

# Diffuse-reflective sensors, range 5/10 cm, with background suppression, in a metal housing



- Robust die-cast zinc housing
- Background suppression
- Light reserve warning indicator
- Dual transistor outputs, NPN or PNP
- Short-circuit protection, reverse polarity protection, and power-up output suppression
- 1000 Hz switching frequency
- Connections: Cable, 2 meter  
Connector, M8  
Connector, Torson, on 20 cm long cable (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

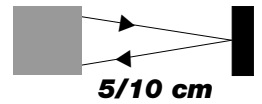
ORT 2NA 100 I1	ORT 2NA 500 I1	ORT 2PA 100 I1	ORT 2PA 500 I1	ORT 2NA 100 I2	ORT 2NA 500 I2	ORT 2PA 100 I2	ORT 2PA 500 I2
NPN (light-/dark-on)		PNP (light-/dark-on)		NPN (light-/dark-on)		PNP (light-/dark-on)	
Cable 2 m	Connector M8	Cable 2 m	Connector M8	Cable 2 m	Connector M8	Cable 2 m	Connector M8
Yes							
5 cm (Kodak card white, 10 x 10 cm)				10 cm (Kodak card white, 10 x 10 cm)			
Infrared-LED, 880 nm, pulsed							
10...45 VDC							
+/- 10% of $U_s$							
< 20 mA							
250 mA							
< 1,6 V							
1000 Hz							
IP 67							
-20...+60 °C							
ca. 150 g	ca. 85 g	ca. 150 g	ca. 85 g	ca. 150 g	ca. 85 g	ca. 150 g	ca. 85 g

1) For product designation of sensors with options see designation code on page 67.

