

## Technical data sheet

### Polarized retro-reflective photoelectric sensor

Part no.: 50127421

PRK49C.UC1/TS



For illustration purposes only

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## Technical data

### Basic data

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

### Optical data

|                                      |                                            |
|--------------------------------------|--------------------------------------------|
| Operating range                      | 0.1 ... 24 m                               |
| Operating range                      | Guaranteed operating range                 |
| Reference reflector                  | With reflector TK(S) 100x100               |
| Operating range limit                | Typical operating range                    |
| Operating range limit                | 0.1 ... 30 m, 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

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

### Switching output 1

|                     |                       |
|---------------------|-----------------------|
| Switching element   | Relay, NC             |
| Switching principle | Light/dark switchable |

### Switching output 2

|                     |                       |
|---------------------|-----------------------|
| 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           |
|                      | Voltage supply       |
| Type of connection   | Cable                |
| Cable length         | 2,000 mm             |
| Sheathing material   | PVC                  |
| Cable color          | Black                |
| Number of conductors | 5 -wire              |
| Wire cross section   | 0.34 mm <sup>2</sup> |

### 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 |

### Operation and display

|                                     |                                                 |
|-------------------------------------|-------------------------------------------------|
| Type of display                     | LED                                             |
| Number of LEDs                      | 2 Piece(s)                                      |
| Operational controls                | 270° potentiometer                              |
|                                     | Teach button                                    |
| Function of the operational control | Activation of the time module for dropout delay |
|                                     | Light/dark switching                            |
|                                     | Sensitivity adjustment                          |

### Environmental data

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

### Certifications

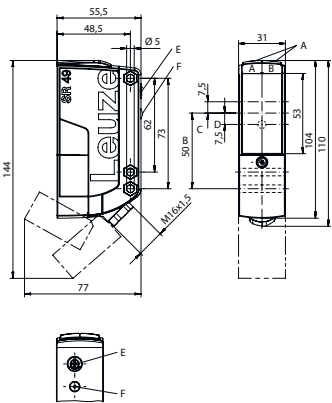
|                      |               |
|----------------------|---------------|
| Degree of protection | IP 67         |
| Protection class     | II            |
| Certifications       | c UL US       |
| Standards applied    | IEC 60947-5-2 |

### 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 |
| ETIM 5.0              | EC002717 |
| ETIM 6.0              | EC002717 |
| ETIM 7.0              | EC002717 |
| ETIM 8.0              | EC002717 |
| ETIM 9.0              | EC002717 |

Dimensioned drawings

All dimensions in millimeters



- AA Green LED
- AB Yellow LED
- B Optical axis
- C Receiver
- D Transmitter
- E Sensitivity adjustment
- F Teach button
- 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   | Cable          |
| Cable length         | 2,000 mm       |
| Sheathing material   | PVC            |
| Cable color          | Black          |
| Number of conductors | 5 -wire        |
| Wire cross section   | 0.34 mm²       |

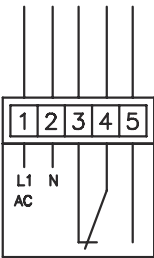
Conductor color

Conductor assignment

|       |        |
|-------|--------|
| Brown | + / L1 |
| Blue  | - / N  |
| White | OUT 1  |
| Gray  | COM    |
| Black | OUT 2  |

Circuit diagrams

AC



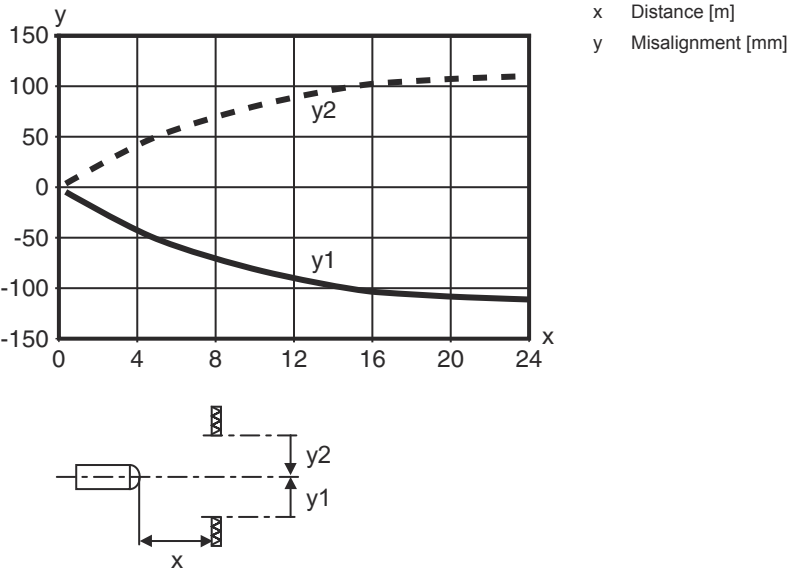
Circuit diagrams

DC

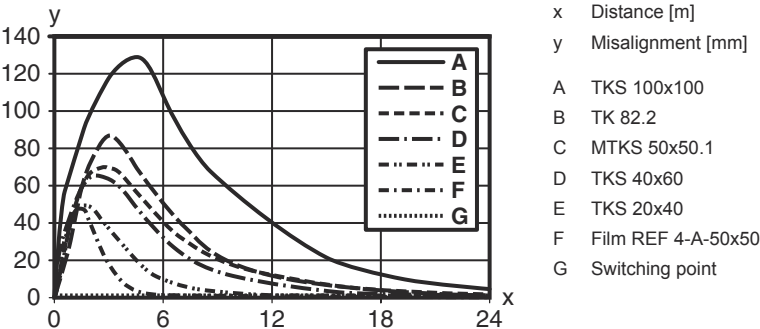


Diagrams

Typ. response behavior (TKS100x100)



Typ. function reserve



Operation and display

| LED | Display                  | Meaning               |
|-----|--------------------------|-----------------------|
| 1   | Green, continuous light  | Operational readiness |
| 2   | Yellow, continuous light | Light path free       |

## Operation and display

| LED | Display          | Meaning                              |
|-----|------------------|--------------------------------------|
| 2   | 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                    |
|  | 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         |

Reflectors & reflective tapes

|                                                                                   | Part no. | Designation | Operating range<br>Operating range<br>limit | Description                                                                                                                                                                                                                          |
|-----------------------------------------------------------------------------------|----------|-------------|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 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

|        |                                                                                                                                                                                                                                                                                                                                                                                    |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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)                                                                                                                                                                                                                                         |
| 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 <a href="http://www.leuze.com">www.leuze.com</a> . |

Notes

|  Observe intended use! |                                                                                                                                                                                                                                                                             |
|-----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                         | <ul style="list-style-type: none"><li>This product is not a safety sensor and is not intended as personnel protection.</li><li>The product may only be put into operation by competent persons.</li><li>Only use the product in accordance with its intended use.</li></ul> |

## 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 |

### 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 |

## Standard reflectors

|                                                                                     | Part no. | Designation | Article   | Description                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------------------------|----------|-------------|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50024127 | TK 82.2     | Reflector | 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 | Reflector | 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           |

#### Note



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