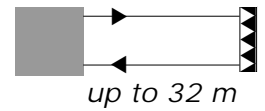


24...240 VAC/DC

10...30 VDC

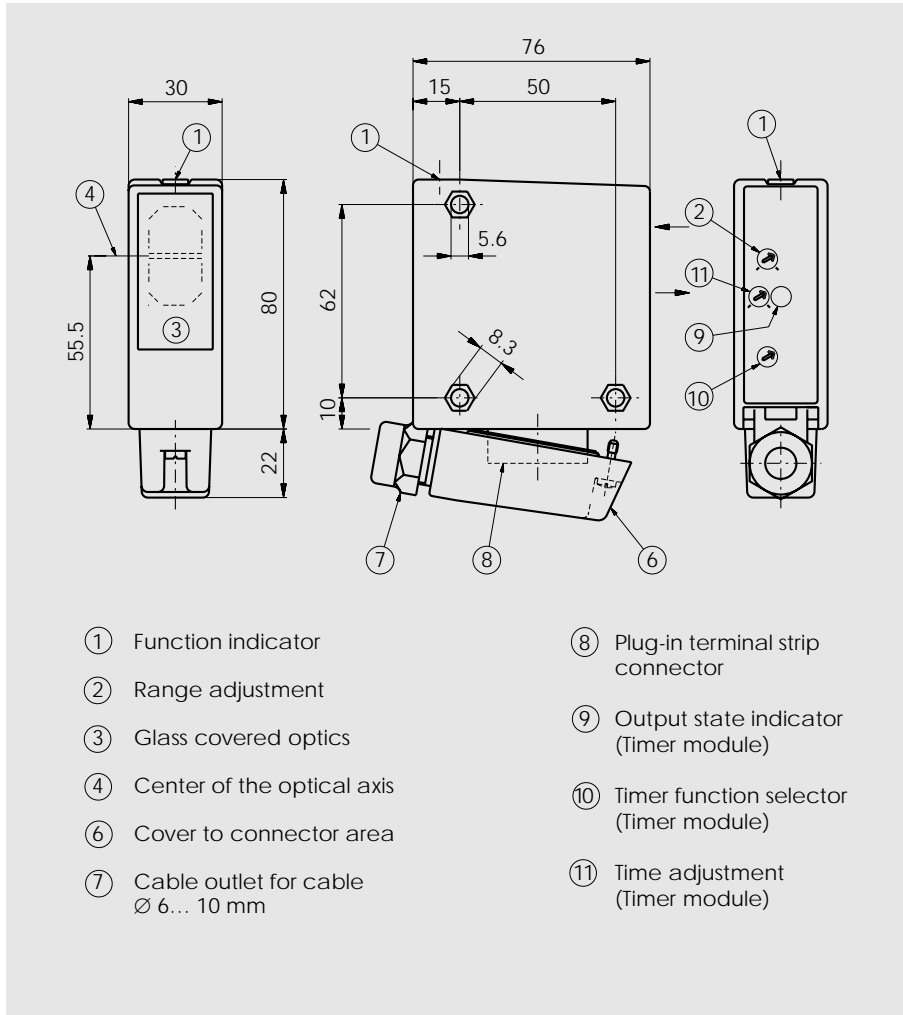
Relay
1 CO contact

NPN / PNP
light-on and
dark-on output

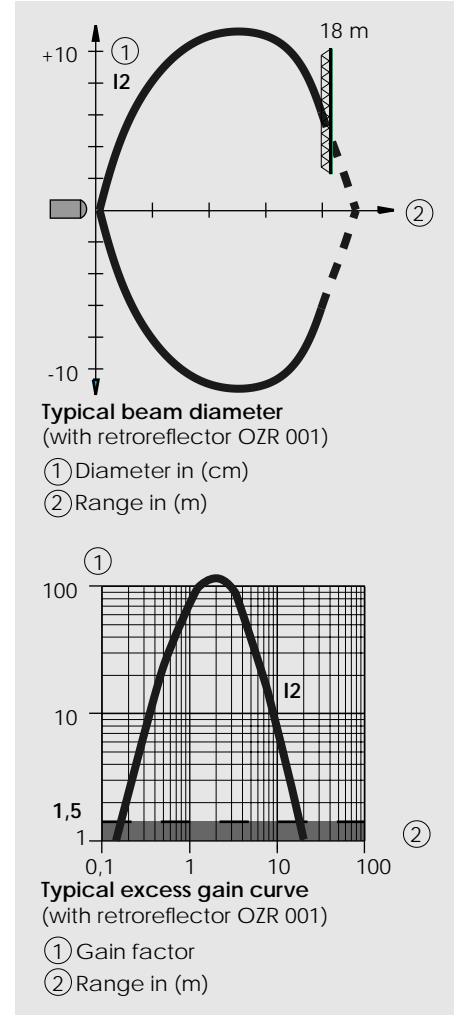


OFR

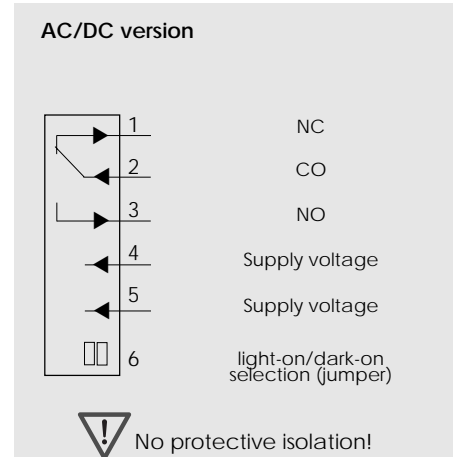
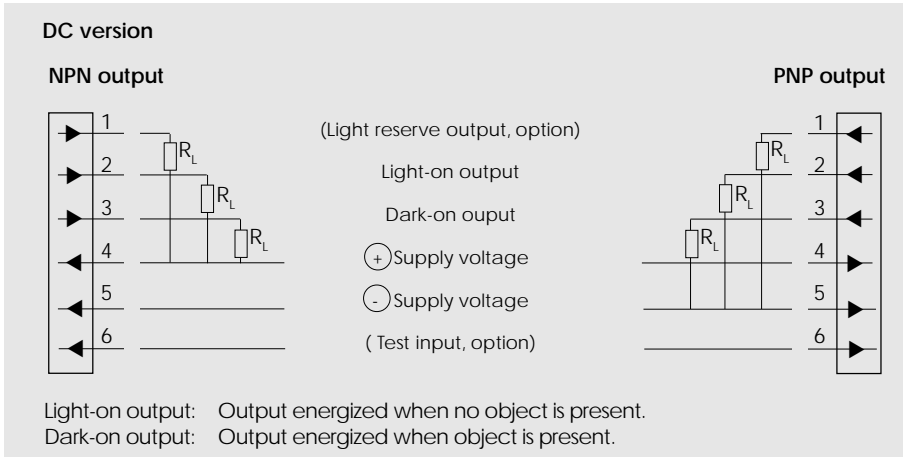
Dimensions (102 mm x 76 mm x 30 mm)



Optical diagrams



Wiring diagram



Retro-reflective sensors with polarizing filters and terminal strip connection



- DC or AC/DC supply voltage
- Short-circuit protected dual transistor outputs (NPN oder PNP) or relay output with 1 change over contact (light-on/dark-on selectable)
- Reverse polarity protection and power-up output suppression
- Light reserve warning indicator
- Plug-in terminal strip connector
- Options:
 - timer with selectable functions (on AC/DC sensors)
 - test input (on DC sensors)
 - light reserve warning output (on DC sensors)
- EMC tested according to IEC 801 and EN 50081-2/EN 50082-2



Product designation¹⁾

Output
Connection
Range adjustment

Optical data²⁾

Range
Emitter

Electrical data²⁾

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

Options¹⁾

Timer functions (selectable)
Timing range
Test input: emitter on
emitter off
Max. load current of light reserve warning output ³⁾

