



Figure can vary

Part no.: 50139674

**PRK25C.TT3/4P-200-M12**

**Polarized retro-reflective photoelectric sensor**



## Contents

- Technical data
- Dimensioned drawings
- Electrical connection
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## Technical data

| <b>Basic data</b>                   |   |
|-------------------------------------|---|
| Series                              | 25C   |
| Operating principle                 | Reflection principle  |
| Application                         | Detection of highly transparent bottles<br>Detection of transparent films |
| <b>Special design</b>               |   |
| Special design                      | Autocollimation<br>Tracking function                                      |
| <b>Optical data</b>                 |   |
| Operating range                     | Guaranteed operating range  |
| Operating range                     | 0 ... 3 m , With reflector TK(S) 100x100                                  |
| Operating range limit               | Typical operating range   |
| Operating range limit               | 0 ... 3.6 m , With reflector TK(S) 100x100                                |
| Light source                        | LED , Red   |
| LED light wavelength                | 640 nm  |
| LED group                           | Exempt group (in acc. with EN 62471)                                      |
| Transmitted-signal shape            | Pulsed  |
| <b>Electrical data</b>              |   |
| Protective circuit                  | Polarity reversal protection<br>Short circuit protected                   |
| <b>Performance data</b>             |   |
| Supply voltage $U_B$                | 10 ... 30 V , DC , Incl. residual ripple                                  |
| Residual ripple                     | 0 ... 15 % , From $U_B$   |
| Open-circuit current                | 0 ... 20 mA   |
| <b>Outputs</b>                      |   |
| Number of digital switching outputs | 2 Piece(s)  |
| <b>Switching outputs</b>            |   |
| Voltage type                        | DC  |
| Switching current, max.             | 100 mA  |
| Switching voltage                   | high: $\geq(U_B-2.5V)$<br>low: $\leq 2.5V$                                |
| <b>Switching output 1</b>           |   |
| Assignment                          | Connection 1, pin 4   |
| Switching element                   | Transistor , PNP  |
| Switching principle                 | Light switching   |
| <b>Switching output 2</b>           |   |
| Assignment                          | Connection 1, pin 2   |
| Switching element                   | Transistor , PNP  |
| Switching principle                 | Dark switching  |
| <b>Timing</b>                       |   |
| Switching frequency                 | 1,500 Hz  |
| Response time                       | 0.33 ms   |
| Readiness delay                     | 300 ms  |
| <b>Connection</b>                   |   |

**Connection 1**

|                    |                              |
|--------------------|------------------------------|
| Type of connection | Cable with connector         |
| Function           | Signal OUT<br>Voltage supply |
| Cable length       | 200 mm                       |
| Sheathing material | PUR                          |
| Cable color        | Black                        |
| Wire cross section | 0.2 mm <sup>2</sup>          |
| Thread size        | M12                          |
| Type               | Male                         |
| Material           | PUR                          |
| No. of pins        | 4 -pin                       |
| Encoding           | A-coded                      |

**Mechanical data**

|                            |  |
|----------------------------|--|
| Dimension (W x H x L)      | 15 mm x 42.7 mm x 30 mm  |
| Housing material           | Plastic , ABS  |
| Lens cover material        | Plastic  |
| Net weight                 | 33 g   |
| Housing color              | Red  |
| Type of fastening          | Through-hole mounting with M4 thread<br>Via optional mounting device |
| Compatibility of materials | ECOLAB   |

**Operation and display**

|                                     |                        |
|-------------------------------------|------------------------|
| Type of display                     | LED                    |
| Number of LEDs                      | 2 Piece(s)             |
| Operational controls                | Teach button           |
| Function of the operational control | Sensitivity adjustment |

