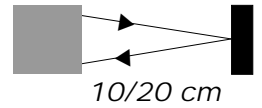


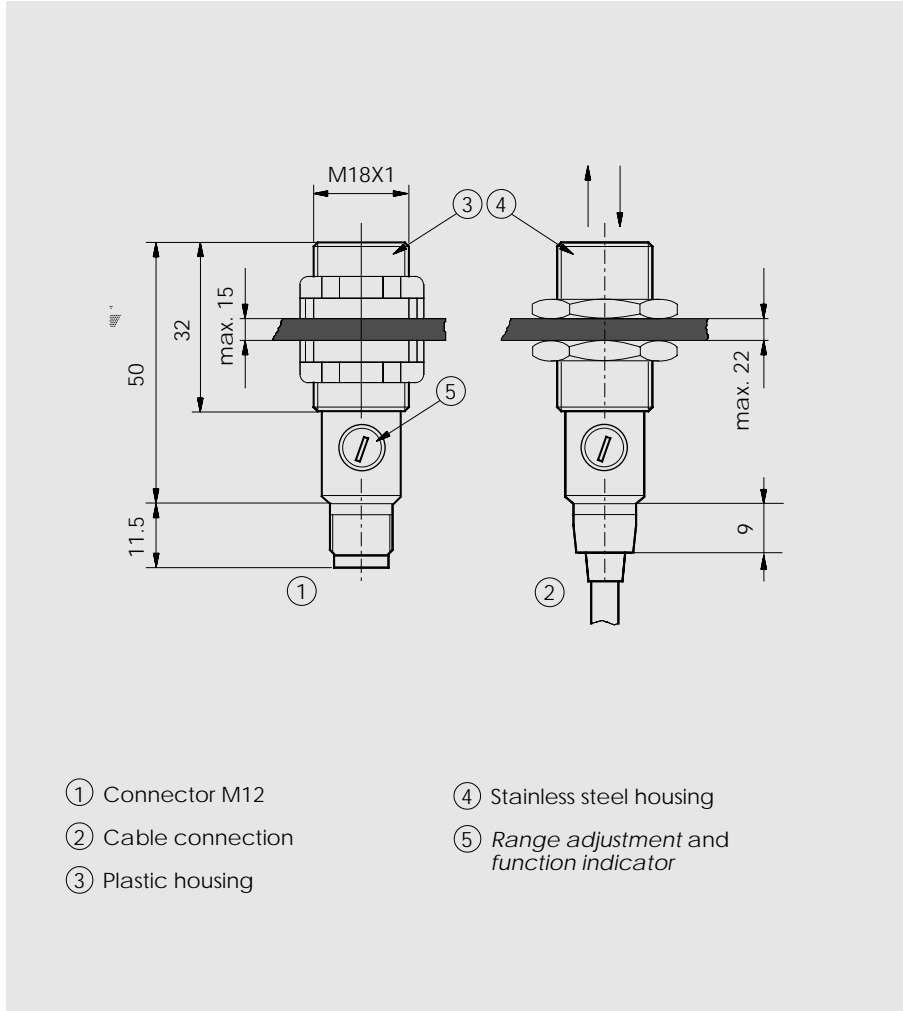
10...30 VDC

NPN / PNP
light-on and
dark-on output

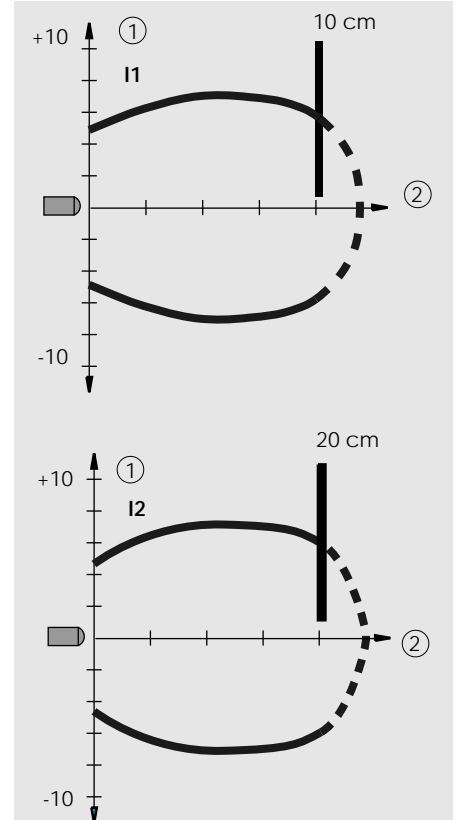


M1T

Dimensions (50 mm, M18 x 1)