	OFP 1NA 800 R1	OFP 1PA 800 R1	OFP 7RW 800 R1
Output	NPN (light- and dark-on)	PNP (light- and dark-on)	Relay, 1 CO
Connection	Plug-in terminal strip		
Range adjustment	Yes		
Range	0,2...9 m (retroreflector OZR 001)		
Emitter	Visible-red LED, 660 nm, pulsed, with polarizing filter		
Supply voltage U_s	10...30 VDC		24...240 VAC/DC
Allowable ripple	+/- 10% of U_s		
Current consumption (without load)	< 15 mA		< 2 VA
Max. load current I_L	200 mA		3 A
Residual voltage	< 1,6 V		
Max. switching frequency	1000 Hz		25 Hz
Sealing	IP 67		
Temperature T_A (operating and storage)	-25...+65 °C		
Weight	ca. 150 g		ca. 160 g

Timer functions (selectable)	on delay off delay one-shot
Timing range	0,1...6 sec.
Test input: emitter on	+ U_s or open
emitter off	< 1 V < U_s - 8 V
Max. load current of light reserve warning output ³⁾	200 mA

1) For product designation of sensors with options see designation code on page 105.
 2) When not otherwise noted, all technical data at $T_A = 25^\circ\text{C}$ and $U_s = 24\text{ VDC}$ or $U_s = 220\text{ VAC}$, respectively.
 3) Light reserve warning output static or dynamic, normally open or normally closed.

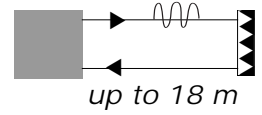
Retro-reflector ●	Range	Retro-reflector ■	Range	Retro-reflective tape	Range
OZR 001	0.20 – 9 m	OZR 101	0.15 – 5 m	OZR 201	0 m
OZR 002	0.15 – 8 m	OZR 102	0.15 – 5 m	OZR 202	0 m
OZR 003	0.20 – 4 m	OZR 103	0.10 – 11 m	OZR 203	0.40 – 4.5 m
		OZR 104	0.10 – 18 m	OZR 204*	0.40 – 3.9 m
				OZR 205*	0.40 – 5.4 m