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

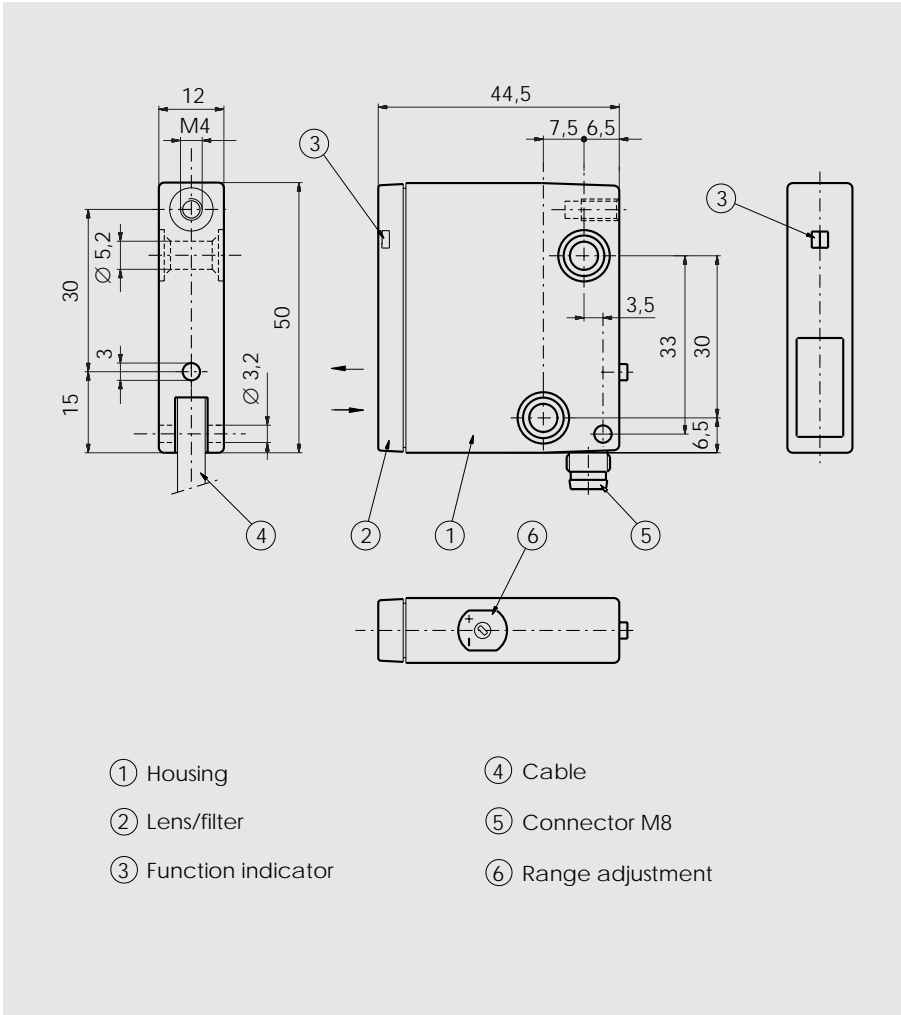
10...45 VDC

NPN / PNP  
light-on and  
dark-on output



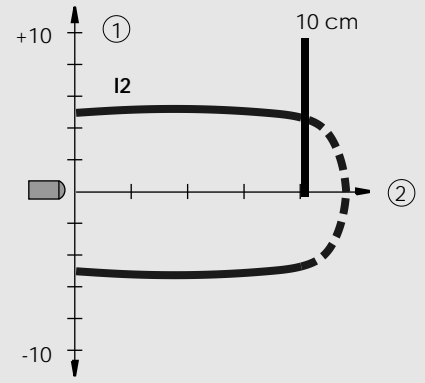
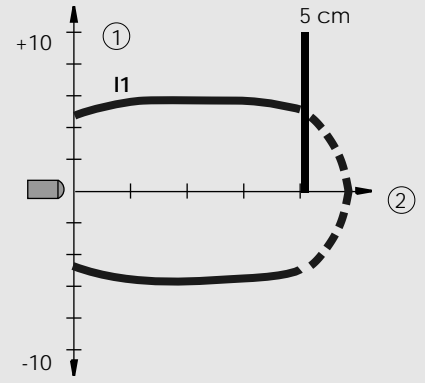
**ORT**

**Dimensions (50 mm x 44,5 mm x 12 mm)**



- ① Housing
- ② Lens/filter
- ③ Function indicator
- ④ Cable
- ⑤ Connector M8
- ⑥ Range adjustment

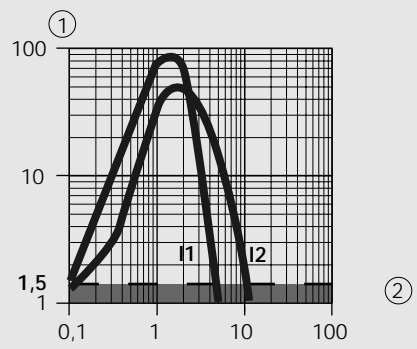
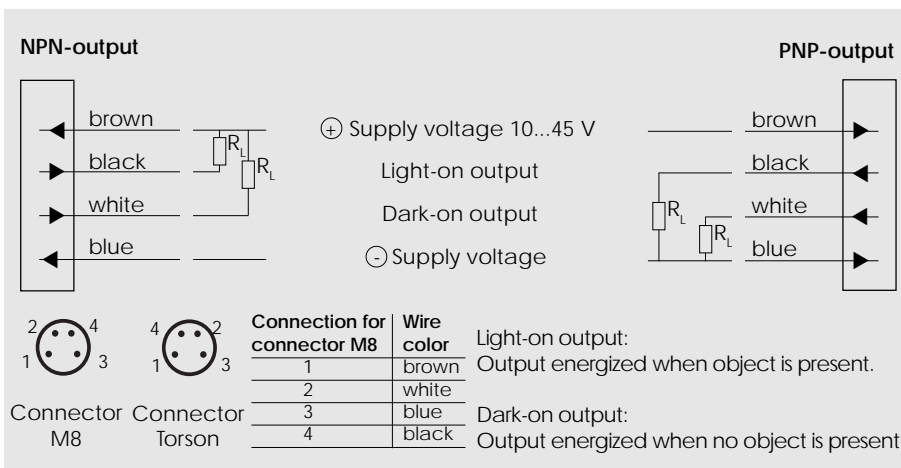
**Optical diagrams**