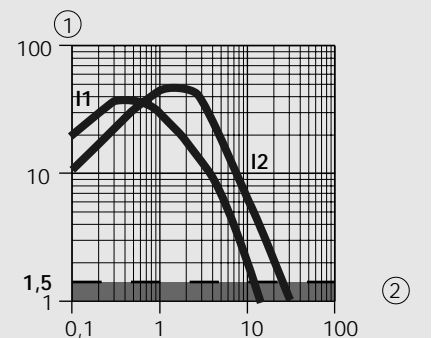
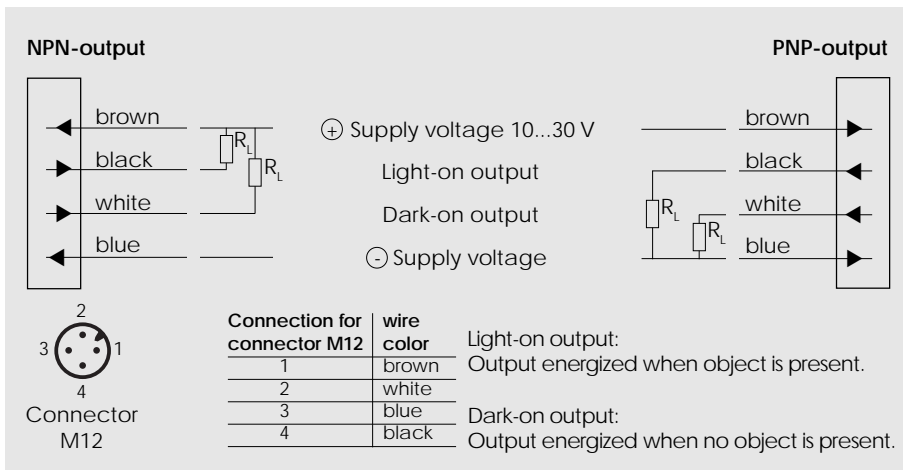
Optical diagrams



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

① Diameter in (cm)
② Range in (cm)

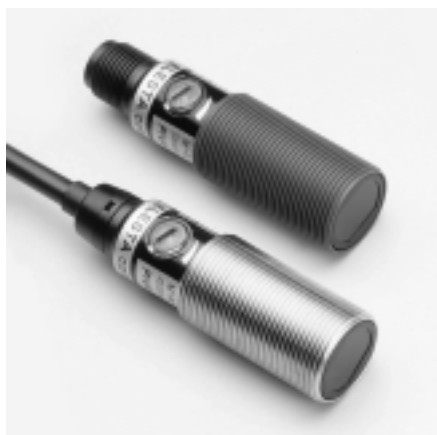
Wiring diagram



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

① Gain factor
② Range in (cm)

Diffuse-reflective sensors, range 40/55 cm, M18 housing



- Range adjustable
- 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
- EMC tested according to IEC 801 and EN50081-1/EN 50082-2



Product designation Plastic housing ¹⁾

Product designation Stainless steel ¹⁾

Output

Connection

Range adjustment

Optical data ²⁾

Max. range

Emitter

Electrical data ²⁾

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 Plastic/Stainless steel

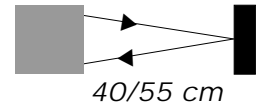
M1T 1NA 100 I3	M1T 1NA 400 I3	M1T 1PA 100 I3	M1T 1PA 400 I3	M1T 1NA 100 I4	M1T 1NA 400 I4	M1T 1PA 100 I4	M1T 1PA 400 I4
M1T 1NA 100 I3M	M1T 1NA 400 I3M	M1T 1PA 100 I3M	M1T 1PA 400 I3M	M1T 1NA 100 I4M	M1T 1NA 400 I4M	M1T 1PA 100 I4M	M1T 1PA 400 I4M
NPN (light-/dark-on)		PNP (light-/dark-on)		NPN (light-/dark-on)		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)				55 cm (Kodak card white, 10 x 10 cm)			
Infrared-LED, 880 nm, pulsed							
10...30 VDC							
+/- 10% of U_{sp}							
< 15 mA							
100 mA							
< 1,6 V							
1000 Hz							
IP 67							
-25...+65 °C							
Connector M12: ca. 15/25 g , Cable 2 m: ca. 100/110 g							

1) For product designation of sensors with options see designation code on page 23.

