



HRT 96

Diffuse reflection light scanner with background suppression

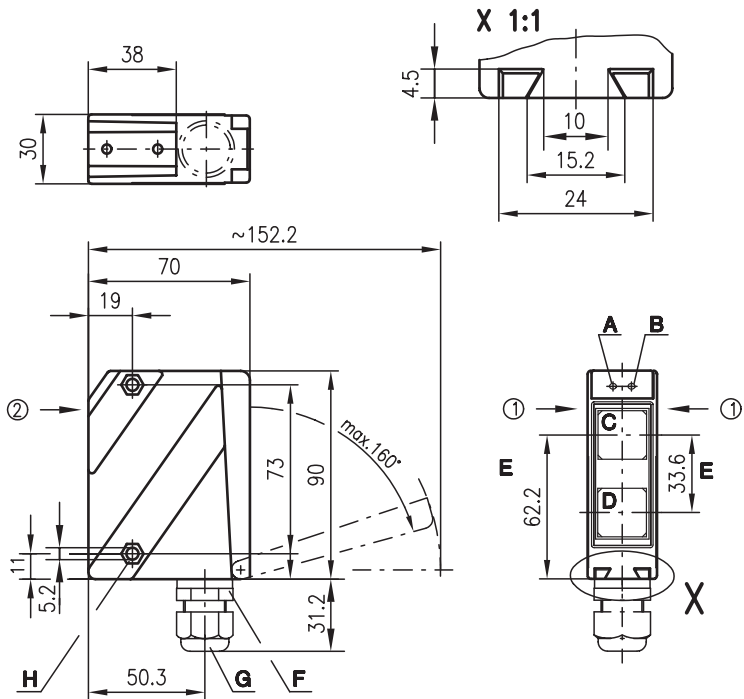


100 ... 1800mm  
100 ... 1200mm

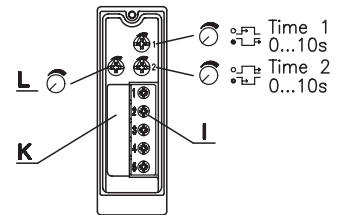


- Scanner with adjustable background suppression in visible red light or infrared light
- Robust metal housing with glass cover or plastic housing, protection class IP 67/ IP 69K for industrial application
- Complementary outputs, scanning range adjustment and delay before start-up for optimal adaptation to the application
- Connection via M12 connector or terminal compartment
- Multiple options with switching delays, activation input and optics heating for use at low temperatures

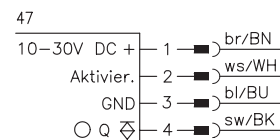
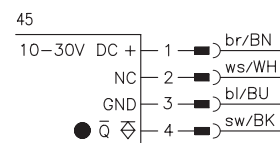
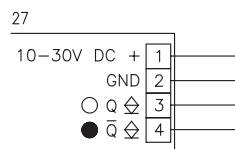
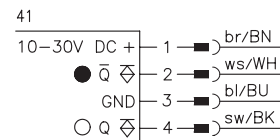
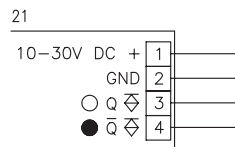
Dimensioned drawing



- 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 ... 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\_d01e.fm



### Specifications

#### Optical data

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

#### Infrared light

100 ... 1800mm  
 see tables  
 150 ... 1200mm  
 LED (modulated light)  
 880nm

#### 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, ≤ 75mA with optics heating  
 Switching output PNP transistor  
 Function characteristics light or dark switching (reversible)  
 Signal voltage high/low ≥ ( $U_B - 2V$ ) / ≤ 2V  
 Output current max. 100mA

#### Indicators

LED green ready  
 LED yellow reflection

#### Mechanical data

Housing diecast zinc  
 Optics cover glass  
 Weight 380g  
 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, IP 69K <sup>5)</sup>  
 LED class 1 (acc. to EN 60825-1)  
 Standards applied IEC 60947-5-2

#### Options

**Optics heating** for temperature changes, prevents fogging  
**Low temperature** to -35°C  
**Switching delay** (slow oper./release) 0 ... 10s (separately adjustable)  
**Activation input** activ  
 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
- 5) IP 69K test acc. to DIN 40050 part 9 simulated, high pressure cleaning conditions without the use of additives, acids and bases are not part of the test

### 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.

### Order guide

Selection table		Order code →									
Equipment ↓		HRT 96MP-1630-800-41 Part No. 500 80047	HRT 96MP-1636-800-41 Part No. 500 32127	HRT 96MP-1640-800-21 Part No. 500 25124	HRT 96MP-1640-800-41 Part No. 500 25126	HRT 96MP-1635-800-45 Part No. 501 04142	HRT 96MP-1610-1200-21 Part No. 500 25116	HRT 96MP-1610-1200-41 Part No. 500 25118	HRT 96MP-1620-1200-21 Part No. 500 25114	HRT 96MP-1620-1200-41 Part No. 500 61102	HRT 96MN-1606-1200-27 Part No. 500 40358
Light source	red light (800mm)	●	●	●	●	●					
	infrared light (1200mm)						●	●	●	●	●
Connection	terminals			●			●		●		●
	M12 connector	●	●		●	●		●		●	
Features	optics heating/low temp.		●						●	●	●
	switching delay			●	●		●	●	●	●	
	activation input										
	NPN switching output										●
	for AS-i I/O coupling modules					●					

### Tables

#### Red light

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

#### Infrared light

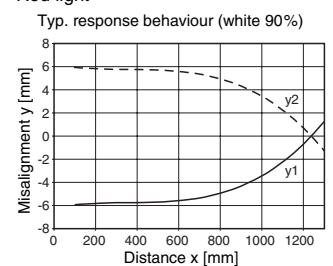
1	100	1200	1800
2	100	1100	1600
3	100	1000	1350

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

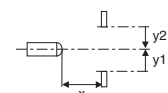
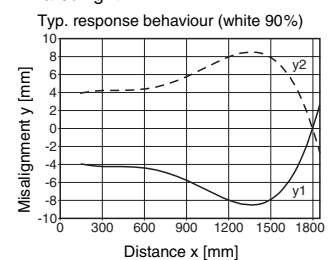
□ Scanning range [mm]  
 ■ Typ. scanning range limit [mm]

### Diagrams

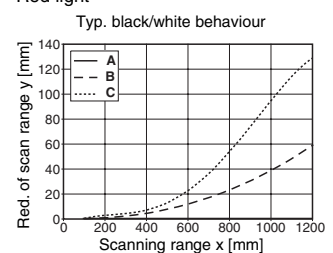
#### Red light



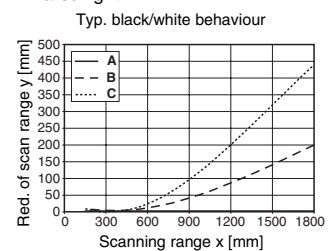
#### Infrared light



#### Red light



#### Infrared light



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