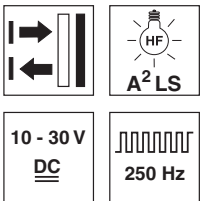


HT49C

Diffuse reflection sensor with background suppression

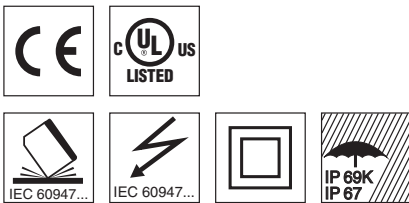
en 01-2016/06 50134384



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 1.5mm²)
- A²LS - Active Ambient Light Suppression

We reserve the right to make changes • DS_HT49CTB_en_50134384.fm

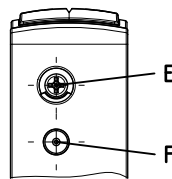
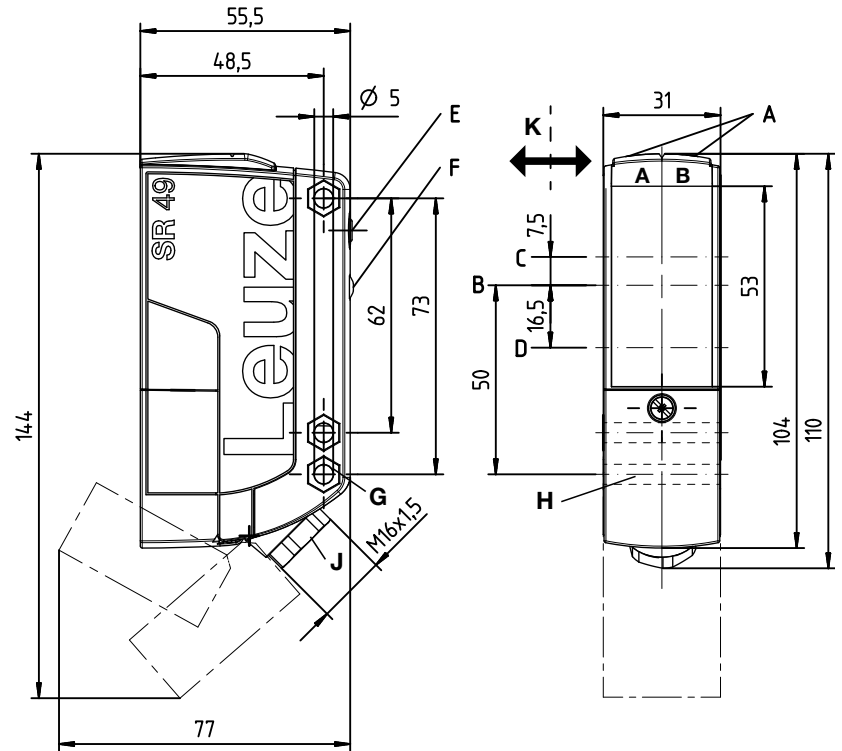


Accessories:

(available separately)

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

Dimensioned drawing



- A_A** Green indicator diode
- A_B** 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%) ¹⁾
 Scanning range ²⁾
 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 ³⁾ 10 ... 30VDC (incl. residual ripple)
 Residual ripple ≤ 15% of U_B
 Open-circuit current ≤ 20mA

Switching outputs/functions ⁴⁾

/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

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

Signal voltage high/low
 Output current

Indicators

Green LED Ready
 Yellow LED Reflection

Mechanical data

Housing Polycarbonate
 Optics cover Plastic
 Weight 150g
 Connection type Spring terminals, max. wire cross section 1.5mm²

Environmental data

Ambient temp. (operation/storage) -40°C ... +60°C / -40°C ... +70°C
 Protective circuit ⁵⁾ 1, 2, 3
 VDE safety class ⁶⁾ II, all-insulated
 Degree of protection IP 67, IP 69K ⁷⁾
 Light source Exempt group (in acc. with EN 62471)
 Standards applied IEC 60947-5-2
 Certifications UL 508, CSA C22.2 No.14-13 ³⁾ ⁸⁾

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

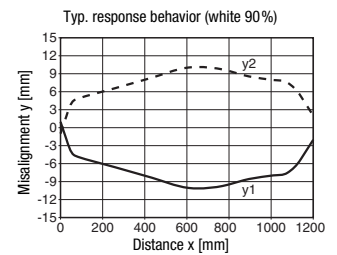
1	5	3000
2	20	2000
3	50	1500

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

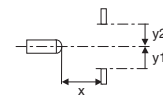
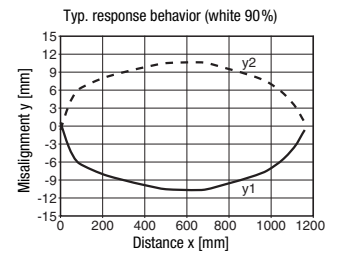
Scanning range [mm]

Diagrams

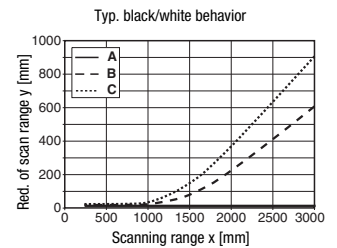
HT49C... with red light



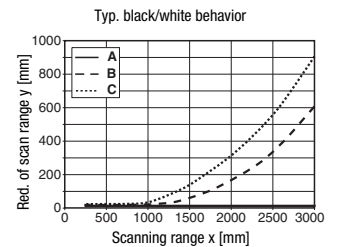
HT49CI... with infrared light



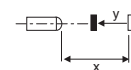
HT49C... with red light



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 1.5mm²)

Order guide

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

Red-light diffuse reflection sensor with background suppression

Designation

Part no.

Terminal compartment with spring terminals (5 x 1.5mm²)

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 1.5mm²)

OUT1: PNP light switching; OUT2: PNP dark switching

HT49CI/4P-TB

50134464

