

HRTR 53 "VXL"

Reflection light scanner with background suppression

en 01-2013/05 50122234

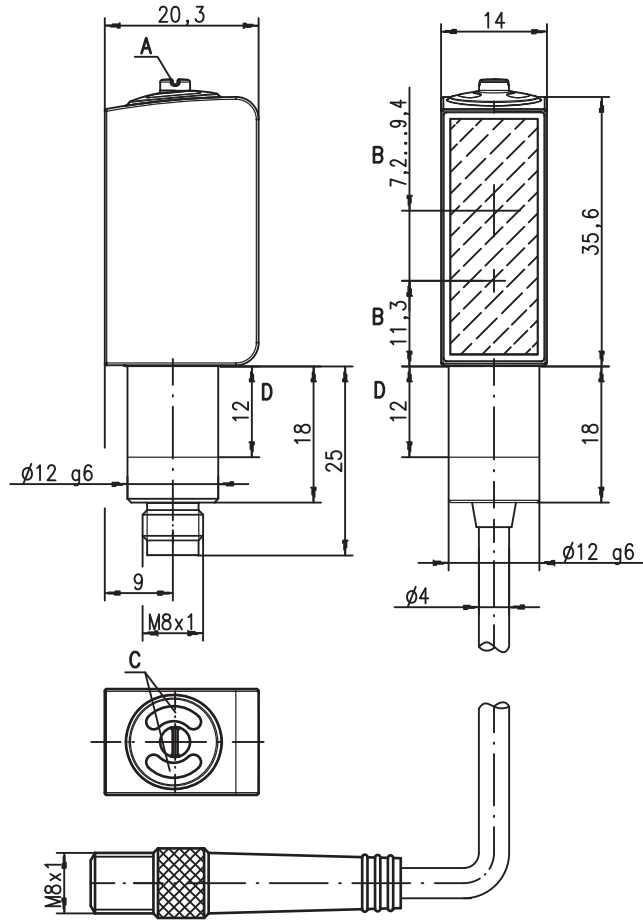


10 ... 90mm
80mm with
black-white error < 20%



- Reflection light scanner with visible red light
- Rectangular light spot guarantees the reliable detection of:
 - Top layers of syringe trays
 - Top layers of ampule trays
 - Paper and plastic webs in front of glass containers
- 316L stainless steel housing in Hygiene-Design
- Enclosed optics design prevents bacterial carry-overs
- ECOLAB and CleanProof+ tested
- Paperless device identification
- Scratch resistant and non-diffusive plastic front cover
- A²LS- Active Ambient Light Suppression
- Push-pull switching outputs

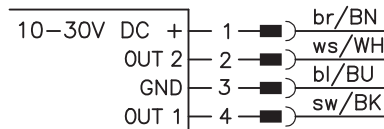
Dimensioned drawing



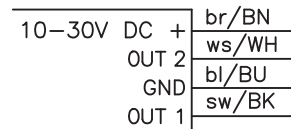
- A Adjustment screw
- B Optical axis
- C Indicator diodes
- D Permissible clamping range

Electrical connection

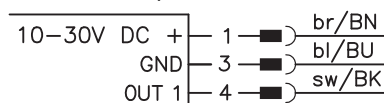
Plug connection, 4-pin
(with/without cable)



Cable, 4 wires



Connector, 3-pin



Accessories:

(available separately)

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

We reserve the right to make changes • DS_HRTR53_VXL_en_50122234.fm

Specifications

Optical data

Typ. scanning range limit ¹⁾ 10 ... 90mm
 Scanning range ²⁾ see tables
 Adjustment range 20 ... 90mm
 Light spot approx. 5 x 30mm² at 70mm
 Light source ³⁾ LED (modulated light)
 Wavelength 620nm (visible red light)

Timing

Switching frequency 1000Hz
 Response time 0.5ms
 Delay before start-up ≤ 300ms (acc. to. IEC 60947-5-2)

Electrical data

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

Indicators

LED green ready
 Yellow LED object detected - reflection

Mechanical data

Housing AISI 316L stainless steel, DIN X2CrNiMo17132, W.No1.4404
 Housing design HYGIENE-Design
 Housing roughness ⁶⁾ $R_a \leq 2.5$
 Connector AISI 316L stainless steel, DIN X2CrNiMo17132, W.No1.4404
 Optics cover coated plastic (PMMA), scratch resistant and non-diffusive
 Operation with TPV-PE, non-diffusive
 Weight with M8 connector: 50g
 with 200mm cable and M8 connector: 60g
 Connection type M8 connector, 4-pin or 3-pin
 0.2m cable with M8 connector, 4-pin
 via fit (see "Remarks")
 Fastening 3 Nm (permissible range, see dimensioned drawing)
 Max. tightening torque

Environmental data

Ambient temp. (operation/storage) ⁷⁾ -30°C ... +70°C / -30°C ... +70°C
 Protective circuit ⁸⁾ 2, 3
 VDE safety class ⁹⁾ III
 Protection class IP 67, IP 69K ¹⁰⁾
 Environmentally tested acc. to ECOLAB, CleanProof+
 Light source exempt group (in accordance with EN 62471)
 Standards applied IEC 60947-5-2
 Certifications UL 508 ⁴⁾
 Chemical resistance tested in accordance with ECOLAB and CleanProof+ (see Remarks)

- 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) Typical value for the stainless steel housing
- 7) Operating temperatures of +70°C permissible only briefly (≤ 15min)
- 8) 2=polarity reversal protection, 3=short circuit protection for all transistor outputs
- 9) Rating voltage 50V
- 10) Only with internal tube mounting of the M8 connector

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.

Tables

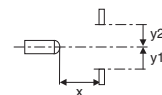
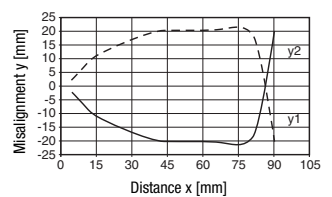
1	10	80	90
2	12	70	75
3	12	60	65

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

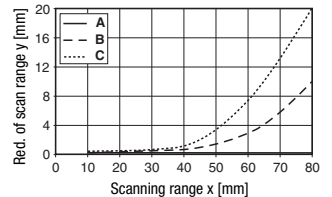
Scanning range [mm]
 Typ. scanning range limit [mm]

Diagrams

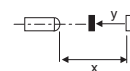
Typ. response behavior (white 90%)



Typ. black/white behavior



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



Remarks

A list of tested chemicals can be found in the first part of the product description.

Only secure in designated area using set screw. Max. tightening torque 3Nm.

HRTR 53 "VXL"

Reflection light scanner with background suppression

Order guide

Selection table		Order code →	HRTR 53/66-VXL-S8 Part no.: 50122261
Equipment ↓			
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		
	cable 200 mm with M 8 connector, 4-pin		
	2000 mm cable, 4-wire		
Indicators	green LED: ready		●
	yellow LED: switching output		●

Application notes



- 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.

