

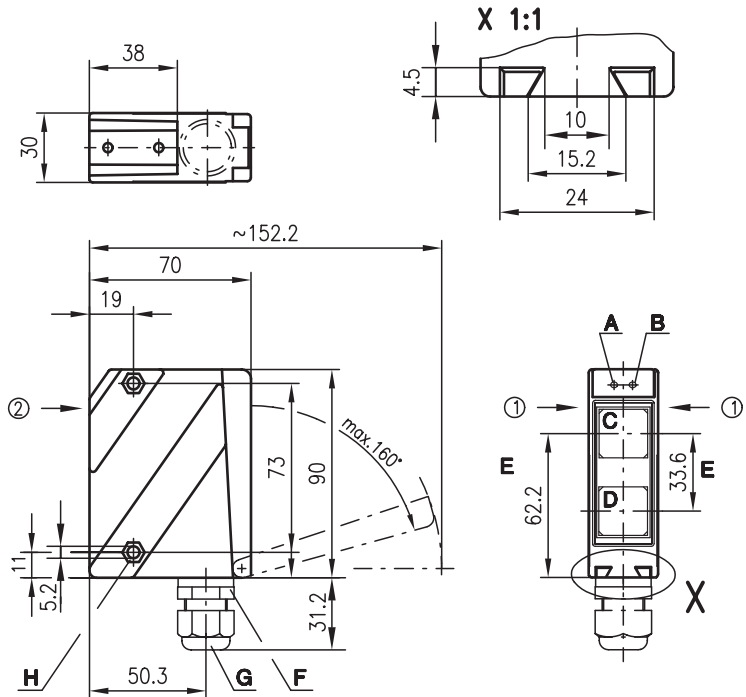


# HRT 96

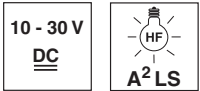
# Diffuse reflection light scanner with background suppression



## Dimensioned drawing

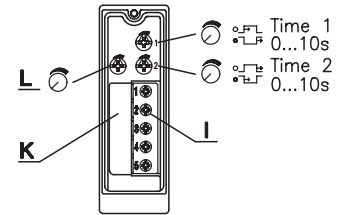


100 ... 1200mm

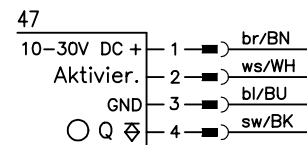
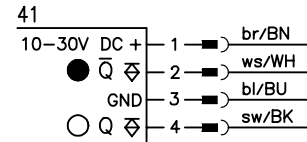
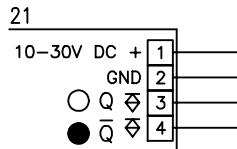


- Scanner with adjustable background suppression using visible red light
- Robust metal housing with glass cover or plastic housing, protection class IP 67 for industrial application
- Complementary outputs for standard applications and a wide range of input and output variants for optimum adaptation 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

- 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 ... 10mm
  - 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



## Accessories:

(available separately)

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

We reserve the right to make changes\*96\_d09e.fm

## Specifications

### Optical data

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

### Red light

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

### Timing

Switching frequency 300Hz  
 Response time 1.67ms  
 Delay before start-up ≤ 200ms

### Electrical data

Operating voltage  $U_B$  10 ... 30VDC (incl. residual ripple)  
 Residual ripple ≤ 15% of  $U_B$   
 Bias current ≤ 35mA  
 Switching output PNP transistor  
 Function characteristics light or dark switching  
 Signal voltage high/low ≥ ( $U_B - 2V$ ) / ≤ 2V  
 Output current max. 100mA

### Indicators

LED green ready  
 LED yellow reflection

### Mechanical data

Housing polycarbonate  
 Optics cover plastic  
 Weight 150g  
 Connection type terminals or M12 connector

### Environmental data

Ambient temp. (operation/storage) -20°C ... +60°C / -40°C ... +70°C  
 Protective circuit <sup>3)</sup> 1, 2, 3, 4  
 VDE safety class <sup>4)</sup> II, all-insulated  
 Protection class IP 67  
 LED class 1 (acc. to EN 60825-1)  
 Standards applied IEC 60947-5-2

### Options

Switching delay (slow oper./release) 0 ... 10s (separately adjustable)  
 Activation input activ (high)  
 Transmitter active/not active ≥ 8V / ≤ 2V  
 Activation/disable delay ≤ 0.5ms  
 Input resistance 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

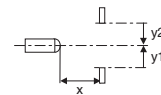
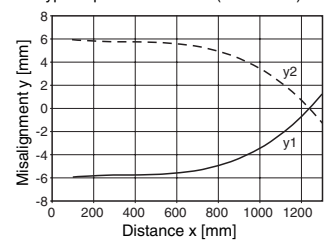
|   |     |     |      |
|---|-----|-----|------|
| 1 | 100 | 800 | 1200 |
| 2 | 100 | 770 | 1140 |
| 3 | 100 | 730 | 1050 |

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

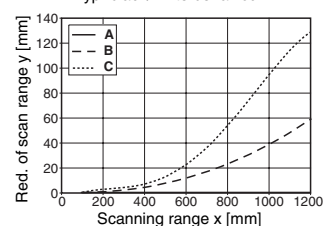
Scanning range [mm]  
 Typ. scanning range limit [mm]

## Diagrams

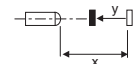
Typ. response behaviour (white 90%)



Typ. black/white behaviour



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



## Order guide

| Selection table |                  | Order code →                                |   |   |   |   |  |  |  |  |  |
|-----------------|------------------|---|---|---|---|---|--|--|--|--|--|
| Equipment ↓     | Light source     | HRT 96K/P-1630-800-41<br>Part No. 500 80242 | HRT 96K/P-1630-800-21<br>Part No. 500 80327 | HRT 96K/P-1640-800-41<br>Part No. 500 81464 | HRT 96K/P-1631-800-47<br>Part No. 500 38471 |   |  |  |  |  |  |
|                 |                  | 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.