

# 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



Product designation <sup>1)</sup>	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							
<b>Optical data <sup>2)</sup></b>								
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							
<b>Electrical data <sup>2)</sup></b>								
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							
<b>Environmental data</b>								
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

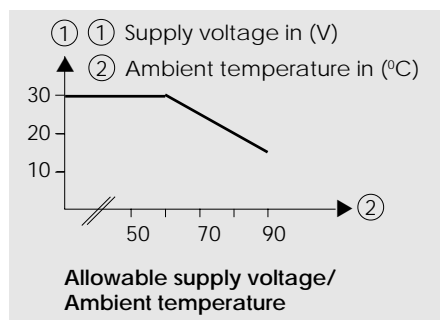
1) For product designation of sensors with options see designation code on page 47.

2) When not otherwise noted, all technical data at  $T_A = 25\text{ °C}$  and  $U_s = 24\text{ V}$ .

### 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

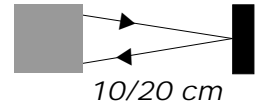


### Allowable supply voltage as a function of ambient temperature

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

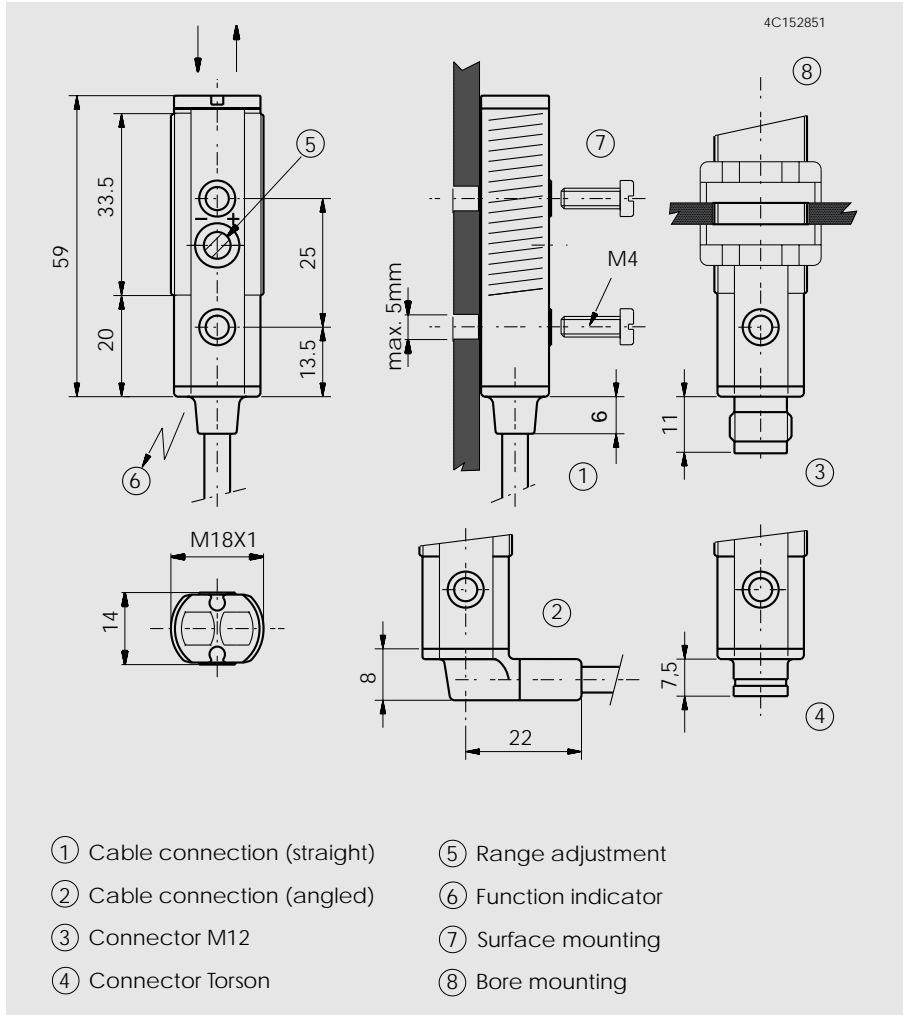
10...30 VDC

NPN / PNP  
light-on and  
dark-on output

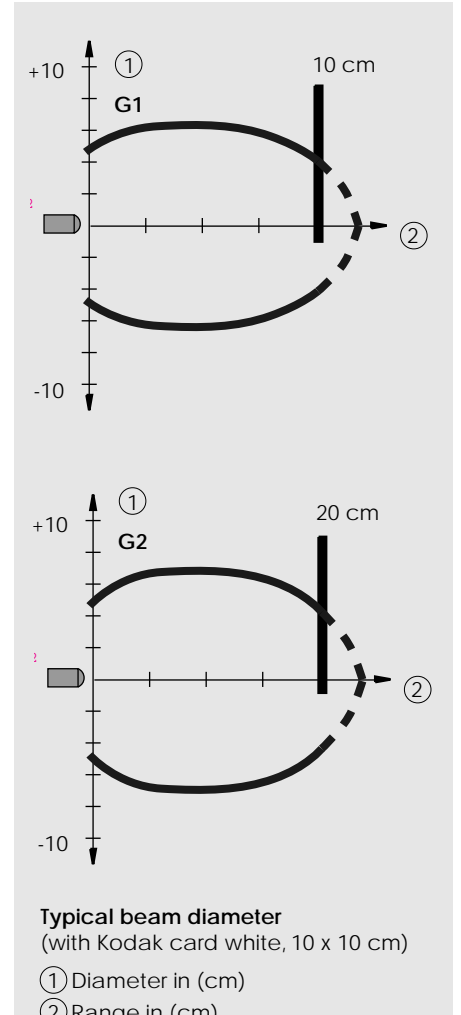


# OMT straight optics

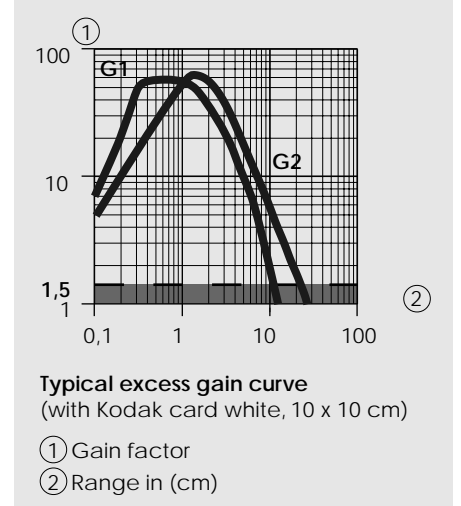
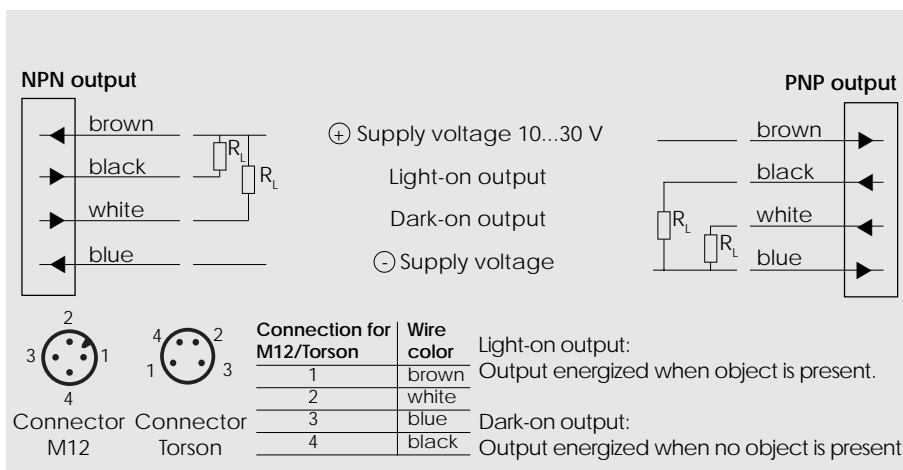
## Dimensions (59 mm, M18 x 1)



## Optical diagrams



## Wiring diagram



# 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



## Product designation <sup>1)</sup>

Output

Connection

Range adjustment

## Optical data <sup>2)</sup>

Max. range

Emitter

## Electrical data <sup>2)</sup>

Supply voltage  $U_s$

Allowable ripple

Current consumption (without load)