* 30 cm long

24...240 VAC/DC 10...30 VDC

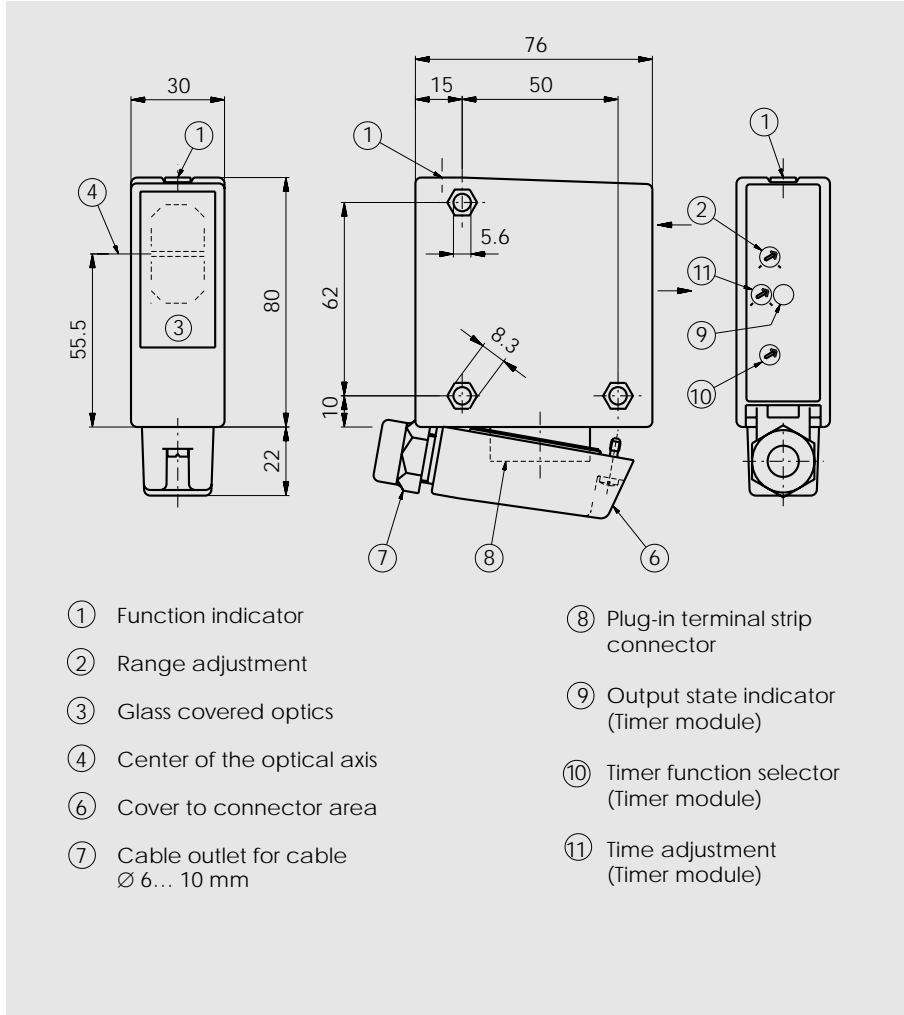
Relay
1 CO contact

NPN / PNP
light-on and
dark-on output

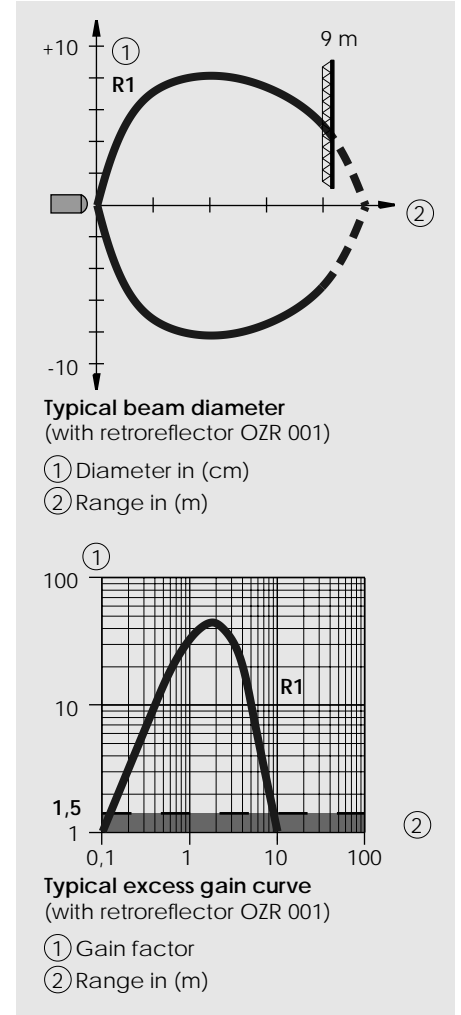


OFF

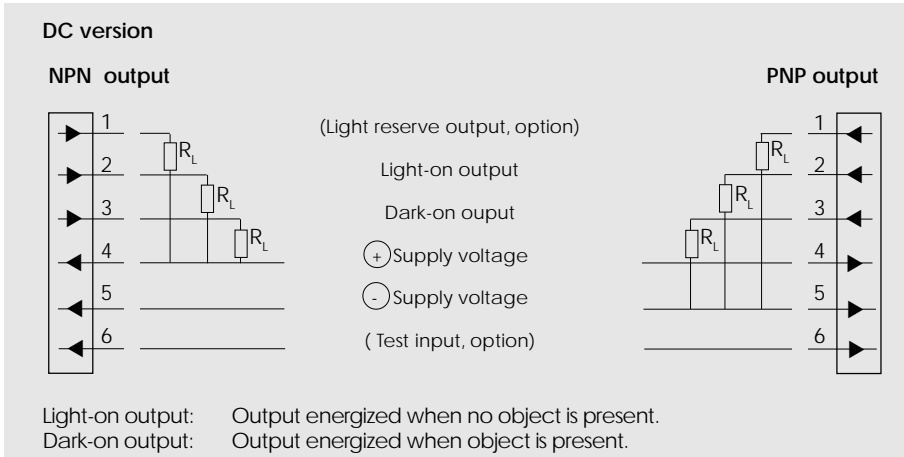
Dimensions (102 mm x 76 mm x 30 mm)



