

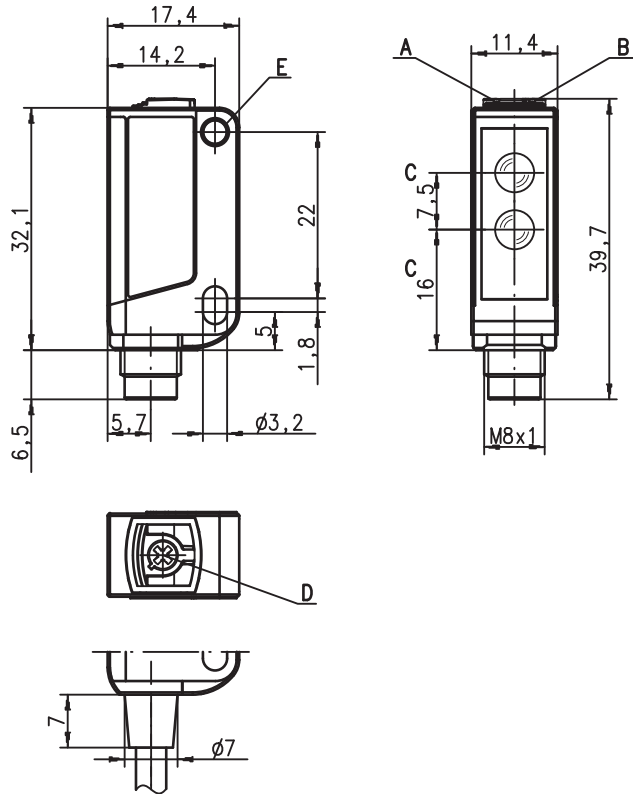
**RKR 3B**

**Retro-reflective photoelectric sensors**

en 03-2010/08 50109557



**Dimensioned drawing**



- A Green indicator diode
- B Yellow indicator diode
- C Optical axis
- D Potentiometer for operating range adjustment
- E Attachment sleeve

**0.02 ... 7m**

10 - 30 V  
DC

HF  
A<sup>2</sup>LS

ASIC

- 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*<sup>®</sup>
- A<sup>2</sup>LS - Active Ambient Light Suppression
- High switching frequency for detection of fast events
- Special version for glossy objects, e.g. metallic surfaces

**Electrical connection**

Cable, 4-wire

10-30V DC +	br/BN
OUT 2	ws/WH
GND	bl/BU
OUT 1	sw/BK

ISO  
9001

c UL US  
LISTED

**Accessories:**

- (available separately)
- Mounting systems (BT 3...)
  - Reflectors
  - Reflective tapes

Änderungen vorbehalten • DS\_RKR3B\_en.fm

## Specifications

### Optical data

Typ. op. range limit (TK(S) 100x100) <sup>1)</sup>	0.02 ... 7 m
Operating range <sup>2)</sup>	see tables
Light source <sup>3)</sup>	LED (modulated light)
Wavelength	620nm (visible red light, not polarised)

### Timing

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

### Electrical data

Operating voltage $U_B$ <sup>4)</sup>	10 ... 30VDC (incl. residual ripple)
Residual ripple	≤ 15% of $U_B$
Open-circuit current	≤ 14 mA
Switching output	.../66 2 push-pull switching outputs OUT 2 (ws/WH): PNP dark switching, NPN light switching OUT 1 (sw/BK): PNP light switching, NPN dark switching light/dark switching
Function characteristics	light/dark switching
Signal voltage high/low	≥ ( $U_B - 2V$ ) / ≤ 2V
Output current	max. 100mA
Operating range	fixed setting

### Indicators

Green LED	ready
Yellow LED	light path free

### Mechanical data

Housing <sup>5)</sup>	plastic (PC-ABS); 1 attachment sleeve, nickel-plated steel
Optics cover <sup>6)</sup>	plastic (PMMA)
Weight	with 2m cable: 50g
Connection type	2m cable (cross section 4x0.20mm <sup>2</sup> )

### Environmental data

Ambient temp. (operation/storage)	-30°C ... +55°C / -30°C ... +70°C
Protective circuit <sup>7)</sup>	2, 3
VDE safety class	II <sup>8)</sup>
Protection class	IP 67
LED class	1 (acc. to EN 60825-1)
Standards applied	IEC 60947-5-2
Certifications	UL 508 <sup>4)</sup>

- 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) Patent Pending Publ. No. US 7,476,848 B2
- 6) Patent Pending Publ. No. US 2009/0101791 A1
- 7) 2=polarity reversal protection, 3=short-circuit protection for all transistor outputs
- 8) Rating voltage 50V

## Remarks

### ● Approved purpose:

The retro-reflective photoelectric sensors are optical electronic sensors for optical, contactless detection of objects.

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.

## Order guide

Selection table		Order code →
<b>Equipment ↓</b>		
switching output	2 x Push-pull switching output	●
Switching function	1 PNP light switching and NPN dark switching OUT 1 (sw/BK)	●
	1 PNP dark switching and NPN light switching OUT 2 (ws/WH)	●
Connection	2000 mm, cable	●
Indicators	green LED: ready	●
	yellow LED: switching output	●

## Tables

Reflectors		Operating range	
1 TK(S)	100x100	0.02 ... 6.5m	
2 Tape 4	50x50	0.02 ... 2.5m	
1	0.02	6.5	7
2	0.02	2.5	3

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

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

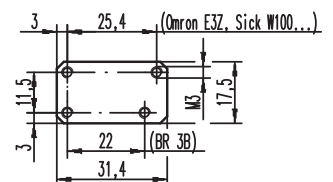
## Diagrams

## Remarks

Adapter plate:

BT 3.2 (Part No. 50103844)

for alternate mounting on  
 25.4mm hole spacing  
 (Omron E3Z, Sick W100...):



Mounting system:



① = BT 3  
 (Part No. 50060511)

②+③ = BT 3.1 <sup>1)</sup>  
 (Part No. 50105585)

①+②+③ = BT 3B  
 (Part No. 50105546)

1) Packaging unit: PU = 10 pcs.