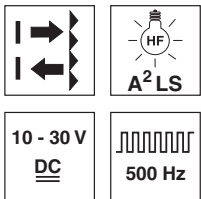


**PRK 318B**

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

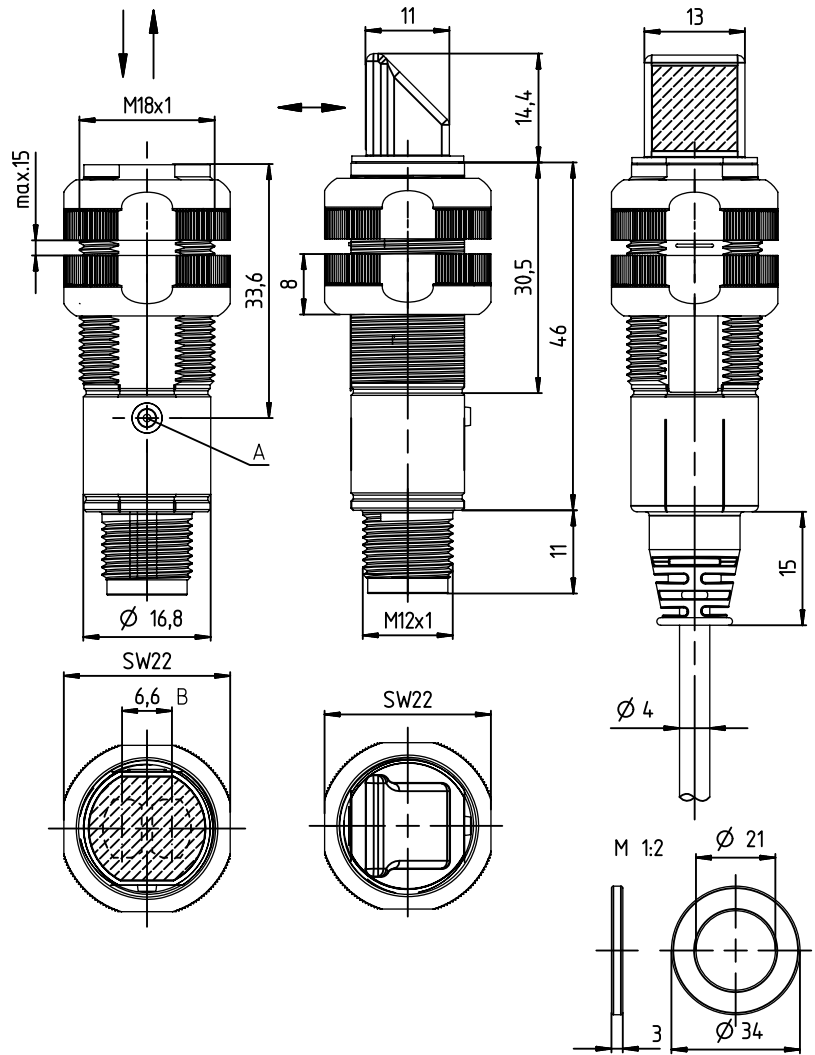
en 06-2015/09 50116752



**0.02 ... 6.0m**  
**0.02 ... 5.0m**  
 (with 90° angular optics)

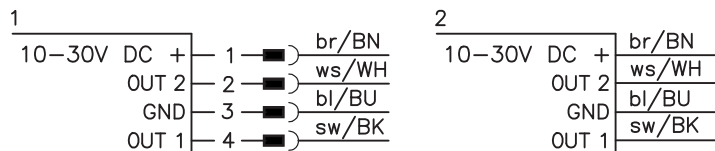
- Polarized retro-reflective photoelectric sensor using visible red light
- Axial and 90° light beam gate for flexible integration
- Active suppression of extraneous light A²LS
- Fast alignment through *brightVision*®
- Simple fine adjustment via *omni-mount*
- Embedded mounting option
- Robust plastic housing acc. to IP 67 for industrial application
- Complementary outputs for light/dark switching

**Dimensioned drawing**



**A** Indicator diode  
**B** Optical axis

**Electrical connection**

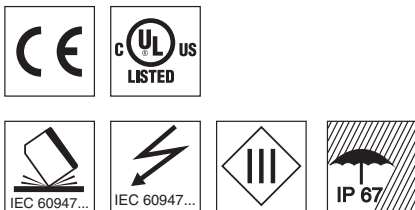


**Accessories:**

(available separately)

- Mounting systems (BT 318, BT 318-ARH)
- M12 connectors (KD ...)
- Ready-made cables (K-D ...)
- Reflectors
- Reflective tape

We reserve the right to make changes • DS\_PRK318B\_en\_50116752.fm



## Specifications

### Optical data

Typ. op. range limit (TK(S) 100x100) <sup>1)</sup>  
 Operating range <sup>2)</sup>  
 Light source  
 Wavelength

axial optics: 0.02 ... 6.0 m 90° optics 0.02 ... 5.0 m  
 see tables  
 LED (modulated light)  
 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  
 .../2N... 2 NPN transistor outputs  
 pin 2: PNP dark switching, pin 4: PNP light switching  
 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

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 70g (cable), 20g (M12)  
 Connection type 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 exempt group (in acc. with EN 62471)  
 Standards applied IEC 60947-5-2  
 Certifications UL 508, C22.2 No.14-13 <sup>3) 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)

