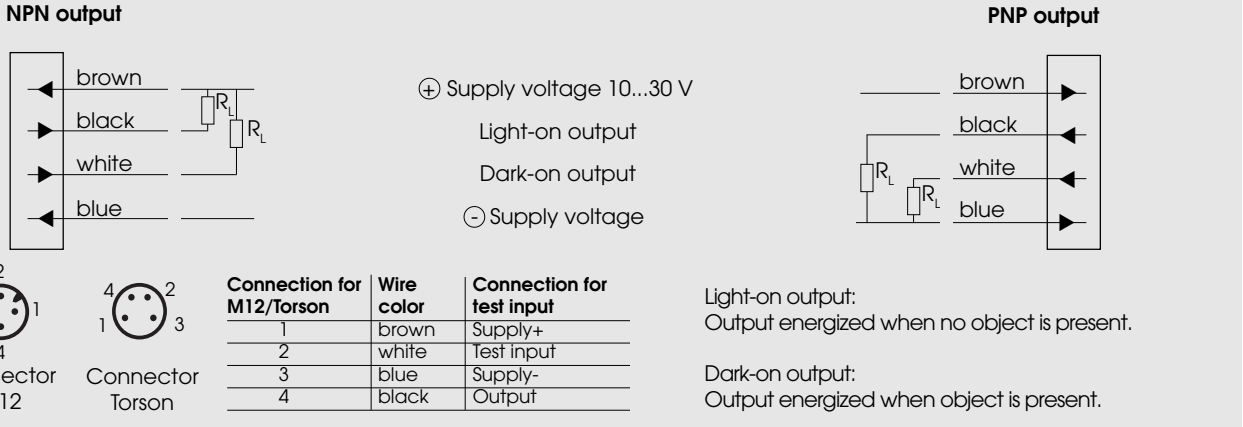
① Diameter in (cm)
② Range in (m)



Typical excess gain curve
(with retroreflector OZR 001)

① Gain factor
② Range in (m)

Wiring diagram



Connection for M12/Torson	Wire color	Connection for test input
1	brown	Supply+
2	white	Test input
3	blue	Supply-
4	black	Output

Light-on output:
Output energized when no object is present.

Dark-on output:
Output energized when object is present.

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Retro-reflective sensors with polarizing filters, straight optics, M18 housing

- **Combined surface and bore mounting**
- **Glass protected optics**
- Light reserve warning indicator
- Dual transistor outputs, **NPN or PNP**
- Test input **(option)**
- Short-circuit protection, reverse polarity protection, **and** power-up output suppression
- **Connections: Straight cable, 2 meter**
  Connector, M12
  Right angle cable, 2 meter (option)
  Connector, Torson (option)
- **EMC tested according to IEC 801 and EN50081-1/EN 50082-2**

CE

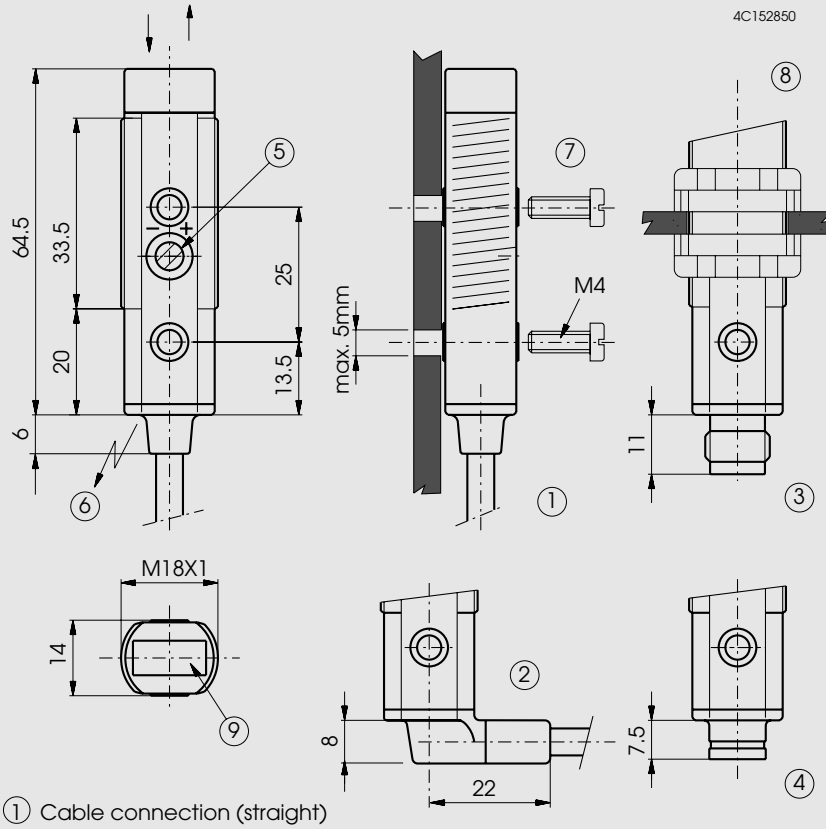
Product designation [1]	**OMP 1NA 100 S2**	**OMP 1NA 400 S2**	**OMP 1PA 100 S2**	**OMP 1PA 400 S2**
Output	NPN (light- and dark-on)		PNP (light- and dark-on)	
Connection	Cable 2 m	Connector M12	Cable 2 m	Connector M12
Range adjustment	Yes			
Optical data [2]				
Range	0,2...2 m (retroreflector OZR 001)			
Emitter	Visible-red LED, 660 nm, pulsed, with polarizing filter			
Electrical data [2]				
Supply voltage U_S	10...30 VDC			
Allowable ripple	+/- 10% of U_S			
Current consumption (without load)	< 15 mA			
Max. load current I_L	200 mA			
Residual voltage	< 1,6 V			
Max. switching frequency	1000 Hz			
Environmental data				
Sealing	IP 67			
Temperatrer T_A (operating and storage)	-20...+60 °C			
Weight	ca. 90 g	ca. 20 g	ca. 90 g	ca. 20 g
Option [1]				
Test input: emitter on	+ U_S or open			
emitter off	< 1,5 V		< U_S - 8 V	

