

L 5

Throughbeam photoelectric sensors

en 07-2016/10 50117572



0 ... 15m



- Throughbeam photoelectric sensor with clearly visible red light and high performance reserve
- Fast alignment through *brightVision*[®]
- 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

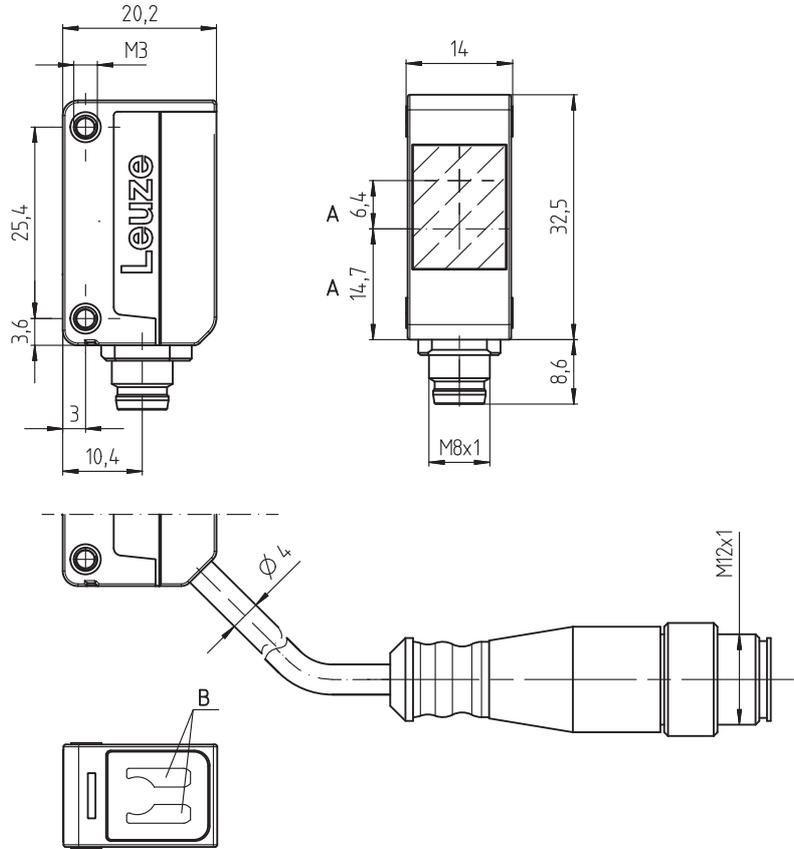


Accessories:

(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		Cable, 4 wires	
Connector, 4-pin	10-30V DC + 1 — BR/BN OUT 2 2 — WS/WH GND 3 — BL/BU OUT 1 4 — SW/BK	Cable, 4 wires	10-30V DC + BR/BN OUT 2 WS/WH GND BL/BU OUT 1 SW/BK
Connector, 3-pin	10-30V DC + 1 — BR/BN GND 3 — BL/BU OUT 1 4 — SW/BK	Cable, 3 wires	10-30V DC + BR/BN GND BL/BU OUT 1 SW/BK
Transmitter		Cable, 4 wires	
Connector, 4-pin	10-30V DC + 1 — BR/BN IN 2 2 — WS/WH GND 3 — BL/BU IN 1 4 — SW/BK	Cable, 4 wires	10-30V DC + BR/BN IN 2 WS/WH GND BL/BU IN 1 SW/BK
Connector, 3-pin	10-30V DC + 1 — BR/BN GND 3 — BL/BU IN 1 4 — SW/BK	Cable, 3 wires	10-30V DC + BR/BN GND BL/BU IN 1 SW/BK

Änderungen vorbehalten • DS_L5_en_50117572.fm

Specifications

Optical data

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

Timing

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

Electrical data

Operating voltage U_B ³⁾	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 ⁴⁾

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, 3-pin or 4-pin cable 200mm with M12 connector, 4-pin cable 2m, 3x0.14mm ² or 4x0.20mm ²

Environmental data

Ambient temp. (operation/storage)	-40°C ... +60°C/-40°C ... +70°C
Protective circuit ⁵⁾	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
Certifications	UL 508, C22.2 No.14-13 ³⁾ 6)

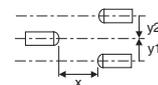
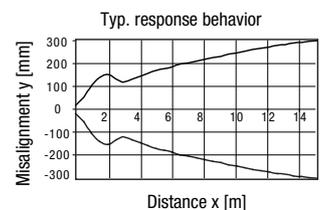
- 1) Typ. operating range limit: max. attainable range without performance reserve
- 2) Operating range: recommended range with performance reserve
- 3) For UL applications: for use in class 2 circuits according to NEC only
- 4) Sum of the output currents for both outputs, 50mA when ambient temperatures > 40°C
- 5) 2=polarity reversal protection, 3=short circuit protection for all outputs
- 6) These proximity switches shall be used with UL Listed Cable assemblies rated 30V, 0.5A min, in the field installation, or equivalent (categories: CYJV/CYJV7 or PVVA/PVVA7)

Tables

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

Diagram



Remarks

Operate in accordance with intended use!

-  This product is not a safety sensor and is not intended as personnel protection.
-  The product may only be put into operation by competent persons.
-  Only use the product in accordance with the intended use.

Order guide

The sensors listed here are preferred types; current information at www.leuze.com.

		Designation	Part no.
Transmitter	With 3-pin M8 connector		
		no deactivation inputs	LS 5/X-M8.3 50134594
	With 4-pin M8 connector		
		no deactivation inputs	LS 5/XX-M8 50134585
		2 deactivation inputs (pin 4 = IN1, pin 2 = IN2)	LS 5/9D-M8 50117695
Receiver	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		
		no deactivation inputs	LS 5 50132418
		2 deactivation inputs (pin 4 = IN1, pin 2 = IN2)	LS 5/9D 50117694
	With 3-pin M8 connector		
		Pin 4: PNP light switching	LE 5/4-M8.3 50134595
		Pin 4: NPN light switching	LE 5/2-M8.3 50134596
	With 4-pin M8 connector		
		Pin 4: PNP light switching, pin 2: not connected	LE 5/4X-M8 50134592
	Pin 4: NPN light switching, pin 2: not connected	LE 5/2X-M8 50134593	
	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	
Receiver	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
	With cable, cable length 2m		
		Pin 4: PNP light switching	LE 5/4 50132417
		Pin 4: NPN light switching	LE 5/2 50132420
		Pin 4: PNP light switching, pin 2: PNP dark switching	LE 5/4P 50117691
	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

Switching output/function /OUT1/OUT2 (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

-M8.3 M8 connector, 3-pin

N/A Cable, standard length 2m

-200-M12 Cable, length 200 mm, with M12 connector, 4-pin