Max. load current  $I_L$

Residual voltage

Max. switching frequency

## Environmental data

Sealing

Temperature  $T_A$   
(operating and storage)

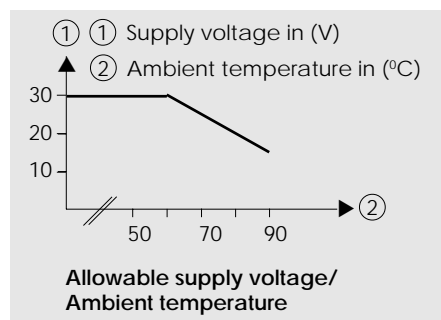
Weight

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
NPN (light-/dark-on)		PNP (light-/dark-on)		NPN (light-/dark-on)		PNP (light-/dark-on)	
Cable 2 m	Connector M12	Cable 2 m	Connector M12	Cable 2 m	Connector M12	Cable 2 m	Connector M12
Yes							
40 cm (Kodak card white, 10 x 10 cm)				65 cm (Kodak card white, 10 x 10 cm)			
Infrared-LED, 880 nm, pulsed							
10...30 VDC							
+/- 10% of $U_s$							
< 15 mA							
200 mA							
< 1,6 V							
1000 Hz							
IP 67							
-20...+90 °C (☛ Tech. explanation)							
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  $T_A = 25\text{ °C}$  and  $U_s = 24\text{ V}$ .

