

## Technical data sheet

### Diffuse sensor with background suppression

Part no.: 50127193

HT49C.UC/TS-TB



For illustration purposes only

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## Technical data

### Basic data

|                     |                                                          |
|---------------------|----------------------------------------------------------|
| Series              | 49C                                                      |
| Operating principle | Diffuse reflection principle with background suppression |

### Optical data

|                                  |                                      |
|----------------------------------|--------------------------------------|
| Black-white error                | < 10% up to 1200 mm                  |
| Operating range                  | Guaranteed operating range           |
| Operating range, white 90%       | 0.005 ... 3 m                        |
| Operating range, gray 18%        | 0.02 ... 2 m                         |
| Operating range, black 6%        | 0.05 ... 1.5 m                       |
| Operating range limit, white 90% | 0.005 ... 3 m                        |
| Operating range limit            | Typical operating range              |
| Adjustment range                 | 120 ... 3,000 mm                     |
| Light source                     | LED, Red                             |
| Wavelength                       | 630 nm                               |
| Transmitted-signal shape         | Pulsed                               |
| LED group                        | Exempt group (in acc. with EN 62471) |

### Electrical data

|                    |                                               |
|--------------------|-----------------------------------------------|
| Protective circuit | Interference blanking<br>Transient protection |
|--------------------|-----------------------------------------------|

### Performance data

|                             |                     |
|-----------------------------|---------------------|
| Supply voltage $U_B$        | 20 ... 250 V, AC/DC |
| Power consumption (with AC) | 1.5 V·A             |

### Outputs

|                                     |            |
|-------------------------------------|------------|
| Number of digital switching outputs | 2 Piece(s) |
|-------------------------------------|------------|

### Switching outputs

|                         |             |
|-------------------------|-------------|
| Voltage type            | AC/DC       |
| Switching current, max. | 2,500 mA    |
| Switching voltage       | 250 V AC/DC |

### Switching output 1

|                     |                       |
|---------------------|-----------------------|
| Assignment          | Connection 1, pin 3   |
| Switching element   | Relay, NC             |
| Switching principle | Light/dark switchable |

### Switching output 2

|                     |                       |
|---------------------|-----------------------|
| Assignment          | Connection 1, pin 5   |
| Switching element   | Relay, NO             |
| Switching principle | Light/dark switchable |

### Time behavior

|                     |        |
|---------------------|--------|
| Switching frequency | 25 Hz  |
| Response time       | 20 ms  |
| Readiness delay     | 300 ms |

### Connection

|                    |                              |
|--------------------|------------------------------|
| Connection 1       |                              |
| Function           | Signal OUT<br>Voltage supply |
| Type of connection | Terminal                     |
| Type of terminal   | Spring-cage terminal         |
| No. of pins        | 5 -pin                       |

### Mechanical data

|                       |                                                       |
|-----------------------|-------------------------------------------------------|
| Dimension (W x H x L) | 31 mm x 104 mm x 55.5 mm                              |
| Housing material      | Plastic                                               |
| Plastic housing       | PC                                                    |
| Lens cover material   | Plastic                                               |
| Net weight            | 150 g                                                 |
| Housing color         | Red                                                   |
| Type of fastening     | Through-hole mounting<br>Via optional mounting device |

### Operation and display

|                                     |                                                                                                                           |
|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| Type of display                     | LED                                                                                                                       |
| Number of LEDs                      | 2 Piece(s)                                                                                                                |
| Operational controls                | Multiturn potentiometer<br>Teach button                                                                                   |
| Function of the operational control | Activation of the time module for dropout delay<br>Light/dark switching<br>Range adjustment<br>Switching range adjustment |

### Environmental data

|                                |               |
|--------------------------------|---------------|
| Ambient temperature, operation | -40 ... 60 °C |
| Ambient temperature, storage   | -40 ... 70 °C |

### Certifications

|                      |               |
|----------------------|---------------|
| Degree of protection | IP 67         |
| Protection class     | II            |
| Approvals            | c UL US       |
| Standards applied    | IEC 60947-5-2 |

