

## Technical data sheet

### Polarized retro-reflective photoelectric sensor

Part no.: 50127422

PRK49C.UC/TS-TB



For illustration purposes only

#### Contents

- Technical data
- Dimensioned drawings
- Electrical connection
- Circuit diagrams
- Diagrams
- Operation and display
- Reflectors & reflective tapes
- Part number code
- Notes
- Further information
- Accessories



## Technical data

### Basic data

|                     |                      |
|---------------------|----------------------|
| Series              | 49C                  |
| Operating principle | Reflection principle |

### Optical data

|                                      |                                                                         |
|--------------------------------------|-------------------------------------------------------------------------|
| Operating range                      | 0.1 ... 24 m (guaranteed operating range), With reflector TK(S) 100x100 |
| Operating range limit                | 0.1 ... 30 m (typical operating range), With reflector TK(S) 100x100    |
| Beam path                            | Divergent                                                               |
| Light source                         | LED, Red                                                                |
| Wavelength                           | 630 nm                                                                  |
| Transmitted-signal shape             | Pulsed                                                                  |
| LED group                            | Exempt group (in acc. with EN 62471)                                    |
| Light spot size [at sensor distance] | 130 mm [6,000 mm]                                                       |
| Type of light spot geometry          | Round                                                                   |

### Electrical data

|                    |                       |
|--------------------|-----------------------|
| Protective circuit | Interference blanking |
|                    | 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

|                         |                          |
|-------------------------|--------------------------|
| Type                    | Digital switching output |
| 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

|                       |            |
|-----------------------|------------|
| Number of connections | 1 Piece(s) |
|-----------------------|------------|

### Connection 1

|                    |                      |
|--------------------|----------------------|
| Function           | Signal OUT           |
|                    | 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        |
|                                                | Via optional mounting device |
| Recommended tightening torque for M3 fastening | 0.9 N·m                      |
| Recommended tightening torque for M4 fastening | 1.4 N·m                      |

### Operation and display

|                 |            |
|-----------------|------------|
| Type of display | LED        |
| Number of LEDs  | 2 Piece(s) |

### Environmental data

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

### Certifications

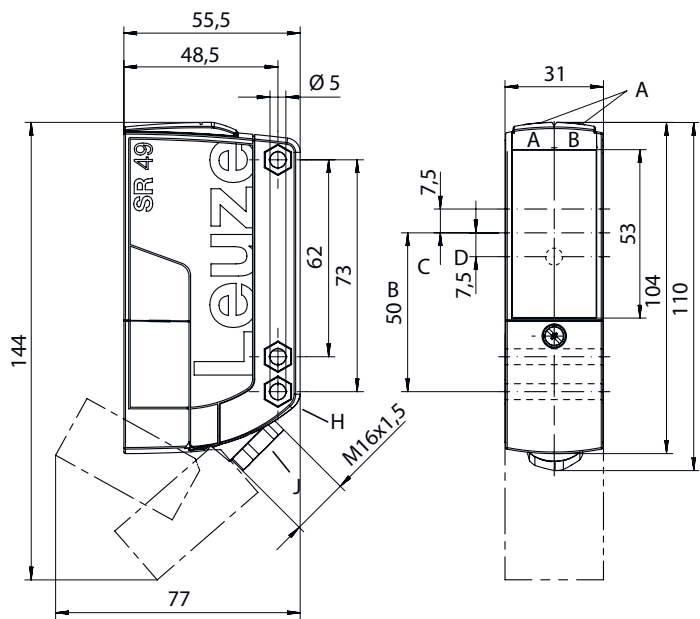
|                      |               |
|----------------------|---------------|
| Degree of protection | IP 67         |
| Protection class     | II            |
| Approvals            | c UL US       |
| Standards applied    | IEC 60947-5-2 |

### Classification

|                       |          |
|-----------------------|----------|
| Customs tariff number | 85365080 |
| ECLASS 5.1.4          | 27270902 |
| ECLASS 8.0            | 27270902 |
| ECLASS 9.0            | 27270902 |
| ECLASS 10.0           | 27270902 |
| ECLASS 11.0           | 27270902 |
| ECLASS 12.0           | 27270902 |
| ECLASS 13.0           | 27270902 |
| ECLASS 14.0           | 27270902 |
| ECLASS 15.0           | 27270902 |
| ETIM 5.0              | EC002717 |
| ETIM 6.0              | EC002717 |
| ETIM 7.0              | EC002717 |
| ETIM 8.0              | EC002717 |
| ETIM 9.0              | EC002717 |
| ETIM 10.0             | EC002717 |

Dimensioned drawings

All dimensions in millimeters



- AA Green LED
- AB Yellow LED
- B Optical axis
- C Receiver
- D Transmitter
- H Countersinking for SK nut M5, 4.2 mm deep
- J Cable entry with M16x1.5 screw fitting for Ø5 ... 10 mm

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

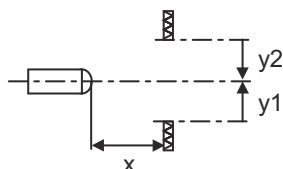
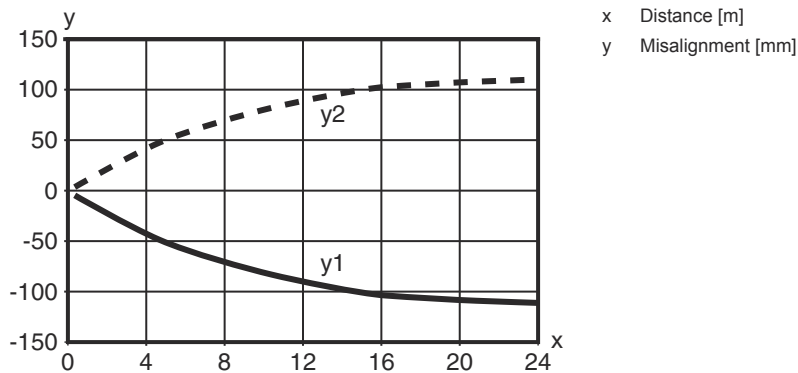


