

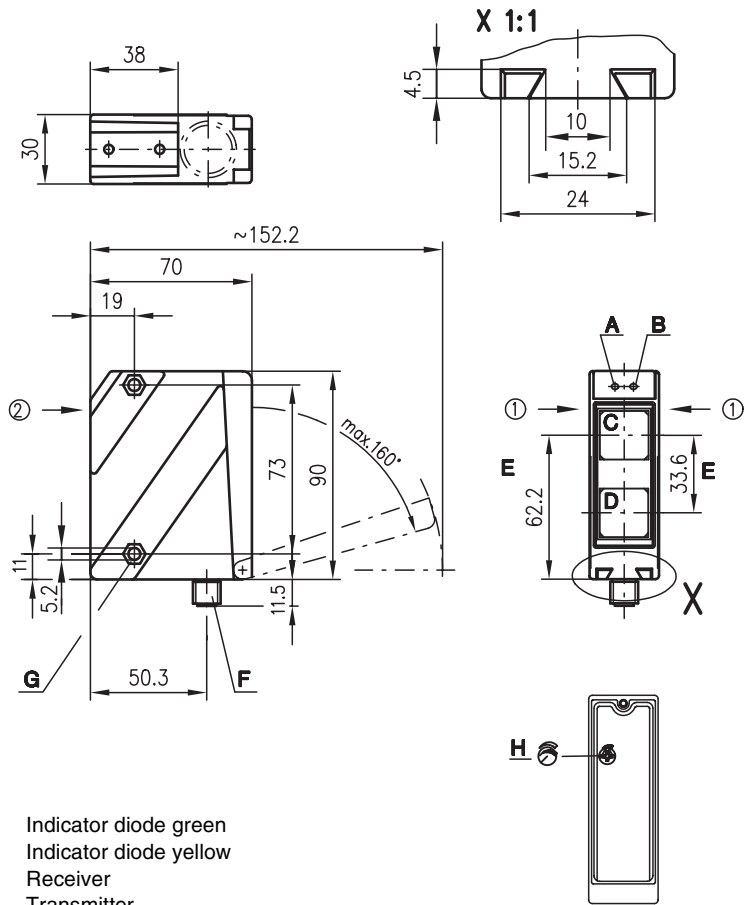


HRT 96

Diffuse reflection light scanner with background suppression



Dimensioned drawing



- A Indicator diode green
  - B Indicator diode yellow
  - C Receiver
  - D Transmitter
  - E Optical axis
  - F Device plug M12x1
  - G Countersinking for SK nut M5, 4.2 deep
  - H Scanning range adjustment
- Preferred entry direction for objects ① + ②

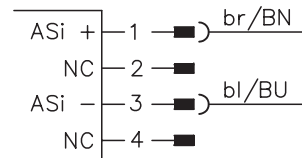


100 ... 1800mm  
100 ... 1200mm



- Robust metal housing with glass cover, protection class IP 67/IP 69K for industrial application
- Access to all sensor functions via an AS-interface without additional wiring
- Scanning range adjustment and ready indicator for optimal adaptation to the application
- Common conductor for both power and data reduces installation work

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 ...)

AS-i Accessories:

(available separately)

- Bus terminals
- AS-i ribbon cable
- Address programming device
- Coupling modules
- Intermediate cables etc.

We reserve the right to make changes • 96\_d03e.fm

### Specifications

#### Optical data

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

#### Infrared

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

#### Red light

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

#### Timing

Sensor switching frequency 300Hz  
 Sensor response time 1.67ms  
 Delay before start-up ≤ 200ms

#### Electrical data

Operating voltage  $U_B$  26.5 ... 31.6V (according to AS-i specification)  
 Bias current ≤ 40mA per sensor

#### Indicators

LED green ready  
 LED yellow reflection

#### Mechanical data

Housing diecast zinc  
 Optics cover glass  
 Weight 380g  
 Connection type M12 connector

#### Environmental data

Ambient temp. (operation/storage) -20°C ... +60°C/-40°C ... +70°C  
 Protective circuit <sup>3)</sup> 1, 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

#### AS-i data for receiver

I/O code 1  
 ID code 1  
 Address programmed by the user in the range of 1 to 31 (default=0)  
 Cycle time acc. to AS-i specification 5ms  
 AS-i standard according to profile S-1.1

- 1) Typ. scanning range limit: max. attainable range without performance reserve
- 2) Scanning range: recommended range with performance reserve
- 3) 1=transient protection, 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

Assignment: data bits			Assignment: parameter bits			
		Programming (host level)			Programming (host level)	
D <sub>0</sub>	Switching output	0 no reflection 1 reflection	System input	*P <sub>0</sub>	NC 1	System parameter
D <sub>1</sub>	NC	0 1	System input	*P <sub>1</sub>	Light/dark switching 0 dark switching 1 light switching	System parameter
D <sub>2</sub>	Ready output	0 sensor not ready 1 sensor ready	System input	*P <sub>2</sub>	NC 0 1	System parameter
*D <sub>3</sub>	Activation input	0 transmitter on 1 transmitter off	System output	*P <sub>3</sub>	NC 0 1	System parameter

\* default = 1

### 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.

### Order guide

	Designation	Part No.
Infrared light	HRT 96M/A-1660-1200-44	500 25112
Red light	HRT 96M/A-1670-800-44	500 80048

### Tables

#### Red light

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

#### Infrared light

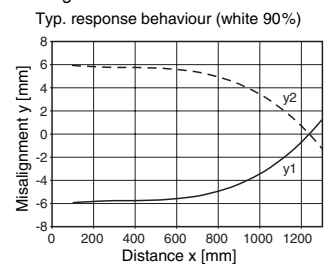
1	100	1200	1800
2	100	1100	1600
3	100	1000	1350

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

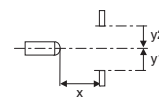
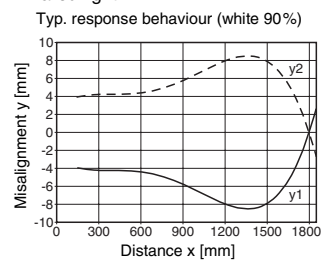
- Scanning range [mm]
- Typ. scanning range limit [mm]

### Diagrams

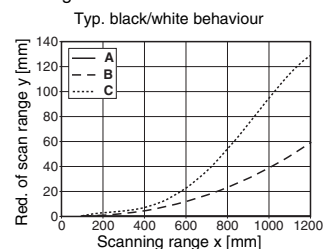
#### Red light



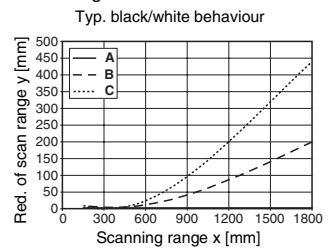
#### Infrared light



#### Red light



#### Infrared light



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