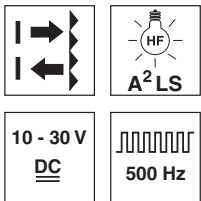


PRK 318B

Retro-reflective photoelectric sensors with polarization filter

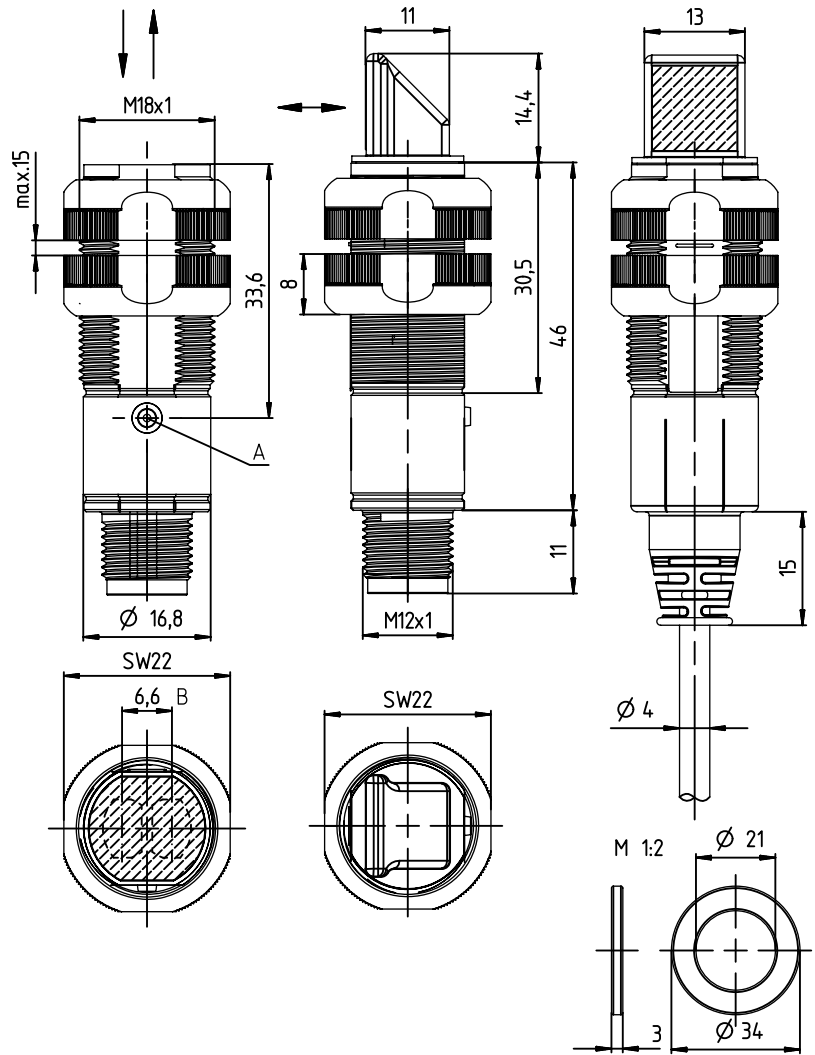
en 06-2015/09 50116752



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

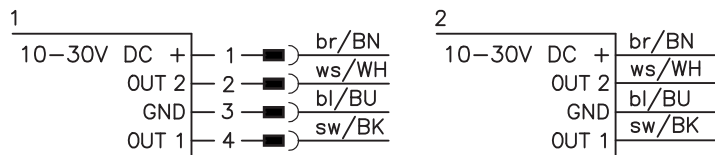
- Polarized retro-reflective photoelectric sensor using visible red light
- Axial and 90° light beam gate for flexible integration
- Active suppression of extraneous light A²LS
- Fast alignment through *brightVision*®
- Simple fine adjustment via *omni-mount*
- Embedded mounting option
- Robust plastic 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) ¹⁾
 Operating range ²⁾
 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 ³⁾ 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 $\geq (U_B - 2.5V) / \leq 2.5V$
 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 70g (cable), 20g (M12)
 Connection type M12 connector, 4-pin
 cable 2m, 4x0.20mm²

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 exempt 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)

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:

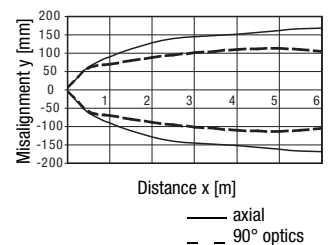
Reflectors	Operating range
1 TK(S) 100x100	0.02 ... 4.0m
2 TKS 40x60	0.02 ... 2.6m
3 TKS 82.2	0.05 ... 3.3m
4 TKS 30x50	0.05 ... 1.6m
5 TKS 20x40	0.04 ... 1.5m
6 Tape 4 50x50	0.10 ... 1.3m

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

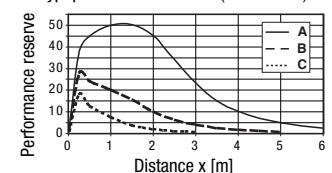
□ Operating range [m]
 □ Typ. operating range limit [m]

Diagrams

Typ. response behavior (TK 100x100)



Typ. performance reserve (axial model)



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

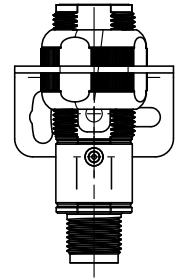
PRK 318B

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.

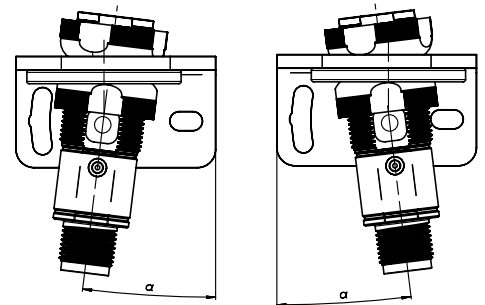


omni-mount

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*.

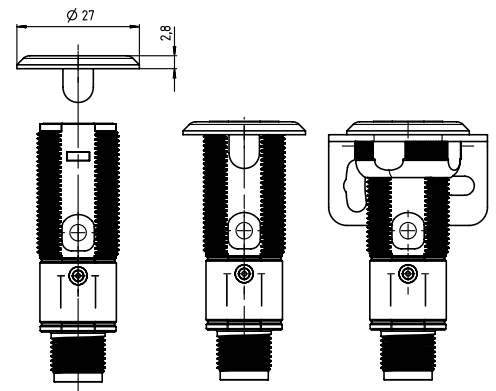
Mounting sheet thickness	Max. adjustment angle
2 mm	+/- 5°
4 mm ^{*)}	+/- 8°

^{*)} 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.

		Designation	Part no.
Sensors with axial optics			
With M12 connector	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
With cable, 2m	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
Sensors with 90° angular optics			
With M12 connector	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
With cable, 2m	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
Accessories for optimum fastening			
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

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