

Technical data sheet

Polarized retro-reflective photoelectric sensor

Part no.: 50139662

PRK25CL1.1/2N-M8



For illustration purposes only

Contents

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



CDRH

UK
CA

Technical data

Basic data

| | |
|---------------------|----------------------|
| Series | 25C |
| Operating principle | Reflection principle |

Optical data

| | |
|--------------------------------------|---|
| Operating range | 0.2 ... 20 m (guaranteed operating range), With reflector TK(S) 100x100 |
| Operating range limit | 0.15 ... 25 m (typical operating range), With reflector TK(S) 100x100 |
| Beam path | Collimated |
| Light source | Laser, Red |
| Wavelength | 650 nm |
| Laser class | 1, IEC/EN 60825-1:2014 |
| Max. laser power | 0.0043 W |
| Transmitted-signal shape | Pulsed |
| Pulse duration | 4.5 μ s |
| Light spot size [at sensor distance] | 3 mm x 5 mm [1,000 mm] |
| Type of light spot geometry | elliptic |
| Shift angle | Typ. \pm 1.5° |

Electrical data

| | |
|--------------------|---|
| Protective circuit | Polarity reversal protection Short circuit protected |
|--------------------|---|

Performance data

| | |
|----------------------|--|
| Supply voltage U_B | 10 ... 30 V, DC, Incl. residual ripple |
| Residual ripple | 0 ... 15 %, From U_B |
| Open-circuit current | 0 ... 20 mA |

Outputs

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

Switching outputs

| | |
|-------------------------|---|
| Type | Digital switching output |
| Voltage type | DC |
| Switching current, max. | 100 mA |
| Switching voltage | high: $\geq(U_B - 2.5V)$ low: $\leq 2.5 V$ |

Switching output 1

| | |
|---------------------|---------------------|
| Assignment | Connection 1, pin 4 |
| Switching element | Transistor, NPN |
| Switching principle | Light switching |

Switching output 2

| | |
|---------------------|---------------------|
| Assignment | Connection 1, pin 2 |
| Switching element | Transistor, NPN |
| Switching principle | Dark switching |

Time behavior

| | |
|---------------------|----------|
| Switching frequency | 2,500 Hz |
| Response time | 0.33 ms |
| Readiness delay | 300 ms |

Connection

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

Connection 1

| | |
|--------------------|------------------------------|
| Function | Signal OUT Voltage supply |
| Type of connection | Connector |
| Thread size | M8 |
| Type | Male |
| Material | PUR |
| No. of pins | 4 -pin |

Mechanical data

| | |
|--|--|
| Dimension (W x H x L) | 15 mm x 42.7 mm x 30 mm |
| Housing material | Plastic |
| Plastic housing | ABS |
| Lens cover material | Plastic |
| Net weight | 22 g |
| Housing color | Red |
| Type of fastening | Through-hole mounting with M4 thread Via optional mounting device |
| Recommended tightening torque for M3 fastening | 0.9 N·m |
| Recommended tightening torque for M4 fastening | 1.4 N·m |
| Compatibility of materials | ECOLAB |

Operation and display

| | |
|-------------------------------------|------------------------|
| Type of display | LED |
| Number of LEDs | 2 Piece(s) |
| Operational controls | 270° potentiometer |
| Function of the operational control | Sensitivity adjustment |

