Through-beam sensors, in a small plastic housing

- ***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***
- ***Test input***
- **Connections: Cable, 2 meter**
  Connector, M12
  Connector, M8 (option)
  Connector, Torson (option)
- **EMC tested according to IEC 801 and EN50081-1/EN 50082-2**

CE

	Emitter		Receiver			
Product designation[1]	**OPS 1KA 141 I1**	**OPS 1KA 441 I1**	**OPE 1NA 100 I1**	**OPE 1NA 400 I1**	**OPE 1PA 100 I1**	**OPE 1PA 400 I1**
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*	12 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 65					
Temperature T_A (operating and storage)	-25...+65 ^{0}C					
Weight	ca. 100 g	ca. 35 g	ca. 100 g	ca. 35 g	ca. 100 g	ca. 35 g

1) For product designation of sensors with options see designation code on page 81.
2) When not otherwise noted, all technical data at T_A = 25 ^{0}C and U_S = 24 V.

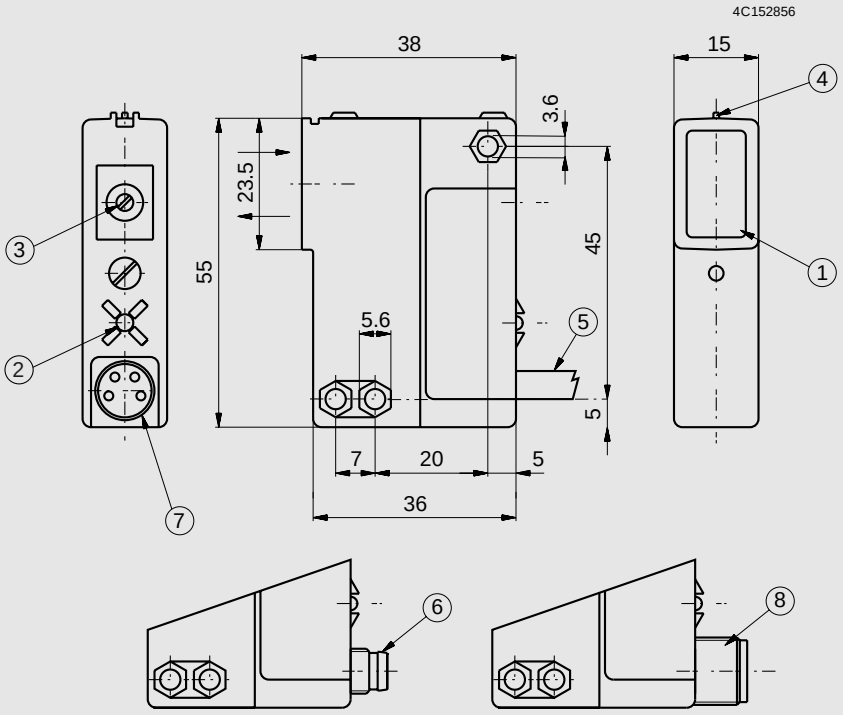
10...30 VDC

NPN / PNP
light-on and
dark-on output

12 m

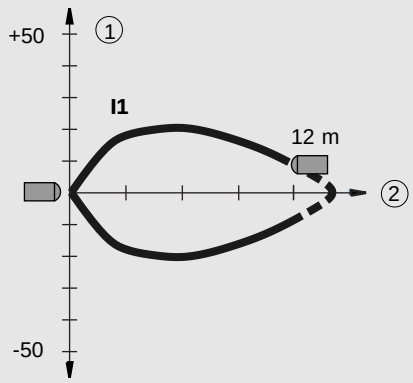
OPS/OPE

Dimensions (55 mm x 38 mm x 15 mm)



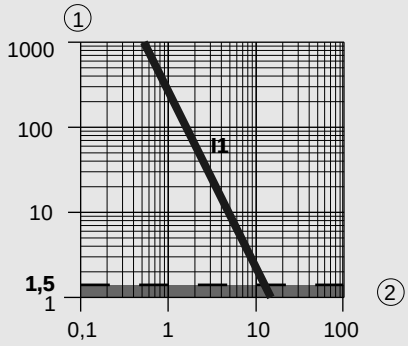
① Optics
② Emitter: operation indicator
Receiver: function indicator
③ Range adjustment
④ Alignment aid
⑤ Cable connection
⑥ Connector M8
⑦ Connector Torson
⑧ Connector M12

Optical diagrams



Typical beam diameter

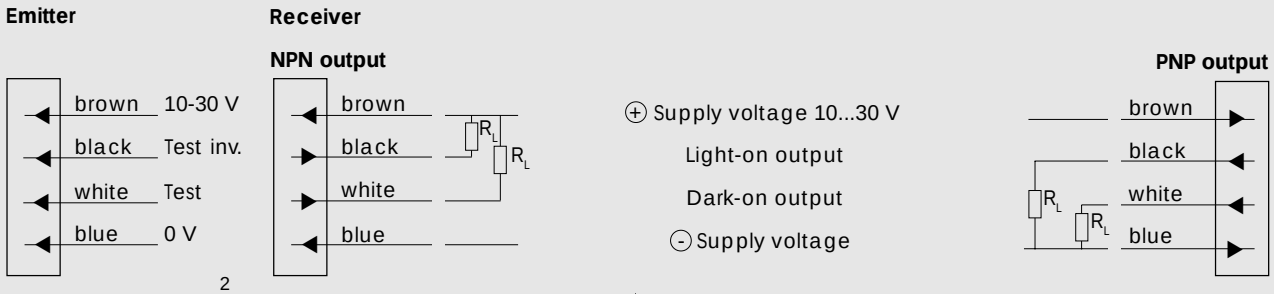
① Diameter in (cm)
② Range in (m)

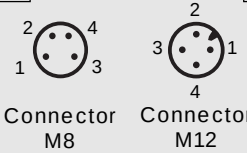


Typical excess gain curve

① Gain factor
② Range in (m)

Wiring diagram





Connector M8 | Connector M12 | Connector Torson

Connection for M8/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.

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