

PRK 3B Economy Retro-reflective photoelectric sensors with polarisation filter

en 06-2011/04 50105366



0.02 ... 6m



- Polarized retro-reflective photoelectric sensor with visible red light
- High performance reserve
- Small and compact construction with robust plastic housing, protection class IP 67 for industrial application
- Fast alignment through *brightVision*®
- A²LS- Active Ambient Light Suppression
- Push-pull switching output
- High switching frequency for detection of fast events
- Low current consumption

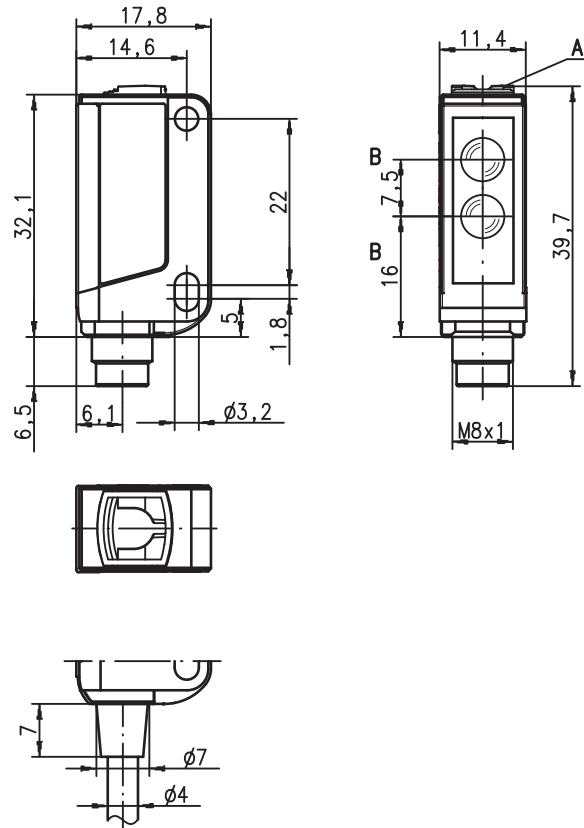


Accessories:

(available separately)

- Mounting systems (BT 3...)
- Cable with M8 or M12 connector (K-D ...)
- Reflectors
- Reflective tapes

Dimensioned drawing



- A** Yellow indicator diode
- B** Optical axis

Electrical connection

Plug connection, 4-pin

10-30V DC +	1	br/BN
NC	2	bl/BU
GND	3	sw/BK
OUT 1	4	

Cable, 4-wire

10-30V DC +	br/BN
NC	ws/WH
GND	bl/BU
OUT 1	sw/BK

Specifications

Optical data

Typ. op. range limit (TK(S) 100x100) ¹⁾	0.02 ... 6m
Operating range ²⁾	see tables
Light source ³⁾	LED (modulated light)
Wavelength	620nm (visible red light, polarized)

Timing

Switching frequency	1,000Hz
Response time	0.5ms
Delay before start-up	≤ 300ms

Electrical data

Operating voltage U_B ⁴⁾	10 ... 30VDC (incl. residual ripple)
Residual ripple	≤ 15% of U_B
Open-circuit current	≤ 10mA
Switching output ⁵⁾	.../6.7 1 push-pull switching output pin 4: PNP light switching, NPN dark switching; pin 2: not connected ⁶⁾
	.../6D.7 1 push-pull switching output pin 4: PNP dark switching, NPN light switching; pin 2: not connected ⁶⁾ light/dark switching $\geq (U_B - 2V) \leq 2V$ max. 100mA fixed setting
Function characteristics	
Signal voltage high/low	
Output current	
Operating range	

Indicators

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

Mechanical data

Housing ⁷⁾	plastic (PC-ABS)
Optics cover ⁸⁾	plastic (PMMA)
Weight (plug/cable)	10g/50g
Connection type	2m cable (cross section 4x0.20mm ²), M8 plastic connector

Environmental data

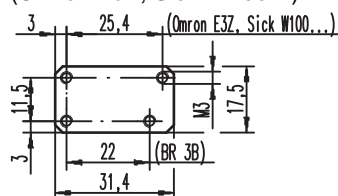
Ambient temp. (operation/storage)	-30°C ... +55°C/-30°C ... +70°C
Protective circuit ⁹⁾	2, 3
VDE safety class ¹⁰⁾	III
Protection class	IP 67
Light source	free group (in accordance with EN 62471)
Standards applied	IEC 60947-5-2
Certifications	UL 508 ⁴⁾

- 1) Typ. operating range limit: max. attainable range without performance reserve
- 2) Operating range: recommended range with performance reserve
- 3) Average life expectancy 100,000h at an ambient temperature of 25°C
- 4) For UL applications: for use in class 2 circuits according to NEC only
- 5) The push-pull switching outputs must not be connected in parallel
- 6) Pin 2: unassigned, hence especially suitable for the connection to AS-interface I/O coupling modules
- 7) Patent Pending Publ. No. US 7,476,848 B2
- 8) Patent Pending Publ. No. US 2009/0101791 A1
- 9) 2=polarity reversal protection, 3=short-circuit protection for all transistor outputs
- 10) Rating voltage 50V

Remarks

Adapter plate:

BT 3.2 (part no. 50103844) for alternate mounting on 25.4mm hole spacing (Omron E3Z, Sick W100...)



Tables

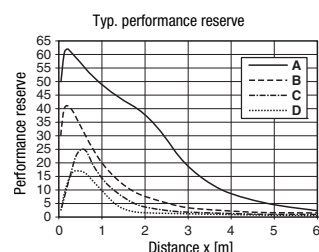
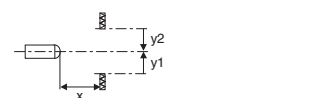
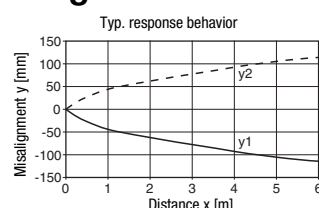
Reflectors			Operating range	
1	TK(S)	100x100	0.02 ... 5.0m	
2	TK	40x60	0.02 ... 3.0m	
3	TK	20x40	0.02 ... 1.5m	
4	Tape 4	50x50	0.1 ... 1.2m	

1	0,02			5	6
2	0,02		3	3,6	
3	0,02	1,5		2	
4	0,1	1,2	1,6		

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

TK ... = adhesive
TKS ... = screw type

Diagrams



- A TK 100x100
- B TKS 40x60
- C TKS 20x40
- D Tape 4: 50x50

Remarks

Mounting system:



- ① = BT 3
(part no. 50060511)
- ②+③ = BT 3.1 ¹⁾
(part no. 50105585)
- ①+②+③ = BT 3B
(part no. 50105546)

1) Packaging unit: PU = 10 pcs.

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Order guide

Selection table				Order code →						
Equipment ↓						PRK 3B/6.7 Part No. 50104697	PRK 3B/6.7-S8 Part No. 50104698	PRK 3B/6D.7 on request	PRK 3B/6D.7-S8 Part No. 50106865	
Output 1 (OUT 1)	push-pull switching output		light switching	○	●	●				
			dark switching	●				●	●	
Connection	cable 2,000 mm		4-wire		●			●		
	M8 connector, plastic		4-pin				●		●	
	pin 2: not assigned, suitable for connecting to AS-i coupling module				●	●		●	●	

● **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.

