

L 5

Throughbeam photoelectric sensors

en 02-2012/11 50117572



0 ... 15m



- Throughbeam photoelectric sensor with clearly visible red light and high performance reserve
- Fast alignment through *brightVision*<sup>®</sup>
- Simple mounting with integrated M3 metal threaded sleeves
- Compact installation possible due to cable outlet at the rear and bottom
- Full control through green and yellow indicator LEDs
- Robust plastic housing acc. to IP 67 for industrial application
- Deactivation output for testing and interlinking of the sensor
- Complementary outputs for light/dark switching

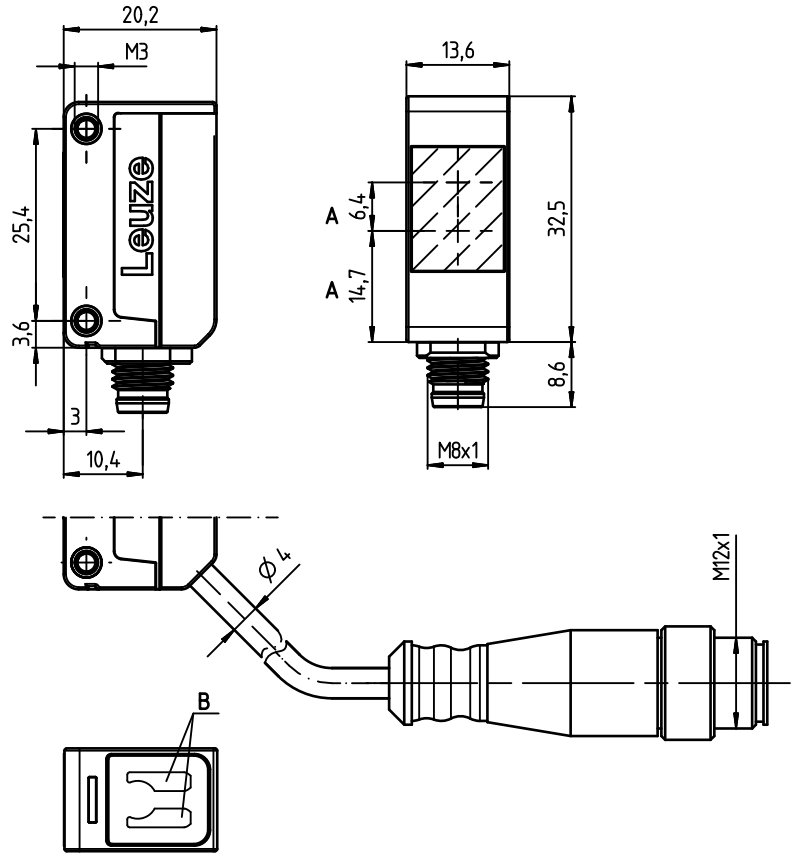


Accessories:

(available separately)

- Mounting systems (BTU 200 ..., BT 200...)
- M12 connectors (KD ...)
- Ready-made cables (K-D ...)

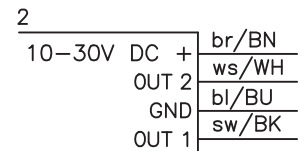
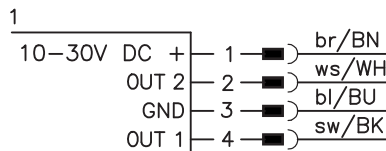
Dimensioned drawing



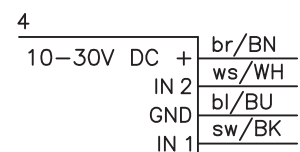
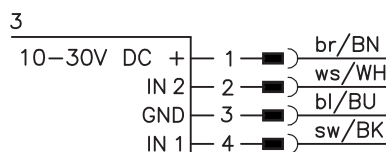
- A Optical axis
- B Indicator diodes

Electrical connection

Receiver



Transmitter



Änderungen vorbehalten • DS\_L5\_en\_50117572.fm

## Specifications

### Optical data

Typ. operating range limit <sup>1)</sup>	0 ... 15m
Operating range <sup>2)</sup>	0 ... 10m
Light source	LED (modulated light)
Wavelength	620nm (visible red light)