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

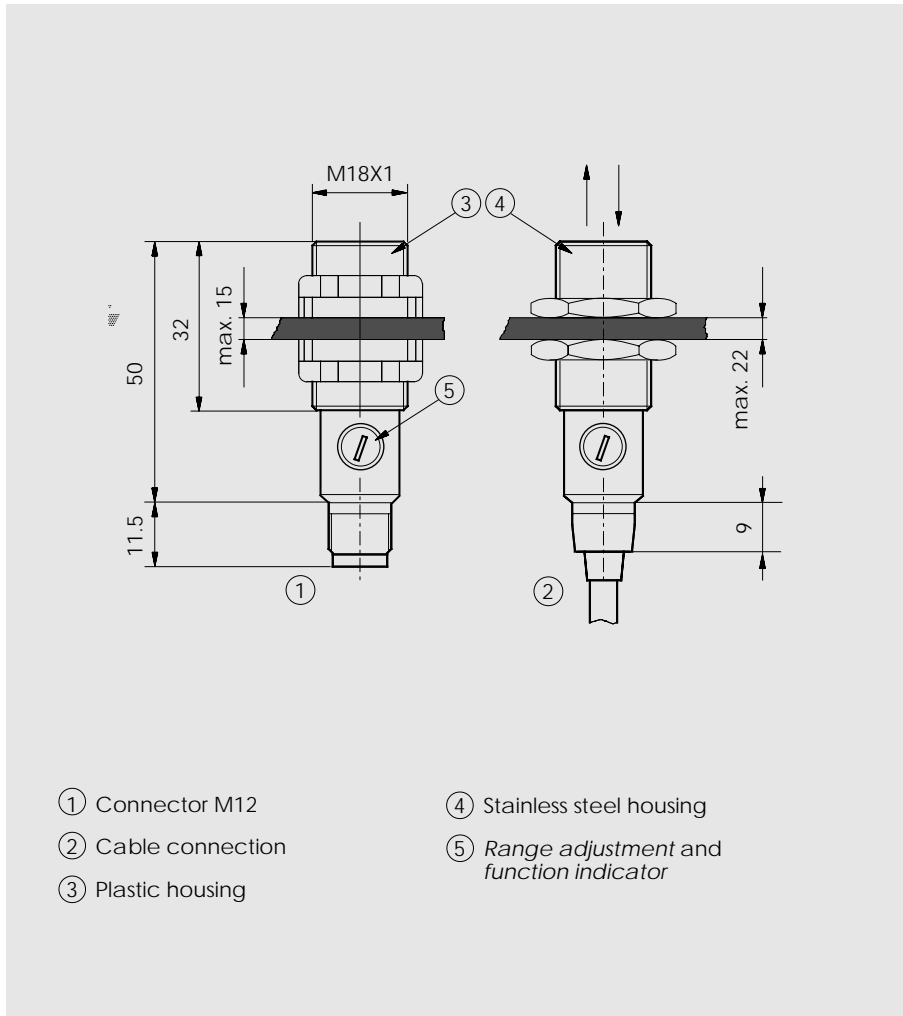
10...30 VDC

NPN / PNP
light-on and
dark-on output

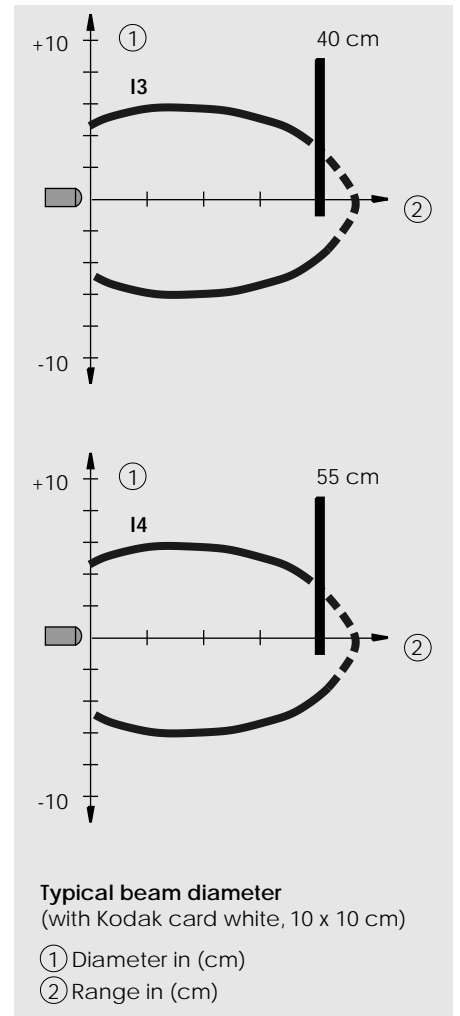


M1T

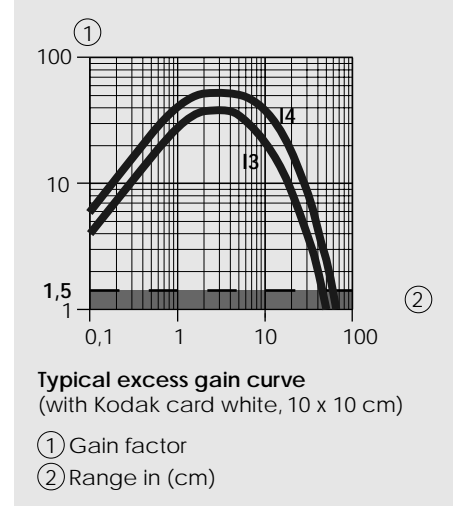
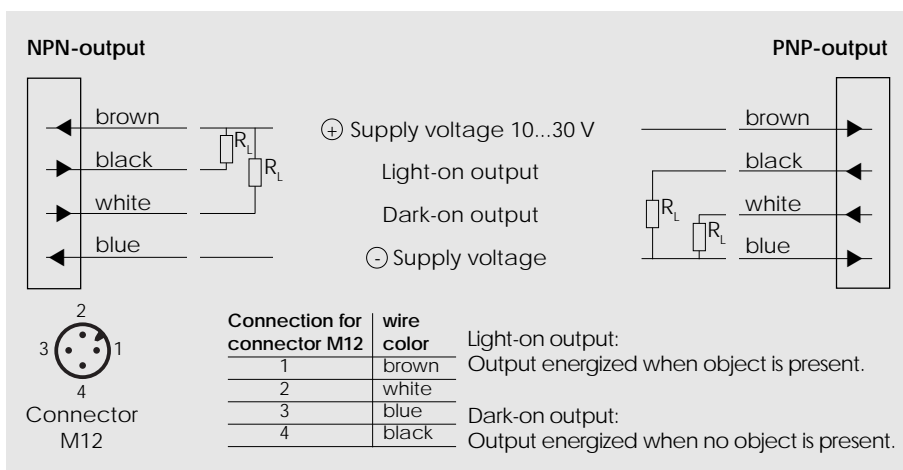
Dimensions (50 mm, M18 x 1)