1) For product designation of sensors with options see designation code on page 47.
2) When not otherwise noted, all technical data at T_A = 25 °C and U_S = 24 V.

Retro-reflector ●	Range	Retro-reflector ▬	Range	Retro-reflective tape	Range
OZR 001	0.20 – 2.0 m	OZR 101	0.15 – 3.5 m	OZR 201	0 m
OZR 002	0.15 – 1.9 m	OZR 102	0.20 – 1.2 m	OZR 202	0 m
OZR 003	0.25 – 0.6 m	OZR 103	0.15 – 2.7 m	OZR 203	0.30 – 1.1 m
		OZR 104	0.15 – 4.7 m	OZR 204*	0.30 – 0.7 m
				OZR 205*	0.30 – 1.1 m

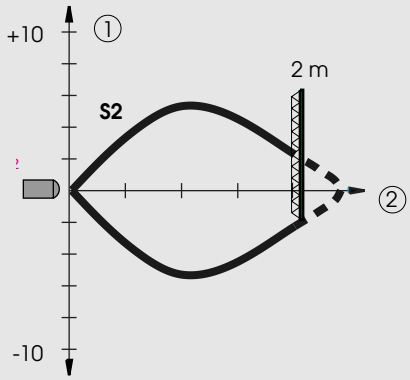
* 30 cm long

Dimensions (64,5 mm, M18 x 1)



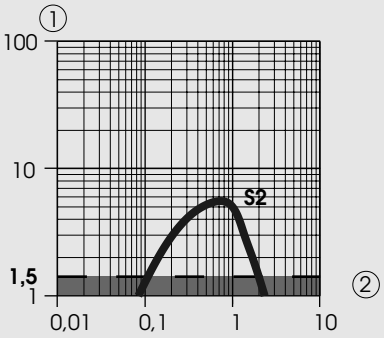
① Cable connection (straight)
② Cable connection (angled)
③ Connector M12
④ Connector Torson
⑤ Range adjustment
⑥ Function indicator
⑦ Surface mounting
⑧ Bore mounting
⑨ Glass cover for polarizing filters

Optical diagrams



Typical beam diameter
(with retroreflector OZR 001)

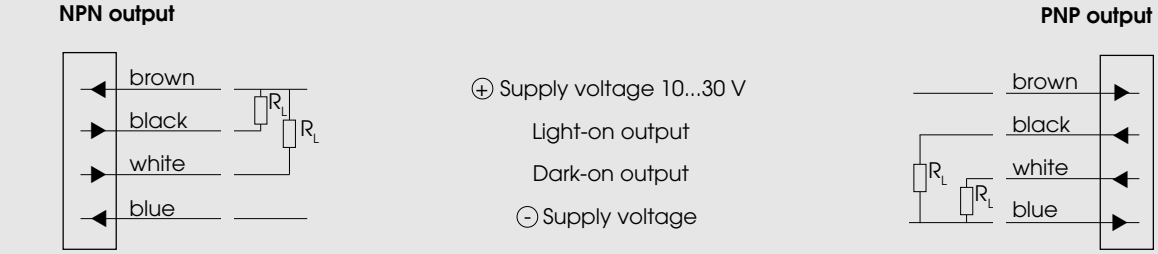
① Diameter in (cm)
② Range in (m)

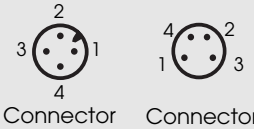


Typical excess gain curve
(with retroreflector OZR 001)

① Gain factor
② Range in (m)

Wiring diagram





Connector M12 | Connector Torson

Connection for M12/Torson	Wire color	Connection for test input
1	brown	Supply+
2	white	Test input
3	blue	Supply-
4	black	Output

Light-on output:
Output energized when no object is present.

Dark-on output:
Output energized when object is present.