### Timing

Switching frequency	500Hz
Response time	1ms
Delay before start-up	≤ 300ms

### Electrical data

Operating voltage $U_B$	10 ... 30VDC
Residual ripple	≤ 15% of $U_B$
Open-circuit current	≤ 15mA
Switching output	.../4P... 2 PNP transistor outputs pin 2: PNP dark switching, pin 4: PNP light switching
	.../2N... 2 NPN transistor outputs pin 2: NPN dark switching, pin 4: NPN light switching
Switching input	.../9D... 2 deactivation inputs pin 2: transmitter active when not connected or with HIGH signal pin 4: transmitter active when not connected or with LOW signal
Signal voltage high/low	≥ ( $U_B - 2V$ ) / ≤ 2V
Output current	max. 100mA <sup>3)</sup>

### Indicators

Green LED	ready
Yellow LED	light path free
Yellow LED, flashing	light path free, no performance reserve

### Mechanical data

Housing	plastic
Optics cover	plastic
Weight	20g with M8 connector 40g with 200mm cable and M12 connector 70g with 2m cable
Connection type	M8 connector, 4-pin cable 200mm with M12 connector, 4-pin cable 2m, 4x0.20mm <sup>2</sup>

### Environmental data

Ambient temp. (operation/storage)	-40°C ... +60°C / -40°C ... +70°C
Protective circuit <sup>4)</sup>	2, 3
VDE safety class	III
Protection class	IP 67
Light source	free group (in acc. with EN 62471)
Standards applied	IEC 60947-5-2

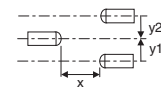
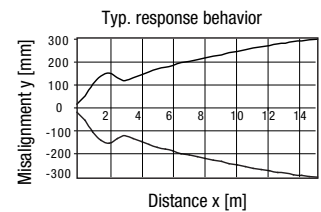
- 1) Typ. operating range limit: max. attainable range without performance reserve  
 2) Operating range: recommended range with performance reserve  
 3) Sum of the output currents for both outputs, 50mA when ambient temperatures > 40°C  
 4) 2=polarity reversal protection, 3=short circuit protection for all outputs

## Tables

0	10.0	15.0
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Operating range [m]
Typ. operating range limit [m]

## Diagram



## Remarks

- **Approved purpose:**  
 This product may only be used by qualified personnel and must only be used for the approved purpose. This sensor is not a safety sensor and is not to be used for the protection of persons.

## Order guide

The sensors listed here are preferred types; current information at [www.leuze.com](http://www.leuze.com).

			Designation	Part no.
Transmitter	With 4-pin M8 connector	2 deactivation inputs (pin 4 = IN1, pin 2 = IN2)	LS 5/9D-M8	50117695
	With 200mm cable and M12 connector	2 deactivation inputs (pin 4 = IN1, pin 2 = IN2)	LS 5/9D-200-M12	50117693
	With cable, cable length 2m	2 deactivation inputs (pin 4 = IN1, pin 2 = IN2)	LS 5/9D	50117694
Receiver	With 4-pin M8 connector	Pin 4: PNP light switching, pin 2: PNP dark switching	LE 5/4P-M8	50117692
		Pin 4: NPN light switching, pin 2: NPN dark switching	LE 5/2N-M8	50117689
	With 200mm cable and M12 connector	Pin 4: PNP light switching, pin 2: PNP dark switching	LE 5/4P-200-M12	50117690
		Pin 4: NPN light switching, pin 2: NPN dark switching	LE 5/2N-200-M12	50117683
		Pin 4: PNP light switching, pin 2: PNP dark switching	LE 5/4P	50117691
With cable, cable length 2m	Pin 4: NPN light switching, pin 2: NPN dark switching	LE 5/2N	50117688	

## Part number code

L	E	5	/	4	P	-	M	8
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### Operating principle

LS	Throughbeam photoelectric sensor, transmitter
LE	Throughbeam photoelectric sensor, receiver

### Series

5	5 Series
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### Switching output/function /OUT1OUT2 (OUT1 = Pin 4, OUT2 = Pin 2)

4	PNP light switching
P	PNP, dark switching
2	NPN, light-switching
N	NPN dark switching
9	Input for transmitter deactivation (deactivation with HIGH signal)
D	Input for transmitter deactivation (deactivation with LOW signal)
X	Pin not used

### Electrical connection

-M8	M8 connector, 4-pin
N/A	Cable, standard length 2m
-200-M12	Connector