## Technical explanation

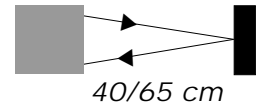


### Allowable supply voltage as a function of ambient temperature

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

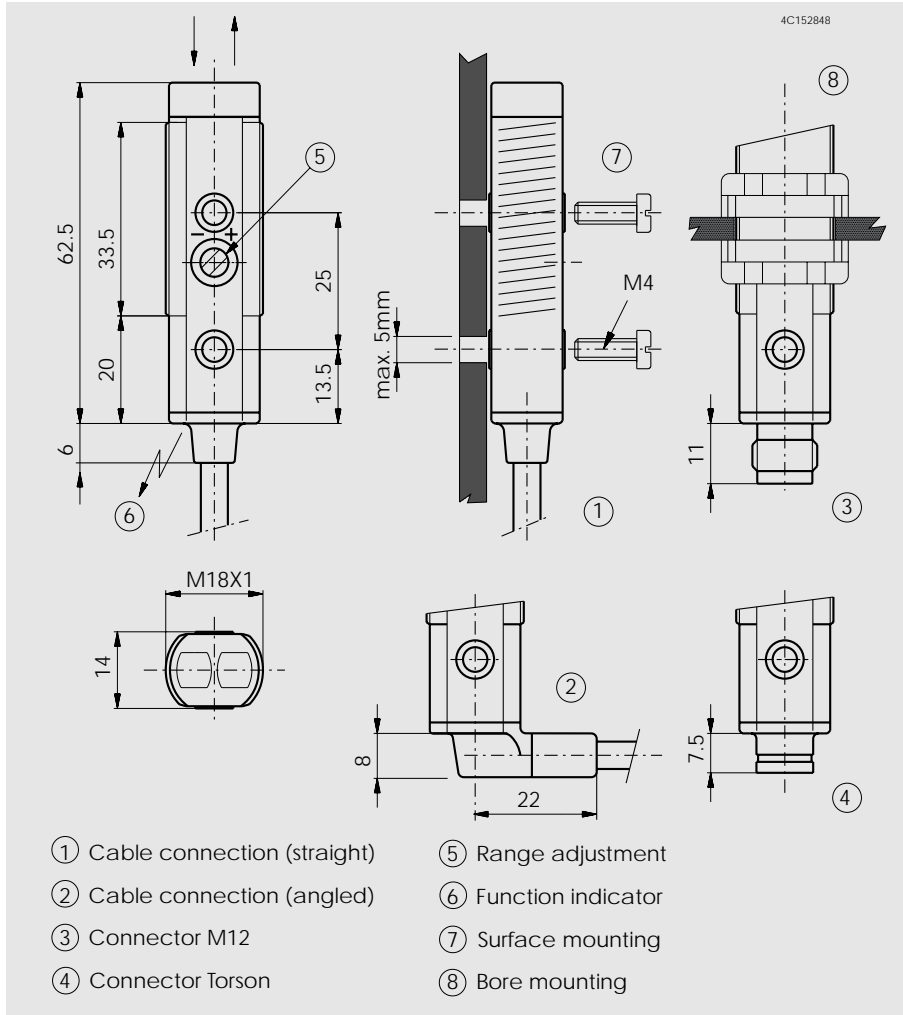
10...30 VDC

NPN / PNP  
light-on and  
dark-on output

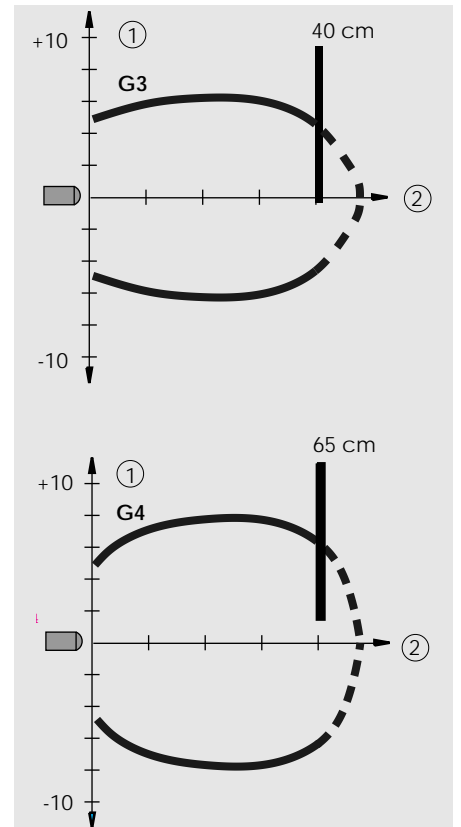


# OMT straight optics

## Dimensions (62,5 mm, M18 x 1)



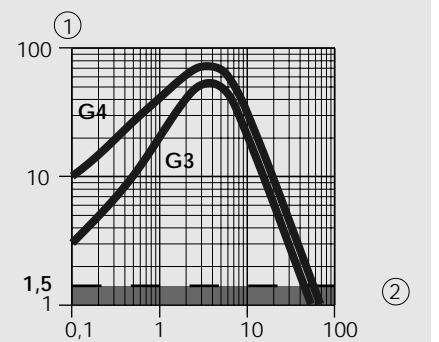
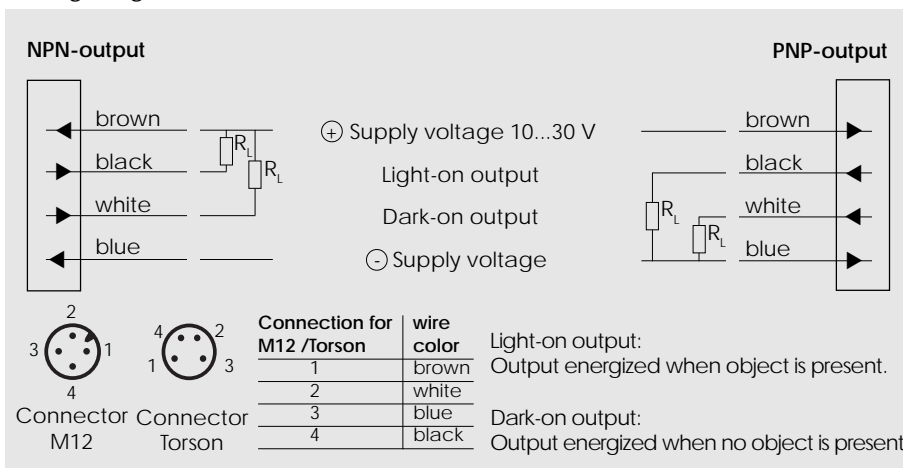
## Optical diagrams



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

- ① Diameter in (cm)
- ② Range in (cm)

## Wiring diagram



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

- ① Gain factor
- ② Range in (cm)