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Retro-reflective sensors with polarizing filters, right angle optics, M18 housing

- **Combined surface and bore mounting**
- **Glass protected optics**
- Light reserve warning indicator
- Dual transistor outputs, **NPN or PNP**
- Test input **(option)**
- Short-circuit protection, reverse polarity protection, **and** power-up output suppression
- **Connections: Straight cable, 2 meter**
  Connector, M12
  Right angle cable, 2 meter (option)
  Connector, Torson (option)
- **EMC tested according to IEC 801 and EN50081-1/EN 50082-2**

CE

Product designation [1]	**OMP 1NA 100 A1**	**OMP 1NA 400 A1**	**OMP 1PA 100 A1**	**OMP 1PA 400 A1**
Output	NPN (light- and dark-on)		PNP (light- and dark-on)	
Connection	Cable 2 m	Connector M12	Cable 2 m	Connector M12
Range adjustment	Yes			
Optical data [2]				
Range	0,2...2 m (retroreflector OZR 001)			
Emitter	Visible-red LED, 660 nm, pulsed, with polarizing filter			
Electrical data [2]				
Supply voltage U_S	10...30 VDC			
Allowable ripple	+/- 10% of U_S			
Current consumption (without load)	< 15 mA			
Max. load current I_L	200 mA			
Residual voltage	< 1,6 V			
Max. switching frequency	1000 Hz			
Environmental data				
Sealing	IP 67			
Temperature T_A (operating and storage)	-20...+60 °C			
Weight	ca. 95 g	ca. 25 g	ca. 95 g	ca. 25 g
Option [1]				
Test input: emitter on	+ U_S or open			
emitter off	< 1,5 V		< U_S - 8 V	

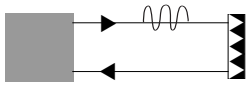
1) For product designation of sensors with options see designation code on page 47.
2) When not otherwise noted, all technical data at T_A = 25 °C and U_S = 24 V.

Retro-reflector ●	Range	Retro-reflector ▬	Range	Retro-reflective tape	Range
OZR 001	0.20 – 2.0 m	OZR 101	0.15 – 3.3 m	OZR 201	0 m
OZR 002	0.20 – 1.8 m	OZR 102	0.15 – 1.0 m	OZR 202	0 m
OZR 003	0.15 – 0.8 m	OZR 103	0.15 – 2.5 m	OZR 203	0.30 – 1.0 m
		OZR 104	0.15 – 4.7 m	OZR 204*	0.30 – 0.6 m
				OZR 205*	0.30 – 1.0 m

* 30 cm long

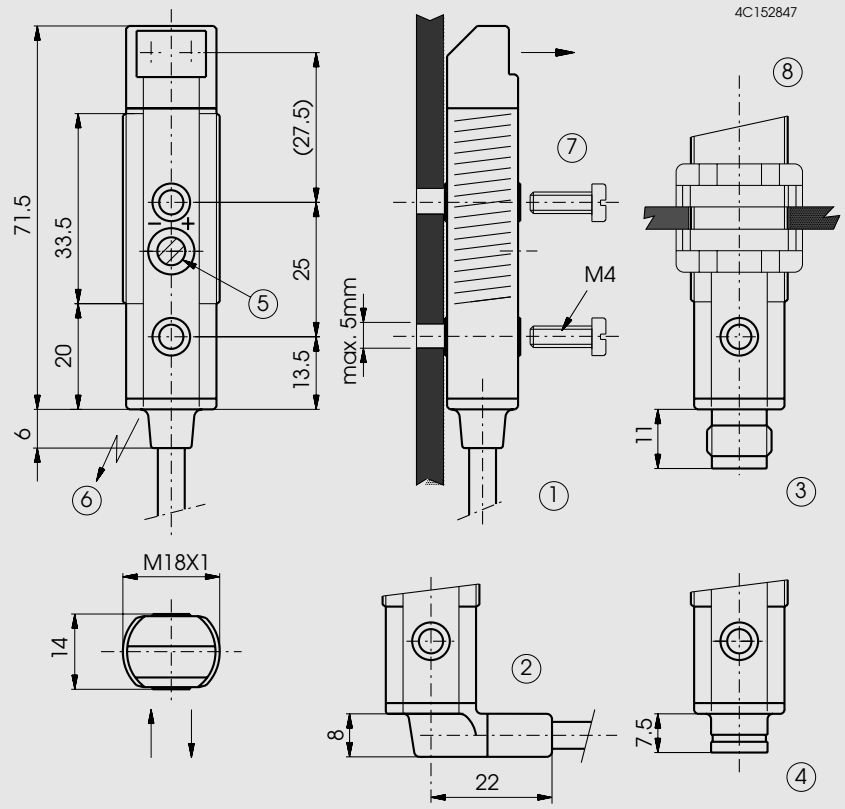
10...30 VDC

NPN / PNP
light-on and
dark-on output



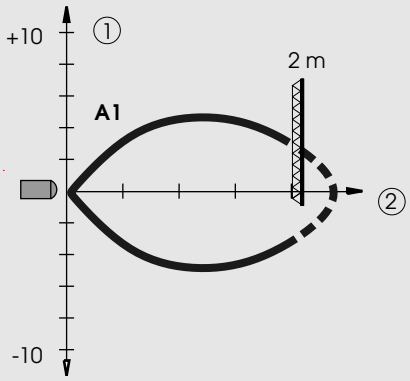
OMP
right angle optics

Dimensions (71,5 mm, M18 x 1)



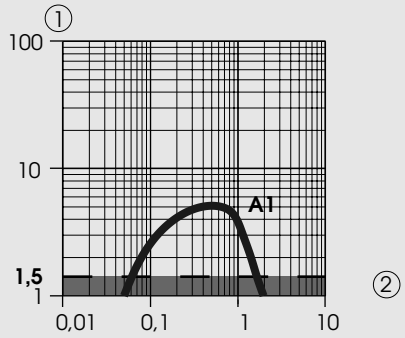
① Cable connection (straight)
② Cable connection (angled)
③ Connector M12
④ Connector Torson
⑤ Range adjustment
⑥ Function indicator
⑦ Surface mounting
⑧ Bore mounting