## 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.

## Tables

### Axial optics:

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

### 90° optics:

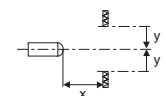
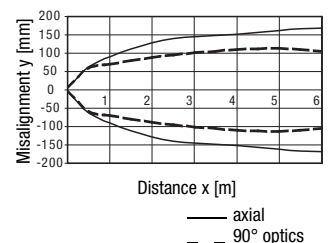
Reflectors	Operating range
1 TK(S) 100x100	0.02 ... 4.0m
2 TKS 40x60	0.02 ... 2.6m
3 TKS 82.2	0.05 ... 3.3m
4 TKS 30x50	0.05 ... 1.6m
5 TKS 20x40	0.04 ... 1.5m
6 Tape 4 50x50	0.10 ... 1.3m

1	0.02	4.0	5.0
2	0.02	2.6	3.5
3	0.05	3.3	4.0
4	0.05	1.6	2.0
5	0.04	1.5	2.0
6	0.10	1.3	1.8

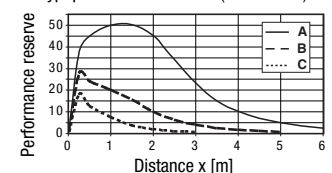
□ Operating range [m]  
 □ Typ. operating range limit [m]

## Diagrams

Typ. response behavior (TK 100x100)



Typ. performance reserve (axial model)



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

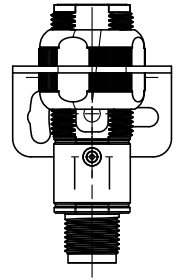
## PRK 318B

## Retro-reflective photoelectric sensors with polarization filter

### Mounting options

#### Standard mounting

Alignment of the supplied mounting nuts with flat side towards the mounting sheet.  
Mounting bracket BT D18M.5 is recommended for standard mounting.

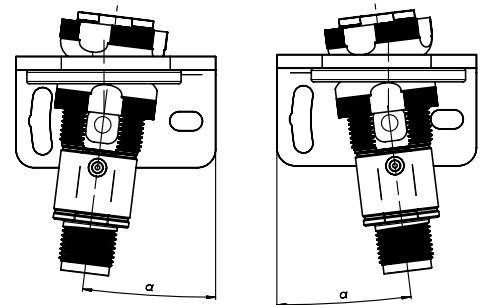


#### omni-mount

*omni-mount* makes fine adjustment of the sensors possible in a very simple and economical manner. For this type of mounting, the mounting nuts are used with the round side towards the mounting device. The mounting sheet must have a bore hole of approx. 21 mm in diameter. The special molding of the mounting nuts together with the spacer disc included in the delivery contents allows form-locking fastening of the sensors at different adjustment angles. The maximum possible tilt angle depends on the thickness of the mounting sheet. Mounting bracket BT D21M is recommended for *omni-mount*.

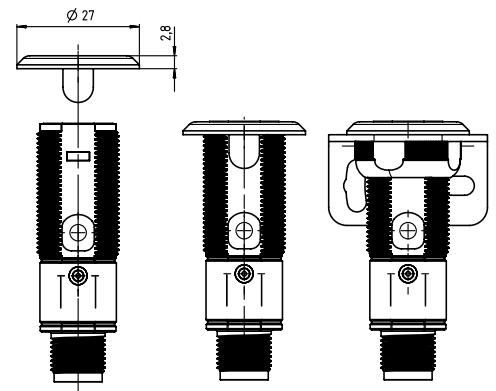
Mounting sheet thickness	Max. adjustment angle
2 mm	+/- 5°
4 mm <sup>*)</sup>	+/- 8°

<sup>\*)</sup> Corresponds to the thickness of the BT D21M mounting bracket



#### Embedded mounting

Embedded mounting, e.g. into a materials handling belt, is possible via the BT 318P-LS mounting support. The supports can be used either for fastening the axial sensors or for sensors with 90° optics.



## Order guide

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

		Designation	Part no.
<b>Sensors with axial optics</b>			
<b>With M12 connector</b>	Pin 4: PNP light switching, pin 2: PNP dark switching	PRK 318B/4P-M12	50116859
	Pin 4: NPN light switching, pin 2: NPN dark switching	PRK 318B/2N-M12	50116857
<b>With cable, 2m</b>	Pin 4: PNP light switching, pin 2: PNP dark switching	PRK 318B/4P	50116858
	Pin 4: NPN light switching, pin 2: NPN dark switching	PRK 318B/2N	50116856
<b>Sensors with 90° angular optics</b>			
<b>With M12 connector</b>	Pin 4: PNP light switching, pin 2: PNP dark switching	PRK 318B.W/4P-M12	50116863
	Pin 4: NPN light switching, pin 2: NPN dark switching	PRK 318B.W/2N-M12	50116861
<b>With cable, 2m</b>	Pin 4: PNP light switching, pin 2: PNP dark switching	PRK 318B.W/4P	50116862
	Pin 4: NPN light switching, pin 2: NPN dark switching	PRK 318B.W/2N	50116860
<b>Accessories for optimum fastening</b>			
Support for embedded mounting	Collective packaging with 10 supports	BT 318P-LS	50117258
Mounting bracket for standard mounting		BT D18M.5	50113548
Mounting bracket for omni-mount		BT D21M	50117257

## Part number code

P	R	K	3	1	8	B	.	W	/	4	P	-	M	1	2
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### Operating principle

**PRK** Polarized retro-reflective photoelectric sensor

### Series

**318B** Series 318B

### Optics design

**N/A** Axial optics  
**.W** 90° angular optics

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

**4** PNP transistor output, light switching  
**P** PNP transistor output, dark switching  
**2** NPN transistor output, light switching  
**N** NPN transistor output, dark switching  
**X** Pin not used

Combinations of functions are possible via two-digit code!

### Electrical connection

**N/A** Cable, standard length 2000 mm  
**-M12** M12 connector