# 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



## Product designation <sup>1)</sup>

Output

Connection

Range adjustment

## Optical data <sup>2)</sup>

Max. range

Emitter

## Electrical data <sup>2)</sup>

Supply voltage  $U_s$

Allowable ripple

Current consumption (without load)

Max. load current  $I_L$

Residual voltage

Max. switching frequency

## Environmental data

Sealing

Temperature  $T_A$   
(operating and storage)

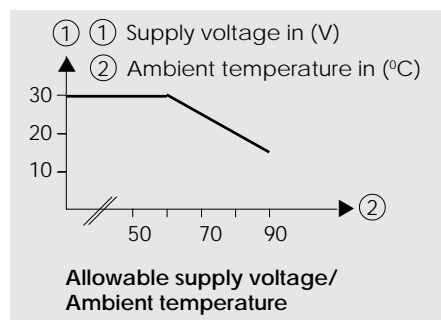
Weight

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
NPN (light-/dark-on)		PNP (light-/dark-on)		NPN (light-/dark-on)		PNP (light-/dark-on)	
Cable 2 m	Connector M12	Cable 2 m	Connector M12	Cable 2 m	Connector M12	Cable 2 m	Connector M12
Yes							
10 cm (Kodak card white, 10 x 10 cm)				40 cm (Kodak card white, 10 x 10 cm)			
Infrared-LED, 880 nm, pulsed							
10...30 VDC							
+/- 10% of $U_s$							
< 15 mA							
200 mA							
< 1,6 V							
1000 Hz							
IP 67							
-20...+90 °C (☛ Tech. explanation)							
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  $T_A = 25\text{ °C}$  and  $U_s = 24\text{ V}$ .

## Technical explanation

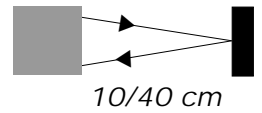


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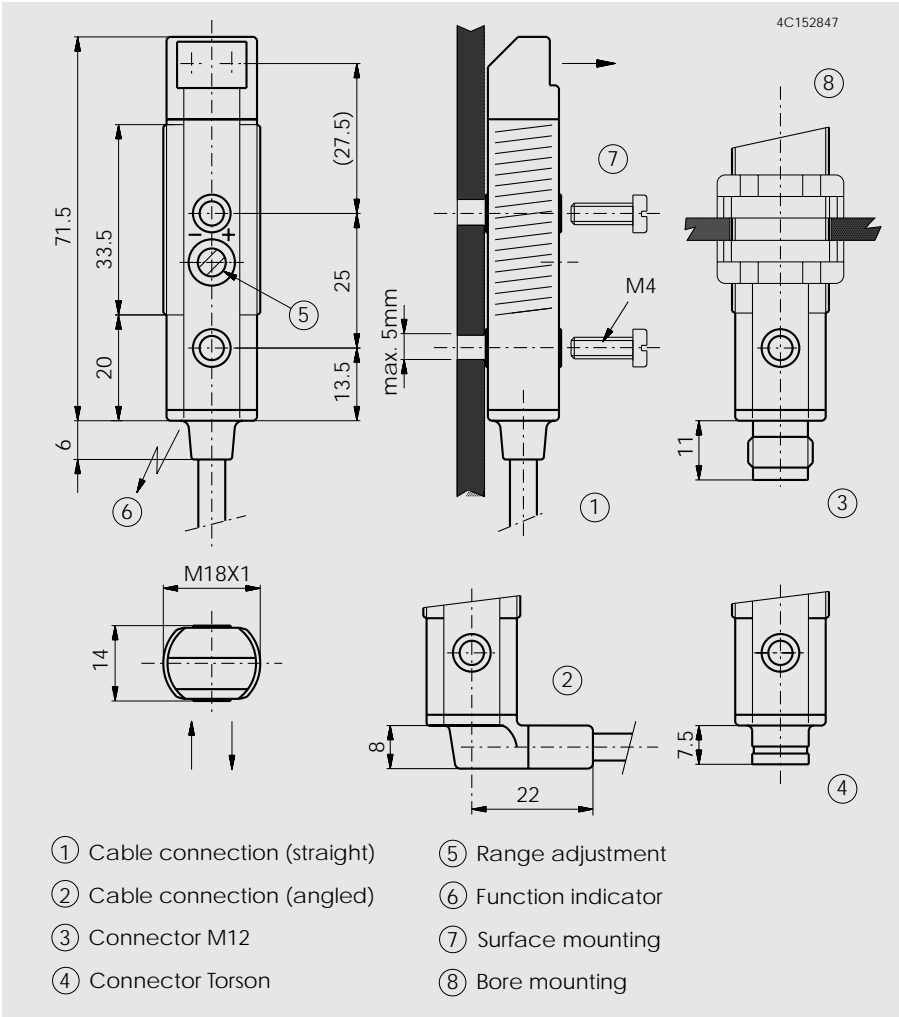
10...30 VDC

