



Figure can vary

Part no.: 50137346

**PRK25C.XA2/2N**

**Polarized retro-reflective photoelectric sensor**



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- Dimensioned drawings
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## Technical data

| <b>Basic data</b>                   |   |
|-------------------------------------|---|
| Series                              | 25C   |
| Operating principle                 | Reflection principle                                    |
| Application                         | Detection of highly transparent bottles                 |
| <b>Special design</b>               |   |
| Special design                      | Autocollimation   |
| <b>Optical data</b>                 |   |
| Operating range                     | Guaranteed operating range                              |
| Operating range                     | 0 ... 5 m, With reflector TK(S) 100x100                 |
| Operating range limit               | Typical operating range                                 |
| Operating range limit               | 0 ... 6 m, With reflector TK(S) 100x100                 |
| Light source                        | LED, Red  |
| LED light wavelength                | 640 nm  |
| LED protection class                | 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                      | 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                   | low: $\leq 2.5V$<br>high: $\geq (U_B - 2.5V)$           |
| <b>Switching output 1</b>           |   |
| Assignment                          | Connection 1, conductor 4                               |
| Switching element                   | Transistor, NPN   |
| Switching principle                 | Light switching   |
| <b>Switching output 2</b>           |   |
| Assignment                          | Connection 1, conductor 2                               |
| Switching element                   | Transistor, NPN   |
| 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                        |
| Function             | Signal OUT<br>Voltage supply |
| Cable length         | 2,000 mm                     |
| Sheathing material   | PUR                          |
| Cable color          | Black                        |
| Number of conductors | 4 -wire                      |
| Wire cross section   | 0.2 mm <sup>2</sup>          |

**Mechanical data**

|                            |  |
|----------------------------|--|
| Dimension (W x H x L)      | 15 mm x 42.7 mm x 30 mm  |
| Housing material           | Metal<br>Plastic, Diecast zinc, ABS                                  |
| Lens cover material        | Plastic  |
| Net weight                 | 55 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                | Multiturn potentiometer |
| 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**

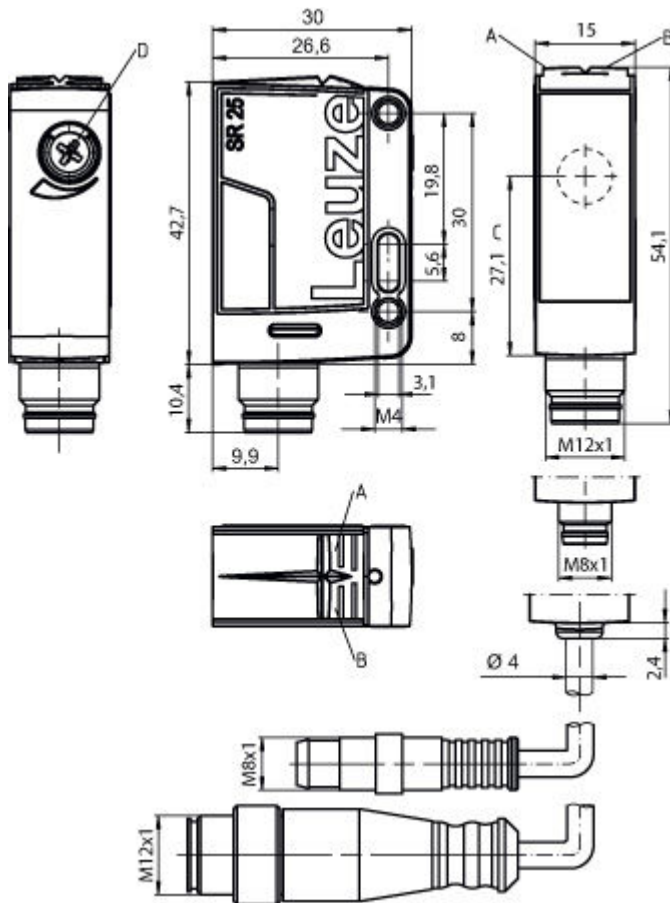
|            |          |
|------------|----------|
| eCl@ss 8.0 | 27270902 |
| eCl@ss 9.0 | 27270902 |
| ETIM 5.0   | EC002717 |

## Reflectors & reflective tapes

|   | Part no. | Designation     | Operating range/<br>Operating range limit | Description  |
|---|----------|-----------------|---|--|
|    | 50117583 | MTKS 50x50.1    | 0 ... 3 m<br>0 ... 3.5 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 |
|    | 50106119 | REF 4-A-100x100 | 0 ... 0.9 m<br>0 ... 1.1 m                | Design: Rectangular<br>Reflective surface: 100 mm x 100 mm<br>Material: Plastic<br>Chemical designation of the material: PMMA<br>Fastening: Self-adhesive  |
|    | 50110192 | REF 6-A-50x50   | 0 ... 2.2 m<br>0 ... 2.5 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 ... 5 m<br>0 ... 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 ... 5 m<br>0 ... 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 ... 1.7 m<br>0 ... 2 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 |
|  | 50040820 | TKS 40X60       | 0 ... 2.5 m<br>0 ... 3 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   |

