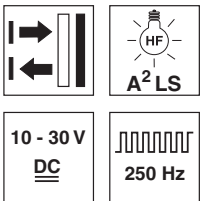


**HT49C**

**Diffuse reflection sensor with background suppression**

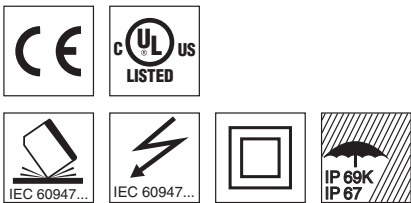
en 01-2016/06 50134384



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

- Sensor with adjustable background suppression in red light and infrared light version
- Reliable detection of objects with different surface structures
- Robust plastic housing, degree of protection IP 67 and IP 69K for universal, industrial application
- Large adjustment range and minimal zero distance for optimum adaptation to the application
- Light/dark switching and time module activation via teach button for time-saving integration in existing evaluation environment
- Space-saving installation thanks to front access to the connection compartment
- Extremely time-saving connection by means of spring terminals (up to 1.5 mm<sup>2</sup>)
- A<sup>2</sup>LS - Active Ambient Light Suppression

We reserve the right to make changes • DS\_HT49CTB\_en\_50134384.fm

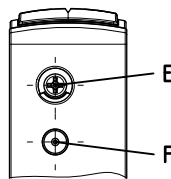
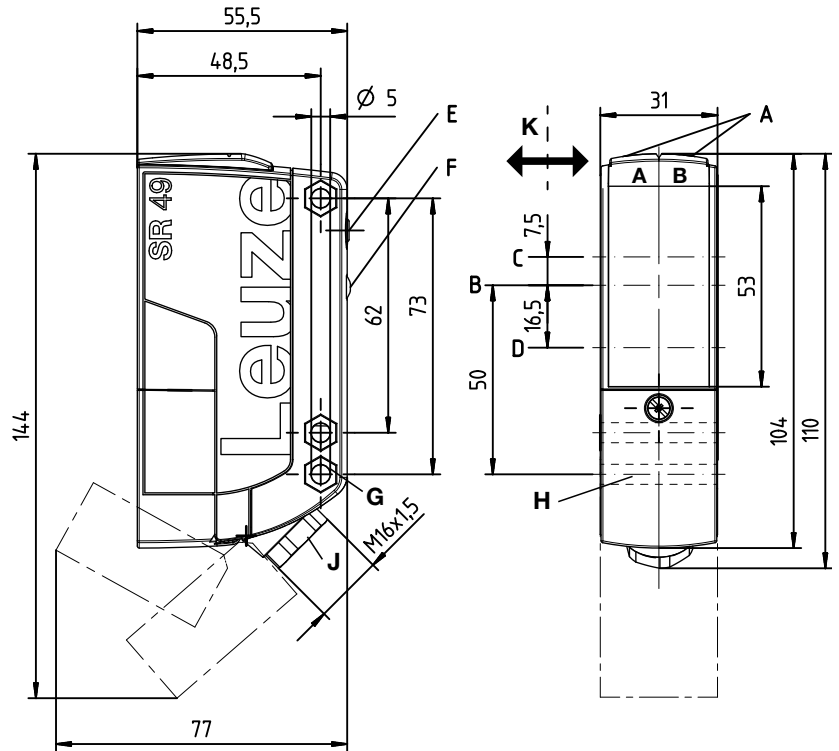


**Accessories:**

(available separately)

- Mounting systems (BTU 460, BT 96, BT 96.1, BT 450.1-96)

**Dimensioned drawing**



- A<sub>A</sub>** Green indicator diode
- A<sub>B</sub>** Yellow indicator diode
- B** Optical axis
- C** Receiver
- D** Transmitter
- E** Scanning range adjustment
- F** Teach button for light/dark switching / time module activation
- G** Countersinking for SK nut M5, 4.2 deep
- H** Connection compartment with spring terminals
- J** Cable entry with M16x1.5 screw fitting for Ø5 ... 10mm
- K** Preferred entry direction

**Electrical connection**

10-30V DC	1
GND	2
OUT 1	3
OUT / IN	4
NC	5

Selection of terminal 4

OUT	IN
OUT 2	Active
Warn	
NC	

Technical data

Optical data

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

HT49C...

5 ... 3000mm  
 See diagrams  
 <10% up to 1200mm  
 120 ... 3000mm  
 LED (modulated light)  
 630nm (red light)

HT49CI...