NPN / PNP  
light-on and  
dark-on output

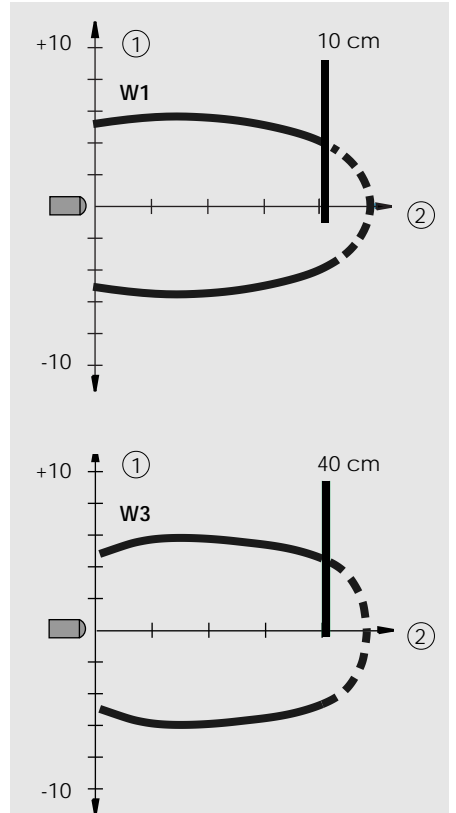


## OMT right angle optics

### Dimensions (71,5 mm, M18 x 1)



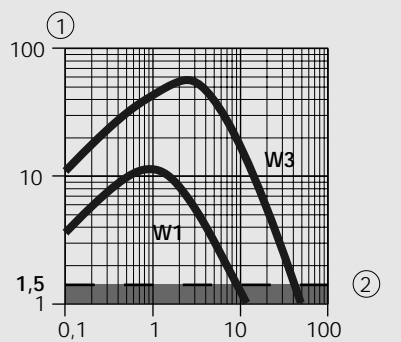
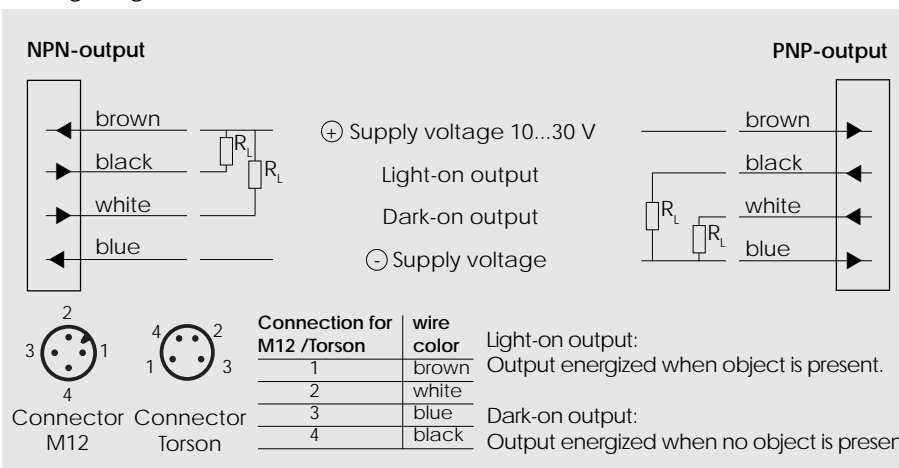
### Optical diagrams



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

- ① Diameter in (cm)
- ② Range in (cm)

### Wiring diagram



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

- ① Gain factor
- ② Range in (cm)