

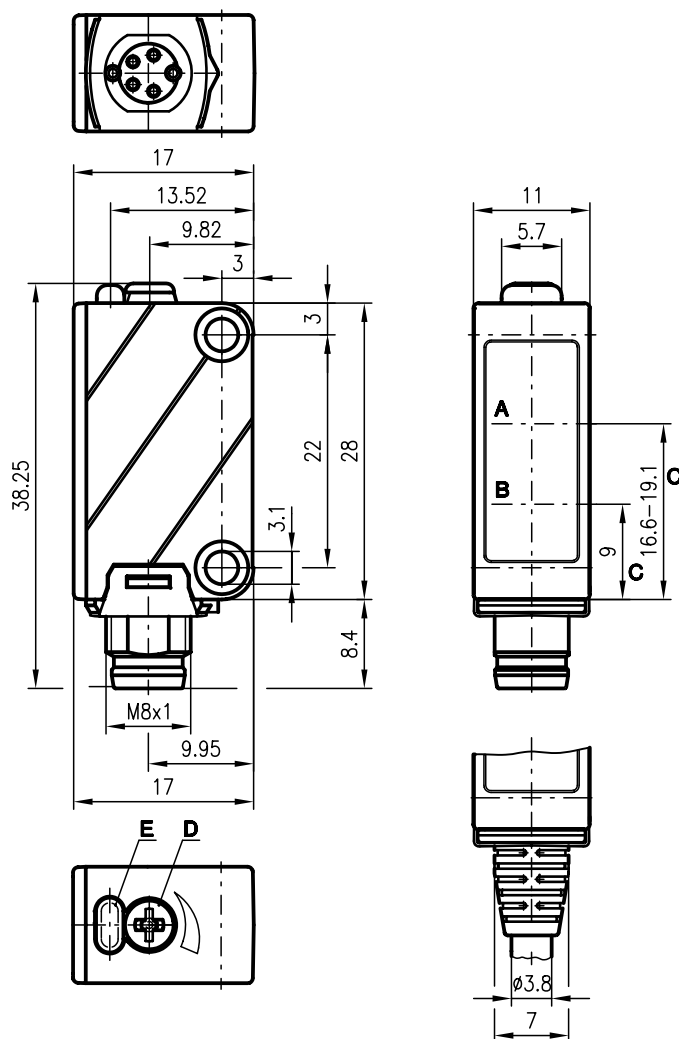
HRTR 3
Diffuse reflection light scanner with background suppression

7 ... 300mm
**10 - 30 V
DC**

- Scanner with adjustable background suppression
- Very good black/white performance, exact adjustment via multiturn potentiometer
- Small construction with robust plastic housing, protection class IP 67 for industrial application
- High switching frequency for detection of fast events


Accessories:
(available separately)

- Mounting systems (BT 3)
- M8 connectors (KD ...)
- Ready-made cables (KB ...)

Dimensioned drawing


- A** Receiver
B Transmitter
C Optical axis
D Adjustment screw
E Indicator diode

Electrical connection

 HRTR 3/44-150, 5000
 HRTR 3/44-150

10-30V DC +	br/BN
GND	bl/BU
○	sw/BK
●	ws/WH

HRTR 3/22-150

10-30V DC +	br/BN
GND	bl/BU
○	sw/BK
●	ws/WH

HRTR 3/44-150-S8

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

HRTR 3/22-150-S8

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

Specifications

Optical data

Typ. scanning range limit ¹⁾	7 ... 300mm
Scanning range ²⁾	see table
Adjustment range	25 ... 300mm
Light beam characteristic	focussed at 110mm
Light source	LED (modulated light)
Wavelength	660nm (visible red light)

Timing

Switching frequency	1000Hz
Response time	0.5 ms
Delay before start-up	≤ 100ms

Electrical data

Operating voltage U_B	10 ... 30VDC (incl. residual ripple)
Residual ripple	≤ 15% of U_B
Bias current	≤ 25mA
Switching output	2 transistor outputs, complementary
Function characteristics	light/dark switching
Signal voltage high/low	≥ ($U_B - 2V$) ≤ 2V
Output current	max. 100mA

Indicators

LED yellow	reflection
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Mechanical data

Housing	plastic
Optics cover	plastic (PMMA)
Weight	20g
Connection type	M8 connector (4-pin) or PUR cable 2m/5m (cross section 4x0.2mm ²)

Environmental data

Ambient temp. (operation/storage)	-25°C ... +55°C/-40°C ... +70°C
Protective circuit ³⁾	2, 3
VDE safety class ⁴⁾	II, all-insulated
Protection class	IP 67
Standards applied	IEC 60947-5-2

1) Typ. scanning range limit: max. attainable range without performance reserve

2) Scanning range: recommended range with performance reserve

3) 2=polarity reversal protection, 3=short-circuit protection for all outputs

4) Rating voltage 250VAC

Order guide

Selection table		Order code →					
Equipment ↓		HRTR 3/44-150 Part No. 500 30925	HRTR 3/44-150-S8 Part No. 500 30924	HRTR 3/44-150, 5000 Part No. 500 371 44	HRTR 3/22-150 Part No. 500 32368	HRTR 3/22-150-S8 Part No. 500 82277	
Switching output	PNP transistor	●	●	●			
	NPN transistor				●	●	
	light/dark switching	●	●	●	●	●	
Connection	M8 connector		●			●	
	cable 5000mm			●			
	cable 2000mm	●			●		

Tables

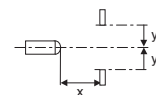
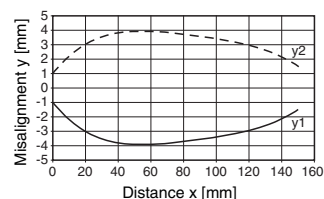
1	7	150	300
2	10	148	270
3	15	144	220

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

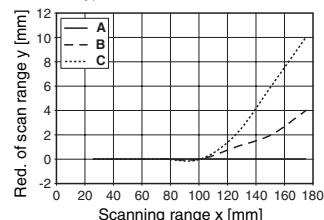
	Scanning range [mm]
	Typ. scanning range limit [mm]

Diagrams

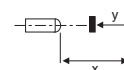
Typ. response behaviour (white 90%)



Typ. black/white behaviour



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



Remarks

- With the set scanning range, a tolerance of the upper scanning range limit is possible depending on the reflection properties of the material surface.