Optical diagrams



Wiring diagram



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



- Range adjustable
- 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
- Extended stainless steel case for protection of angle optic head (option)
- Connections: Straight cable, 2 meter
Connector, M12
- EMC tested according to IEC 801 and EN50081-1/EN 50082-2



Product designation Plastic housing ¹⁾

Product designation Stainless steel ¹⁾

Output

Connection

Range adjustment

Optical data ²⁾

Max. range

Emitter

Electrical data ²⁾

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 Plastic/Stainless steel

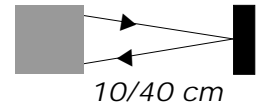
M1T 1NA 100 W1	M1T 1NA 400 W1	M1T 1PA 100 W1	M1T 1PA 400 W1	M1T 1NA 100 W3	M1T 1NA 400 W3	M1T 1PA 100 W3	M1T 1PA 400 W3
M1T 1NA 100 W1M	M1T 1NA 400 W1M	M1T 1PA 100 W1M	M1T 1PA 400 W1M	M1T 1NA 100 W3M	M1T 1NA 400 W3M	M1T 1PA 100 W3M	M1T 1PA 400 W3M
NPN (light-/dark-on)		PNP (light-/dark-on)		NPN (light-/dark-on)		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_{sp}							
< 15 mA							
100 mA							
< 1,6 V							
1000 Hz							
IP 67							
-25...+65 °C							
Connector M12: ca. 15/25 g , Cable 2 m: ca. 100/110 g							

1) For product designation of sensors with options see designation code on page 23.