Optical diagrams



Typical beam diameter
(with retroreflector OZR 001)

① Diameter in (cm)
② Range in (m)

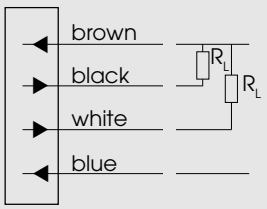


Typical excess gain curve
(with retroreflector OZR 001)

① Gain factor
② Range in (m)

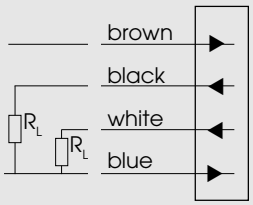
Wiring diagram

NPN output



⊕ Supply voltage 10...30 V
Light-on output
Dark-on output
⊖ Supply voltage

PNP output



Connector
M12

Connector
Torson

Connection for M12/Torson	Wire color	Connection for test input
1	brown	Supply+
2	white	Test input
3	blue	Supply-
4	black	Output

Light-on output:
Output energized when no object is present.

Dark-on output:
Output energized when object is present.

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Diffuse-reflective sensors, range 10/20 cm, straight optics, M18 housing

- **Combined surface and bore mounting**
- Light reserve warning indicator
- Dual transistor outputs, **NPN or PNP**
- **1000 Hz switching frequency**
- Short-circuit protection, reverse polarity protection, **and** power-up output suppression
- **Connections: Straight cable, 2 meter**
  Connector, M12
  Right angle cable, 2 meter (option)
  Connector, Torson (option)
- **EMC tested according to IEC 801 and EN50081-1/EN 50082-2**

CE

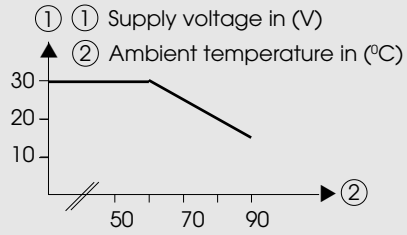
Product designation [1]	**OMT 1NA 100 G1**	**OMT 1NA 400 G1**	**OMT1PA 100 G1**	**OMT 1PA 400 G1**	**OMT 1NA 100 G2**	**OMT 1NA 400 G2**	**OMT1PA 100 G2**	**OMT 1PA 400 G2**
Output	NPN (light-/dark-on)		PNP (light-/dark-on)		NPN (light-/dark-on)		PNP (light-/dark-on)	
Connection	Cable 2 m	Connector M12	Cable 2 m	Connector M12	Cable 2 m	Connector M12	Cable 2 m	Connector M12
Range adjustment	Yes							
Optical data [2]								
Max. range	10 cm (Kodak card white, 10 x 10 cm)				20 cm (Kodak card white, 10 x 10 cm)			
Emitter	Infrared-LED, 880 nm, pulsed							
Electrical data [2]								
Supply voltage U_S	10...30 VDC							
Allowable ripple	+/- 10% of U_{SP}							
Current consumption (without load)	< 15 mA							
Max. load current I_L	200 mA							
Residual voltage	< 1,6 V							
Max. switching frequency	1000 Hz							
Environmental data								
Sealing	IP 67							
Temperature T_A (operating and storage)	-20...+90 °C (☛ Tech. explanation)							
Weight	ca. 90 g	ca. 20 g	ca. 90 g	ca. 20 g	ca. 90 g	ca. 20 g	ca. 90 g	ca. 20 g

1) For product designation of sensors with options see designation code on page 47.
2) When not otherwise notec, all technical data at T_A = 25 °C and U_S = 24 V.

Note:

This OMT sensor (range 20 cm) can also be used as a fiber optic sensor. The corresponding fiber optic cables can be found in the fiber optic chapter (page 124).

Technical explanation



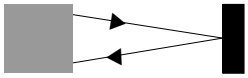
Allowable supply voltage/ Ambient temperature

Allowable supply voltage as a function of ambient temperature

The specified operating temperature is only usable if the supply voltage is reduced at higher temperatures (☛ Diagram "Allowable supply voltage/Ambient temperature").

