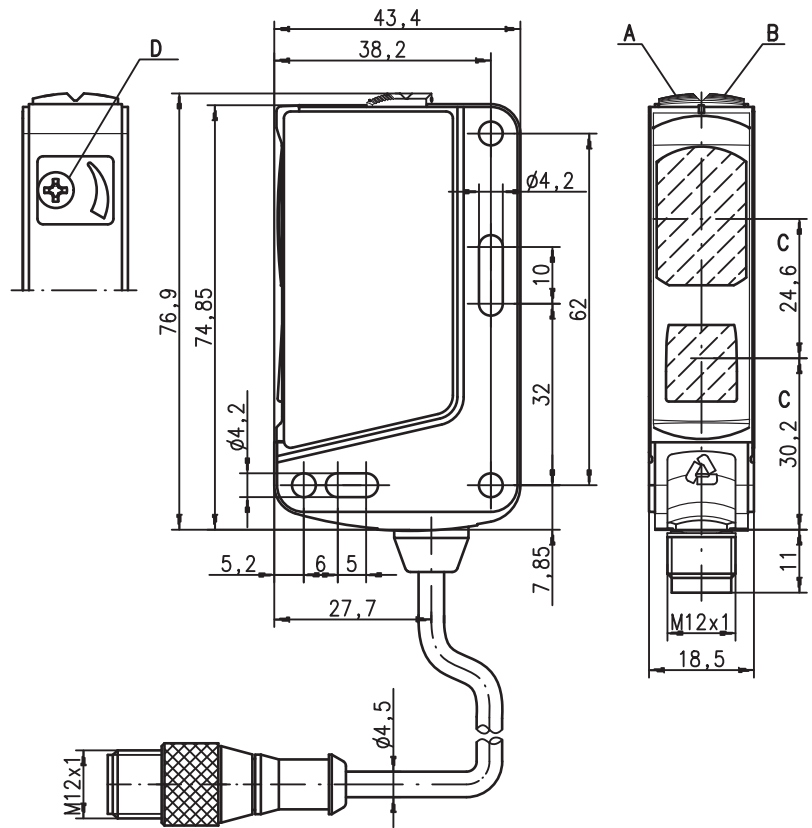


HRTL 46B Laser diffuse reflection light scanner with background suppression

en 02-2014/06 50113429-01



Dimensioned drawing



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

50 ... 800mm
500mm with
black-white error < 10%

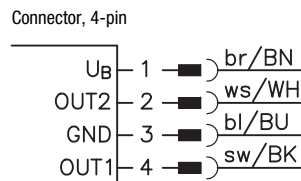
A²LS

10 - 30 V
DC

CDRH

- Adjustable scanner with background suppression
- Exact positioning and detection of small parts by means of a laser beam
- Exact scanning range adjustment through multiturn potentiometer
- Fast alignment through *brightVision*[®]
- High switching frequency for detection of fast events
- A²LS - Active Ambient Light Suppression
- Complementary switching outputs for optimal adaptation to the application
- Laser class 1

Electrical connection



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_HRTL46B661_en_50113429_01_fm

Specifications

Optical data

Typ. scanning range limit (white 90%) ¹⁾ 50 ... 800mm
 Scanning range ²⁾ see tables
 Adjustment range 120 ... 800mm
 Light source laser (modulated light)
 Wavelength 655nm (visible red light)
 Light spot approx. 3mm x 5mm at 1,000mm

Red light

Timing

Switching frequency 1,000Hz
 Response time 0.5ms
 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 ≤ 30mA
 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
 Signal voltage high/low ≥ ($U_B - 2V$) / ≤ 2V
 Output current max. 100mA

Indicators

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

Mechanical data

Housing plastic
 Optics cover plastic
 Weight 50g (with connector) / 65g (with cable and conn.)
 Connection type M12 connector, or cable with M12 connector, cable length: 200mm

Environmental data

Ambient temp. (operation/storage) -30°C ... +55°C / -40°C ... +70°C
 Protective circuit ⁵⁾ 2, 3
 VDE safety class ⁶⁾ II, all-insulated
 Protection class IP 67, IP 69K
 Laser class 1 (acc. to EN 60825-1)
 Standards applied IEC 60947-5-2
 Certifications UL 508, C22.2 No.14-13 ³⁾ 7)

- 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
- 7) These proximity switches shall be used with UL Listed Cable assemblies rated 30V, 0.5A min, in the field installation, or equivalent (categories: CYJV/CYJV7 or PVVA/PVVA7)

Order guide

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

	Designation	Part No.
With M12 connector		
Complementary switching output	HRTL 46B/66.1-S12	50113308

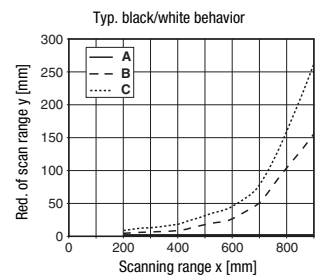
Tables

1	50	800
2	70	600
3	90	500

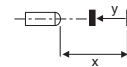
1	white 90%
2	grey 18%
3	black 6%

Scanning range [mm]

Diagrams



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



Remarks

Operate in accordance with intended use!

- ☞ This product is not a safety sensor and is not intended as personnel protection.
- ☞ The product may only be put into operation by competent persons.
- ☞ Only use the product in accordance with the intended use.

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

HRTL 46B Laser diffuse reflection light scanner with background suppression

Type key

H R T L 4 6 B / 6 6 . 1 - S 1 2

Operating principle

HRTL Scanner with background suppression with light visible red light

Series

46B 46B Series

Switching output

/66 Complementary push-pull switching outputs

Function characteristics

N/A Pin 4 light switching; with push-pull, PNP light switching

D Inverted switching logic

Special function

.1 Laser class 1

Product modifications

-xxxx Scanning range in mm, only for preset sensors (only on request)

-xxxxF Permanent setting (only on request)

Electrical connection

N/A Cable, standard length 2000 mm

,200-S12 Cable, length 200 mm with M12 connector

-S12 M12 connector

Laser safety notices



ATTENTION, LASER RADIATION – LASER CLASS 1

The device fulfills the EN 60825-1:2008-05 (IEC 60825-1:2007) safety regulations for a product in **laser class 1** as well as the U.S. 21 CFR 1040.10 regulations with deviations corresponding to "Laser Notice No. 50" from June 24th, 2007.

- ↳ Adhere to the applicable legal and local regulations regarding protection from laser beams acc. to EN 60825 (IEC 60825) in its latest version.
- ↳ The device must not be tampered with and must not be changed in any way.
There are no user-serviceable parts inside the device.
Repairs must only be performed by Leuze electronic GmbH + Co. KG.