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

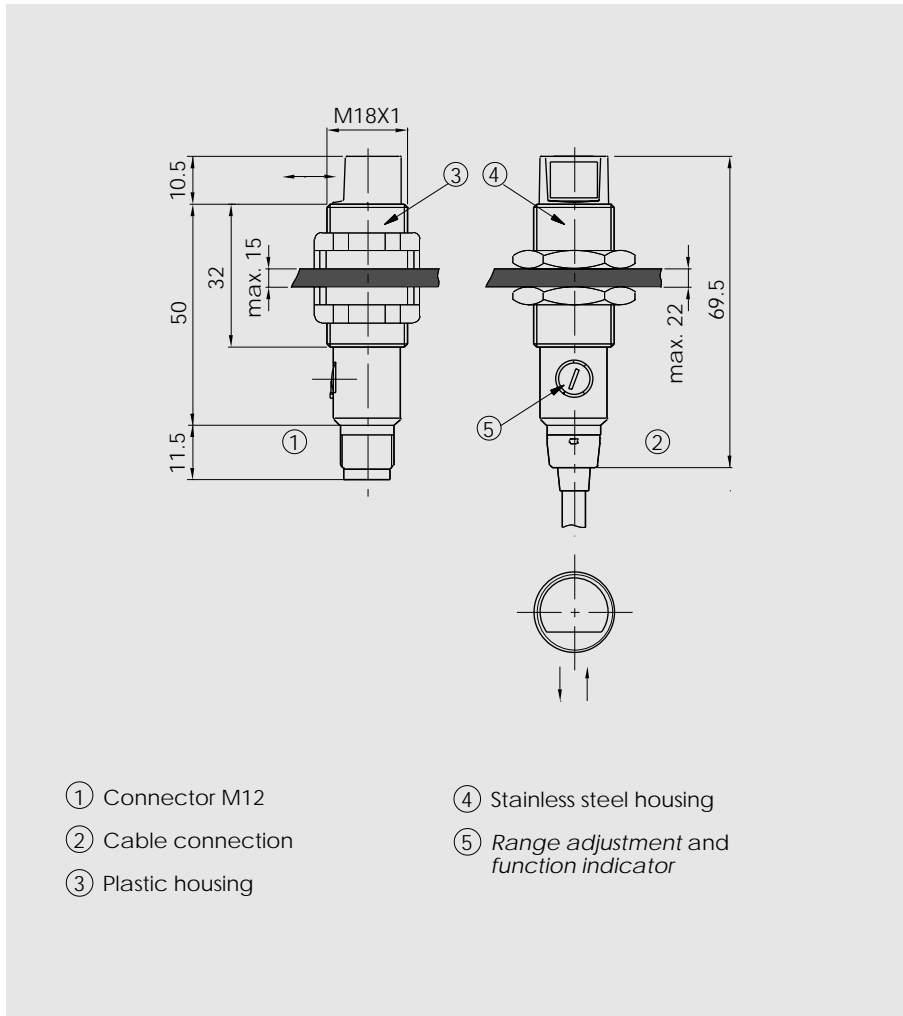
10...30 VDC

NPN / PNP
light-on and
dark-on output

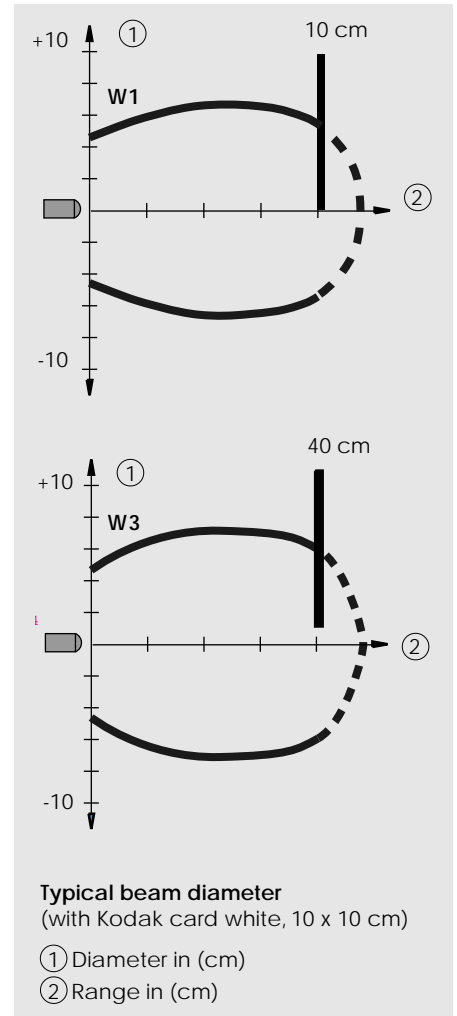


M1T right angle optics

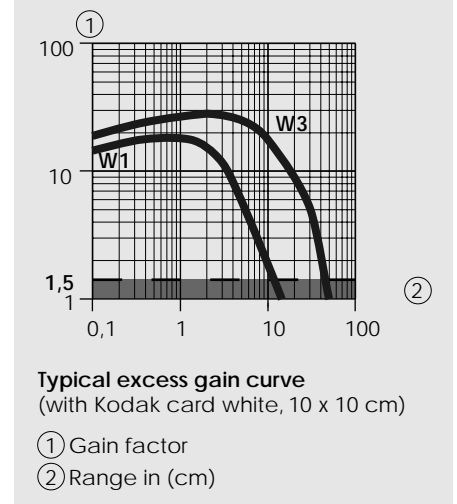
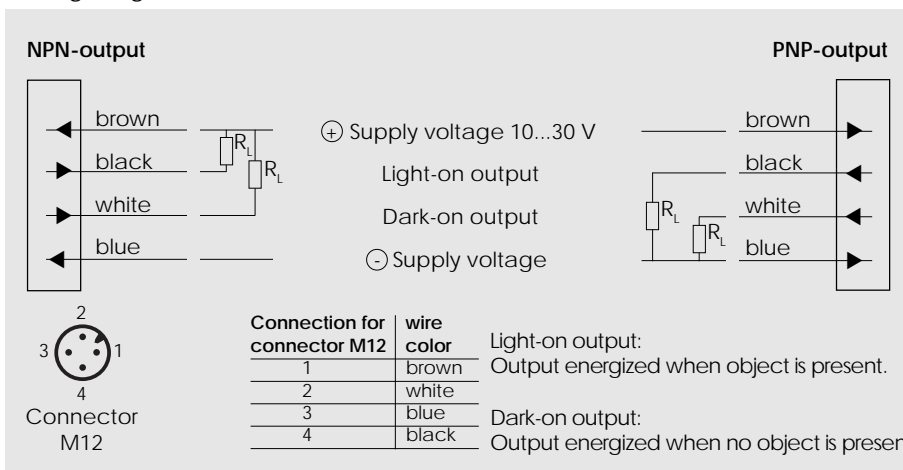
Dimensions (60.5 mm, M18 x 1)



Optical diagrams



Wiring diagram



Diffuse-reflective sensors, range 5/10 cm, with background suppression, M18 housing



- Background suppression with V-optics
- Enormous excess gain (light reserve)
- Enhanced black and white ratio
- 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
- EMC tested according to IEC 801 and EN50081-1/EN 50082-2