Environmental data

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

Certifications

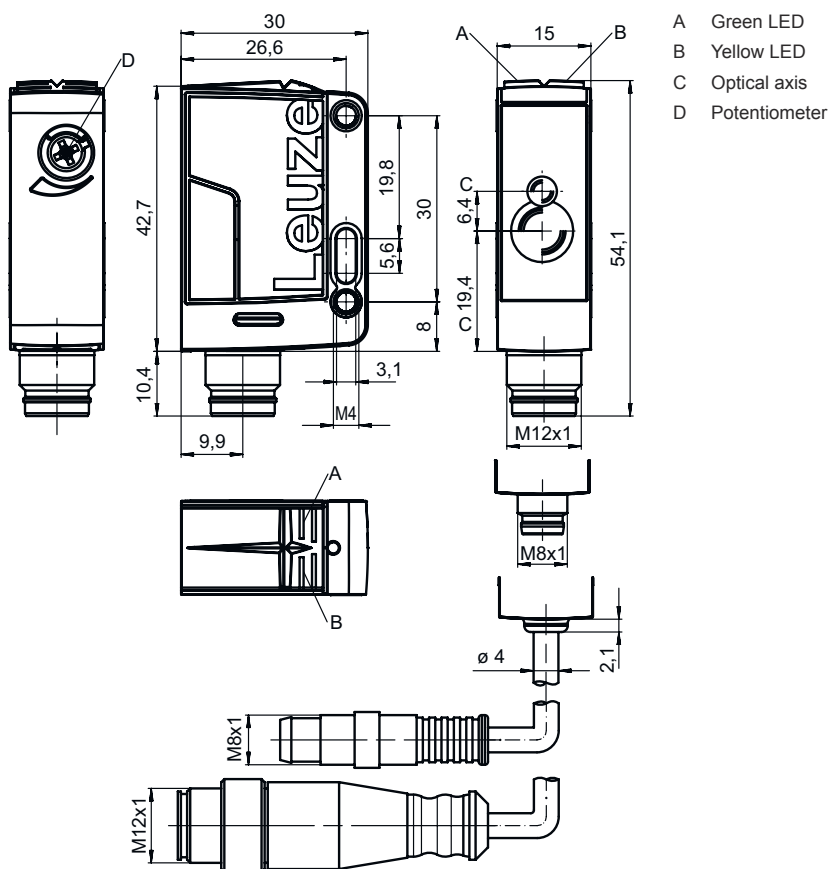
| | |
|----------------------|-----------------|
| Degree of protection | IP 67 IP 69K |
| Protection class | III |
| Approvals | c UL US |
| Standards applied | IEC 60947-5-2 |

Classification

| | |
|-----------------------|----------|
| Customs tariff number | 85365019 |
| 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 |
| ECLASS 16.0 | 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 |
| UNSPSC 26.08 | 39121528 |

Dimensioned drawings

All dimensions in millimeters



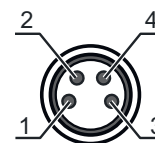
- A Green LED
- B Yellow LED
- C Optical axis
- D Potentiometer

Electrical connection

Connection 1

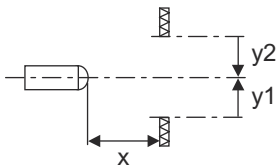
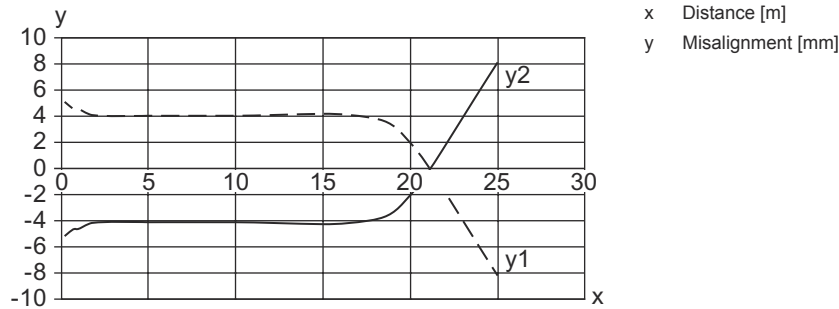
| | |
|--------------------|------------------------------|
| Function | Signal OUT Voltage supply |
| Type of connection | Connector |
| Thread size | M8 |
| Type | Male |
| Material | PUR |
| No. of pins | 4 -pin |

