



HRT 46

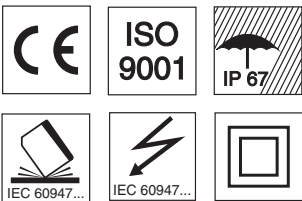
Diffuse reflection light scanner with background suppression



10 ... 1000mm



- Adjustable scanner with background suppression
- Safe detection of light and dark, as well as inclined or sloped surfaces
- Exact scanning range adjustment through multiturn potentiometer
- Complementary switching outputs for optimal adaptation to the application
- Warning output - for increased availability

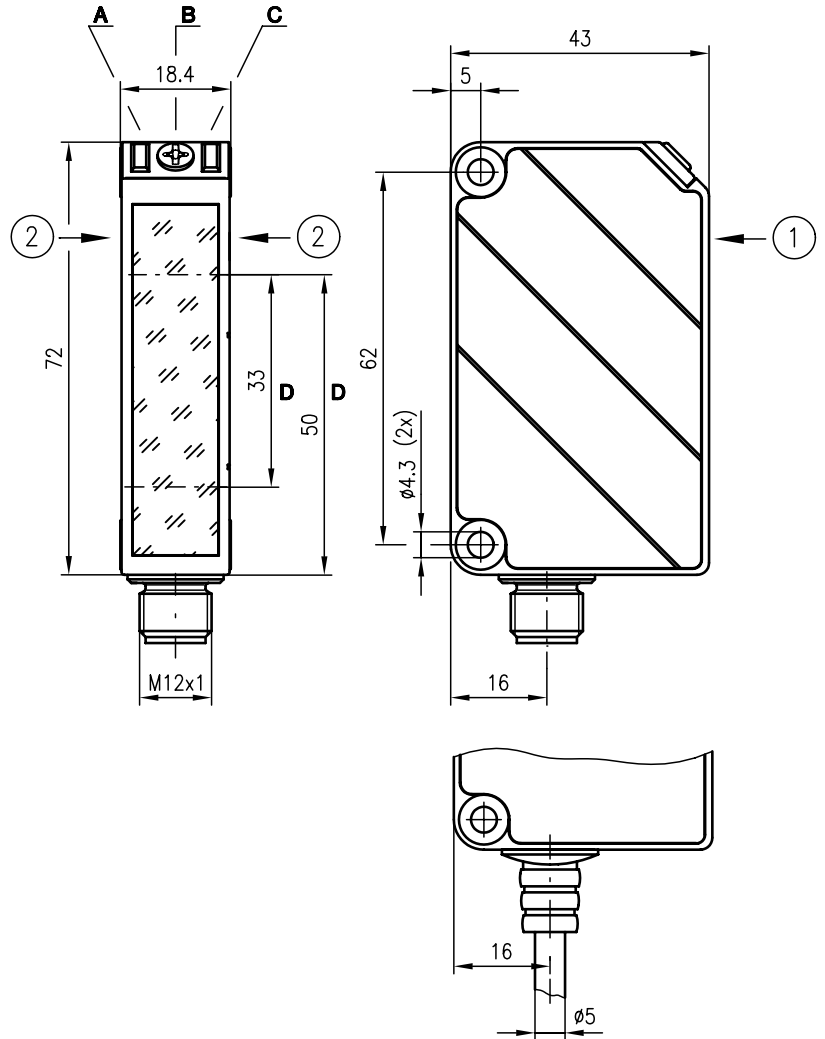


Accessories:

(available separately • see page 314)

- Mounting systems (BT 46.1, BT 46.1.5, BT 46.2)
- M12 connectors (KD ...)
- Ready-made cables (KB ...)

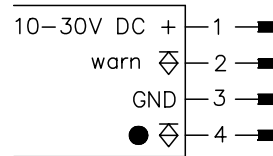
Dimensioned drawing



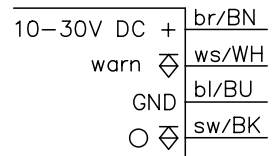
- A Indicator diode green
  - B Scanning range adjustment
  - C Indicator diode yellow
  - D Optical axis
- Preferred direction for movement of the test object ①+②

Electrical connection

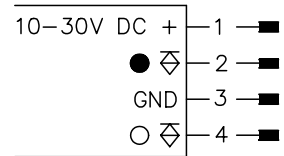
IHRT 46/4D-800-S12



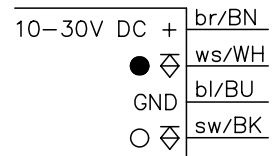
IHRT 46/4-800,2000



HRT 46/44-800-S12



HRT 46/44-800,2000



We reserve the right to make changes • 46\_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

