

PRK 46B

Retro-reflective photoelectric sensors with polarisation filter

en 11-2011/01 50109007-01

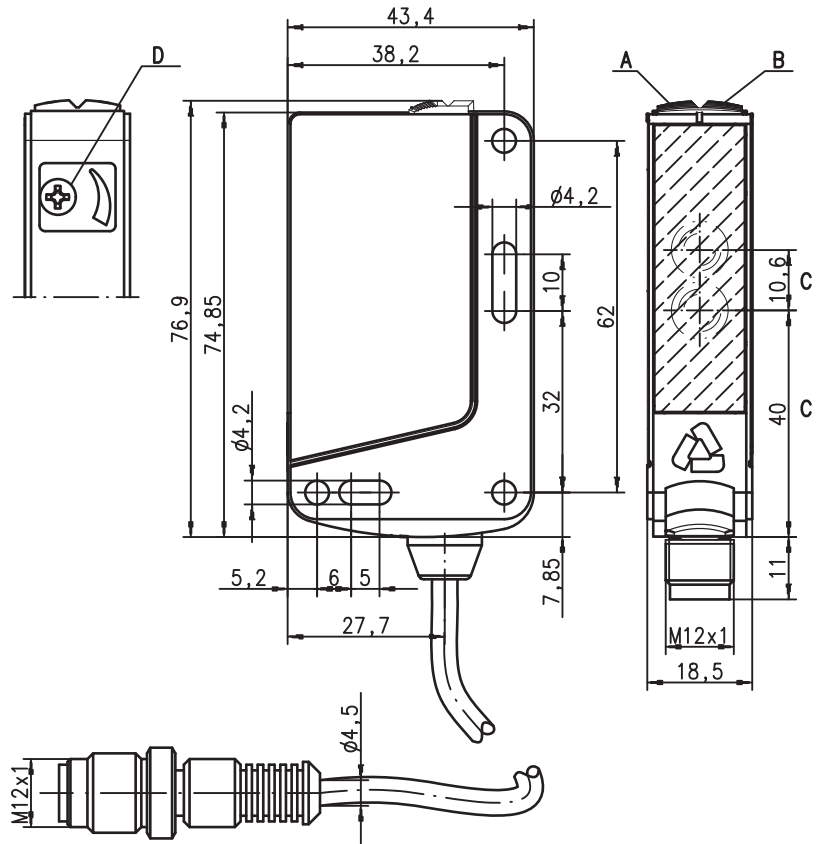


0.05 ... 18m



- Polarized retro-reflective photoelectric sensor
- Fast alignment through *brightVision*®
- A²LS - Active Ambient Light Suppression
- Push-pull switching outputs
- Relay output - for operation without reference potential
- Operating range adjustment
- Warning output - for increased availability

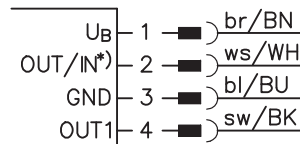
Dimensioned drawing



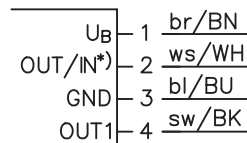
- A Green indicator diode
- B Yellow indicator diode
- C Optical axis
- D Optional operating range adjustment

Electrical connection

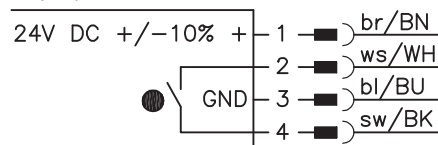
Connector, 4-pin



Cable



Relay output



Selection pin 2

*)	OUT	IN
	OUT 2	active
	warn	
	NC	

We reserve the right to make changes • DS\_PRK\_46B\_66\_en.fm



Accessories:

(available separately)

- Mounting systems (BT 46, BT 46.1, BT 46.1.5, BT 46.2)
- M12 connectors (KD ...)
- Ready-made cables (K-D ...)
- Reflectors
- Reflective tapes

## Specifications

### Optical data

Typ. op. range limit (TK(S) 100x100) <sup>1)</sup> 0.05 ... 18m  
 Operating range <sup>2)</sup> see tables  
 Light source <sup>3)</sup> LED (modulated light)  
 Wavelength 620nm (visible red light, polarized)

### Timing

Switching frequency transistor: 500Hz, relay: 20Hz  
 Response time transistor: 1 ms, relay: 25ms  
 Delay before start-up ≤ 300ms

### Electrical data

#### With transistor switching outputs

Operating voltage  $U_B$  <sup>4)</sup> 10 ... 30VDC (incl. residual ripple)  
 Residual ripple ≤ 15% of  $U_B$   
 Open-circuit current ≤ 20mA  
 Switching output .../66. ... 2 push-pull switching outputs <sup>5)</sup>  
 .../44. ... pin 2: PNP dark switching, NPN light switching  
 .../4. ... pin 4: PNP light switching, NPN dark switching  
 Signal voltage high/low PNP switching outputs, pin 2: PNP dark switching,  
 Output current PNP light switching  
 .../4. ... PNP switching output, pin 4: light switching  
 ≥ ( $U_B - 2V$ ) / ≤ 2V  
 max. 100mA