**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 20/40 cm, in a metal housing



- Robust die-cast zinc housing
- Light reserve warning indicator
- Dual transistor outputs, NPN or PNP
- Short-circuit protection, reverse polarity protection, and power-up output suppression
- 1000 Hz switching frequency
- Connections: Cable, 2 meter  
Connector, M8  
Connector, Torson, on 20 cm long cable (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

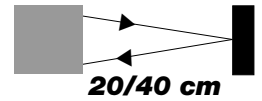
ORT 2NA 100 I3	ORT 2NA 500 I3	ORT 2PA 100 I3	ORT 2PA 500 I3	ORT 2NA 100 I4	ORT 2NA 500 I4	ORT 2PA 100 I4	ORT 2PA 500 I4
NPN (light-/dark-on)		PNP (light-/dark-on)		NPN (light-/dark-on)		PNP (light-/dark-on)	
Cable 2 m	Connector M8	Cable 2 m	Connector M8	Cable 2 m	Connector M8	Cable 2 m	Connector M8
Yes							
20 cm (Kodak card white, 10 x 10 cm)				40 cm (Kodak card white, 10 x 10 cm)			
Infrared-LED, 880 nm, pulsed							
10...45 VDC							
+/- 10% of $U_s$							
< 20 mA							
250 mA							
< 1,6 V							
1000 Hz							
IP 67							
-20...+60 °C							
ca. 150 g	ca. 85 g	ca. 150 g	ca. 85 g	ca. 150 g	ca. 85 g	ca. 150 g	ca. 85 g

1) For product designation of sensors with options see designation code on page 67.

