

RTFR 3B Economy

Diffuse reflection light scanner with fading

en 03-2011/04 50108964



0 ... 450mm



- Diffuse reflection light scanner with visible red light
- Potentiometer for scanning range adjustment
- 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
- Fading: No object detection in the background

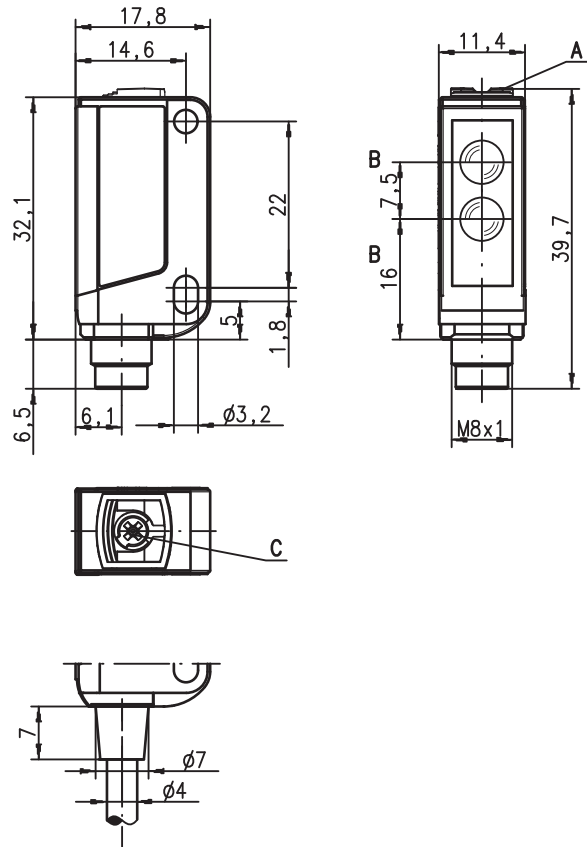


Accessories:

(available separately)

- Mounting systems (BT 3...)
- Cable with M8 connector (K-D ...)

Dimensioned drawing



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

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. operating range limit ¹⁾	0 ... 450 mm
Operating range ²⁾	0 ... 420 mm
Light source ³⁾	LED (modulated light)
Wavelength	620 nm (visible red light, polarized)

Timing

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

Electrical data

Operating voltage U_B ⁴⁾	10 ... 30 VDC (incl. residual ripple)
Residual ripple	≤ 15 % of U_B
Open-circuit current	≤ 10 mA
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⁾
Function characteristics	light/dark switching
Signal voltage high/low	≥ ($U_B - 2V$) / ≤ 2 V
Output current	max. 100 mA
Scanning range	adjustable

Indicators

Yellow LED	light path free
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Mechanical data

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

Environmental data

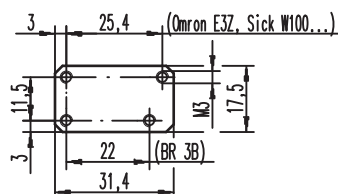
Ambient temp. (operation/storage)	-30 °C ... +55 °C / -30 °C ... +70 °C
Protective circuit ⁹⁾	2, 3
VDE safety class	III
Protection class	IP 67
Light source	free group (in accordance with EN 62471)
Standards applied	IEC 60947-5-2
Certifications	UL 508 ⁴⁾

- 1) Typ. operating range limit: max. attainable range without performance reserve
- 2) Operating range: recommended range with performance reserve
- 3) Average life expectancy 100,000 h 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

Remarks

Adapter plate:

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



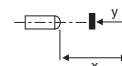
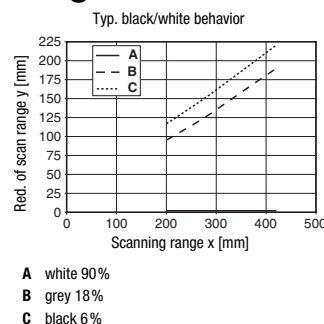
Tables

1	0	420	450
2	3	235	255
3	5	210	220

1	white 90%
2	grey 18%
3	black 6%

	Scanning range [mm]
	Typ. scanning range limit [mm]

Diagrams



Remarks

- With the set scanning range, a tolerance of the scanning range limits is possible depending on the reflection properties of the material surface.
- 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 ↓						RTFR 3B/6.7 Part No. 50108501	RTFR 3B/6.7-S8 Part No. 50108497	RTFR 3B/2.7 Part No. 50108502	RTFR 3B/6D.7-S8 Part No. 50108500	
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.