Optical diagrams



Wiring diagram



Diffuse-reflective sensors, with terminal strip connection



- DC or AC/DC supply voltage
- Short-circuit protected dual transistor outputs (NPN oder PNP) or relay output with 1 change over contact (light-on/dark-on selectable)
- Reverse polarity protection and power-up output suppression
- Light reserve warning indicator
- Plug-in terminal strip connector
- Options:
 - timer with selectable functions (on AC/DC sensors)
 - test input (on DC sensors)
 - light reserve warning output (on DC sensors)
- EMC tested according to IEC 801 and EN 50081-2/EN 50082-2



Product designation¹⁾

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

OFT 1NA 800 I1	OFT 1PA 800 I1	OFT 7RW 800 I1
NPN (light- and dark-on)	PNP (light- and dark-on)	Relay, 1 CO
Plug-in terminal strip		
Yes		
1,8 m (Kodak card white, 20 x 20 cm)		
Infrared-LED, 880 nm, pulsed		
10...30 VDC		24...240 VAC/DC
+/- 10% of U_s		
< 15 mA		< 2 VA
200 mA		3 A
< 1,6 V		
1000 Hz		25 Hz
IP 67		
-25...+65 °C		
ca. 150 g		ca. 160 g

Options¹⁾

Timer functions (selectable)
Timing range
Test input: emitter on
emitter off
Max. load current of light reserve warning output ³⁾

	on delay off delay one-shot
	0,1...6 sec.
+ U_s or open	
< 1 V	< $U_s - 8V$
200 mA	

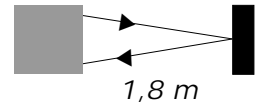
1) For product designation of sensors with options see designation code on page 105.
 2) When not otherwise noted, all technical data at $T_A = 25\text{ °C}$ and $U_s = 24\text{ VDC}$ or $U_s = 220\text{ VAC}$, respectively.
 3) Light reserve warning output static or dynamic, normally open or normally closed.

