

Specifications

Optical data

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

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

Indicators

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

Mechanical data

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

Environmental data

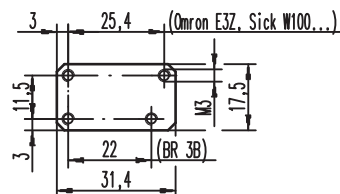
Ambient temp. (operation/storage)	-30°C ... +55°C / -30°C ... +70°C
Protective circuit ⁶⁾	2, 3
VDE safety class ⁷⁾	II
Protection class	IP 67, IP 69K
LED class	1 (acc. to EN 60825-1)
Standards applied	IEC 60947-5-2
Certifications	UL 508 ⁴⁾

- 1) Typ. 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 100,000h 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...)



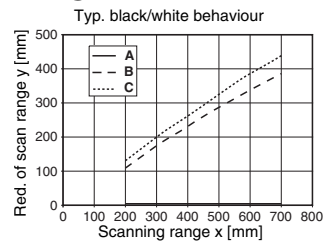
Tables

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

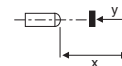
1	white 90%
2	grey 18%
3	black 6%

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

Diagrams



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



Remarks




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

RTR 3B
Energetic diffuse reflection light scanner
Order guide

Selection table				Order code →						
Equipment ↓				RTR 3B/66-S8 Part No. 501 08505	RTR 3B/66 Part No. 501 08506	RTR 3B/6.7-S8 Part No. 501 09061	RTR 3B/6.7 Part No. 501 09250	RTR 3B/2.7-S8 Part No. 501 09065	RTR 3B/2.7 Part No. 501 09251	
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 2,000mm		4-wire		●		●		●	
	M8 connector, metal		4-pin	●						
	M8 connector, plastic		4-pin			●		●		