10...30 VDC

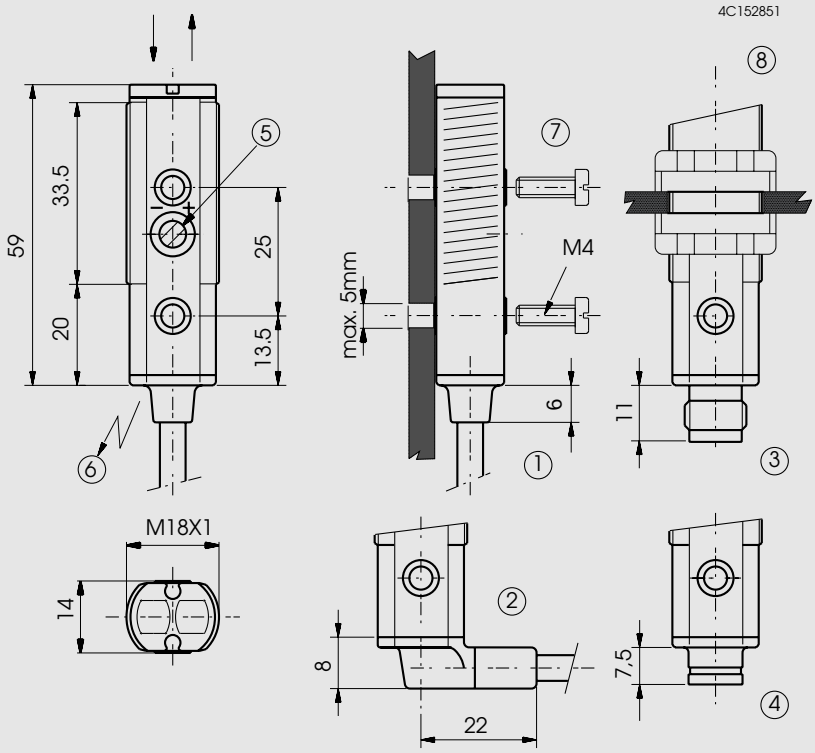
NPN / PNP
light-on and
dark-on output



10/20 cm

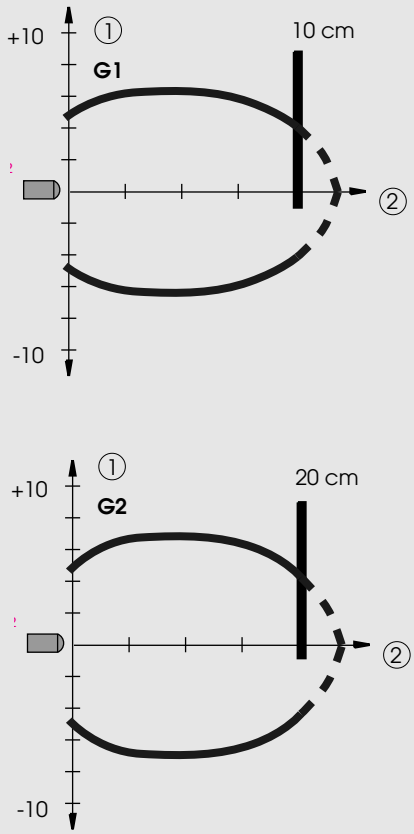
OMT
straight optics

Dimensions (59 mm, M18 x 1)



① Cable connection (straight)
② Cable connection (angled)
③ Connector M12
④ Connector Torson
⑤ Range adjustment
⑥ Function indicator
⑦ Surface mounting
⑧ Bore mounting

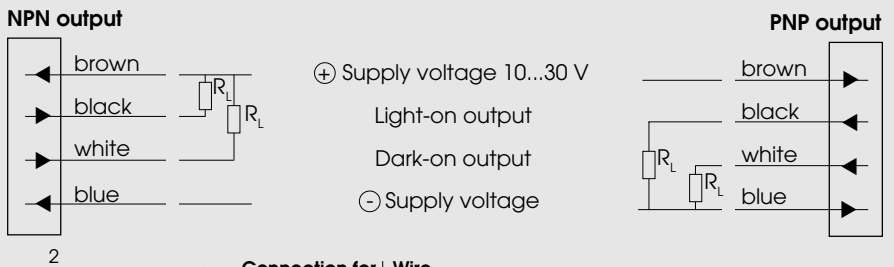
Optical diagrams



Typical beam diameter
(with Kodak card white, 10 x 10 cm)

① Diameter in (cm)
② Range in (cm)

Wiring diagram

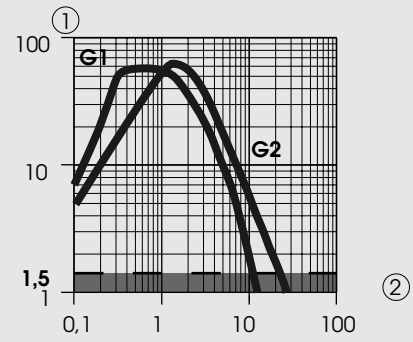


Connector M12 | Connector Torson

Connection for M12/Torson	Wire color
1	brown
2	white
3	blue
4	black

Light-on output:
Output energized when object is present.

Dark-on output:
Output energized when no object is present.



Typical excess gain curve
(with Kodak card white, 10 x 10 cm)

① Gain factor
② Range in (cm)

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Diffuse-reflective sensors, range 40/65 cm, straight optics, M18 housing

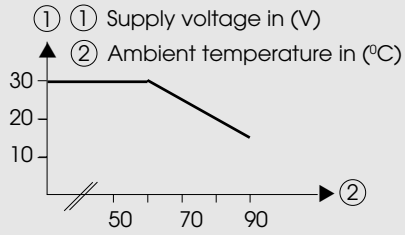
- **Combined surface and bore mounting**
- Light reserve warning indicator
- Dual transistor outputs, **NPN or PNP**
- **1000 Hz switching frequency**
- Short-circuit protection, reverse polarity protection, **and** power-up output suppression
- **Connections: Straight cable, 2 meter**
  Connector, M12
  Right angle cable, 2 meter (option)
  Connector, Torson (option)
- **EMC tested according to IEC 801 and EN50081-1/EN 50082-2**