24...240 VAC/DC

10...30 VDC

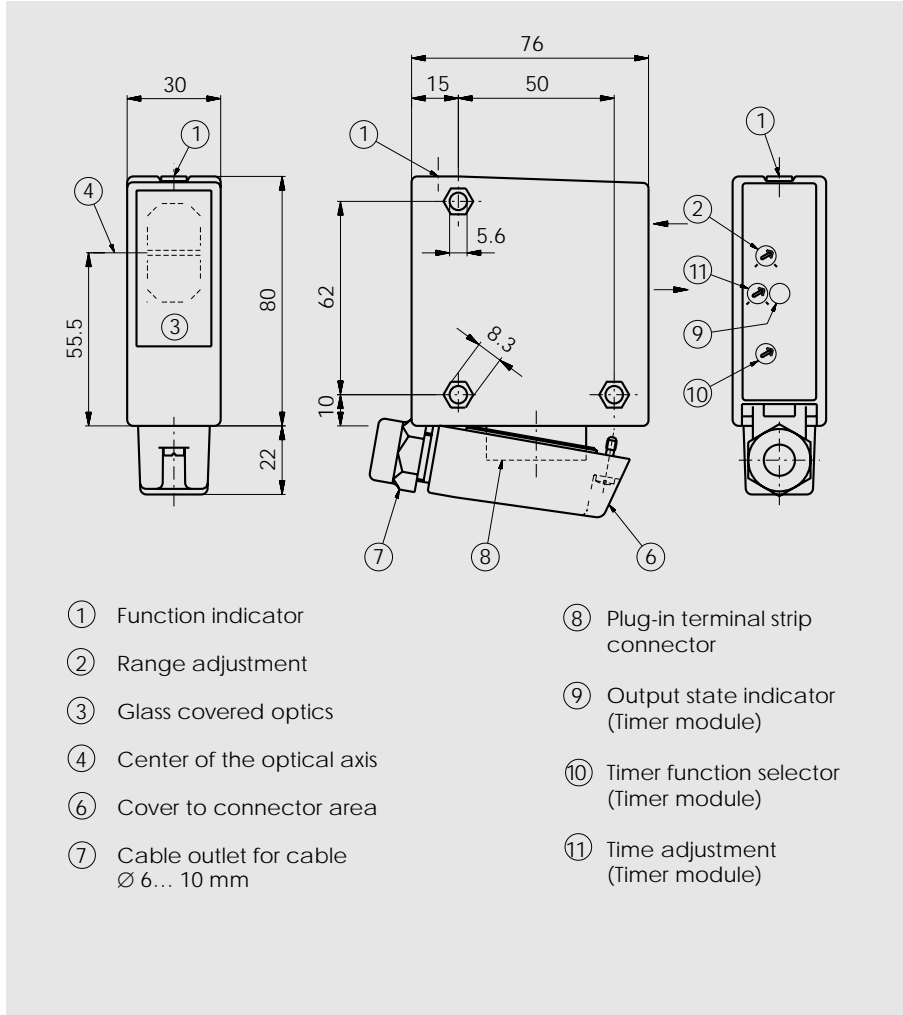
Relay
1 CO contact

NPN / PNP
light-on and
dark-on output

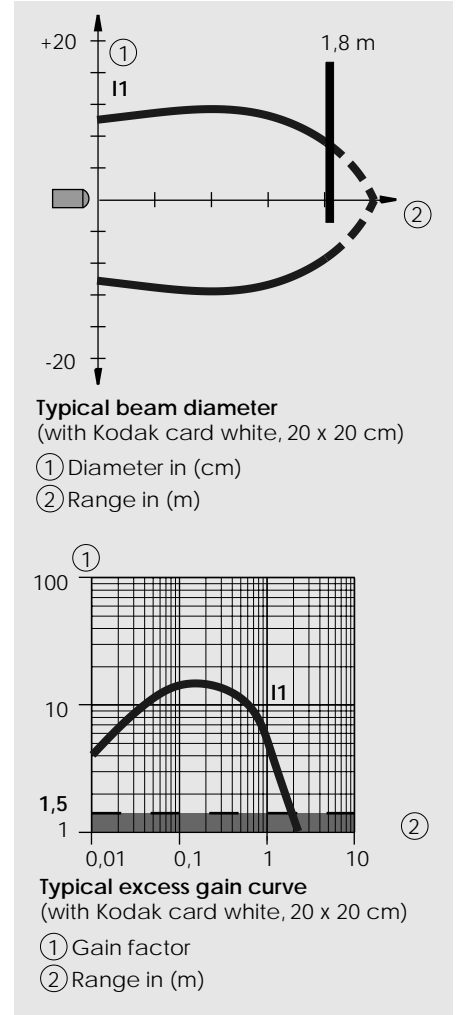


OFT

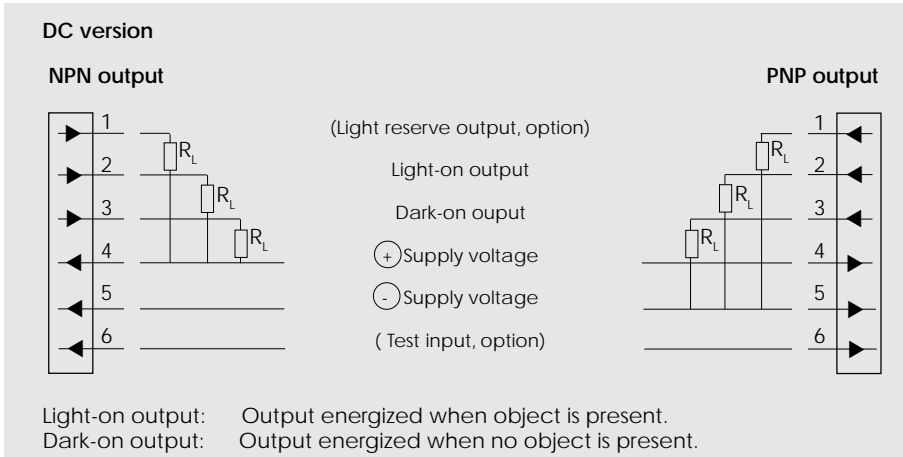
Dimensions (102 mm x 76 mm x 30 mm)



Optical diagrams



Wiring diagram



Diffuse-reflective sensors with background rejection and terminal strip connection



- DC or AC/DC supply voltage
- Short-circuit protected dual transistor outputs (NPN oder PNP) or relay output with 1 change over contact (light-on/dark-on selectable)
- Reverse polarity protection and power-up output suppression
- Light reserve warning indicator
- Electronically adjustable background rejection
- Plug-in terminal strip connector
- Options:
 - timer with selectable timing functions (on AC/DC sensors)
 - test input (on DC sensors)
 - light reserve warning output (on DC sensors)
- EMC tested according to IEC 801 and EN 50081-2/EN 50082-2



Product designation¹⁾

Output
Connection
Range adjustment
Optical data ²⁾
Range
Background rejection