10 ... 1000mm  
 see table  
 300 ... 800mm  
 LED (modulated light)  
 880nm

### Timing

Switching frequency 200Hz  
 Response time 2.5ms  
 Delay before start-up ≤ 100ms

### Electrical data

Operating voltage  $U_B$  10 ... 30VDC (incl. residual ripple)  
 Residual ripple ≤ 15% of  $U_B$   
 Bias current ≤ 30mA  
 Switching output PNP transistor  
 Function characteristics HRT46... light/dark switching (complementary)  
 IHRT46... dark switching  
 Signal voltage high/low  $\geq (U_B - 2V) / \leq 2V$   
 Output current max. 100mA

### Indicators

LED green ready  
 LED yellow reflection  
 LED yellow flashing reflection, no performance reserve

### Mechanical data

Housing plastic  
 Optics cover plastic  
 Weight 100g  
 Connection type M12 connector, or cable, cable length: 2000mm, PVC

### Environmental data

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

### Options

**Warning output autoControl warn**  
 Signal voltage high/low  $\geq (U_B - 2V) / \leq 2V$   
 Output current max. 100mA

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

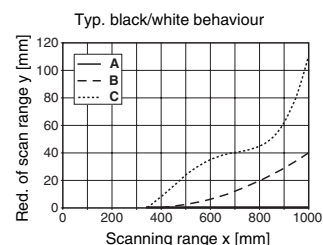
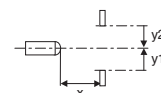
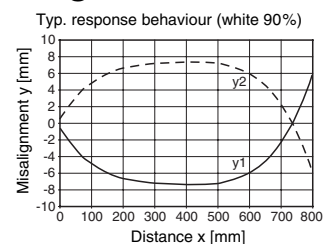
## Tables

1	0	800	1000
2	1	780	900
3	2	750	880

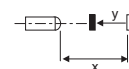
1	white 90%
2	grey 18%
3	black 6%

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

## Diagrams



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



## Order guide

	Designation	Part No.
<b>with M12 connector</b>	complementary switching output	HRT 46/44-800-S12 500 80979
	dark switching with warning output	IHRT 46/4D-800-S12 500 80978
<b>with 2m cable</b>	complementary switching output	HRT 46/44-800, 2000 500 60941
	dark switching with warning output	IHRT 46/4-800, 2000 500 34081

