

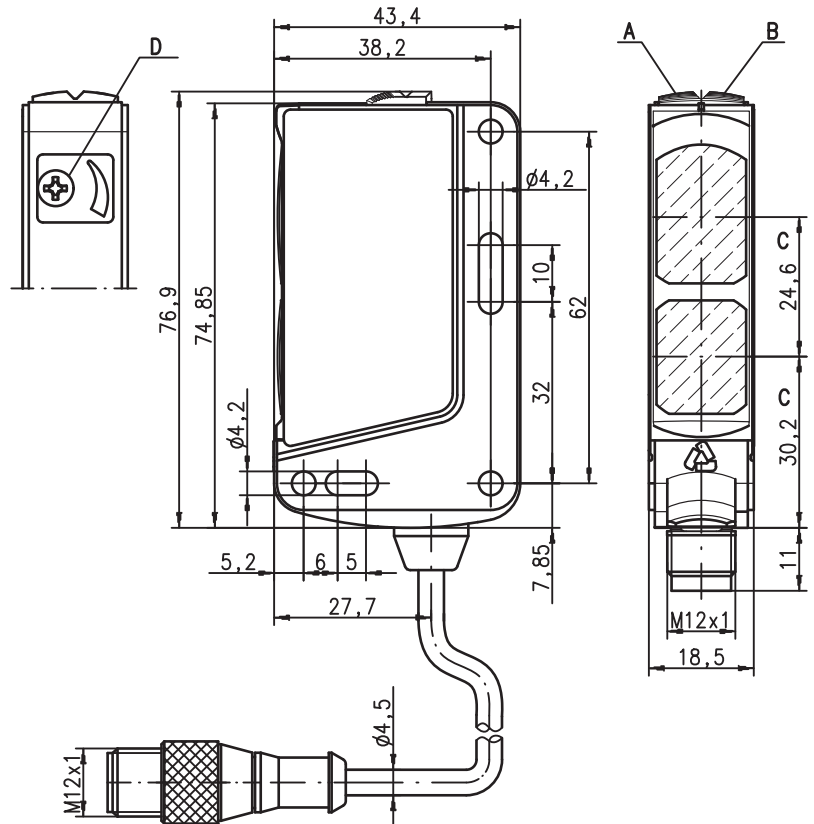
HRTR 46B "S"

Diffuse reflection light scanner with background suppression

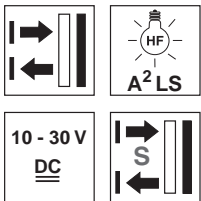
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Dimensioned drawing



- A** Green indicator diode
- B** Yellow indicator diode
- C** Optical axis
- D** Scanning range adjustment

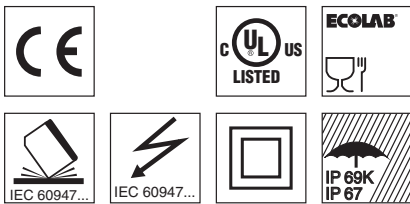
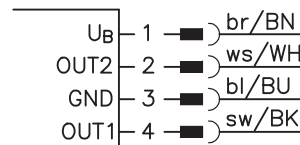


10 ... 700mm
500mm with
black-white error < 10%

- Adjustable scanner with background suppression
- Optimized light spot for reliable detection of objects with colored structure
- Reliable detection of light and dark, as well as inclined or sloped surfaces
- Exact scanning range adjustment through multiturn potentiometer
- Fast alignment through *brightVision*®
- A²LS - Active Ambient Light Suppression
- Complementary switching outputs for optimal adaptation to the application

Electrical connection

Connector, 4-pin



Accessories:

(available separately)

- Mounting systems (BT 46, BT 46.1, BT 46.1.5, BT 46.2)
- M12 connectors (KD ...)
- Ready-made cables (K-D ...)