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

OFH 1NA 800 I2	OFH 1PA 800 I2	OFH 7RW 800 I2
NPN (light- and dark-on)	PNP (light- and dark-on)	Relay, 1 CO
Plug-in terminal strip		
Yes		
0,2...0,8 m (Kodak card white, 10 x 10 cm)		
see diagram «Technical explanation» page 102		
Infrared LED, 880 nm, pulsed		
10...30 VDC		24...240 VAC/DC
+/- 10% of U_s		
< 35 mA		< 2 VA
200 mA		3 A
< 1,6 V		
200 Hz		25 Hz
IP 67		
-25...+65 °C		
ca. 180 g		ca. 190 g

Options¹⁾

Timer functions (selectable)
Timing range
Test input: emitter on
emitter off
Max. load current of light reserve warning output ³⁾

		on delay off delay one-shot
		0,1...6 sec.
	+ U_s or open	
< 1 V	< U_s - 8 V	
200 mA		

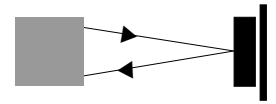
1) For product designation of sensors with options see designation code on page 105.
 2) When not otherwise noted, all technical data at $T_A = 25\text{ °C}$ and $U_s = 24\text{ VDC}$ or $U_s = 220\text{ VAC}$, respectively.
 3) Light reserve warning output static or dynamic, normally open or normally closed.

