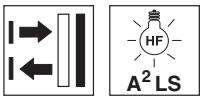


HT46CI.01

Diffuse reflection sensor with background suppression

en 1-2016/05 50133486

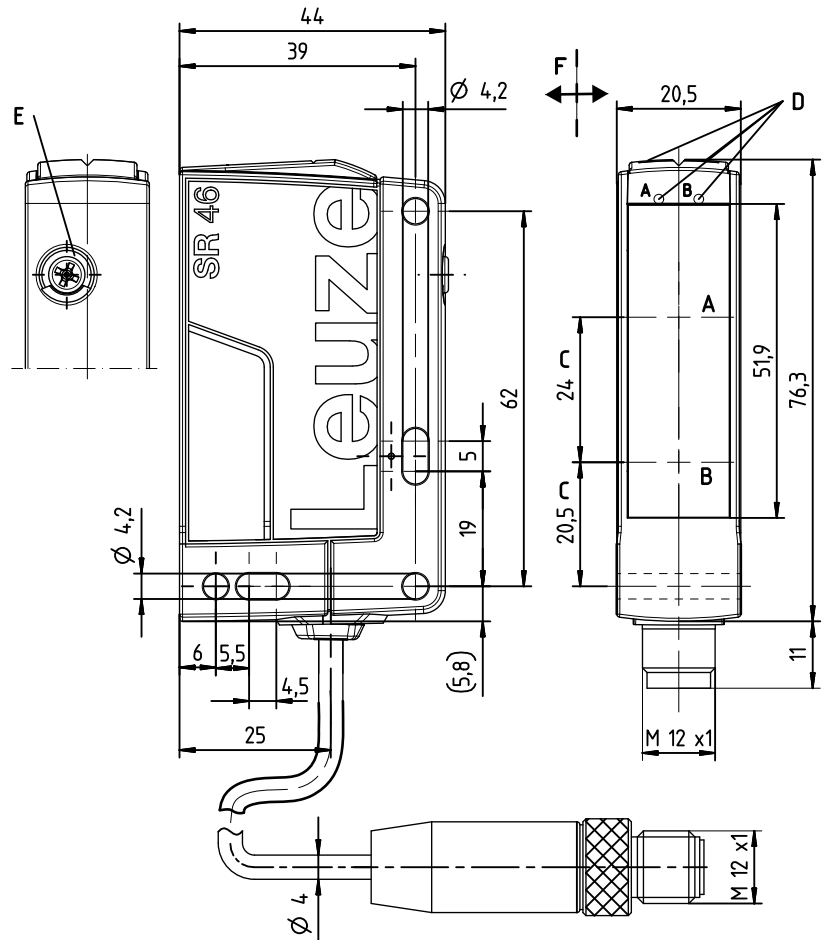


**5 ... 1500mm**  
600mm with  
black-white error < 10%



- Sensor with adjustable background suppression in infrared version for high detection reliability
- Optimized for extremely good background suppression
- Reliable detection of objects with different surface structures
- Minimal zero distance for optimum adaptation to the application
- Highly visible status displays
- Exact switching point adjustment through mechanical adjusting spindle
- 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

Dimensioned drawing



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

Electrical connection

Connector, 4-pin

UB	1	br/BN
OUT/IN*)	2	ws/WH
GND	3	bl/BU
OUT1	4	sw/BK

Cable

UB	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\_HT46CI\_01\_en\_50133486.fm



Accessories:

(available separately)

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

## Technical data

### Optical data

Typ. scanning range limit (white 90%) <sup>1)</sup>	5 ... 1500mm
Scanning range <sup>2)</sup>	see diagrams
Black-white error	<10% up to 600mm
Scanning range adjustment	mechanical adjusting spindle
Adjustment range	120 ... 1500mm
Light source <sup>3)</sup>	LED (modulated light)
Wavelength	860nm (infrared light)

### Timing

Switching frequency	250Hz
Response time	2ms
Readiness delay	≤ 300ms

### Electrical data

Operating voltage $U_B$ <sup>4)</sup>	10 ... 30VDC (incl. residual ripple)
Residual ripple	≤ 15% of $U_B$
Open-circuit current	≤ 30mA
Switching outputs/functions <sup>5)</sup>	/4P 2 PNP switching outputs, antivalent
	/4X 1 PNP switching output, light switching
	/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	object detected

### 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 <sup>2</sup>

### Environmental data

Ambient temp. (operation/storage)	-40°C ... +60°C / -40°C ... +70°C
Protective circuit <sup>6)</sup>	2, 3
VDE safety class	III
Degree of protection	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 <sup>4) 7)</sup>

### Additional function

<b>Background suppression</b>	HG foil (HighGain foil) is not detected from a distance of 900 mm with a scanning range of ≤ 450 mm (diffuse reflection: 6%, black)
-------------------------------	---

- 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) Average life expectancy 100,000 h at an ambient temperature of 25°C
- 4) For UL applications: for use in class 2 circuits only
- 5) See part number code
- 6) 2=polarity reversal protection, 3=short circuit protection for all transistor outputs
- 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)

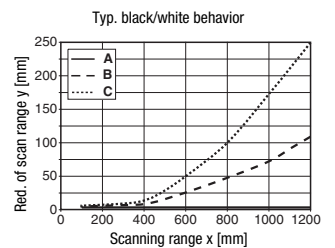
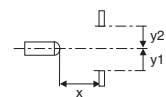
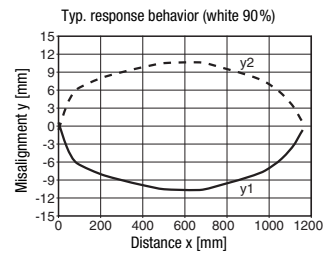
## Tables

1	5	1200
2	20	1050
3	50	950

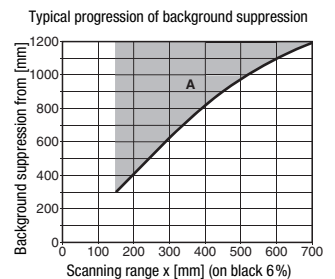
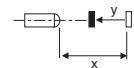
1	white 90%
2	gray 18%
3	black 6%

Scanning range [mm]

## Diagrams



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



A HG foil (HighGain foil) is not detected.

## Notes

### Observe 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 its intended use.

**HT46CI.01**
**Diffuse reflection sensor with background suppression**
**Part number code**

H	T	4	6	C	I	.	0	1	/	4	X	-	2	0	0	-	M	1	2
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

**Operating principle**

**HT** Diffuse reflection sensor with background suppression

**Series**

**46C** 46C series

**Light type**

**Free** Red light

**I** Infrared light

**Setting**

**Free** Scanning range adjustment via mechanical adjusting spindle

**Special design**

**.01** Optimized background suppression:  
HG foil (HighGain foil) is not detected from a distance of 900 mm with a scanning range of ≤ 450 mm (diffuse reflection: 6%, black)

**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 used

**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 200mm with M12 connector, 4-pin

**Free** Cable 2000mm

## Order guide

The sensors listed here are preferred types; current information at [www.leuze.com](http://www.leuze.com).

<b>Infrared-light diffuse reflection sensor with background suppression</b>	<b>Designation</b>	<b>Part no.</b>
<b>Cable 0.2m with M12 connector, 4-pin</b>		
OUT1: PNP light switching; OUT2: no contact <sup>1)</sup>	HT46CI.01/4X-200-M12	50132617

1) Direct connection to AS-i coupling modules possible