We reserve the right to make changes • DS_HRTR_46B_S_en.fm

Specifications

Optical data

| | |
|---|--|
| Typ. scanning range limit (white 90%) ¹⁾ | 10 ... 700mm |
| Scanning range ²⁾ | see tables |
| Adjustment range | 120 ... 700mm |
| Light source | LED (modulated light) |
| Wavelength | 620nm (visible red light) |
| Light spot | 5 x 5mm ² (focussed at approx. 200mm) |

Red light

Timing

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

Electrical data

| | |
|---------------------------------------|---|
| Operating voltage U_B ³⁾ | 10 ... 30VDC (incl. residual ripple) |
| Residual ripple | ≤ 15% of U_B |
| Open-circuit current | ≤ 20mA |
| Switching output | .../66. ... 2 push-pull switching outputs ⁴⁾ pin 2: PNP dark switching, NPN light switching pin 4: PNP light switching, NPN dark switching ≥ ($U_B - 2V$) / ≤ 2V |
| Signal voltage high/low | max. 100mA |
| Output current | |

Indicators

| | |
|----------------------|------------------------------------|
| Green LED | ready |
| Yellow LED | reflection |
| Yellow LED, flashing | reflection, no performance reserve |

Mechanical data

| | |
|-----------------|---------------|
| Housing | plastic |
| Optics cover | plastic |
| Weight | 50g |
| Connection type | M12 connector |

Environmental data

| | |
|-----------------------------------|-----------------------------------|
| Ambient temp. (operation/storage) | -40°C ... +60°C / -40°C ... +70°C |
| Protective circuit ⁵⁾ | 2, 3 |
| VDE safety class ⁶⁾ | II, all-insulated |
| Protection class | IP 67, IP 69K |
| LED class | 1 (acc. to EN 60825-1) |
| Standards applied | IEC 60947-5-2 |

- 1) Typ. scan. range limit: max. achievable scanning range for light objects (white 90%)
- 2) Scanning range: recommended scanning range for objects with different diffuse reflection
- 3) For UL applications: for use in class 2 circuits only
- 4) The push-pull switching outputs must not be connected in parallel
- 5) 2=polarity reversal protection, 3=short-circuit protection for all outputs
- 6) Rating voltage 50V

● 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.

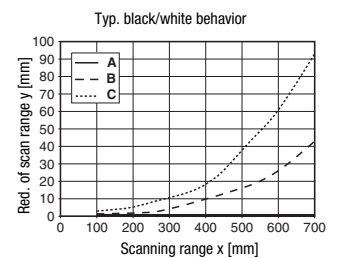
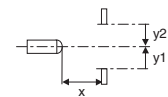
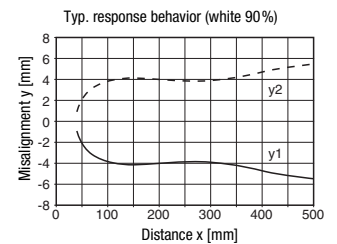
Tables

| | | |
|---|----|-----|
| 1 | 10 | 700 |
| 2 | 30 | 650 |
| 3 | 60 | 550 |

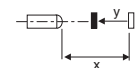
| | |
|---|-----------|
| 1 | white 90% |
| 2 | grey 18% |
| 3 | black 6% |

Scanning range [mm]

Diagrams



- 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.
- A minimal edge error (reliable detection of objects with colored structure) is achieved at an actuation distance in the range of 150 ... 250mm.

HRTR 46B "S" Diffuse reflection light scanner with background suppression

Order guide

The sensors listed here are preferred types; current information at www.leuze.com.

| | Designation | Part No. |
|---|-------------------|----------|
| With M12 connector Complementary switching output | HRTR 46B/66-S-S12 | 50106559 |

Type key

| | | | | | | | | | | | | | | | | |
|---|---|---|---|--|---|---|---|---|---|---|---|---|---|---|---|---|
| H | R | T | R | | 4 | 6 | B | / | 6 | 6 | - | S | - | S | 1 | 2 |
|---|---|---|---|--|---|---|---|---|---|---|---|---|---|---|---|---|

| | |
|---------------------------------|--|
| Operating principle | |
| HRTR | Scanner with background suppression with light visible red light |
| Series | |
| 46B | 46B Series |
| Switching output | |
| /66 | Complementary push-pull switching outputs |
| /44 | Complementary PNP switching outputs |
| /4 | Pin 4 PNP switching output, pin 2 no contact or warning output |
| /6 | Pin 4 push-pull switching output, pin 2 no contact |
| Function characteristics | |
| N/A | Pin 4 light switching; with push-pull, PNP light switching |
| D | Inverted switching logic |
| Product modifications | |
| -xxxx | Scanning range in mm, only for preset sensors (only on request) |
| -xxxxF | Permanent setting (only on request) |
| -S | Focussed at approx. 200mm |
| Electrical connection | |
| N/A | Cable, standard length 2000mm |
| ,200-S12 | Cable, length 200 mm with M12 connector |
| -S12 | M12 connector |

