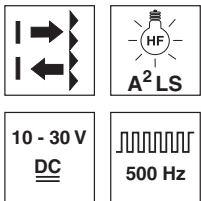


**PRK 5**

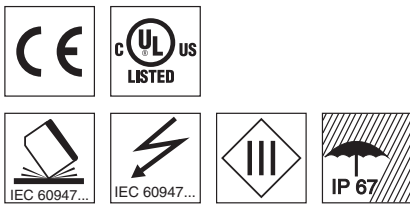
**Retro-reflective photoelectric sensors with polarization filter**

en 05-2015/09 50117573



0.02 ... 6.0m

- Polarized retro-reflective photoelectric sensor using visible red light
- Active suppression of extraneous light A²LS
- Fast alignment through *brightVision*®
- Simple mounting with integrated M3 metal threaded sleeves
- Compact installation possible due to cable outlet at the rear or bottom
- Full control through green and yellow indicator LEDs
- Robust plastic housing acc. to IP 67 for industrial application
- Complementary outputs for light/dark switching

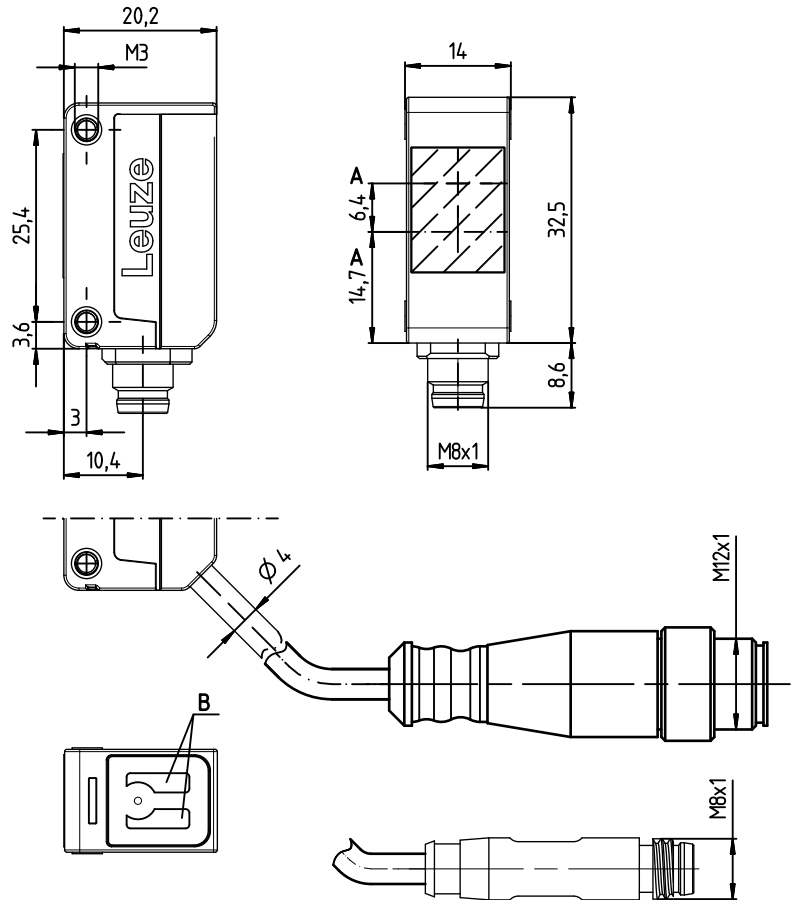


**Accessories:**

(available separately)

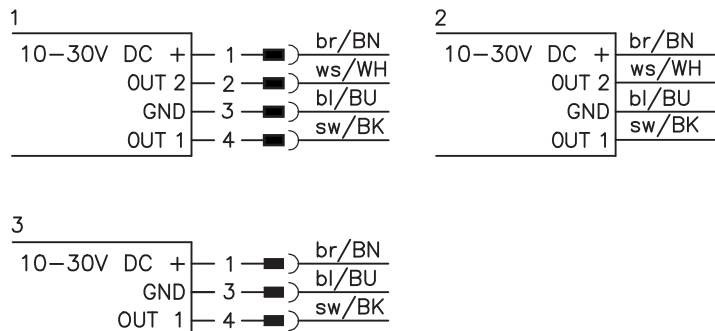
- Mounting systems (BTU 200 ..., BT 200..., BT 205M)
- M12 connectors (KD ...)
- Ready-made cables (K-D ...)
- Reflectors
- Reflective tape

