



HRT 96

Diffuse reflection light scanner with background suppression



100 ... 1200 mm



- Scanner with adjustable background suppression using visible red light
- Robust metal housing with glass cover or plastic housing, protection class IP 67 for industrial application
- Complementary outputs for standard applications and a wide range of input and output variants for optimum adaptation to the application
- Connection via M12 connector or terminal compartment
- Various options with switching delays, light/dark switching, activation input, and optics heating combined with low temperature

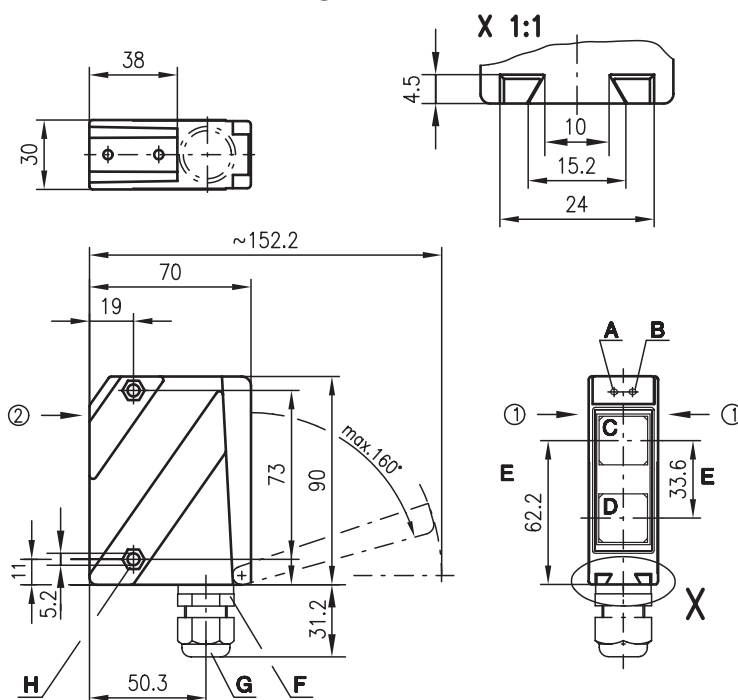


Accessories:

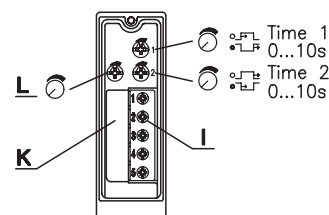
(available separately)

- Mounting systems (BT 96, BT 96.1, UMS 96, BT 450.1-96)
- M12 connectors (KD ...)
- Ready-made cables (K-D ...)

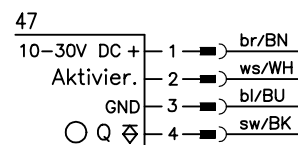
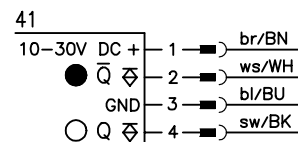
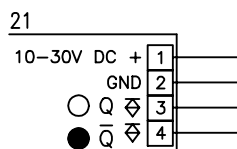
Dimensioned drawing



- A** Indicator diode green
B Indicator diode yellow
C Transmitter
D Receiver
E Optical axis
F Device plug M12x1
G Screwed cable gland M16x1.5 for Ø 5 ... 10 mm
H Countersinking for SK nut M5, 4.2 deep
I Connection terminals
K Cable entry
L Scanning range adjustment
 Preferred entry direction for objects ① + ②



Electrical connection



Specifications

Optical data

Typ. scanning range limit (white 90%) ¹⁾
 Scanning range ²⁾
 Adjustment range
 Light source
 Wavelength

Red light

100 ... 1200mm
 see tables
 100 ... 800mm
 LED (modulated light)
 660nm

Timing

Switching frequency
 Response time
 Delay before start-up

300Hz
 1.67ms
 ≤ 200ms

Electrical data

Operating voltage U_B
 Residual ripple
 Bias current
 Switching output
 Function characteristics
 Signal voltage high/low
 Output current

10 ... 30VDC (incl. residual ripple)
 ≤ 15% of U_B
 ≤ 35mA
 PNP transistor
 light or dark switching
 ≥ ($U_B - 2V$) / ≤ 2V
 max. 100mA

Indicators

LED green
 LED yellow

ready
 reflection

Mechanical data

Housing
 Optics cover
 Weight
 Connection type

Plastic housing

polycarbonate
 plastic
 150g
 terminals or M12 connector

Environmental data

Ambient temp. (operation/storage)
 Protective circuit ³⁾
 VDE safety class ⁴⁾
 Protection class
 LED class
 Standards applied

-20°C ... +60°C / -40°C ... +70°C
 1, 2, 3, 4
 II, all-insulated
 IP 67
 1 (acc. to EN 60825-1)
 IEC 60947-5-2

Options

Switching delay (slow oper./release)
 Activation input activ (high)
 Transmitter active/not active
 Activation/disable delay
 Input resistance

0 ... 10s (separately adjustable)
 ≥ 8V / ≤ 2V
 ≤ 0.5ms
 47KΩ ± 10%

- 1) Typ. scanning range limit: max. attainable range without performance reserve
- 2) Scanning range: recommended range with performance reserve
- 3) 1=transient protection, 2=polarity reversal protection, 3=short circuit protection for all outputs, 4=interference blanking
- 4) Rating voltage 250VAC

Tables

Red light

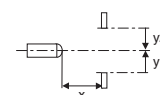
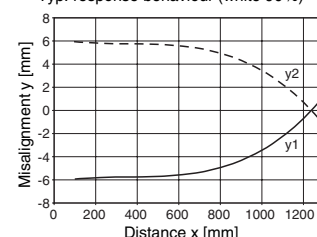
1	100	800	1200
2	100	770	1140
3	100	730	1050

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

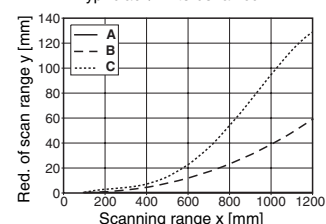
Scanning range [mm]
 Typ. scanning range limit [mm]

Diagrams

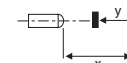
Typ. response behaviour (white 90%)



Typ. black/white behaviour



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



Order guide

Selection table		Order code →											
Equipment ↓		HRT 96K/P-1630-800-41 Part No. 500 80242	HRT 96K/P-1630-800-21 Part No. 500 80327	HRT 96K/P-1640-800-41 Part No. 500 81464	HRT 96K/P-1631-800-47 Part No. 500 38471								
Light source	red light (800mm)	●	●	●	●								
	infrared light (1200mm)												
Connection	terminals		●										
	M12 connector	●		●	●								
Features	switching delay			●									
	activation input				●								
	UL homologation	●	●	●	●								

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.
- The diffuse reflection light scanner is also available with integrated AS-i chip for direct connection to the AS-i system.
- Available as a set together with cable socket.