Product designation Plastic housing ¹⁾

Product designation Stainless steel ¹⁾

Output

Connection

Range adjustment

Optical data ²⁾

Max. range

Emitter

Electrical data ²⁾

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 Plastic/Stainless steel

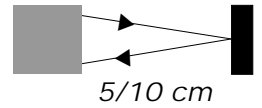
M1T 1NA 100 I5	M1T 1NA 400 I5	M1T 1PA 100 I5	M1T 1PA 400 I5	M1T 1NA 100 I6	M1T 1NA 400 I6	M1T 1PA 100 I6	M1T 1PA 400 I6
M1T 1NA 100 I5M	M1T 1NA 400 I5M	M1T 1PA 100 I5M	M1T 1PA 400 I5M	M1T 1NA 100 I6M	M1T 1NA 400 I6M	M1T 1PA 100 I6M	M1T 1PA 400 I6M
NPN (light-/dark-on)		PNP (light-/dark-on)		NPN (light-/dark-on)		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							
5 cm (Kodak card white, 10 x 10 cm)				10 cm (Kodak card white, 10 x 10 cm)			
Infrared-LED, 880 nm, pulsed							
10...30 VDC							
+/- 10% of U_{sp}							
< 15 mA							
100 mA							
< 1,6 V							
1000 Hz							
IP 67							
-25...+65 °C							
Connector M12: ca.15/25 g , Cable 2 m: ca. 100/110 g							

1) For product designation of sensors with options see designation code on page 23.