**Dimensioned drawing**



**A** Optical axis  
**B** Indicator diodes

**Electrical connection**



Änderungen vorbehalten • DS\_PRK5\_en\_50117573.fm

## Specifications

### Optical data

Typ. op. range limit (TK(S) 100x100) <sup>1)</sup>	0.02 ... 6.0m
Operating range <sup>2)</sup>	see tables
Light source	LED (modulated light)
Wavelength	620nm (visible red light, polarized)

### Timing

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

### Electrical data

Operating voltage $U_B$ <sup>3)</sup>	10 ... 30VDC
Residual ripple	≤ 15% of $U_B$
Open-circuit current	≤ 20mA
Switching output	.../4P... 2 PNP transistor outputs pin 2: PNP dark switching, pin 4: PNP light switching
	.../4...M8.3 1 PNP transistor output pin 4: PNP light switching
	.../2N... 2 NPN transistor outputs pin 2: NPN dark switching, pin 4: NPN light switching
Signal voltage high/low	≥ ( $U_B - 2.5V$ ) / ≤ 2.5V
Output current	max. 100mA <sup>4)</sup>

### Indicators

LED green	ready
LED yellow	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 M8 connector 40g with 200mm cable and M12 connector 70g with 2m cable
Connection type	M8 connector, 4-pin cable 200mm with M8 connector, 4-pin cable 200mm with M8 connector, 3-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>5)</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
Certifications	UL 508, C22.2 No.14-13 <sup>3)</sup> <sup>6)</sup>

- 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

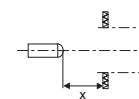
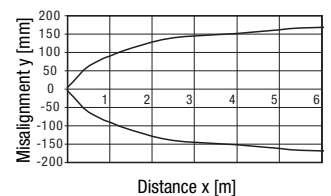
Reflectors			Operating range
1	TK(S)	100x100	0.02 ... 4.5m
2	TKS	40x60	0.02 ... 3.0m
3	TKS	82.2	0.05 ... 3.6m
4	TKS	30x50	0.03... 1.9m
5	TKS	20x40	0.04 ... 1.6m
6	Tape 4	50x50	0.08 ... 1.4m

1	0.02		4.5	6.0
2	0.02	3.0	4.0	
3	0.05	3.6	4.5	
4	0.03	1.9	2.5	
5	0.04	1.6	2.2	
6	0.08	1.4	2.0	

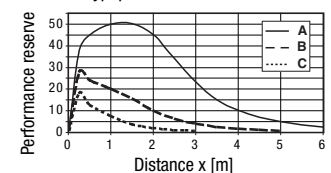
- Operating range [m]
- Typ. operating range limit [m]

## Diagrams

Typ. response behavior (TK 100x100)



Typ. performance reserve



- A** TKS 100x100
- B** TKS 40x60
- C** TKS 20x40

## 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.

## PRK 5 Retro-reflective photoelectric sensors with polarization filter

### Order guide

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

		Designation	Part no.
<b>With 4-pin M8 connector</b>	Pin 4: PNP light switching, pin 2: PNP dark switching	PRK 5/4P-M8	50117706
	Pin 4: NPN light switching, pin 2: NPN dark switching	PRK 5/2N-M8	50117703
<b>With 200mm cable and M12 connector</b>	Pin 4: PNP light switching, pin 2: PNP dark switching	PRK 5/4P-200-M12	50117704
	Pin 4: NPN light switching, pin 2: NPN dark switching	PRK 5/2N-200-M12	50117702
<b>With cable, cable length 2m</b>	Pin 4: PNP light switching, pin 2: PNP dark switching	PRK 5/4P	50117705
	Pin 4: NPN light switching, pin 2: NPN dark switching	PRK 5/2N	50117707

### Part number code

P R K 5 / 4 P - 2 0 0 - M 1 2

#### Operating principle

**PRK** Polarized retro-reflective photoelectric sensor – PRK

#### 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  
**X** Pin not used

#### Electrical connection

**-M8** M8 connector, 4-pin  
**N/A** Cable, standard length 2m  
**-200-M8** 200mm cable with M8 connector, 4-pin  
**-200-M8.3** 200mm cable with M8 connector, 3-pin  
**-200-M12** 200mm cable with M12 connector