**Environmental data**

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

**Certifications**

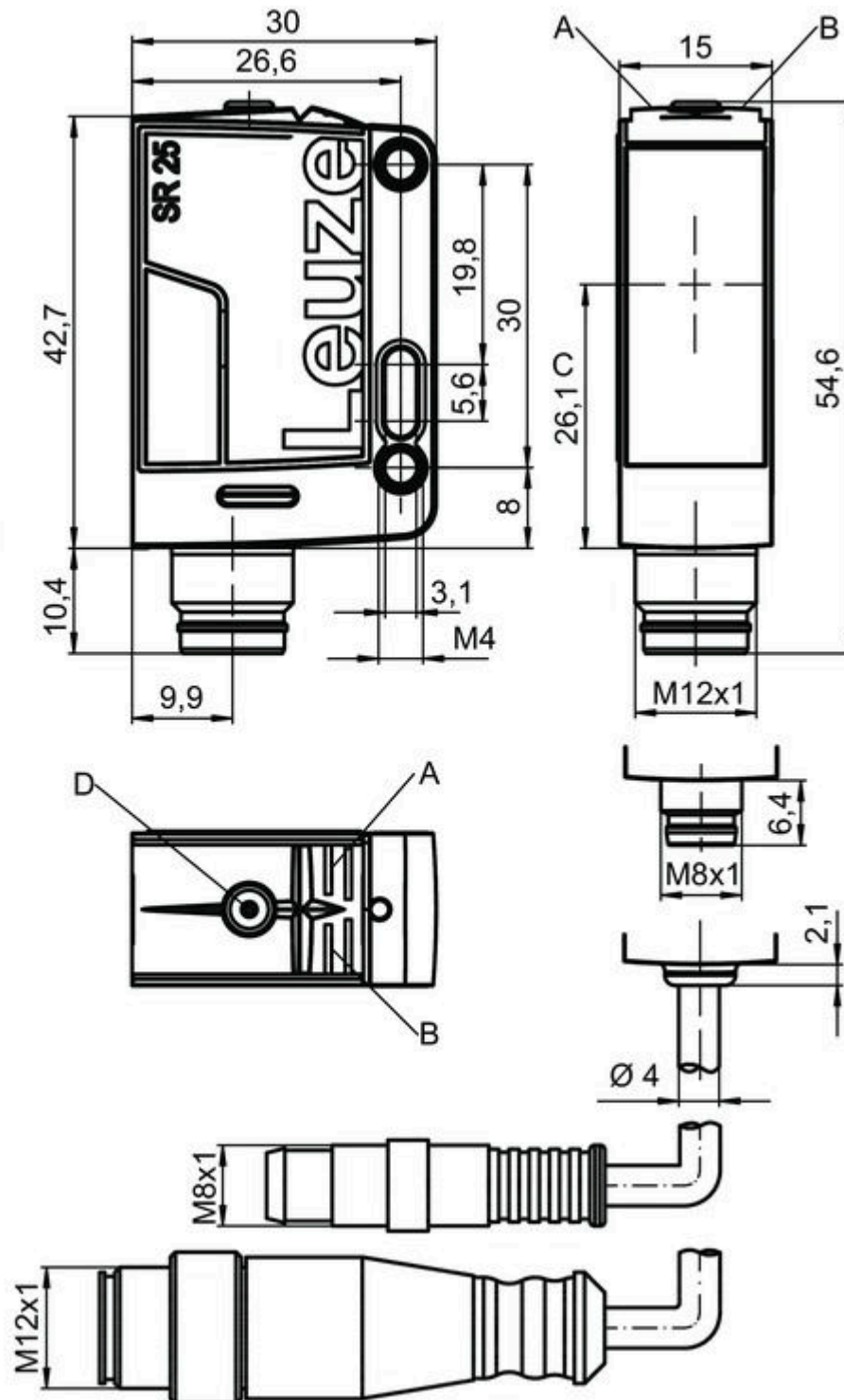
|                      |                 |
|----------------------|-----------------|
| Degree of protection | IP 67<br>IP 69K |
| Protection class     | III             |
| Certifications       | c UL US         |
| Standards applied    | IEC 60947-5-2   |

**Classification**

|                       |          |
|-----------------------|----------|
| Customs tariff number | 85365019 |
| eCl@ss 8.0            | 27270902 |
| eCl@ss 9.0            | 27270902 |
| ETIM 5.0              | EC002717 |
| ETIM 6.0              | EC002717 |