CE

Product designation [1]	**OMT 1NA 100 G3**	**OMT 1NA 400 G3**	**OMT 1PA 100 G3**	**OMT 1PA 400 G3**	**OMT 1NA 100 G4**	**OMT 1NA 400 G4**	**OMT 1PA 100 G4**	**OMT 1PA 400 G4**
Output	NPN (light-/dark-on)		PNP (light-/dark-on)		NPN (light-/dark-on)		PNP (light-/dark-on)	
Connection	Cable 2 m	Connector M12	Cable 2 m	Connector M12	Cable 2 m	Connector M12	Cable 2 m	Connector M12
Range adjustment	Yes							
Optical data [2]								
Max. range	40 cm (Kodak card white, 10 x 10 cm)				65 cm (Kodak card white, 10 x 10 cm)			
Emitter	Infrared-LED, 880 nm, pulsed							
Electrical data [2]								
Supply voltage U_S	10...30 VDC							
Allowable ripple	+/- 10% of U_S							
Current consumption (without load)	< 15 mA							
Max. load current I_L	200 mA							
Residual voltage	< 1,6 V							
Max. switching frequency	1000 Hz							
Environmental data								
Sealing	IP 67							
Temperature T_A (operating and storage)	-20...+90 ^{0}C (☛ Tech. explanation)							
Weight	ca. 90 g	ca. 20 g	ca. 90 g	ca. 20 g	ca. 90 g	ca. 20 g	ca. 90 g	ca. 20 g

1) For product designation of sensors with options see designation code on page 47.
2) When not otherwise noted, all technical data at T_A = 25 ^{0}C and U_S = 24 V.

Technical explanation

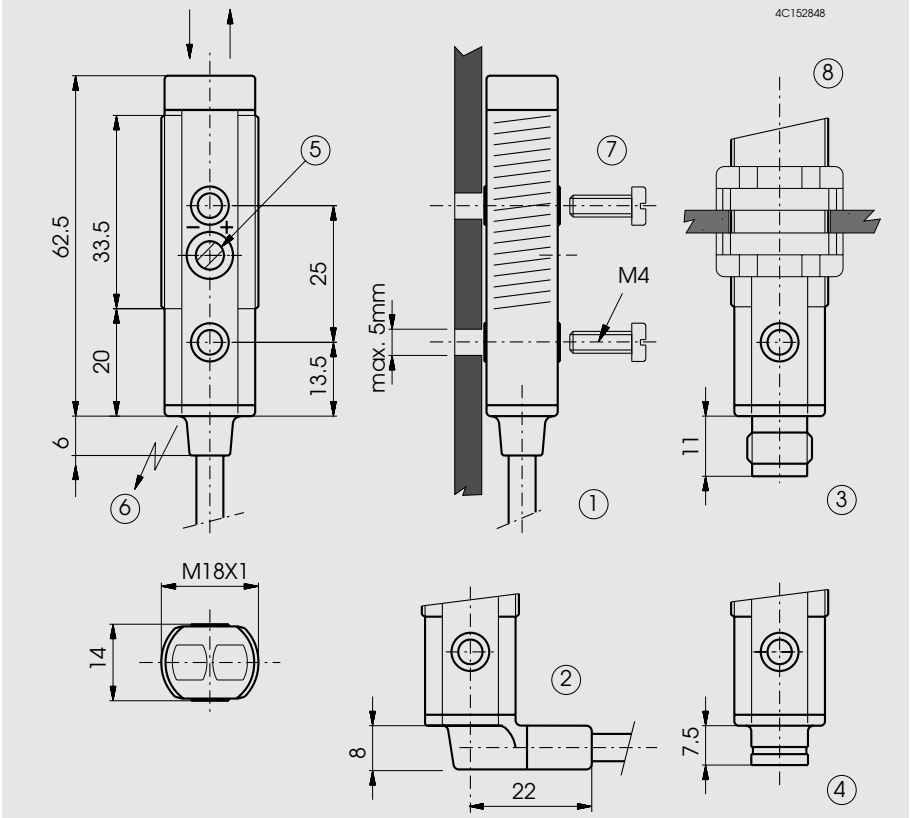


Allowable supply voltage/ Ambient temperature

Allowable supply voltage as a function of ambient temperature

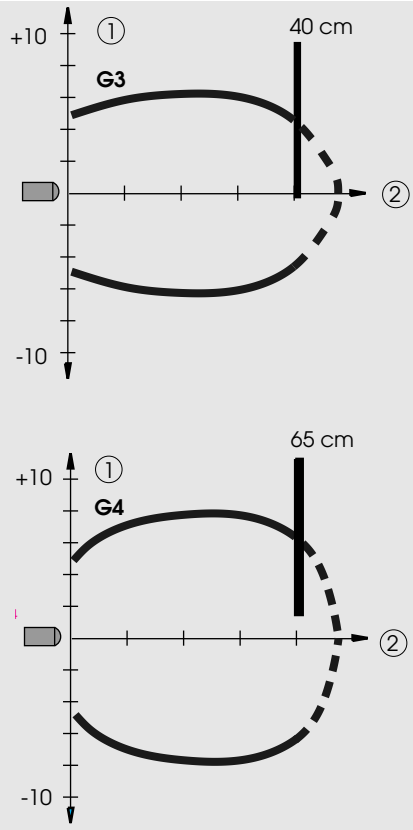
The specified operating temperature is only usable if the supply voltage is reduced at higher temperatures (☛ Diagram "Allowable supply voltage/Ambient temperature").

