

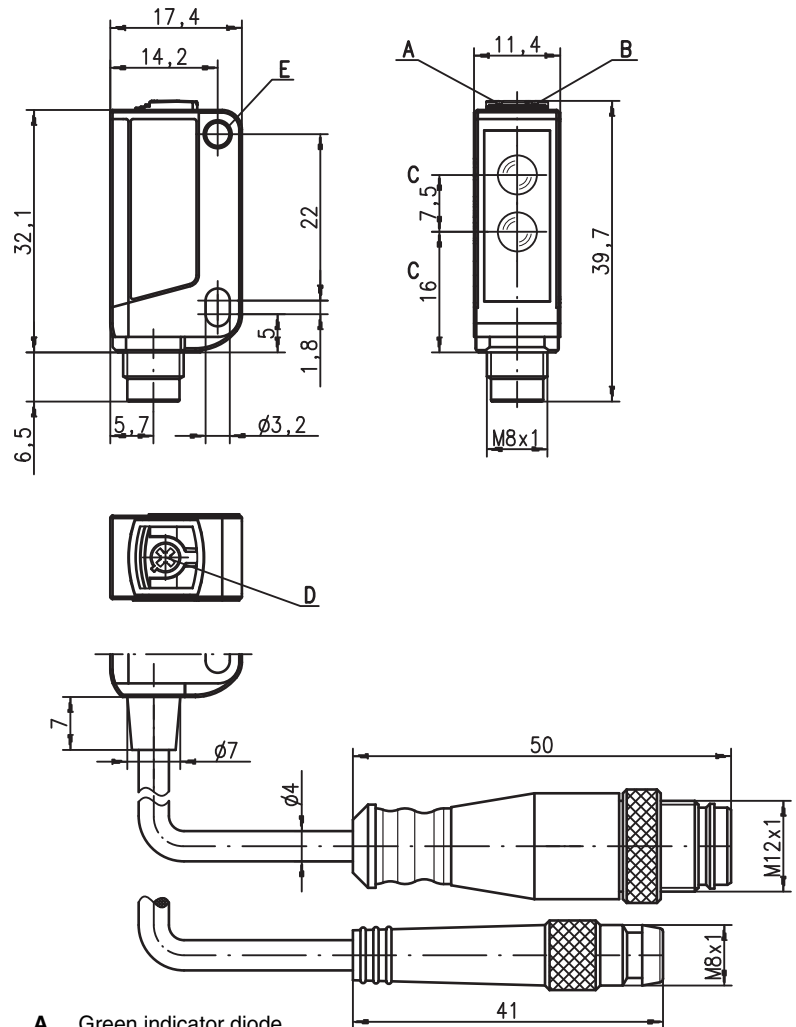
RK 3B

Retro-reflective photoelectric sensor

Part No. 501 07219



Dimensioned drawing



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

1 kHz

0.02
... **5.5m**

10 - 30 V
DC

A²LS

ASIC

- Retro-reflective photoelectric sensors with infrared light (IR)
- High performance reserve
- Small and compact construction with robust plastic housing, protection class IP 67/ IP 69K for industrial application
- A²LS - Active Ambient Light Suppression
- Push-pull switching output
- 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

We reserve the right to make changes • 3B_b08gb.fm

Specifications

Optical data

Typ. op. range limit (TK(S) 100x100) ¹⁾	0.02 ... 5.5m
Operating range ²⁾	see tables
Light source ³⁾	LED (modulated light)
Wavelength	850nm (infrared light, not polarised)

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	≤ 14mA
Switching output	.../66.1 ⁵⁾ 2 push-pull switching outputs OUT 1: PNP light switching, NPN dark switching OUT 2: PNP dark switching, NPN light switching
Function characteristics	light/dark switching
Signal voltage high/low	≥ ($U_B - 2V$) / ≤ 2V
Output current	max. 100mA
Operating range	adjustable with potentiometer, rotational angle approx. 250°

Indicators

Green LED	ready
Yellow LED	light path free

Mechanical data

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

Environmental data

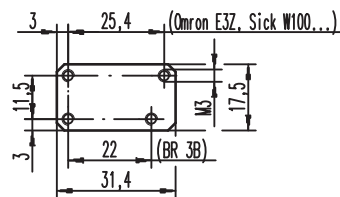
Ambient temp. (operation/storage)	-30°C ... +55°C / -30°C ... +70°C
Protective circuit ⁶⁾	2, 3
VDE safety class	II ⁷⁾
Protection class	IP 67, IP 69K
LED class	1 (acc. to EN 60825-1)
Standards applied	IEC 60947-5-2
Certifications	UL 508 ⁴⁾

- 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) 2=polarity reversal protection, 3=short-circuit protection for all transistor outputs
- 7) Rating voltage 50V

Remarks

Adapter plate:

BT 3.2 (Part No. 501 03844) for alternate mounting on 25.4mm hole spacing (Omron E3Z, Sick W100...)



Order guide

Selection table		Order code →		RK 3B/66.1 Part No. 501 06852			
Equipment ↓							
Output 1 (OUT 1)	push-pull switching output	☐	light switching	○	●		
		☐	dark switching	●			
Output 2 (OUT 2)	push-pull switching output	☐	light switching	○			
		☐	dark switching	●	●		
Connection	cable 2,000mm		4-wire		●		
Configuration	potentiometer, rotational angle approx. 250°				●		

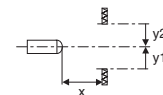
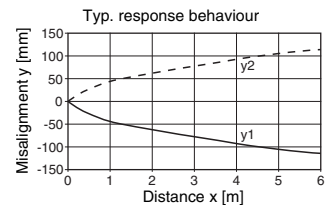
Tables

Reflectors			Operating range	
1	TK(S)	100x100	0.02 ... 5.5m	
4	Tape 4	50x50	0.05 ... 1.2m	
1	0.02		4.5	5.5
4	0.05	1.2	1.4	

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

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

Diagrams



Remarks

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

Mounting system:



- ① = BT 3 (Part No. 500 60511)
- ②+③ = BT 3.1 ¹⁾ (Part No. 501 05585)
- ①+②+③ = BT 3B (Part No. 501 05546)

1) Packaging unit: PU = 10 pcs.