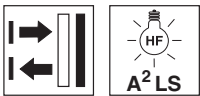


**HT46C(I).E "Dust sensor" Diffuse reflection sensor with background suppression**

en 01-2015/11 50130089



**5 ... 2000 mm**  
700mm with  
black-white error < 10%



- Sensor with adjustable background suppression in red light or infrared version for extremely high detection reliability
- Optimized sensitivity for use in dusty environments
- Large adjustment range and minimal zero distance for optimum adaptation to the application
- Highly visible status displays
- Switching point adjustment through mechanical adjusting spindle
- Extremely high repeatability of the switching point
- 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

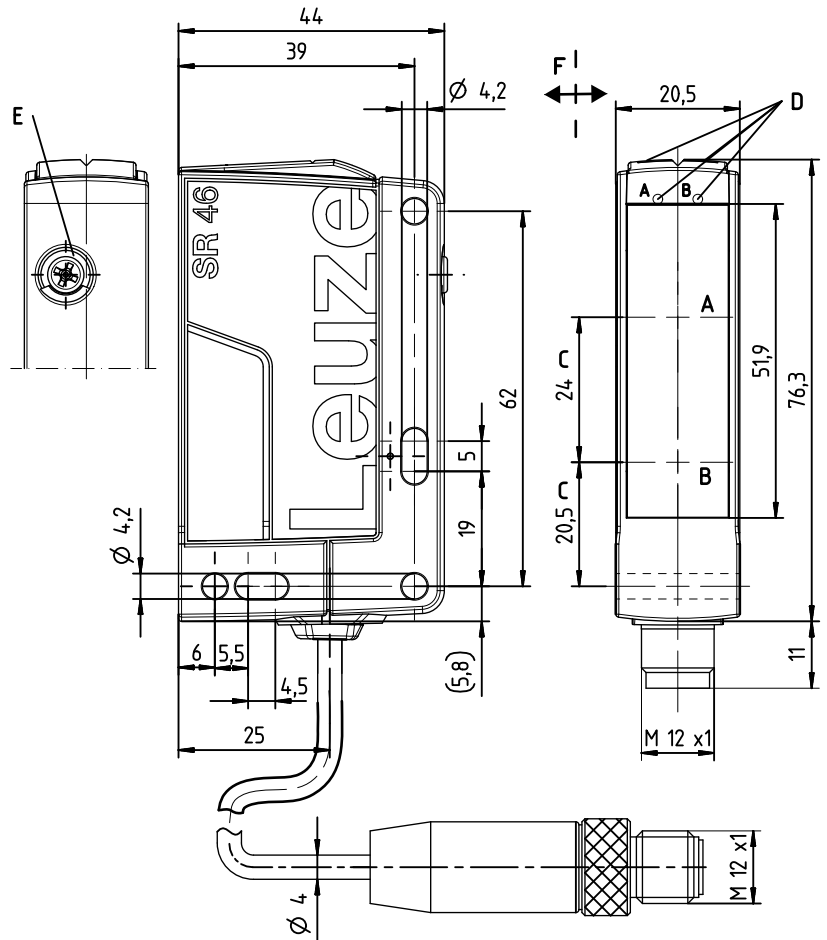


**Accessories:**

(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
- 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\_HT46C(I).E\_en\_50130089.fm

**Specifications**

**Optical data**

Typ. scanning range limit (white 90%) <sup>1)</sup>  
 Scanning range <sup>2)</sup>  
 Black-white error  
 Scanning range adjustment  
 Adjustment range  
 Light source <sup>3)</sup>  
 Wavelength

**HT46C(I).E...**

5 ... 2000mm  
 see diagrams  
 <10% up to 700mm  
 mechanical adjusting spindle  
 120 ... 2000mm  
 LED (modulated light)  
 860nm (infrared light)

**HT46C.E...**

630nm (red light)

**Timing**

Switching frequency 100Hz  
 Response time 5ms  
 Readiness delay ≤ 300ms

**Electrical data**

Operating voltage  $U_B$  <sup>4)</sup>  
 Residual ripple  
 Open-circuit current  
 Switching outputs/functions <sup>5)</sup>

10 ... 30VDC (incl. residual ripple)  
 ≤ 15% of  $U_B$   
 ≤ 30mA  
 /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

Signal voltage high/low  
 Output current

≥ ( $U_B - 2V$ ) / ≤ 2V  
 max. 100mA

**Indicators**

Green LED ready  
 Yellow LED reflection

**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  
 M12 connector, 4-pin  
 cable 200mm with M12 connector, 4-pin  
 cable 2000mm, 4 x 0.21 mm<sup>2</sup>

Connection type

**Environmental data**

Ambient temp. (operation/storage) -40°C ... +60°C / -40°C ... +70°C  
 Protective circuit <sup>6)</sup> 2, 3  
 VDE safety class <sup>7)</sup> II, all-insulated  
 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)</sup> <sup>8)</sup>

**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 ≤ 1 ms / ≤ 2 ms  
 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) 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) Rating voltage 50V
- 8) 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)

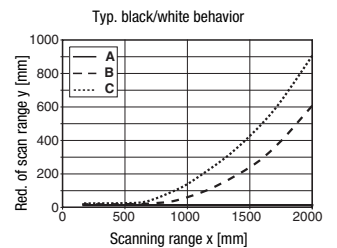
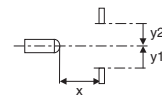
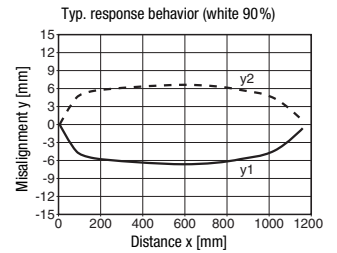
**Tables**

1	5	2000
2	20	1200
3	50	700

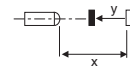
1	white 90%
2	gray 18%
3	black 6%

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(I).E "Dust sensor" Diffuse reflection sensor with background suppression

## Part number code

H	T	4	6	C	I	.	E	/	4	P	-	M	1	2
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### 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

### Function

**E** Optimized for dusty environments

### 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](http://www.leuze.com).

<b>Diffuse reflection sensor with background suppression, optimized for dusty environments</b>	<b>Designation</b>	<b>Part no.</b>
<b>Infrared light</b>		
<b>With M12 connector, 4-pin</b>		
OUT1: PNP light switching; OUT2: PNP dark switching	HT46CI.E/4P-M12	50131549
<b>Red light</b>		
<b>With M12 connector, 4-pin</b>		
OUT1: PNP light switching; OUT2: PNP dark switching	HT46C.E/4P-M12	50131550