### Classification

|                       |          |
|-----------------------|----------|
| Customs tariff number | 85365080 |
| ECLASS 5.1.4          | 27270904 |
| ECLASS 8.0            | 27270904 |
| ECLASS 9.0            | 27270904 |
| ECLASS 10.0           | 27270904 |
| ECLASS 11.0           | 27270904 |
| ECLASS 12.0           | 27270903 |
| ECLASS 13.0           | 27270903 |
| ECLASS 14.0           | 27270903 |
| ECLASS 15.0           | 27270903 |
| ETIM 5.0              | EC002719 |
| ETIM 6.0              | EC002719 |
| ETIM 7.0              | EC002719 |
| ETIM 8.0              | EC002719 |
| ETIM 9.0              | EC002719 |
| ETIM 10.0             | EC002719 |

Dimensioned drawings

All dimensions in millimeters



- AA Green LED
- AB Yellow LED
- B Optical axis
- C Receiver
- D Transmitter
- E Range adjustment
- F Teach button
- K Preferred entry direction
- G Countersinking for SK nut M5, 4.2 mm deep
- J Cable entry with M16x1.5 screw fitting for Ø5 ... 10 mm
- H Connection compartment for spring terminals

Electrical connection

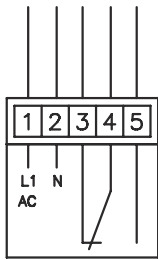
Connection 1

|                    |                      |
|--------------------|----------------------|
| Function           | Signal OUT           |
|                    | Voltage supply       |
| Type of connection | Terminal             |
| Type of terminal   | Spring-cage terminal |
| No. of pins        | 5 -pin               |

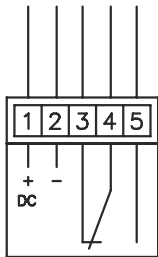
| Terminal | Assignment |
|----------|------------|
| 1        | + / L1     |
| 2        | - / N      |
| 3        | OUT 1      |
| 4        | COM        |
| 5        | OUT 2      |

## Circuit diagrams

### AC

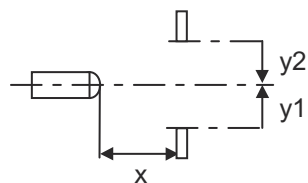
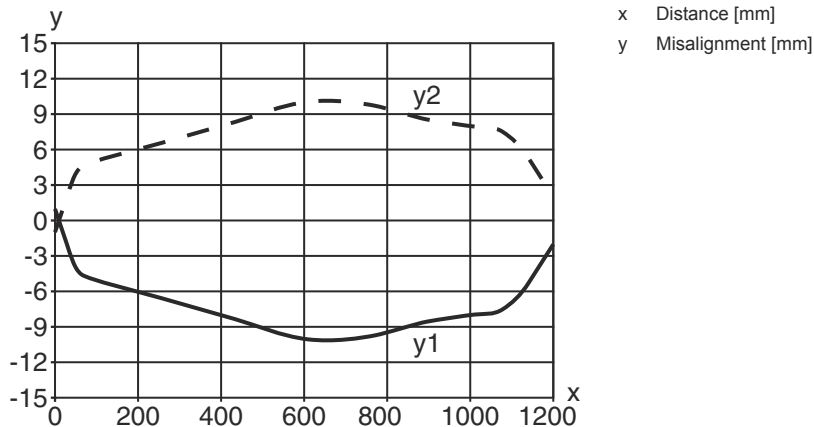


