

HT46C

Diffuse reflection light scanners with background suppression

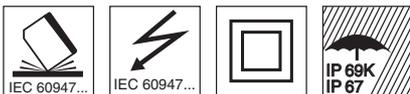
en 01-2015/06 50129624



5 ... 3000mm
1200mm with
black-white error < 10%



- Scanner with adjustable background suppression in red light version
- Reliable detection of objects with different surface structures
- Large adjustment range and minimal zero distance for optimum adaptation to the application
- Highly visible status displays
- Exact switching point adjustment through mechanical adjusting spindle
- Activation input for sensor test
- Various switching output functions for universal connection to existing control environment
- A²LS active ambient light suppression for avoiding mutual interference
- Robust plastic housing in degrees of protection IP67 and IP69K

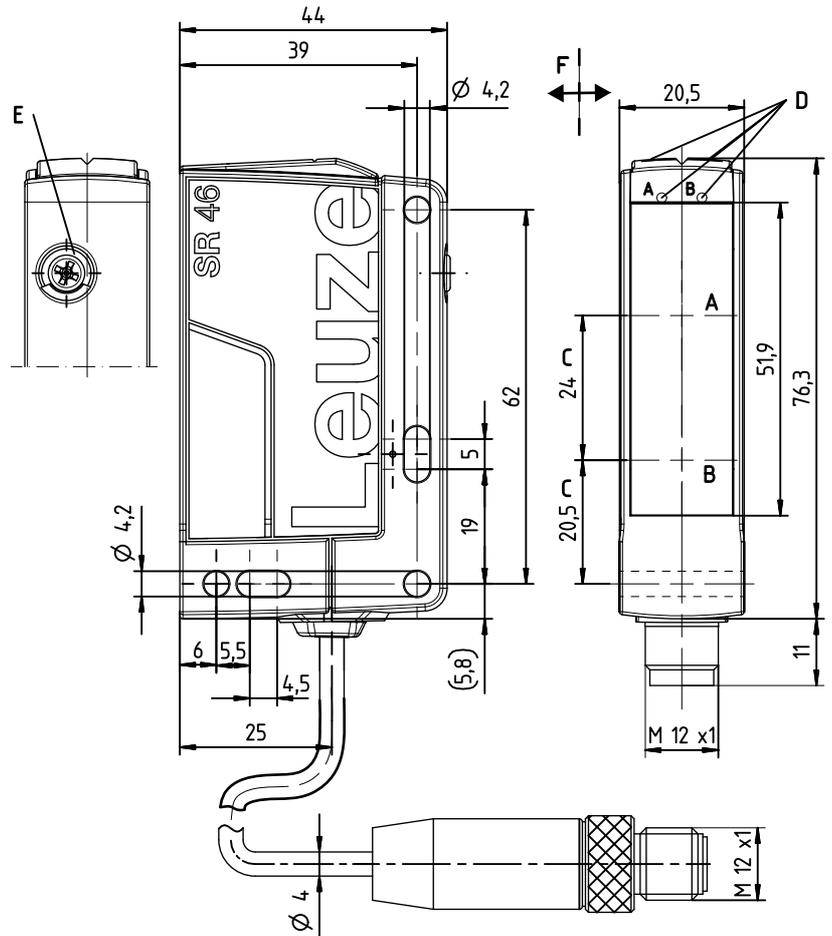


Accessories:

(available separately)

- Mounting systems (BT 46, BTU 300M, BT 300, BTU 346)
- M12 connectors (KD ...)
- Ready-made cables (K-D ...)

Dimensioned drawing



- A** Receiver
- B** Transmitter
- C** Optical axis
- D_A** Green indicator diode
- D_B** Yellow indicator diode
- E** Scanning range adjustment
- F** Preferred movement for objects

Electrical connection

Connector, 4-pin

U _B	1	br/BN
OUT/IN ^{*)}	2	ws/WH
GND	3	bl/BU
OUT1	4	sw/BK

Cable

U _B	1	br/BN
OUT/IN ^{*)}	2	ws/WH
GND	3	bl/BU
OUT1	4	sw/BK

Selection pin 2

*)	OUT	IN
	OUT 2	Active
	Warn	
	NC	

We reserve the right to make changes • DS_HT46C_en_50129624.fm

Specifications

Optical data

Typ. scanning range limit (white 90%) ¹⁾	5 ... 3000mm
Scanning range ²⁾	see diagrams
Black-white error	<10% up to 1200mm
Scanning range adjustment	mechanical adjusting spindle
Adjustment range	120 ... 3000mm
Light source	LED (modulated light)
Wavelength	630nm (visible red light)

