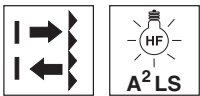


PRK 318B

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

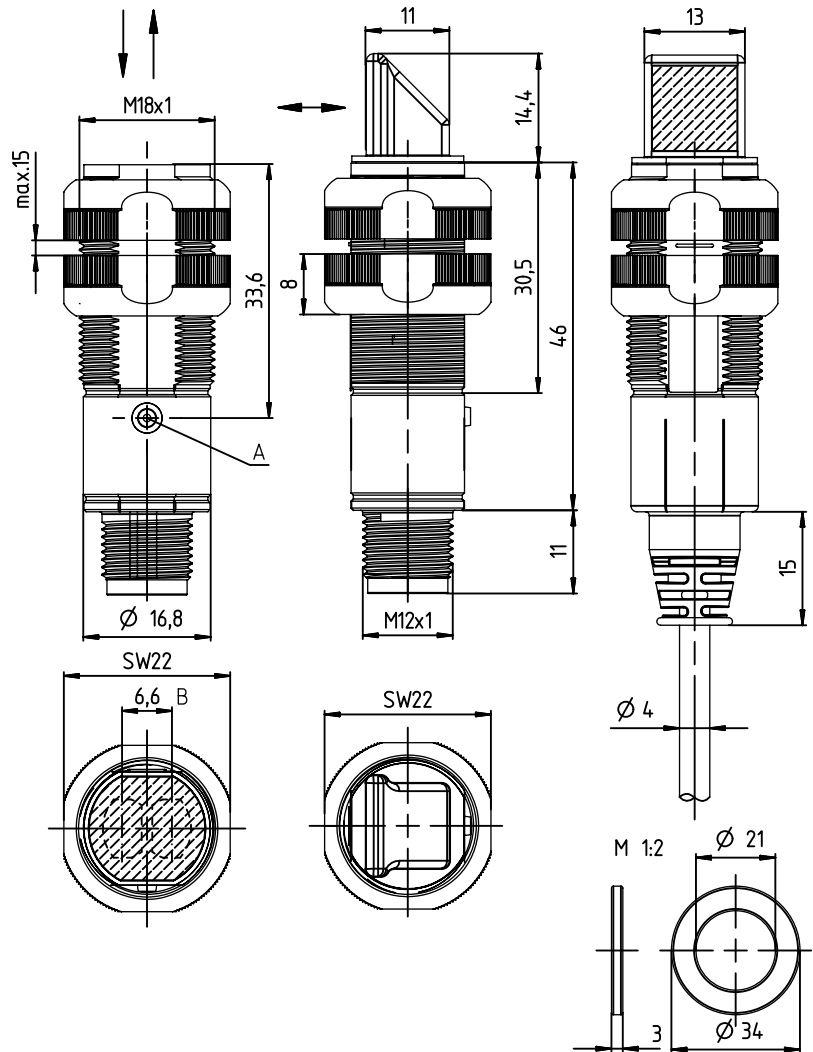


Accessories:

(available separately)

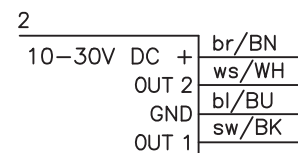
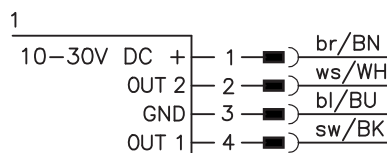
- Mounting systems (BT 318, BT 318-ARH)
- M12 connectors (KD ...)
- Ready-made cables (K-D ...)
- Reflectors
- Reflective tape

Dimensioned drawing



- A** Indicator diode
B Optical axis

Electrical connection



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
 $\geq (U_B - 2.5V) / \leq 2.5V$
max. 100mA ⁴⁾

Signal voltage high/low
Output current

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:

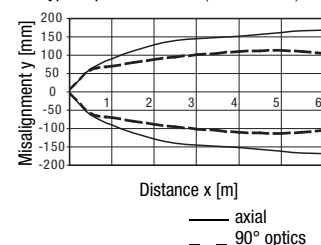
Reflectors	Operating range
1 TK(S) 100x100	0.02 ... 4.0m
2 TKS 40x60	0.02 ... 2.6m
3 TKS 82.2	0.05 ... 3.3m
4 TKS 30x50	0.05 ... 1.6m
5 TKS 20x40	0.04 ... 1.5m
6 Tape 4 50x50	0.10 ... 1.3m

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

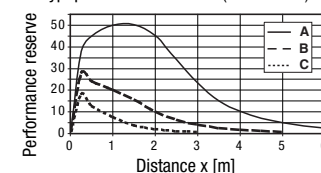
Operating range [m]
Typ. operating range limit [m]

Diagrams

Typ. response behavior (TK 100x100)



Typ. performance reserve (axial model)



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

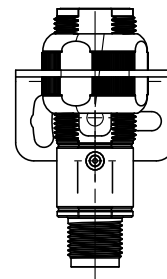
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Mounting options

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.

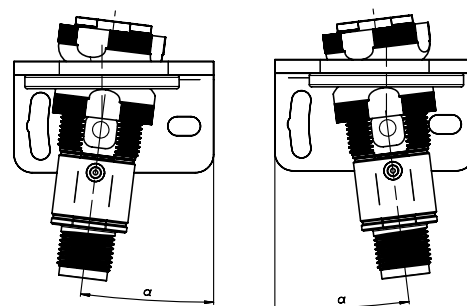


omni-mount

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*.

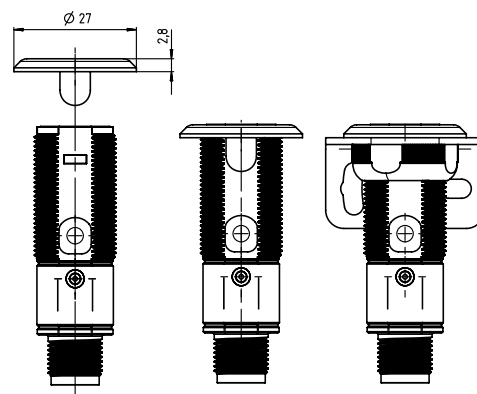
Mounting sheet thickness	Max. adjustment angle
2 mm	+/- 5°
4 mm ^{*)}	+/- 8°

^{*)} 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
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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