## Dimensioned drawings

All dimensions in millimeters

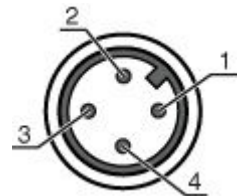


A Green LED  
 B Yellow LED  
 C Optical axis  
 D Teach button

## Electrical connection

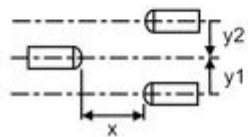
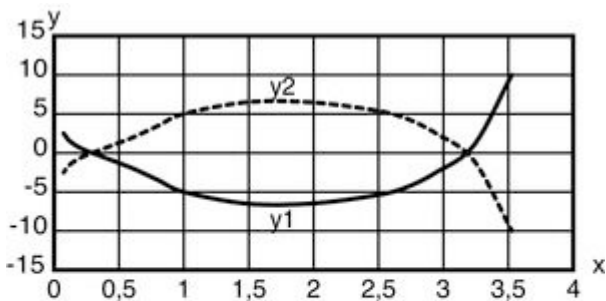
| Connection 1       |                              |
|--------------------|------------------------------|
| Type of connection | Cable with connector         |
| Function           | Signal OUT<br>Voltage supply |
| Cable length       | 200 mm                       |
| Sheathing material | PUR                          |
| Cable color        | Black                        |
| Wire cross section | 0.2 mm <sup>2</sup>          |
| Thread size        | M12                          |
| Type               | Male                         |
| Material           | PUR                          |
| No. of pins        | 4 -pin                       |
| Encoding           | A-coded                      |

| Pin | Pin assignment |
|-----|----------------|
| 1   | V+             |
| 2   | OUT 2          |
| 3   | GND            |
| 4   | OUT 1          |



## Diagrams

Typ. response behavior (TKS100x100)



x Distance [m]  
y Misalignment [mm]

## Operation and display



### LEDs

| 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 limit | Description  |
|---|----------|---------------|---|--|
|    | 50117583 | MTKS 50x50.1  | 0 ... 2 m<br>0 ... 2.4 m                  | Design: Rectangular<br>Reflective surface: 50 mm x 50 mm<br>Triple reflector size: 1.2 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 ... 0.5 m<br>0 ... 0.6 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  |
|  | 50110192 | REF 6-A-50x50 | 0 ... 1.3 m<br>0 ... 1.5 m                | Design: Rectangular<br>Reflective surface: 50 mm x 50 mm<br>Triple reflector size: 0.3 mm<br>Material: Plastic<br>Chemical designation of the material: PMMA<br>Fastening: Self-adhesive   |
|  | 50003192 | TK 100x100    | 0 ... 3 m<br>0 ... 3.6 m                  | Design: Rectangular<br>Reflective surface: 96 mm x 96 mm<br>Triple reflector size: 4 mm<br>Material: Plastic<br>Base material: Plastic<br>Chemical designation of the material: PMMA8N<br>Fastening: Adhesive                          |
|  | 50022816 | TKS 100X100   | 0 ... 3 m<br>0 ... 3.6 m                  | Design: Rectangular<br>Reflective surface: 96 mm x 96 mm<br>Triple reflector size: 4 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 ... 1.1 m<br>1.3 ... 2.4 m              | Design: Rectangular<br>Reflective surface: 16 mm x 38 mm<br>Triple reflector size: 2.3 mm<br>Material: Plastic<br>Base material: Plastic<br>Chemical designation of the material: PMMA8N<br>Fastening: Through-hole mounting, Adhesive |

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|   | Part no. | Designation | Operating range/<br>Operating range limit | Description  |
|---|----------|-------------|---|--|
|  | 50040820 | TKS 40X60   | 0 ... 2 m<br>0 ... 2.4 m                  | Design: Rectangular<br>Reflective surface: 37 mm x 56 mm<br>Triple reflector size: 4 mm<br>Material: Plastic<br>Base material: Plastic<br>Chemical designation of the material: PMMA8N<br>Fastening: Through-hole mounting, Adhesive   |
|  | 50109257 | TKS 40x60.1 | 0 ... 1.9 m<br>0 ... 2.3 m                | Design: Rectangular<br>Reflective surface: 37 mm x 56 mm<br>Triple reflector size: 2.3 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: **AAA25C d EE-f.GGH/iJ-K**

|        |   |
|--------|---|
| AAA25C | <b>Operating principle / construction:</b><br>HT25C: diffuse reflection sensor with background suppression<br>PRK25C: retro-reflective photoelectric sensor with polarization filter<br>LS25C: throughbeam photoelectric sensor transmitter<br>LE25C: throughbeam photoelectric sensor receiver   |
| d      | <b>Light type:</b><br>n/a: red light<br>l: infrared light   |
| EE     | <b>Light source:</b><br>n/a: LED<br>L1: laser class 1<br>L2: laser class 2  |
| f      | <b>Pre-set range (optional):</b><br>n/a: operating range acc. to data sheet<br>XXXX: pre-set range [mm]   |
| GG     | <b>Equipment:</b><br>A: autocollimation principle (single lens)<br>S: small light spot<br>D: detection of stretch-wrapped objects<br>X: extended model<br>HF: suppression of HF illumination (LED)<br>XL: extra long light spot<br>T: autocollimation principle (single lens) for highly transparent bottles without tracking<br>TT: autocollimation principle (single lens) for highly transparent bottles with tracking |
| H      | <b>Operating range adjustment:</b><br>1: 270° potentiometer<br>2: multiturn potentiometer<br>3: teach-in via button   |
| i      | <b>Switching output/function OUT 1/IN: Pin 4 or black conductor:</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>X: pin not used<br>8: activation input (activation with high signal)  |
| J      | <b>Switching output / function OUT 2/IN: pin 2 or white conductor:</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>X: pin not used  |