860nm (infrared light)

Timing

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

Electrical data

Operating voltage  $U_B$  <sup>3)</sup> 10 ... 30VDC (incl. residual ripple)  
 Residual ripple ≤ 15% of  $U_B$   
 Open-circuit current ≤ 20mA

Switching outputs/functions <sup>4)</sup>

/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  $\geq (U_B - 2V) / \leq 2V$   
 Max. 100mA

Indicators

Green LED Ready  
 Yellow LED Reflection

Mechanical data

Housing Polycarbonate  
 Optics cover Plastic  
 Weight 150g  
 Connection type Spring terminals, max. wire cross section 1.5mm<sup>2</sup>

Environmental data

Ambient temp. (operation/storage) -40°C ... +60°C / -40°C ... +70°C  
 Protective circuit <sup>5)</sup> 1, 2, 3  
 VDE safety class <sup>6)</sup> II, all-insulated  
 Degree of protection IP 67, IP 69K <sup>7)</sup>  
 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>3) 8)</sup>

Additional functions

Switching function (teach level 1) Light switching (factory setting) or dark switching  
 Active: dropout delay 500ms  
 Not active: no dropout delay (factory setting)

Time module (teach level 2) PNP transistor, counting principle  
 $\geq (U_B - 2V) / \leq 2V$   
 Max. 100mA

Warning output

Signal voltage high/low  
 Output current

Activation input

Transmitter active/not active  $\geq 8V / \leq 2V$   
 Activation/disable delay  $\leq 1 \text{ ms} / \leq 2 \text{ ms}$   
 Input resistance 10kΩ ± 10%

- 1) Typ. scanning range limit: max. attainable range without function reserve
- 2) Scanning range: recommended range with function reserve
- 3) For UL applications: for use in class 2 circuits only
- 4) See part number code
- 5) 1=transient protection, 2=polarity reversal protection, 3=short circuit protection for all transistor outputs
- 6) Rating voltage 50V
- 7) IP 69K test acc. to DIN 40050 part 9 simulated, high pressure cleaning conditions without the use of additives, acids and bases are not part of the test
- 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)

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.

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

Tables

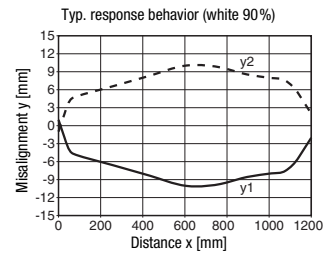
1	5	3000
2	20	2000
3	50	1500

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

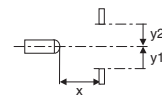
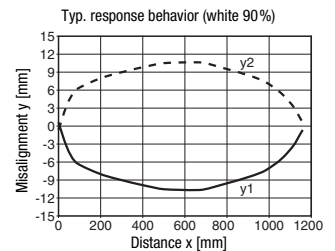
☐ Scanning range [mm]

Diagrams

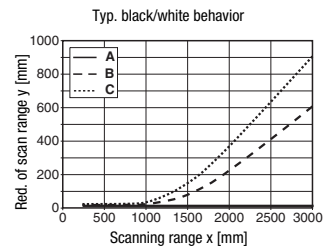
HT49C... with red light



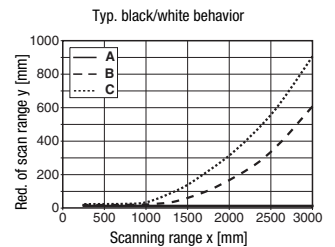
HT49CI... with infrared light



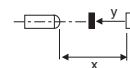
HT49C... with red light



HT49CI... with infrared light



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



# HT49C

# Diffuse reflection sensor with background suppression

## Part number code

H	T	4	9	C	I	/	4	P	-	T	B
---	---	---	---	---	---	---	---	---	---	---	---

### Operating principle

**HT** Diffuse reflection sensor with background suppression

### Series

**49C** 49C series

### Light type

**Free** Red light

**I** Infrared light

### Setting

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

### Pin assignment OUT1 (terminal 3)

**2** NPN, light switching

**N** NPN, dark switching

**4** PNP, light switching

**P** PNP, dark switching

### Pin assignment OUT/IN (terminal 4)

**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

**TB** Terminal block - terminal compartment with spring terminals (5 x 1.5mm<sup>2</sup>)

## Order guide

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

### Red-light diffuse reflection sensor with background suppression

#### Designation

#### Part no.

#### Terminal compartment with spring terminals (5 x 1.5mm<sup>2</sup>)

OUT1: PNP light switching; OUT2: PNP dark switching

HT49C/4P-TB

50134461

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

HT49C/48-TB

50134463

OUT1: NPN light switching; OUT2: NPN dark switching

HT49C/2N-TB

50134462

### Infrared-light diffuse reflection sensor with background suppression

#### Designation

#### Part no.

#### Terminal compartment with spring terminals (5 x 1.5mm<sup>2</sup>)

OUT1: PNP light switching; OUT2: PNP dark switching

HT49CI/4P-TB

50134464