## Dimensioned drawings

All dimensions in millimeters



- A Green LED
- B Yellow LED
- C Optical axis
- D Potentiometer

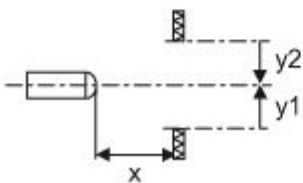
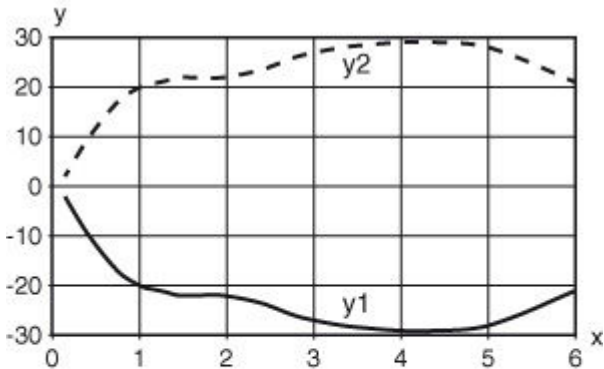
## Electrical connection

| Connection 1         |                              |
|----------------------|------------------------------|
| Type of connection   | Cable                        |
| Function             | Signal OUT<br>Voltage supply |
| Cable length         | 2,000 mm                     |
| Sheathing material   | PUR                          |
| Cable color          | Black                        |
| Number of conductors | 4 -wire                      |
| Wire cross section   | 0.2 mm <sup>2</sup>          |

| Conductor color | Conductor assignment |
|-----------------|----------------------|
| Brown           | V+                   |
| White           | OUT 2                |
| Blue            | GND                  |
| Black           | OUT 1                |

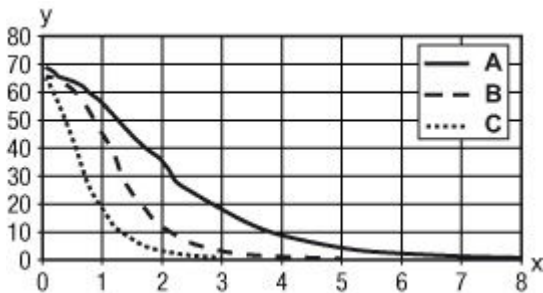
**Diagrams**

Typ. response behavior (TKS100x100)



x Distance [m]  
y Misalignment [mm]

Typ. function reserve



x Distance [m]  
y Function reserve  
A TKS 100x100  
B TKS 40x60  
C TKS 20x40

**Operation and display**

LEDs

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

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## Part number code

Part designation: AAA25Cd-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   |
| d      | <b>Light type:</b><br>n/a: red light<br>l: infrared light  |
| 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   |
| H      | <b>Operating range adjustment:</b><br>1: 270° potentiometer<br>2: multiturn potentiometer  |
| 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   |
| 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>8: activation input (activation with high signal) |
| K      | <b>Electrical connection:</b><br>n/a: cable, PVC, standard length 2000 mm, 4-wire<br>M8: M8 connector, 4-pin (plug)<br>200-M12: cable, PVC, length 200 mm with M12 connector, 4-pin, axial (plug)<br>M12: M12 connector, 4-pin (plug)  |

## Accessories

### Mounting technology - Mounting brackets


|   | Part no. | Designation   | Article             | Description   |
|---|----------|---------------|---------------------|---|
|  | 50124651 | BT 205M-10SET | Mounting device set | Contains: 10x<br>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 |
|  | 50040269 | BT 25         | 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                  |

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## Mounting technology - Rod mounts

|   | Part no. | Designation  | Article         | Description   |
|---|----------|--------------|-----------------|---|
|    | 50117830 | BTP 200M-D10 | Mounting system | Design of mounting device: Protection hood<br>Fastening, at system: For 10 mm rod<br>Mounting bracket, at device: Screw type<br>Type of mounting device: Clampable, Adjustable, Turning, 360°<br>Material: Metal  |
|    | 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  |
|    | 50117828 | BTP 200M-D14 | Mounting system | Design of mounting device: Protection hood<br>Fastening, at system: For 14 mm rod<br>Mounting bracket, at device: Screw type<br>Type of mounting device: Clampable, Adjustable, Turning, 360°<br>Material: Metal  |
|   | 50117256 | BTU 200M-D10 | Mounting system | Contains: 2x M3 x 18 screw, 2x position washers<br>Design of mounting device: Mounting system<br>Fastening, at system: For 10 mm rod, Sheet-metal mounting<br>Mounting bracket, at device: Screw type<br>Type of mounting device: Clampable, Adjustable, Turning, 360°<br>Material: Metal |
|  | 50117255 | BTU 200M-D12 | Mounting system | Contains: 2x M3 x 18 screw, 2x 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 |
|  | 50117254 | BTU 200M-D14 | Mounting system | Contains: 2x M3 x 18 screw, 2x position washers<br>Design of mounting device: Mounting system<br>Fastening, at system: For 14 mm rod, Sheet-metal mounting<br>Mounting bracket, at device: Screw type<br>Type of mounting device: Clampable, Adjustable, Turning, 360°<br>Material: Metal |
|  | 50122797 | BTU 346M-D12 | Mounting system | Contains: 2x M4 x 25 screw, 2x 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: Turning, 360°, Clampable, Adjustable<br>Material: Metal |


## Standard reflectors

|   | Part no. | Designation | Article   | Description   |
|---|----------|-------------|-----------|---|
|  | 50003192 | TK 100x100  | Reflector | 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 |



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|   | Part no. | Designation | Article   | Description  |
|---|----------|-------------|-----------|--|
|  | 50022816 | TKS 100X100 | Reflector | 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   | Reflector | 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 |
|  | 50040820 | TKS 40X60   | Reflector | 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   |

**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 |

**Reflective tapes for standard applications**

|   | Part no. | Designation     | Article         | Description  |
|---|----------|-----------------|-----------------|--|
|  | 50106119 | REF 4-A-100x100 | Reflective tape | Design: Rectangular<br>Reflective surface: 100 mm x 100 mm<br>Material: Plastic<br>Chemical designation of the material: PMMA<br>Fastening: Self-adhesive                                |
|  | 50110192 | REF 6-A-50x50   | Reflective tape | 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 |

**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.

**For UL applications:**

- Only for use in "class 2" circuits
  - 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)
- 
- 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