24...240 VAC/DC

10...30 VDC

Relay
1 CO contact

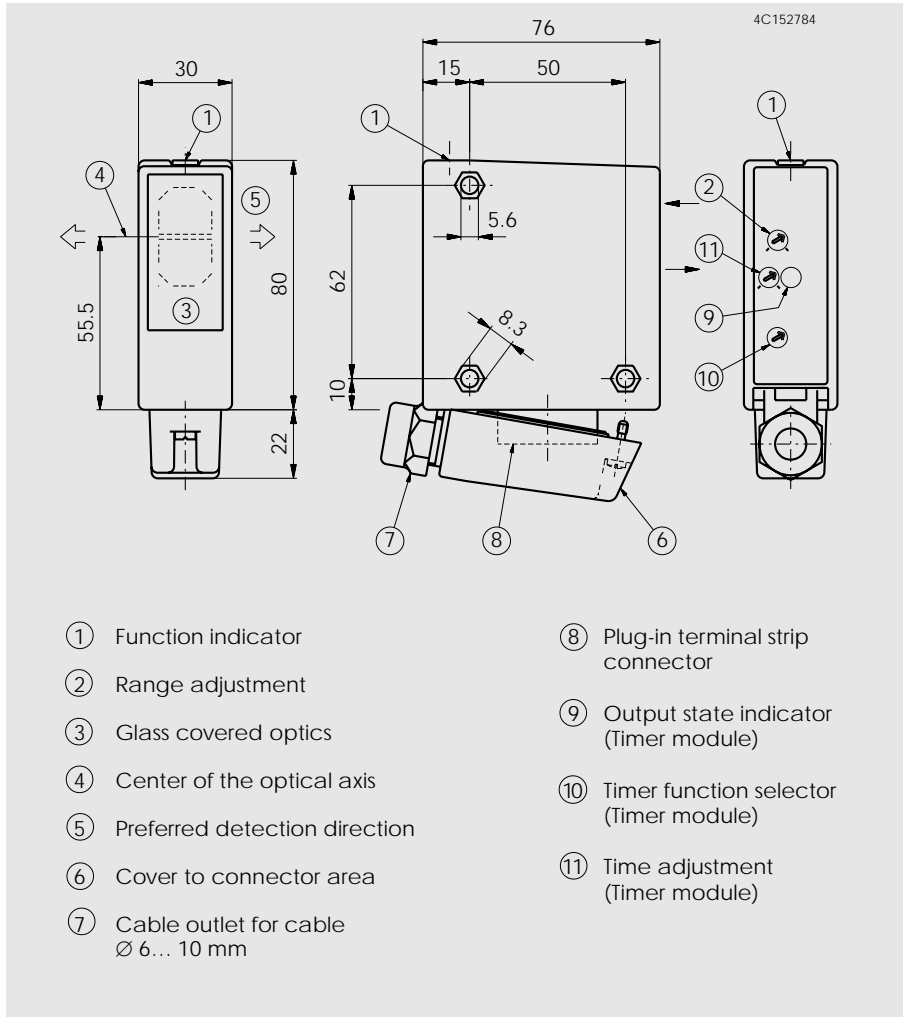
NPN / PNP
light-on and
dark-on output



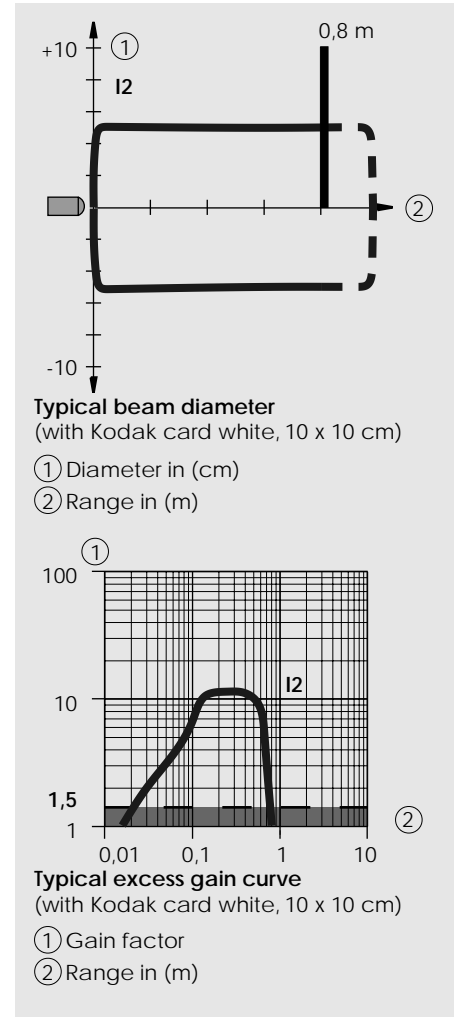
0,2...0,8 m

OFH

Dimensions (102 mm x 76 mm x 30 mm)



Optical diagrams



Wiring diagram