Dimensions (62,5 mm, M18 x 1)



① Cable connection (straight)
② Cable connection (angled)
③ Connector M12
④ Connector Torson
⑤ Range adjustment
⑥ Function indicator
⑦ Surface mounting
⑧ Bore mounting

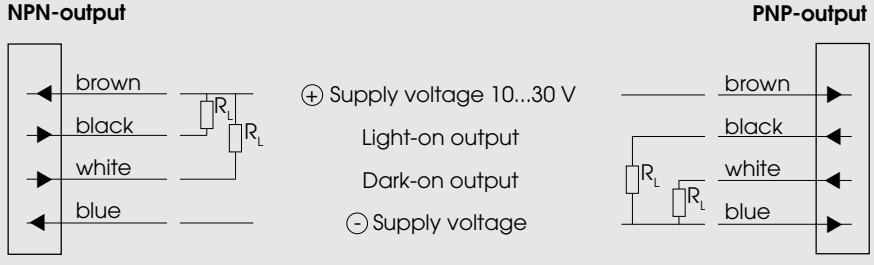
Optical diagrams



Typical beam diameter
(with Kodak card white, 10 x 10 cm)

① Diameter in (cm)
② Range in (cm)

Wiring diagram

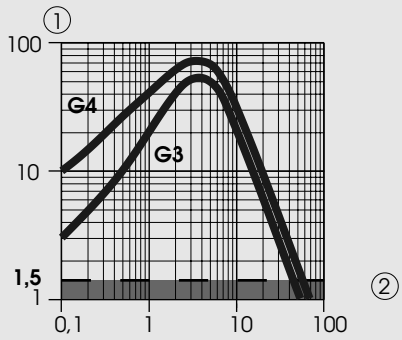


Connector M12 | Connector Torson

Connection for M12 /Torson	wire color
1	brown
2	white
3	blue
4	black

Light-on output:
Output energized when object is present.

Dark-on output:
Output energized when no object is present.



Typical excess gain curve
(with Kodak card white, 10 x 10 cm)

① Gain factor
② Range in (cm)

JAXXEN incorporated
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Diffuse-reflective sensors, range 10/40 cm, right angle optics, M18 housing

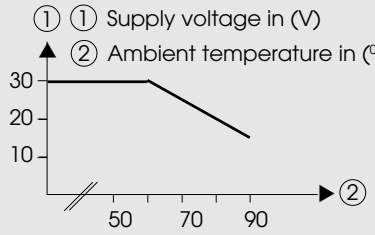
- **Combined surface and bore mounting**
- Light reserve warning indicator
- Dual transistor outputs, **NPN or PNP**
- **1000 Hz switching frequency**
- Short-circuit protection, reverse polarity protection, **and** power-up output suppression
- **Connections: Straight cable, 2 meter**
  Connector, M12
  Right angle cable, 2 meter (option)
  Connector, Torson (option)
- **EMC tested according to IEC 801 and EN50081-1/EN 50082-2**

CE

Product designation [1]	**OMT 1NA 100 W1**	**OMT 1NA 400 W1**	**OMT 1PA 100 W1**	**OMT 1PA 400 W1**	**OMT 1NA 100 W3**	**OMT 1NA 400 W3**	**OMT 1PA 100 W3**	**OMT 1PA 400 W3**
Output	NPN (light-/dark-on)		PNP (light-/dark-on)		NPN (light-/dark-on)		PNP (light-/dark-on)	
Connection	Cable 2 m	Connector M12	Cable 2 m	Connector M12	Cable 2 m	Connector M12	Cable 2 m	Connector M12
Range adjustment	Yes							
Optical data [2]								
Max. range	10 cm (Kodak card white, 10 x 10 cm)				40 cm (Kodak card white, 10 x 10 cm)			
Emitter	Infrared-LED, 880 nm, pulsed							
Electrical data [2]								
Supply voltage U_S	10...30 VDC							
Allowable ripple	+/- 10% of U_S							
Current consumption (without load)	< 15 mA							
Max. load current I_L	200 mA							
Residual voltage	< 1,6 V							
Max. switching frequency	1000 Hz							
Environmental data								
Sealing	IP 67							
Temperature T_A (operating and storage)	-20...+90 ^{0}C (☛ Tech. explanation)							
Weight	ca. 95 g	ca. 25 g	ca. 95 g	ca. 25 g	ca. 95 g	ca. 25 g	ca. 95 g	ca. 25 g

1) For product designation of sensors with options see designation code on page 47.
2) When not otherwise noted, all technical data at T_A = 25 ^{0}C and U_S = 24 V.

Technical explanation



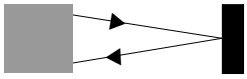
Allowable supply voltage/ Ambient temperature

Allowable supply voltage as a function of ambient temperature

The specified operating temperature is only usable if the supply voltage is reduced at higher temperatures (☛ Diagram "Allowable supply voltage/Ambient temperature").