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

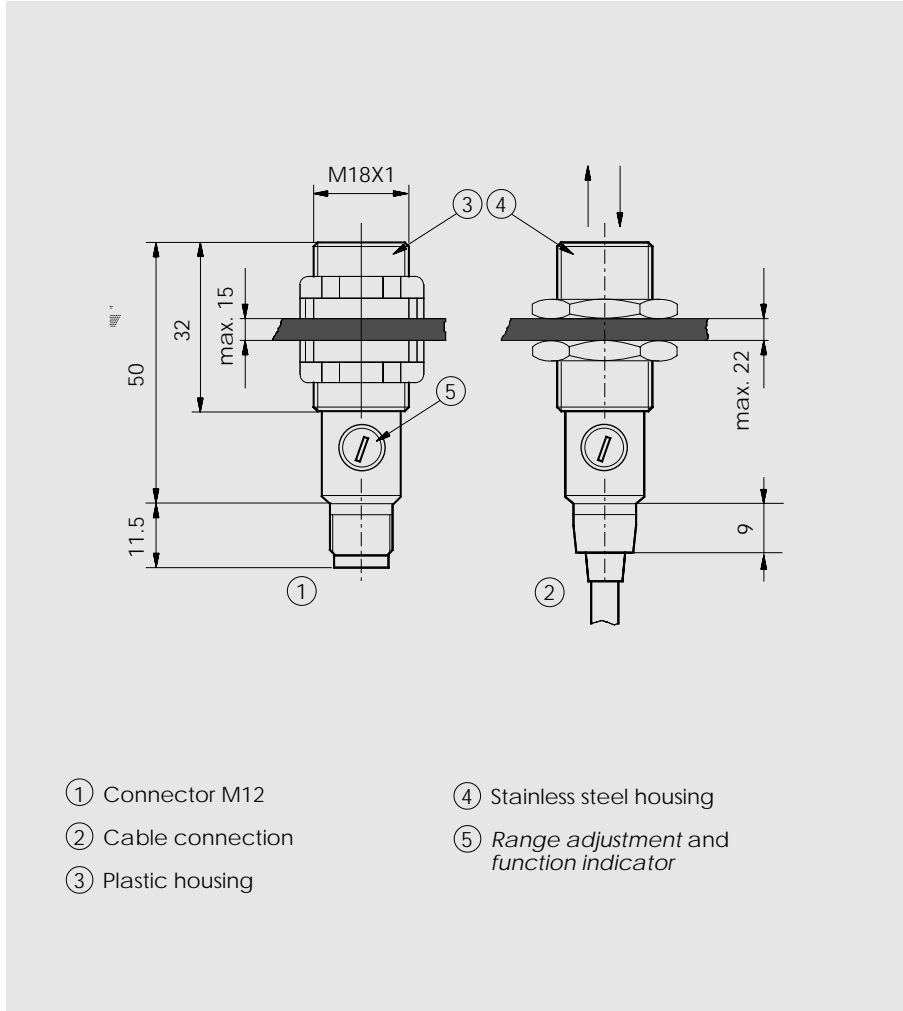
10...30 VDC

NPN / PNP
light-on and
dark-on output

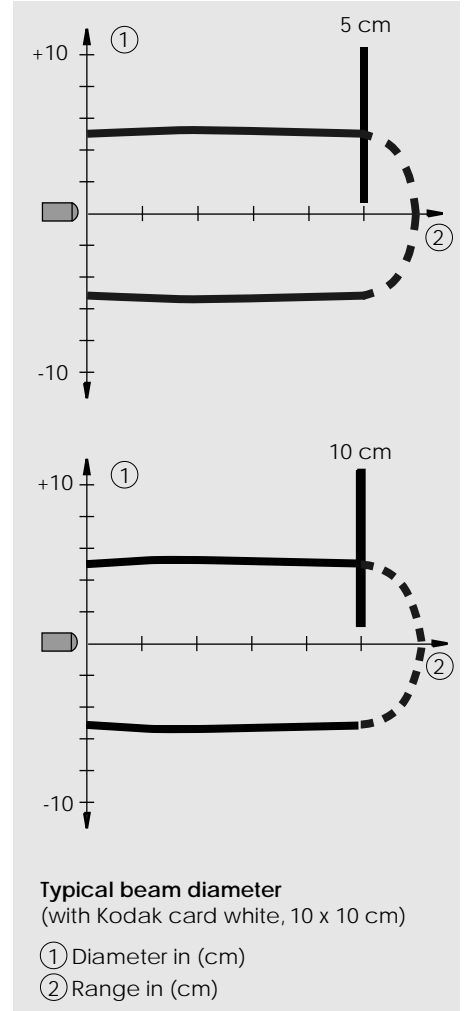


M1T

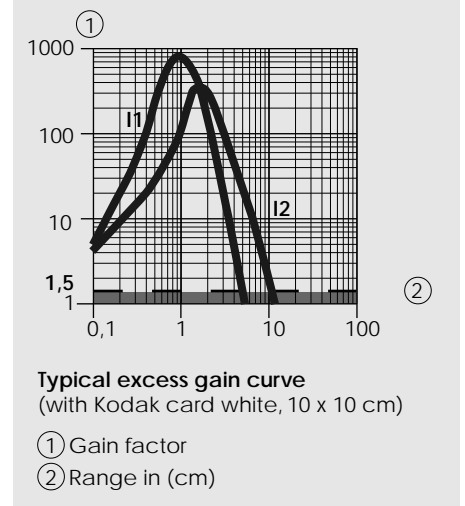
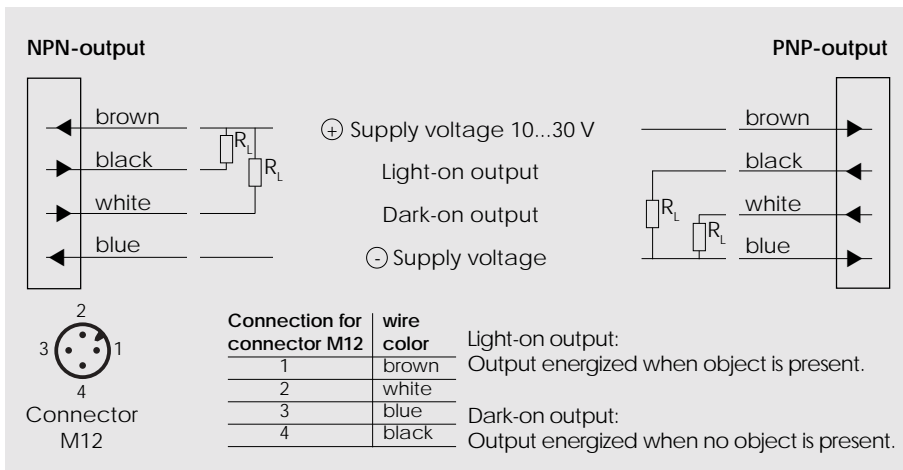
Dimensions (50 mm, M18 x 1)



Optical diagrams



Wiring diagram



Diffuse-reflective sensors with background rejection, M18 housing



- Range electronically adjustable between 5 and 10 cm
- Dual transistor outputs, PNP
- 1000 Hz switching frequency
- Short-circuit protection, reverse polarity protection, and power-up output suppression
- Connections: Straight cable, 2 meter
Connector, M12
- EMC tested according to IEC 801 and EN50081-1/EN 50082-2



Product designation Plastic housing ¹⁾

Product designation Stainless steel ¹⁾

Output

Connection

Range adjustment

Optical data ²⁾

range

Typical grey/white difference
(grey: 18%/white: 90%)

Emitter

Electrical data ²⁾

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 Plastic/Stainless steel

M1H 1PA 100 I1	M1H 1PA 400 I1
M1H 1PA 100 I1M	M1H 1PA 400 I1M
PNP (light- and dark-on)	
Cable 2 m	Connector M12
Ja	
5...10 cm (Kodak card white, 10 x 10 cm)	
at 10 cm range: ca. 2 cm at 5 cm range: ca. 0,2 cm	
Infrared-LED, 950 nm, pulsed	
10...30 VDC	
+/- 10% of U_{sp}	
< 35 mA	
100 mA	
<1,6 V	
1000 Hz	
IP 67	
-25...+65 °C	
Connector M12: ca.15/25 g , Cable 2 m: ca. 100/110 g	

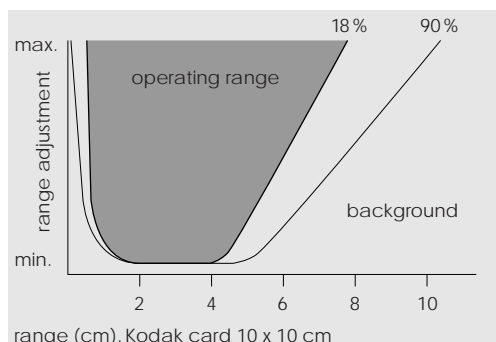
1) For product designation of sensors with options see designation code on page 23.