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|   |  |
|---|--|
| K | <b>Electrical connection:</b><br>n/a: cable, standard length 2000 mm, 4-wire<br>200-M12: cable, length 200 mm with M12 connector, 4-pin, axial (plug)<br>M8: M8 connector, 4-pin (plug)<br>M12: M12 connector, 4-pin (plug)<br>200-M8: cable, length 200 mm with M8 connector, 4-pin, axial (plug) |
|---|--|

|   |
|---|
| <b>Note</b>   |
| A list with all available device types can be found on the Leuze electronic website at <a href="http://www.leuze.com">www.leuze.com</a> . |

## Notes





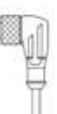

|   |
|---|
| <b>Observe intended use!</b>  |
| <ul style="list-style-type: none"> <li>• This product is not a safety sensor and is not intended as personnel protection.</li> <li>• The product may only be put into operation by competent persons.</li> <li>• Only use the product in accordance with its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

|   |
|---|
| <b>For UL applications:</b>   |
| <ul style="list-style-type: none"> <li>• Only for use in "class 2" circuits</li> <li>• 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)</li> </ul> |

- Light source: Average life expectancy 100,000 h at an ambient temperature of 25 °C
- Sum of the output currents for both outputs 100 mA


## Accessories

### Connection technology - Connection cables



|   | Part no. | Designation        | Article          | Description  |
|---|----------|--------------------|------------------|--|
| <br><br> | 50130652 | KD U-M12-4A-V1-050 | Connection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 4 -pin<br>Connection 2: Open end<br>Shielded: No<br>Cable length: 5,000 mm<br>Sheathing material: PVC  |
| <br><br> | 50130690 | KD U-M12-4W-V1-050 | Connection cable | Connection 1: Connector, M12, Angled, Female, A-coded, 4 -pin<br>Connection 2: Open end<br>Shielded: No<br>Cable length: 5,000 mm<br>Sheathing material: PVC |

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## Mounting technology - Mounting brackets

|   | Part no. | Designation | Article          | Description   |
|---|----------|-------------|------------------|---|
|  | 50118543 | BT 300M.5   | Mounting bracket | 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: Adjustable<br>Material: Stainless steel |


## Mounting technology - Rod mounts

|  | Part no. | Designation  | Article         | Description   |
|--|----------|--------------|-----------------|---|
|   | 50117829 | BTP 200M-D12 | Mounting system | Design of mounting device: Protection hood<br>Fastening, at system: For 12 mm rod<br>Mounting bracket, at device: Screw type<br>Type of mounting device: Clampable, Adjustable, Turning, 360°<br>Material: Metal  |
|  | 50117252 | BTU 300M-D12 | Mounting system | Contains: 2x M4 x 25 screw, 2x M4 x 20 screw, 4x position washers<br>Design of mounting device: Mounting system<br>Fastening, at system: For 12 mm rod, Sheet-metal mounting<br>Mounting bracket, at device: Screw type<br>Type of mounting device: Clampable, Adjustable, Turning, 360°<br>Material: Metal |

## Standard reflectors

|   | Part no. | Designation | Article   | Description  |
|---|----------|-------------|-----------|--|
|  | 50109257 | TKS 40x60.1 | Reflector | Design: Rectangular<br>Reflective surface: 37 mm x 56 mm<br>Triple reflector size: 2.3 mm<br>Material: Plastic<br>Base material: Plastic<br>Chemical designation of the material: PMMA8N<br>Fastening: Through-hole mounting, Adhesive |

## Micro-triad-type reflectors

|   | Part no. | Designation  | Article   | Description  |
|---|----------|--------------|-----------|--|
|  | 50117583 | MTKS 50x50.1 | Reflector | Design: Rectangular<br>Reflective surface: 50 mm x 50 mm<br>Triple reflector size: 1.2 mm<br>Material: Plastic<br>Base material: Plastic<br>Chemical designation of the material: PMMA8N<br>Fastening: Through-hole mounting, Adhesive |