### DC



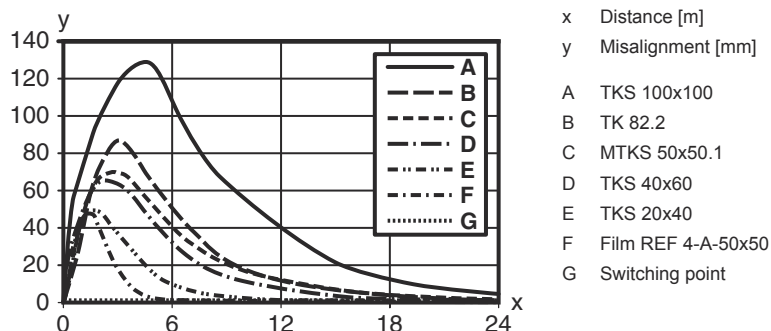
## Diagrams

### Typ. response behavior (TKS100x100)



## Diagrams

Typ. function reserve



## Operation and display

| LED | Display                  | Meaning                              |
|-----|--------------------------|--------------------------------------|
| 1   | Green, continuous light  | Operational readiness                |
| 2   | Yellow, continuous light | Light path free                      |
|     | Yellow, flashing         | Light path free, no function reserve |

## Reflectors & reflective tapes

|                                                                                     | Part no. | Designation   | Operating range<br>Operating range<br>limit | Description                                                                                                                                                                                                                            |
|-------------------------------------------------------------------------------------|----------|---------------|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50117583 | MTKS 50x50.1  | 0.3 ... 15 m<br>0.1 ... 18 m                | Design: Rectangular<br>Triple reflector size: 1.2 mm<br>Reflective surface: 50 mm x 50 mm<br>Material: Plastic<br>Base material: Plastic<br>Chemical designation of the material: PMMA8N<br>Fastening: Through-hole mounting, Adhesive |
|  | 50108300 | REF 4-A-50x50 | 0.3 ... 4 m<br>0.1 ... 5 m                  | Design: Rectangular<br>Reflective surface: 50 mm x 50 mm<br>Material: Plastic<br>Chemical designation of the material: PMMA<br>Fastening: Self-adhesive                                                                                |
|  | 50003192 | TK 100x100    | 0.3 ... 24 m<br>0.1 ... 30 m                | Design: Rectangular<br>Triple reflector size: 4 mm<br>Reflective surface: 96 mm x 96 mm<br>Material: Plastic<br>Base material: Plastic<br>Chemical designation of the material: PMMA8N<br>Fastening: Rear side can be glued            |
|  | 50003189 | TK 30x50      | 0.3 ... 12 m<br>0.1 ... 15 m                | Design: Rectangular<br>Triple reflector size: 4 mm<br>Reflective surface: 29 mm x 45 mm<br>Material: Plastic<br>Base material: Plastic<br>Chemical designation of the material: PMMA8N<br>Fastening: Rear side can be glued            |

## Reflectors & reflective tapes

|                                                                                    | Part no. | Designation | Operating range<br>Operating range<br>limit | Description                                                                                                                                                                                                                                    |
|------------------------------------------------------------------------------------|----------|-------------|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | 50024127 | TK 82.2     | 0.3 ... 15 m<br>0.1 ... 18 m                | Design: Round<br>Triple reflector size: 4 mm<br>Reflective surface, diameter: 79 mm<br>Material: Plastic<br>Base material: Plastic<br>Chemical designation of the material: PMMA8N<br>Fastening: Through-hole mounting, Rear side can be glued |
|   | 50022816 | TKS 100X100 | 0.3 ... 24 m<br>0.1 ... 30 m                | Design: Rectangular<br>Triple reflector size: 4 mm<br>Reflective surface: 96 mm x 96 mm<br>Material: Plastic<br>Base material: Plastic<br>Chemical designation of the material: PMMA8N<br>Fastening: Through-hole mounting, Adhesive           |
|   | 50081283 | TKS 20X40   | 0.3 ... 8 m<br>0.1 ... 10 m                 | Design: Rectangular<br>Triple reflector size: 2.3 mm<br>Reflective surface: 16 mm x 38 mm<br>Material: Plastic<br>Base material: Plastic<br>Chemical designation of the material: PMMA8N<br>Fastening: Through-hole mounting, Adhesive         |
|  | 50023525 | TKS 30X50   | 0.3 ... 12 m<br>0.1 ... 15 m                | Design: Rectangular<br>Triple reflector size: 3 mm<br>Reflective surface: 27 mm x 44 mm<br>Material: Plastic<br>Base material: Plastic<br>Chemical designation of the material: PMMA8N<br>Fastening: Through-hole mounting, Adhesive           |

## Part number code

Part designation: AAA49Cd.EEfG/iJ-KL

|               |                                                                                                                                                                                                                                                                                                |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>AAA49C</b> | <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 |
| <b>d</b>      | <b>Light type</b><br>n/a: red light<br>l: infrared light                                                                                                                                                                                                                                       |
| <b>EE</b>     | <b>Operating voltage</b><br>n/a: 10 ... 30 V, DC<br>UC: 20 ... 250V AC/DC (all-mains design)                                                                                                                                                                                                   |
| <b>f</b>      | <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 mm <sup>2</sup> )<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. |