## 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.



HRT 46

Diffuse reflection light scanner with background suppression

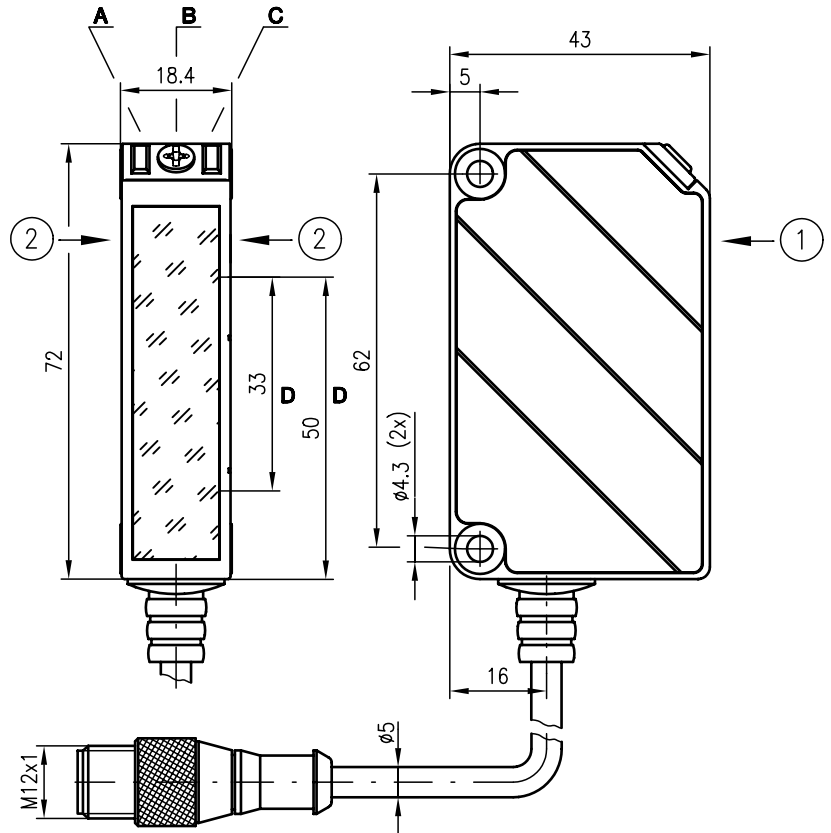


10 ... 1000mm



- Adjustable scanner with background suppression
- Safe detection of light and dark, as well as inclined or sloped surfaces
- Exact scanning range adjustment through multiturn potentiometer
- Complementary switching outputs for optimal adaptation to the application
- Warning output - for increased availability

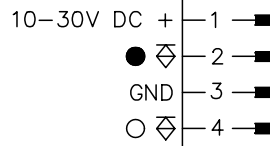
Dimensioned drawing



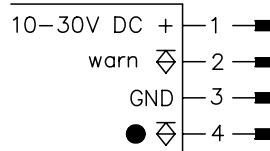
- A Indicator diode green
  - B Scanning range adjustment
  - C Indicator diode yellow
  - D Optical axis
- Preferred direction for movement of the test object ① + ②

Electrical connection

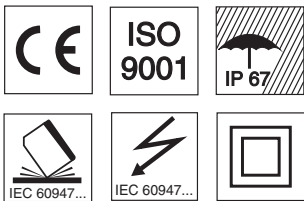
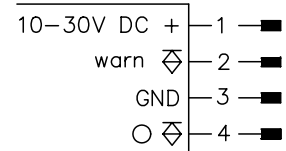
HRT 46/44-800, 300-S12



IHRT 46/4D-800, 300-S12



IHRT 46/4-800, 300-S12



Accessories:

(available separately • see page 314)

- Mounting systems (BT 46.1, BT 46.1.5, BT 46.2)
- M12 connectors (KD ...)
- Ready-made cables (KB ...)

We reserve the right to make changes • 46\_d02e.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

10 ... 1000mm  
 see table  
 300 ... 800mm  
 LED (modulated light)  
 880nm

### Timing

Switching frequency 200Hz  
 Response time 2.5ms  
 Delay before start-up ≤ 100ms

### Electrical data

Operating voltage  $U_B$  10 ... 30VDC (incl. residual ripple)  
 Residual ripple ≤ 15% of  $U_B$   
 Bias current ≤ 30mA  
 Switching output PNP transistor  
 Function characteristics HRT46/44-... light/dark switching (complementary)  
 IHRT46/4D-... dark switching  
 IHRT46/4-... light switching  
 Signal voltage high/low  $\geq (U_B - 2V) / \leq 2V$   
 Output current max. 100mA

### Indicators

LED green ready  
 LED yellow reflection  
 LED yellow flashing reflection, no performance reserve

### Mechanical data

Housing plastic  
 Optics cover plastic  
 Weight 100g  
 Connection type Cable with M12 connector,  
 cable length: 300mm

### Environmental data

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

### Options

**Warning output autoControl warn** PNP transistor, counting principle  
 Signal voltage high/low  $\geq (U_B - 2V) / \leq 2V$   
 Output current max. 100mA

- 1) Typ. scanning range limit: max. attainable range without performance reserve
- 2) Scanning range: recommended range with performance reserve
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- 4) Rating voltage 250VAC

## Order guide

	Designation	Part No.
complementary switching output	HRT 46/44-800, 300-S12	500 81318
dark switching with warning output	IHRT 46/4D-800, 300-S12	500 80977
light switching with warning output	IHRT 46/4-800, 300-S12	500 81440

## Tables

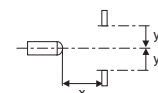
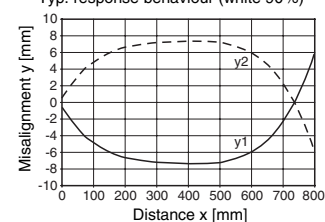
1	0	800	1000
2	1	780	900
3	2	750	880

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

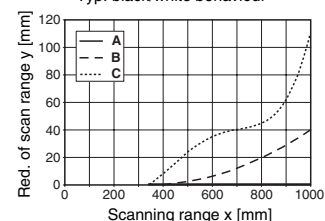
Scanning range [mm]  
 Typ. scanning range limit [mm]

## Diagrams

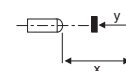
Typ. response behaviour (white 90%)



Typ. black/white behaviour



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



## 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.