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

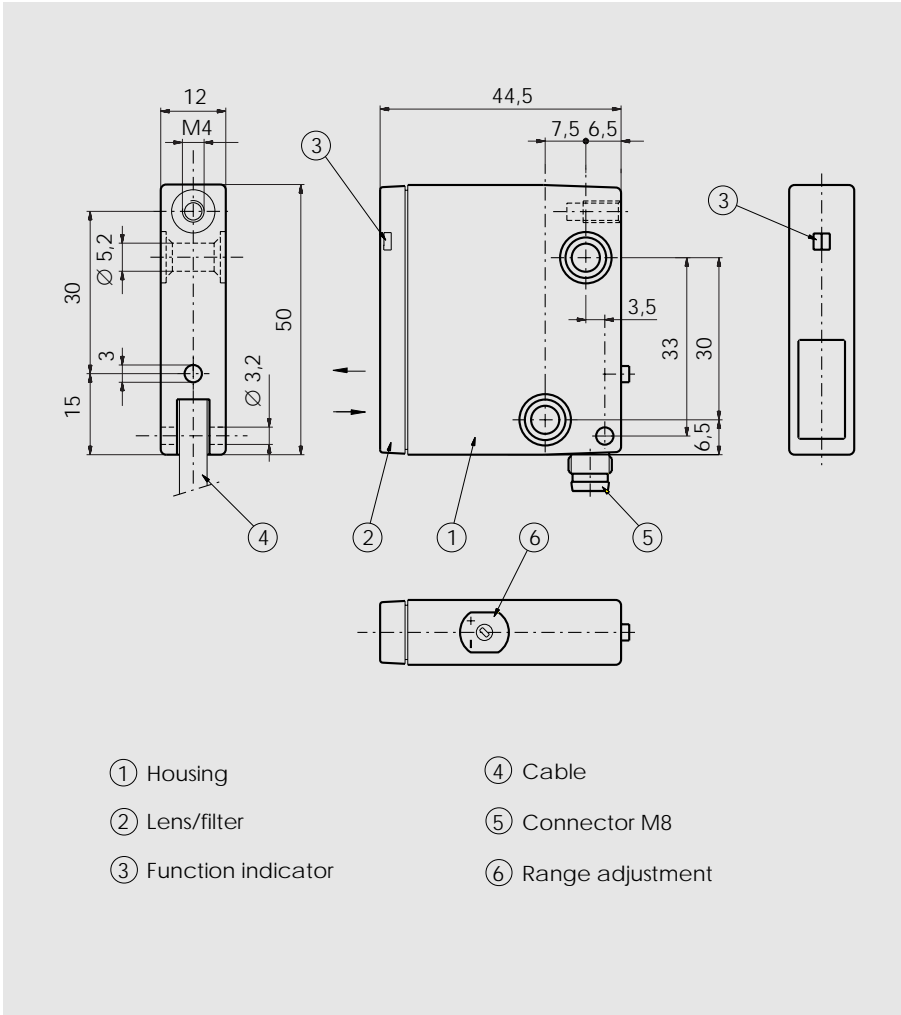
10...45 VDC

NPN / PNP  
light-on and  
dark-on output

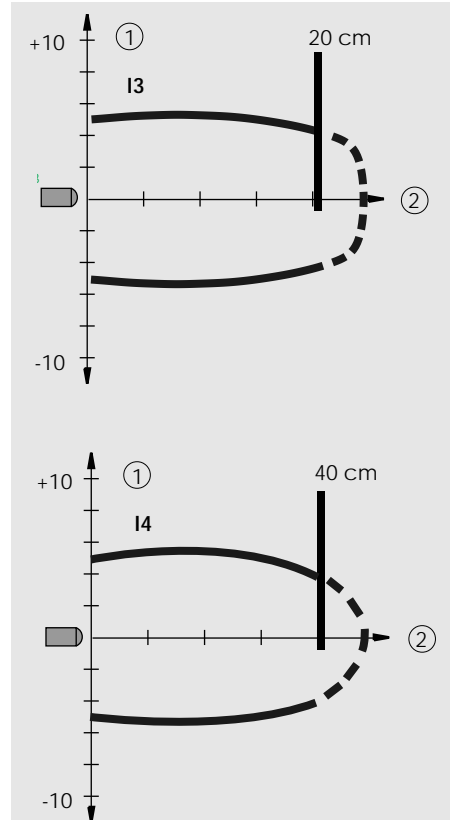


**ORT**

**Dimensions (50 mm x 44,5 mm x 12 mm)**



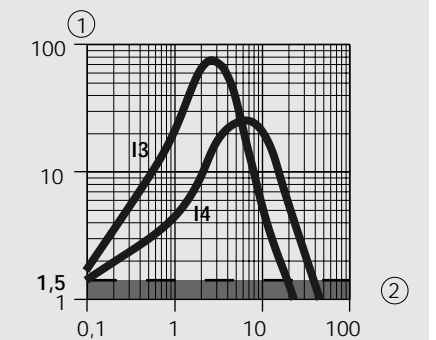
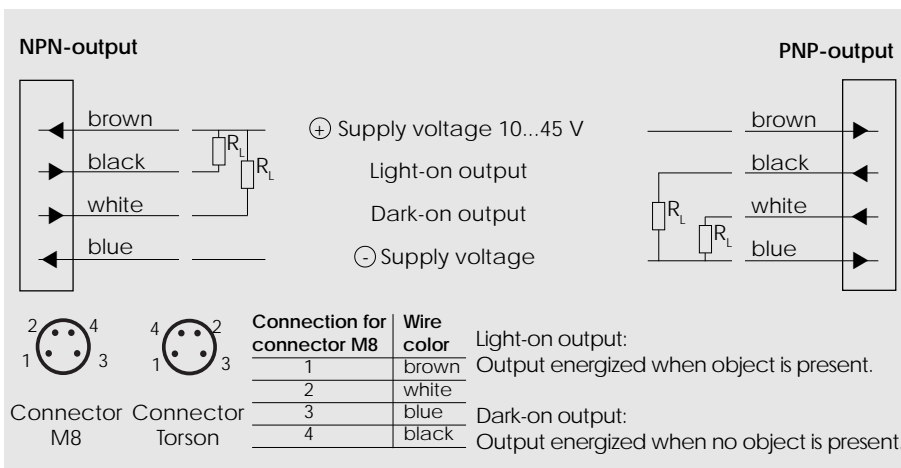
**Optical diagrams**



**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)