#### With relay switching output

Operating voltage  $U_B$  24VDC ±10%  
 Open-circuit current ≤ 30mA  
 Switching output.../7D ... relay, make-contact between pin 2 and pin 4,  
 dark switching <sup>6)</sup>  
 Switching voltage/switching current 30VAC/DC / max. 200mA  
 Switching power 6VA, cos φ = 1  
 Operating range adjustable, 270° (PRK 46B/66.01-S12 only)

### Indicators

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

### Mechanical data

Housing plastic (PC-ABS)  
 Optics cover plastic (PMMA)  
 Weight with connector: 50g  
 with 2m cable: 90g  
 with cable and connector: 65g  
 M12 connector or  
 cable (4 x 0.21mm<sup>2</sup> cross section), cable length: 2m, or  
 cable with M12 connector, cable length: 200mm

Connection type

### Environmental data

Ambient temp. (operation/storage) -40°C ... +60°C / -40°C ... +70°C  
 Protective circuit <sup>7)</sup> 2, 3  
 VDE safety class <sup>8)</sup> II, all-insulated  
 Protection class IP 67, IP 69K  
 LED class 1 (acc. to EN 60825-1)  
 Standards applied IEC 60947-5-2  
 Certifications UL 508 <sup>4)</sup>

### Options

**Warning output autoControl**  
 Signal voltage high/low PNP transistor, counting principle  
 Output current ≥ ( $U_B - 2V$ ) / ≤ 2V  
 max. 100mA  
**Activation input active**  
 Transmitter active/not active ≥ 8V / ≤ 2V  
 Activation/disable delay ≤ 1ms / ≤ 2ms  
 Input resistance 10KΩ ± 10%

- 1) Typ. operating range limit: max. attainable range without performance reserve
- 2) Operating range: recommended range with performance reserve
- 3) Average life expectancy 100,000 h at an ambient temperature of 25°C
- 4) For UL applications: for use in class 2 circuits only
- 5) The push-pull switching outputs must not be connected in parallel
- 6) Suitable spark extinction must be provided with inductive or capacitive loads
- 7) 2=polarity reversal protection, 3=short-circuit protection for all transistor outputs
- 8) Rating voltage 50V

## Tables

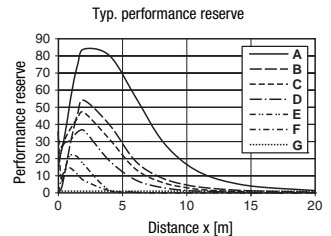
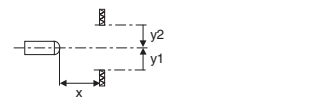
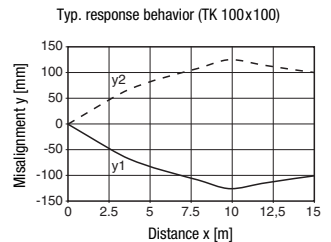
Reflectors	Operating range
1 TK(S) 100x100	0.05 ... 15m
2 TK 82.2	0.25 ... 11m
3 TK(S) 50x50	0.05 ... 10m
4 TK(S) 40x60	0.05 ... 8m
5 TK(S) 20x40	0.05 ... 3m
6 Tape 4 50x50	0.2 ... 2m

1 0.05	15	18
2 0.25	11	14
3 0.05	10	1
4 0.05	8	1
5 0.05	3	5
6 0.2	2	3

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

TK ... = adhesive  
 TK(S) ... = screw type  
 Tape 4 = adhesive

## Diagrams



- A TK 100x100
- B TK 82.2
- C TK 50x50
- D TKS 40x60
- E TKS 20x40
- F Tape 4 50x50
- G Switching point

## 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.

## PRK 46B

## Retro-reflective photoelectric sensors with polarisation 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 M12 connector</b>		
Complementary switching output	PRK 46B/66-S12	50103070
Warning output, display low performance reserve	IPRK 46B/4-S12	50103074
Relay output, dark switching	PRK 46B/7D-S12	50103080
<b>Cable with M12 connector</b>		
Complementary switching output	PRK 46B/66, 200-S12	50103071
<b>Cable, cable length 2m</b>		
Complementary switching output	PRK 46B/66	50107068

### Type key

I	P	R	K	4	6	B	/	4	D	.	2	-	S	1	2
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#### Operating principle

<b>PRK</b>	Polarized retro-reflective photoelectric sensor
<b>IPRK</b>	Polarized retro-reflective photoelectric sensor with warning output

#### Series

<b>46B</b>	46B Series
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#### Switching output

<b>/66</b>	Complementary push-pull switching outputs
<b>/44</b>	Complementary PNP switching outputs
<b>/4</b>	Pin 4 PNP switching output, pin 2 no contact, warning output or activation input
<b>/6</b>	Pin 4 push-pull switching output, pin 2 no contact
<b>/7D</b>	Relay, break-contact

#### Function characteristics

<b>N/A</b>	Pin 4 light switching; with push-pull, PNP light switching
<b>D</b>	Inverted switching logic

#### Special function

<b>.2</b>	No false switching to stretch-wrapped and shrink-wrapped containers
<b>.8</b>	Activation input
<b>.01</b>	Sensitivity adjustment

Combinations of functions are possible via two-digit code

#### Electrical connection

<b>N/A</b>	Cable, standard length 2000mm
<b>,200-S12</b>	Cable, length 200 mm with M12 connector
<b>-S12</b>	M12 connector