Timing

Switching frequency	250Hz
Response time	2ms
Delay before start-up	≤ 300ms

Electrical data

Operating voltage U_B ³⁾	10 ... 30VDC (incl. residual ripple)												
Residual ripple	≤ 15% of U_B												
Open-circuit current	≤ 20mA												
Switching outputs/functions ⁴⁾	<table border="0"> <tr> <td>/4P</td> <td>2 PNP switching outputs, antivalent</td> </tr> <tr> <td>/4X</td> <td>1 PNP switching output, light switching</td> </tr> <tr> <td>/4W</td> <td>1 PNP switching output, light switching, 1 PNP warning output</td> </tr> <tr> <td>/48</td> <td>1 PNP switching output, light switching, 1 activation input</td> </tr> <tr> <td>/PX</td> <td>1 PNP switching output, dark switching</td> </tr> <tr> <td>/2N</td> <td>2 NPN switching outputs, antivalent</td> </tr> </table>	/4P	2 PNP switching outputs, antivalent	/4X	1 PNP switching output, light switching	/4W	1 PNP switching output, light switching, 1 PNP warning output	/48	1 PNP switching output, light switching, 1 activation input	/PX	1 PNP switching output, dark switching	/2N	2 NPN switching outputs, antivalent
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/PX	1 PNP switching output, dark switching												
/2N	2 NPN switching outputs, antivalent												
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	with M12 connector: approx. 60g	
	with 200mm cable and M12 connector: approx. 65g	
	with 2000mm cable: approx. 100g	
Connection type	M12 connector, 4-pin cable 200mm with M12 connector, 4-pin cable 2000mm, 4 x 0.21 mm ²	

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
Light source	exempt group (in acc. with EN 62471)
Standards applied	IEC 60947-5-2
Certifications	UL 508, CSA C22.2 No.14-13 ⁴⁾ 7)

Options

Warning output	PNP transistor, counting principle
Signal voltage high/low	≥ ($U_B - 2V$) / ≤ 2V
Output current	max. 100mA
Activation input	
Transmitter active/not active	≥ 8V / ≤ 2V
Activation/disable delay	≤ 1ms / ≤ 2ms
Input resistance	10KΩ ± 10%

- 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) See part number code
- 5) 2=polarity reversal protection, 3=short circuit protection for all transistor 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)

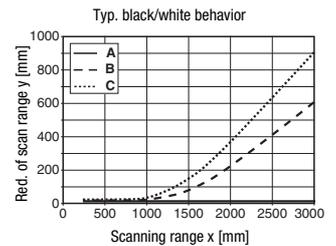
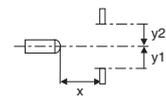
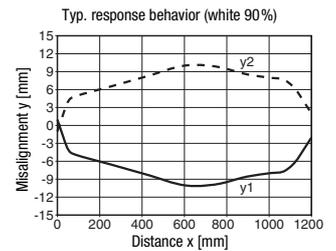
Tables

1	5	3000
2	20	2000
3	50	1500

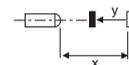
1	white 90%
2	gray 18%
3	black 6%

Scanning range [mm]

Diagrams



- A white 90%
- B gray 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.

HT46C

Diffuse reflection light scanners with background suppression

Part number code

H	T	4	6	C			/	4	P	-	2	0	0	-	M	1	2
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Operating principle

HT Diffuse reflection light scanners with background suppression

Series

46C 46C series

Light type

Free Red light

I Infrared light

Setting

Free Scanning range adjustment via mechanical adjusting spindle

Pin assignment of OUT1 (connector pin 4 / black cable wire)

2 NPN, light switching

N NPN, dark switching

4 PNP, light switching

P PNP, dark switching

Pin assignment of OUT/IN (connector pin 2 / white cable wire)

X Not assigned

2 NPN, light switching

N NPN, dark switching

4 PNP, light switching

P PNP, dark switching

8 Activation input (active high)

W Warning output, PNP light switching

Connection technology

M12 M12 connector, 4-pin

200-M12 Cable 200 mm with M12 connector, 4-pin

Free Cable 2000 mm

Order guide

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

Red-light diffuse reflection light scanner with background suppression

Designation

Part no.

With M12 connector, 4-pin

OUT1: PNP light switching; OUT2: PNP dark switching

HT46C/4P-M12

50127048

OUT1: PNP light switching; OUT2: no contact¹⁾

HT46C/4X-M12

50127050

OUT1: PNP light switching; IN: activation input active high

HT46C/48-M12

50127054

OUT1: PNP light switching; OUT2: warning output PNP active high

HT46C/4W-M12

50127055

OUT1: PNP dark switching; OUT2: no contact¹⁾

HT46C/PX-M12

50127051

OUT1: NPN light switching; OUT2: NPN dark switching

HT46C/2N-M12

50129670

Cable 0.2m with M 12 connector, 4-pin

OUT1: PNP light switching; OUT2: PNP dark switching

HT46C/4P-200-M12

50129752

OUT1: PNP dark switching; OUT2: no contact¹⁾

HT46C/PX-200-M12

50127052

Cable 2m

OUT1: PNP light switching; OUT2: PNP dark switching

HT46C/4P

50127049

1) Direct connection to AS-i coupling modules possible