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

Technical explanation

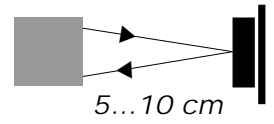
The 18%-line shows the switching-on distance for a gray object.

The 90%-line shows the switching-off distance for a white object.



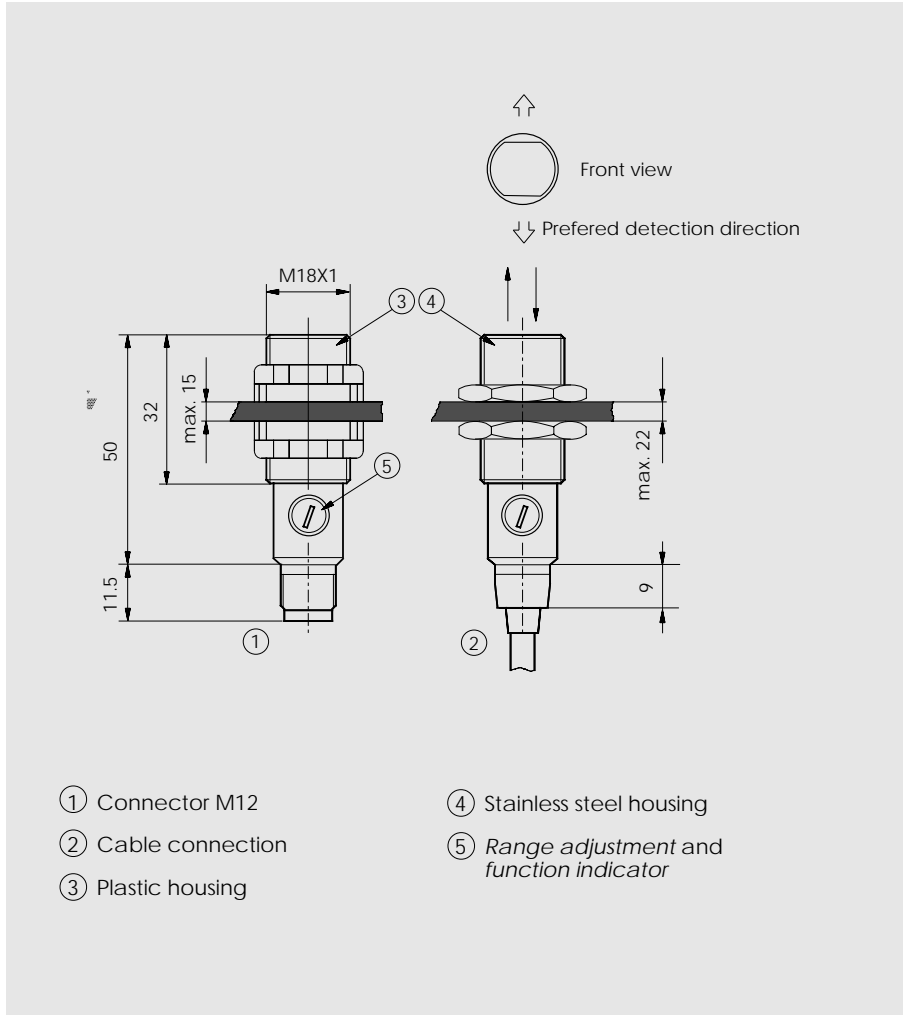
10...30 VDC

PNP
light-on and
dark-on output

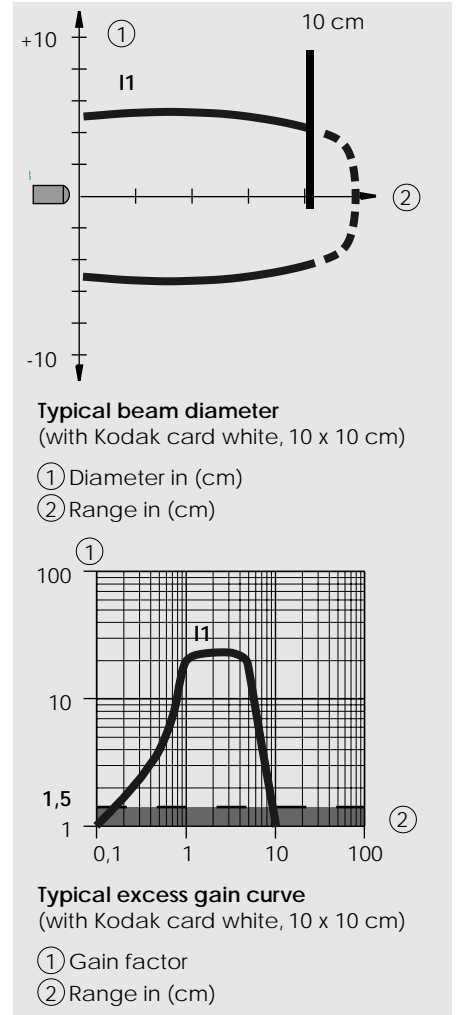


M1H

Dimensions (50 mm, M18 x 1)



Optical diagrams



Wiring diagram