### DC



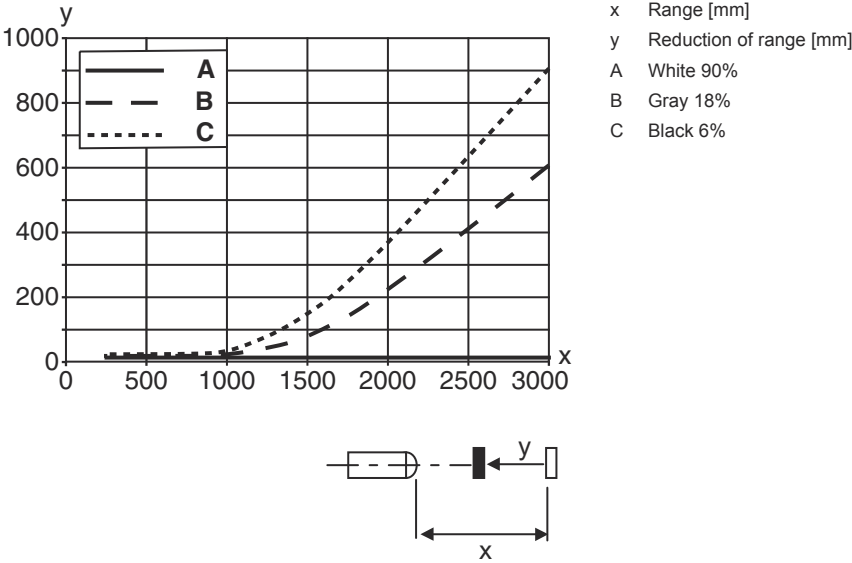
## Diagrams

Typ. response behavior (white 90 %)



Diagrams

Typ. black/white behavior



Operation and display

| LED | Display                  | Meaning                          |
|-----|--------------------------|----------------------------------|
| 1   | Green, continuous light  | Operational readiness            |
| 2   | Yellow, continuous light | Switching output/switching state |

Part number code

Part designation: AAA49Cd.EEfG/iJ-KL

|        |                                                                                                                                                                                                                                                                                                |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AAA49C | <b>Operating principle / construction</b><br>PRK49C: Retro-reflective photoelectric sensor with polarization filter<br>HT49C: Diffuse reflection sensor with background suppression<br>LS49C: Throughbeam photoelectric sensor transmitter<br>LE49C: Throughbeam photoelectric sensor receiver |
| d      | <b>Light type</b><br>n/a: red light<br>I: infrared light                                                                                                                                                                                                                                       |
| EE     | <b>Operating voltage</b><br>n/a: 10 ... 30 V, DC<br>UC: 20 ... 250V AC/DC (all-mains design)                                                                                                                                                                                                   |
| f      | <b>Equipment</b><br>H: with heating<br>D: Depolarizing media<br>1: 270° potentiometer<br>8: activation input (activation with high signal)                                                                                                                                                     |

Part number code

|    |                                                                                                                                                                                                                                                                                                                                                                                    |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| iJ | <b>Switching output / Function / OUT1OUT2</b><br>2: NPN transistor output, light switching<br>N: NPN transistor output, dark switching<br>4: PNP transistor output, light switching<br>P: PNP transistor output, dark switching<br>W: warning output<br>TS: Relay, NC contact/NO contact<br>M4: Low impedance MOSFET semiconductor switching output, NO contact<br>X: pin not used |
| KL | <b>Electrical connection</b><br>TB: Terminal block - terminal compartment with spring terminals (5 x 1.5 mm²)<br>n/a: cable, standard length 2000 mm<br>M12: M12 connector, 4-pin (plug)                                                                                                                                                                                           |

Note



A list with all available device types can be found on the Leuze website at [www.leuze.com](http://www.leuze.com).

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.

Further information

- All-insulated, rating voltage 250 VAC
- With inductive or capacitive load, provide suitable spark extinction (snubber)

Accessories

Mounting technology - Mounting brackets

|                                                                                     | Part no. | Designation | Article         | Description                                                                                                                                                                              |
|-------------------------------------------------------------------------------------|----------|-------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50025570 | BT 96       | Mounting device | Design of mounting device: Angle, L-shape<br>Fastening, at system: Through-hole mounting<br>Mounting bracket, at device: Screw type<br>Type of mounting device: Rigid<br>Material: Metal |

Accessories

Mounting technology - Rod mounts

|                                                                                   | Part no. | Designation  | Article         | Description                                                                                                                                                                                           |
|-----------------------------------------------------------------------------------|----------|--------------|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50128380 | BTU 460M-D12 | Mounting system | Design of mounting device: Mounting system<br>Fastening, at system: For 12 mm rod<br>Mounting bracket, at device: Screw type<br>Type of mounting device: Adjustable, Turning, 360°<br>Material: Metal |

| Note                                                                             |                                                                                                                           |
|----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
|  | A list with all available accessories can be found on the Leuze website in the Download tab of the article detailed page. |