



### Specifications

#### Optical data

Typ. scanning range limit <sup>1)</sup>	10 ... 90mm
Scanning range <sup>2)</sup>	see tables
Adjustment range	20 ... 90mm
Light spot	approx. 5 x 30mm <sup>2</sup> at 70mm
Light source <sup>3)</sup>	LED (modulated light)
Wavelength	620nm (visible red light)

#### Timing

Switching frequency	1,000Hz
Response time	0.5ms
Delay before start-up	≤ 300ms (acc. to. IEC 60947-5-2)

#### Electrical data

Operating voltage $U_B$ <sup>4)</sup>	10 ... 30VDC (incl. residual ripple)
Residual ripple	≤ 15% of $U_B$
Open-circuit current	≤ 15mA
Switching output	.../66 <sup>5)</sup> 2 push-pull switching outputs pin 2: PNP dark switching, NPN light switching pin 4: PNP light switching, NPN dark switching .../6 <sup>5)</sup> 1 push-pull switching output pin 4: PNP light switching, NPN dark switching light/dark switching
Function characteristics	adjustable via 8-turn potentiometer
Signal voltage high/low	$\geq (U_B - 2V) / \leq 2V$
Output current	max. 100mA
Scanning range	

#### Indicators

Green LED	ready
Yellow LED	object detected - reflection

#### Mechanical data

Housing <sup>6)</sup>	plastic (PC-ABS); 1 attachment sleeve, nickel-plated steel
Optics cover	plastic (PMMA)
Weight	with connector: 10g with 200mm cable and connector: 20g with 2m cable: 50g
Connection type	2m cable (cross section 4x0.20mm <sup>2</sup> ), connector M8 metal, 0.2m cable with connector M8 or M12

#### Environmental data

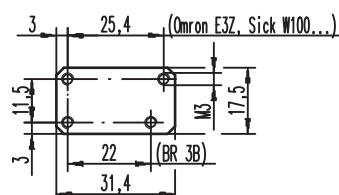
Ambient temp. (operation/storage)	-30°C ... +55°C / -30°C ... +70°C
Protective circuit <sup>7)</sup>	2, 3
VDE safety class	III
Protection class	IP 67
Light source	Exempt group (in acc. with EN 62471)
Standards applied	IEC 60947-5-2
Certifications	UL 508 <sup>4)</sup>

- 1) Typ. scan. range limit: max. achievable scanning 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) Patent Pending Publ. No. US 7,476,848 B2
- 7) 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

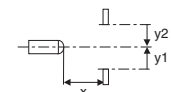
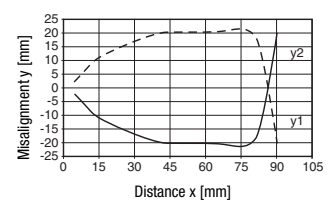
1	10	80	90
2	12	70	75
3	12	60	65

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

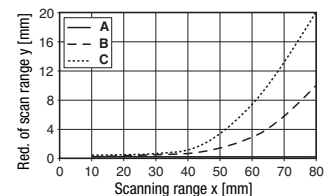
Scanning range [mm]
Typ. scanning range limit [mm]

### Diagrams

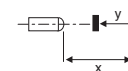
Typ. response behavior (white 90%)



Typ. black/white behavior



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



### Remarks

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.

**HRTR 3B "VXL"**

**Reflection light scanner with background suppression**

**Order guide**

Selection table		Order code →
<b>Equipment ↓</b>		<b>HRTR 3B/66-VXL-S8</b> Part no. 50122262
Switching output	2 x push-pull switching output 1 x push-pull switching output	●
Switching function	1 PNP light switching and NPN dark switching output	●
	1 PNP dark switching and NPN light switching output	●
Connection	M8 connector, metal, 4-pin	●
	M8 connector, metal, 3-pin	
	200mm cable with M8 connector, 4-pin	
	2000mm cable, 4-wire	
Indicators	green LED: ready	●
	yellow LED: switching output	●

**Application notes**



- **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.
- Install the sensor at a distance of 60 ... 80mm from the top layer.
- Position the sensor at an approx. 20° angle (tip plug side towards the top layer).
- Set the sensor with the adjusting spindle so that the top layer will be detected reliably.

