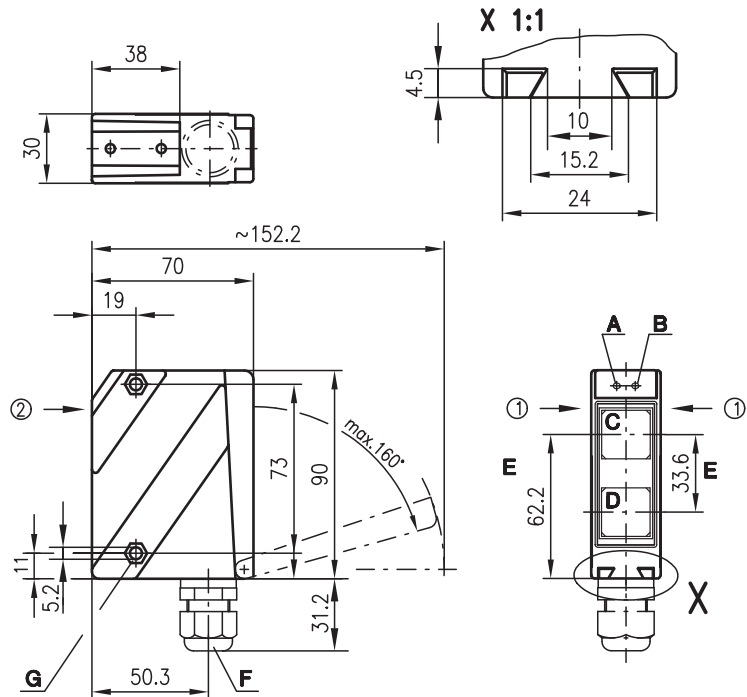


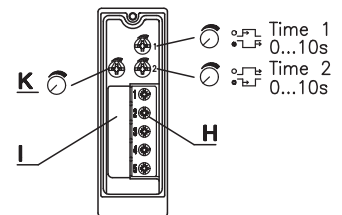
## HRT 96

## Diffuse reflection light scanner with background suppression

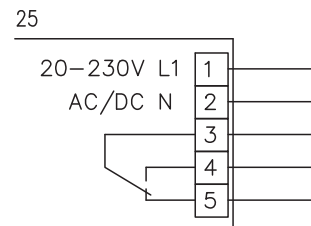
### Dimensioned drawing



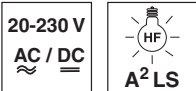
- A Green indicator diode
  - B Yellow indicator diode
  - C Transmitter
  - D Receiver
  - E Optical axis
  - F Screwed cable gland M16x1.5 for Ø 5 ... 10mm
  - G Countersinking for SK nut M5, 4.2 deep
  - H Connection terminals
  - I Cable entry
  - K Scanning range adjustment
- Preferred entry direction for objects ① + ↗



### Electrical connection



100 ... 1800mm



- Scanner with adjustable background suppression in infrared light
- Robust metal housing with glass cover or plastic housing, protection class IP 67/ IP 69K for industrial application
- All-mains design 20 ... 230VAC/DC with relay output
- Relay with change-over contact, scanning range adjustment and delay before start-up for optimal adaptation to the application
- Connection via comfortable terminal compartment up to 1.5mm²
- Version with additional switching delay



### Accessories:

(available separately)

- Mounting systems (BT 96, BT 96.1, UMS 96, BT 450.1-96)
- Spark extinction

## 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 (infrared)

### Timing

Switching frequency  
 Response time  
 Delay before start-up

20Hz  
 25ms  
 ≤ 200ms

### Electrical data

Operating voltage U<sub>B</sub>

20 ... 230VAC, 50/60Hz  
 20 ... 230VDC

Power consumption  
 Switching output <sup>3)</sup>  
 Function characteristics  
 Switching voltage, relay  
 Switching current, relay  
 Switching power, relay

≤ 1.5VA  
 relay, 1 change-over contact  
 break-contact/make-contact  
 250VAC/DC  
 250VAC, 3A/30VDC, 3A  
 750VA, cosφ=1

### Indicators

Green LED  
 Yellow LED

ready  
 reflection

### Mechanical data

Housing  
 Optics cover  
 Weight  
 Connection type

### Metal housing

diecast zinc  
 glass  
 380g  
 terminals

### Plastic housing

polycarbonate  
 plastic  
 150g  
 terminals

### Environmental data

Ambient temp. (operation/storage)  
 Protective circuit <sup>4)</sup>  
 VDE safety class <sup>5)</sup>  
 Protection class  
 Light source  
 Standards applied

-30°C ... +60°C/-40°C ... +70°C  
 1, 4  
 II, all-insulated  
 IP 67, IP 69K <sup>6)</sup>  
 Exempt group (in acc. with EN 62471)  
 IEC 60947-5-2

### Options

**Switching delay** (slow oper./release) 0 ... 10s (separately adjustable)

- 1) Typ. scanning range limit: max. attainable range without performance reserve
- 2) Scanning range: recommended range with performance reserve
- 3) Suitable spark extinction must be provided with inductive or capacitive loads
- 4) 1=transient protection, 4=interference blanking
- 5) Rating voltage 250VAC
- 6) 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

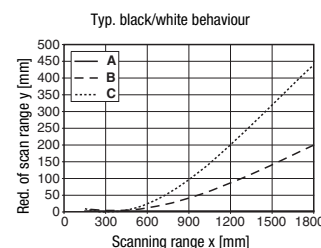
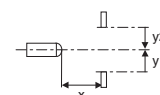
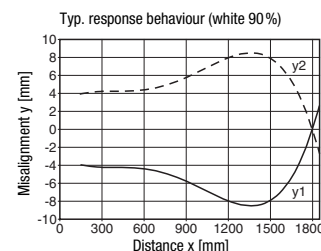
## Tables

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

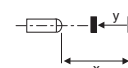
|   |           |
|---|-----------|
| 1 | white 90% |
| 2 | grey 18%  |
| 3 | black 6%  |

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

## Diagrams



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



## Order guide

| Selection table |                             | Order code →                                |                                             |                                             |                                             |                                             |
|-----------------|-----------------------------|---------------------------------------------|---------------------------------------------|---------------------------------------------|---------------------------------------------|---------------------------------------------|
| Equipment ↓     |                             | HRT 96K/R-1680-1200-25<br>Part no. 50025132 | HRT 96K/R-1690-1200-25<br>Part no. 50025131 | HRT 96M/R-1680-1200-25<br>Part no. 50080076 | HRT 96M/R-1690-1200-25<br>Part no. 50080075 | HRT 96K/R-1689-1200-25<br>Part no. 50081261 |
| Housing         | metal                       |                                             |                                             | ●                                           | ●                                           |                                             |
|                 | plastic                     | ●                                           | ●                                           |                                             |                                             | ●                                           |
| Light source    | infrared light (1200mm)     | ●                                           | ●                                           | ●                                           | ●                                           | ●                                           |
| Connection      | terminals                   | ●                                           | ●                                           | ●                                           | ●                                           | ●                                           |
|                 | without screwed cable gland |                                             |                                             |                                             |                                             | ●                                           |
| Features        | switching delay             |                                             | ●                                           |                                             | ●                                           |                                             |
|                 | UL homologation             |                                             |                                             | ●                                           | ●                                           |                                             |

## Remarks

- **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.
- With the set scanning range, a tolerance of the upper scanning range limit is possible depending on the reflection properties of the material surface.