10...30 VDC

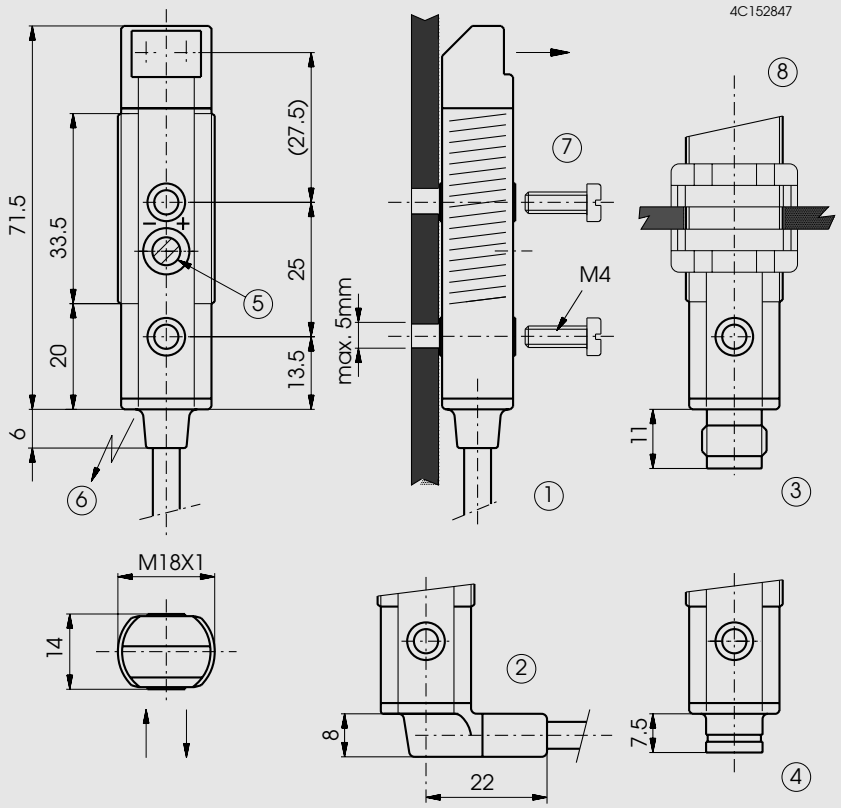
NPN / PNP
light-on and
dark-on output



10/40 cm

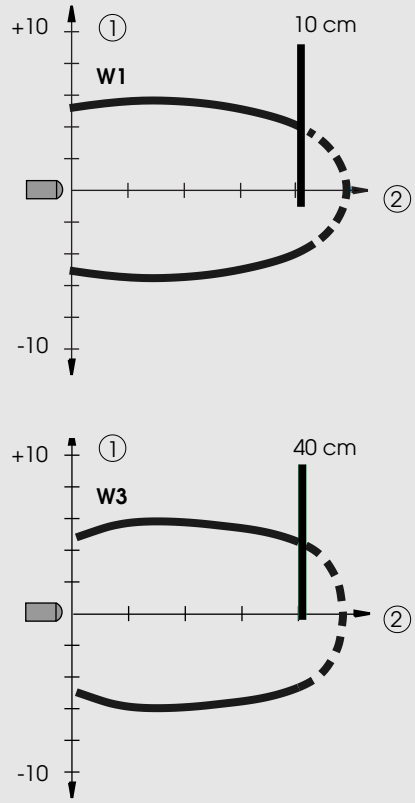
OMT
right angle optics

Dimensions (71,5 mm, M18 x 1)



① Cable connection (straight)
② Cable connection (angled)
③ Connector M12
④ Connector Torson
⑤ Range adjustment
⑥ Function indicator
⑦ Surface mounting
⑧ Bore mounting

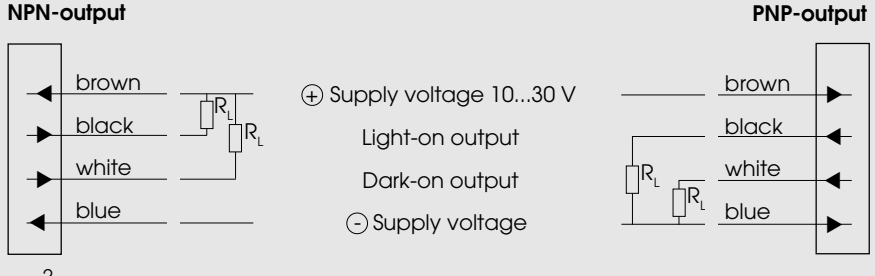
Optical diagrams

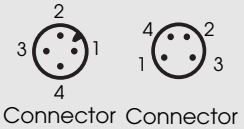


Typical beam diameter
(with Kodak card white, 10 x 10 cm)

① Diameter in (cm)
② Range in (cm)

Wiring diagram

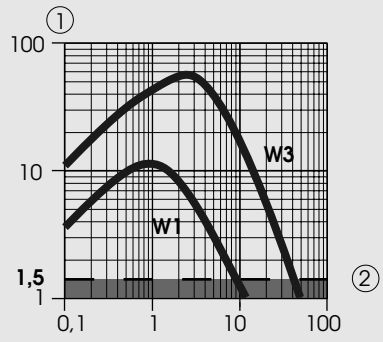




Connection for M12 /Torson	wire color
1	brown
2	white
3	blue
4	black

Light-on output:
Output energized when object is present.

Dark-on output:
Output energized when no object is present.



Typical excess gain curve
(with Kodak card white, 10 x 10 cm)

① Gain factor
② Range in (cm)