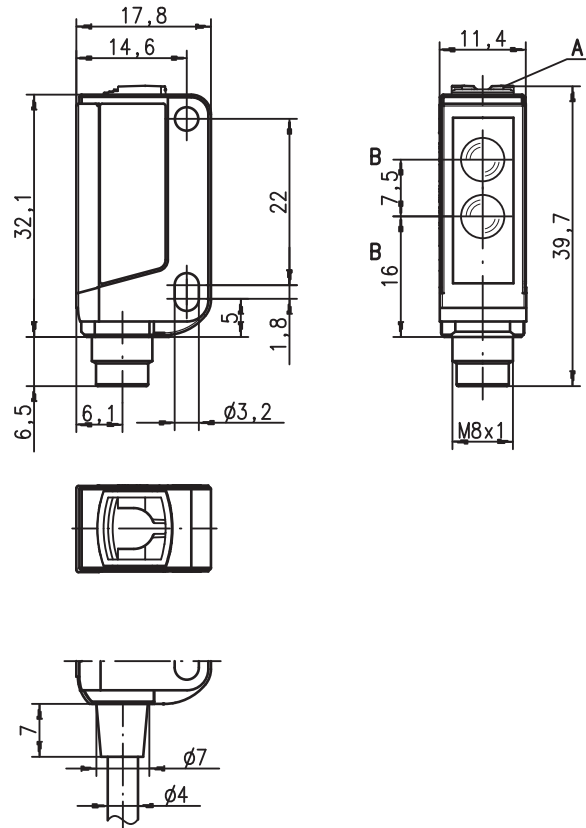


PRK 3B Economy Retro-reflective photoelectric sensors with polarisation filter

en 06-2011/04 50105366



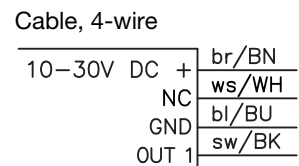
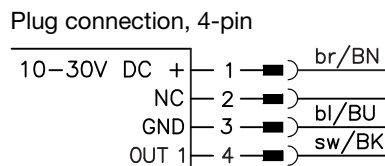
Dimensioned drawing



- A Yellow indicator diode
- B Optical axis

- 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

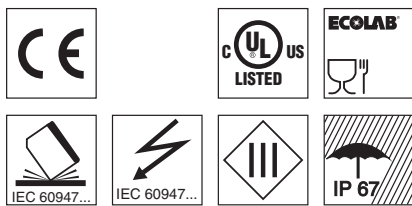
Electrical connection



Accessories:

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

We reserve the right to make changes • DS_PRK3B_econ_en.fm



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
 Signal voltage high/low ≥ ($U_B - 2V$)/≤ 2V
 Output current max. 100mA
 Operating range 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 4x0.20mm²),
 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

Tables

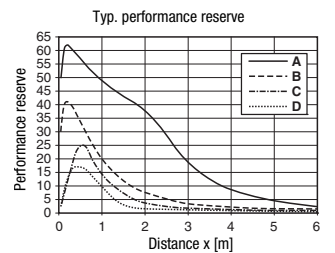
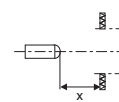
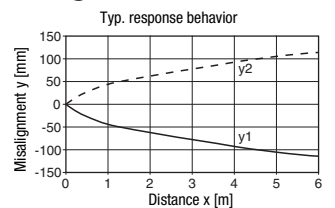
| Reflectors | | Operating range |
|------------|---------------|-----------------|
| 1 | TK(S) 100x100 | 0.02 ... 5.0m |
| 2 | TK 40x60 | 0.02 ... 3.0m |
| 3 | TK 20x40 | 0.02 ... 1.5m |
| 4 | Tape 4 50x50 | 0.1 ... 1.2m |

| | | | | | |
|---|------|-----|---|-----|---|
| 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:

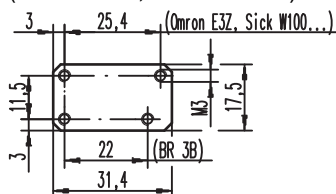


- ① = BT 3 (part no. 50060511)
- ②+③ = BT 3.1 ¹⁾ (part no. 50105585)
- ①+②+③ = BT 3B (part no. 50105546)

1) Packaging unit: PU = 10 pcs.


Remarks

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



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Order guide

| Selection table | | | | Order code → | 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 | | |
|---------------------|--|---|-----------------|--------------|---------------------------------|------------------------------------|---------------------------|-------------------------------------|---|--|
| Equipment ↓ | | | | | | | | | | |
| 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.

