

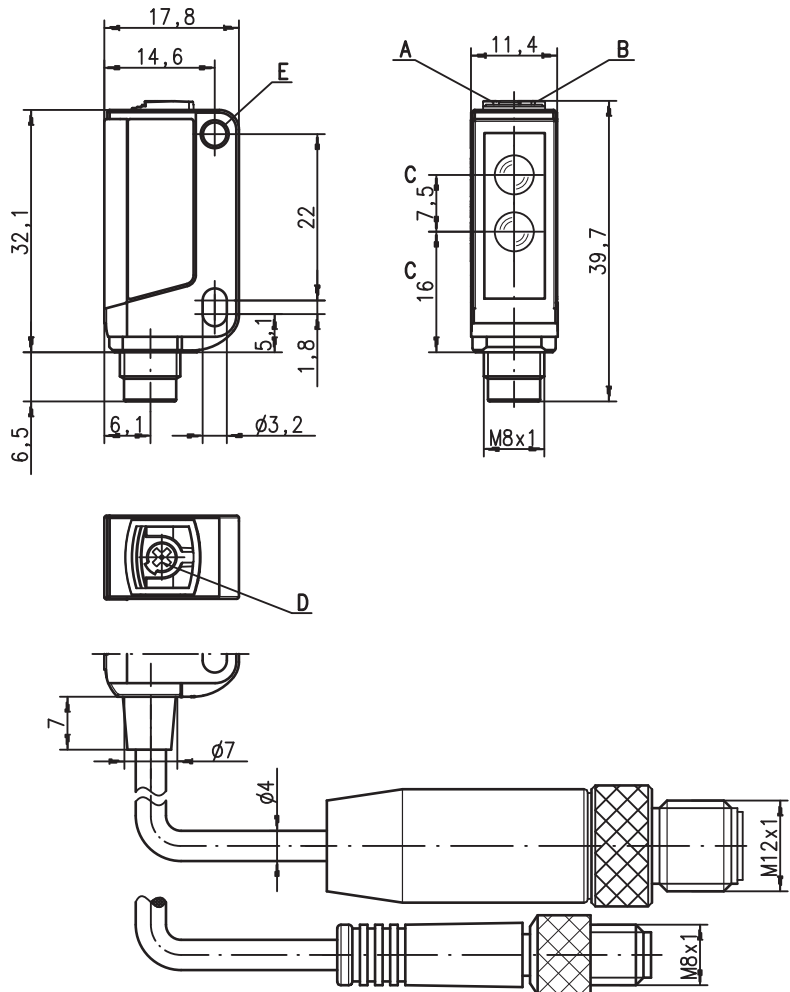
RTR 3B

Energetic diffuse reflection light scanner

en 04-2011/04 50108962



Dimensioned drawing



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

1 kHz

0 ... 750mm

10 - 30 V
DC

HF
A²LS

ASIC

- Energetic diffuse reflection light scanner with scanning range adjustment
- Visible red light
- 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

Plug connection, 4-pin

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

Cable, 4-wire

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

ISO 9001

UL LISTED

ECOLAB

IEC 60947...

IEC 60947...

Accessories:

(available separately)

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

We reserve the right to make changes • DS_RTR3B_en.fm

Specifications

Optical data

Typ. scanning range limit ¹⁾	0 ... 750 mm
Scanning range ²⁾	see tables
Adjustment range ¹⁾	0 ... 700 mm
Light source ³⁾	LED (modulated light)
Wavelength	620 nm (visible red light)

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/function ⁵⁾	2 push-pull switching outputs
	pin 2: PNP light switching, NPN dark switching
	pin 4: PNP dark switching, NPN light switching
.../.6.7	1 push-pull switching output
	pin 2: not connected;
	pin 4: PNP light switching, NPN dark switching
.../.2.7	1 NPN switching output
	pin 2: not connected; pin 4: NPN light switching
	$\geq (U_B - 2V) / \leq 2V$
Signal voltage high/low	max. 100 mA
Output current	adjustable
Scanning range	

Indicators

Green LED	ready (not for .7 types)
Yellow LED	Reflection (object detected)

Mechanical data

Housing ⁶⁾	plastic (PC-ABS)
Optics cover ⁷⁾	plastic (PMMA)
Weight (plug/cable)	10 g/50 g
Connection type	cable 2 m (cross section 4x0.20 mm ²), M8 connector, metal or plastic

Environmental data

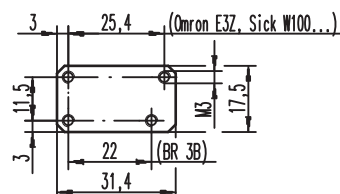
Ambient temp. (operation/storage)	-30°C ... +55°C / -30°C ... +70°C
Protective circuit ⁸⁾	2, 3
VDE safety class	III
Protection class	IP 67
Light source	free group (in accordance with EN 62471)
Standards applied	IEC 60947-5-2
Certifications	UL 508 ⁴⁾

- 1) Typ. scan. range limit/adjustment range: max. achievable scanning range/adjustment range for light objects (white 90%)
- 2) Scanning range: recommended scanning range for objects with different diffuse reflection
- 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) Patent Pending Publ. No. US 7,476,848 B2
- 7) Patent Pending Publ. No. US 2009/0101791 A1
- 8) 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...)



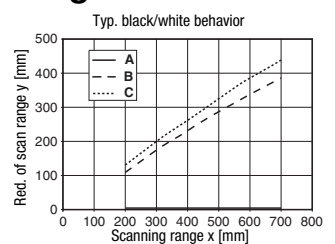
Tables

1	0	700	750
2	5	315	330
3	10	260	275

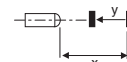
1	white 90%
2	gray 18%
3	black 6%

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

Diagrams



- A white 90%
- B gray 18%
- C black 6%



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.

RTR 3B
Energetic diffuse reflection light scanner
Order guide

Selection table			Order code →						
Equipment ↓			RTR 3B/66-S8 Part no. 50108505	RTR 3B/66 Part no. 50108506	RTR 3B/6.7-S8 Part no. 50109061	RTR 3B/6.7 Part no. 50109250	RTR 3B/2.7-S8 Part no. 50109065	RTR 3B/2.7 Part no. 50109251	
Output 1 (OUT 1)	push-pull switching output	 light switching	○	●	●	●	●		
		 dark switching	●						
	NPN transistor output	 light switching	○				●	●	
		 dark switching	●						
Output 2 (OUT 2)	push-pull switching output	 light switching	○						
		 dark switching	●	●	●				
	not assigned (pin 2), suitable for directly connecting to AS-i coupling module				●	●	●	●	
Connection	cable 2,000 mm	4-wire		●		●		●	
	M8 connector, metal	4-pin	●						
	M8 connector, plastic	4-pin			●		●		

● 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..