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

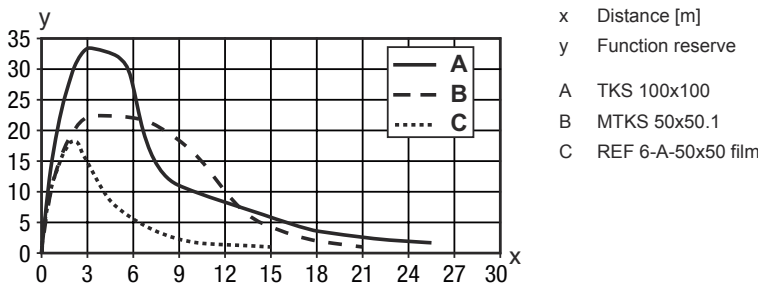


Diagrams

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 |
| | Yellow, flashing | Light path free, no function reserve |

Reflectors & reflective tapes

| Part no. | Designation | Operating range Operating range limit | Description |
|----------|-------------|---|--|
| 50040895 | MTKS 20x20 | 0.15 ... 7 m 0.12 ... 8 m | Design: Rectangular Triple reflector size: 1.2 mm Reflective surface: 20 mm x 20 mm Material: Plastic Base material: Plastic Chemical designation of the material: PMMA8N Fastening: Through-hole mounting, Adhesive |



Reflectors & reflective tapes

| | Part no. | Designation | Operating range Operating range limit | Description |
|---|----------|-----------------|---|--|
|  | 50117583 | MTKS 50x50.1 | 0.15 ... 15 m 0.12 ... 18 m | Design: Rectangular Triple reflector size: 1.2 mm Reflective surface: 50 mm x 50 mm Material: Plastic Base material: Plastic Chemical designation of the material: PMMA8N Fastening: Through-hole mounting, Adhesive |
|  | 50106119 | REF 4-A-100x100 | 0.2 ... 2.2 m 0.15 ... 3 m | Design: Rectangular Reflective surface: 100 mm x 100 mm Material: Plastic Chemical designation of the material: PMMA Fastening: Self-adhesive |
|  | 50110192 | REF 6-A-50x50 | 0.2 ... 10 m 0.15 ... 12 m | Design: Rectangular Triple reflector size: 0.3 mm Reflective surface: 50 mm x 50 mm Material: Plastic Chemical designation of the material: PMMA Fastening: Self-adhesive |
|  | 50022816 | TKS 100X100 | 0.2 ... 20 m 0.15 ... 25 m | Design: Rectangular Triple reflector size: 4 mm Reflective surface: 96 mm x 96 mm Material: Plastic Base material: Plastic Chemical designation of the material: PMMA8N Fastening: Through-hole mounting, Adhesive |
|  | 50081283 | TKS 20X40 | 0.2 ... 9 m 0.15 ... 11 m | Design: Rectangular Triple reflector size: 2.3 mm Reflective surface: 16 mm x 38 mm Material: Plastic Base material: Plastic Chemical designation of the material: PMMA8N Fastening: Through-hole mounting, Adhesive |
|  | 50040820 | TKS 40X60 | 0.2 ... 15 m 0.15 ... 18 m | Design: Rectangular Triple reflector size: 4 mm Reflective surface: 37 mm x 56 mm Material: Plastic Base material: Plastic Chemical designation of the material: PMMA8N Fastening: Through-hole mounting, Adhesive |

Part number code

Part designation: AAA25C d EE-f.GGH/IJ-K

| | |
|---------------|--|
| AAA25C | Operating principle / construction HT25C: Diffuse reflection sensor with background suppression PRK25C: Retro-reflective photoelectric sensor with polarization filter LS25C: Throughbeam photoelectric sensor transmitter LE25C: Throughbeam photoelectric sensor receiver DRT25C: Dynamic reference diffuse sensor |
| d | Light type n/a: red light l: infrared light |
| EE | Light source n/a: LED PP: Power PinPoint® LED L1: laser class 1 L2: laser class 2 |

Part number code

| | |
|-----------|---|
| f | Preset range (optional) n/a: operating range acc. to data sheet xxxF: Preset range [mm] |
| GG | Equipment A: Autocollimation principle (single lens) S: small light spot D: Detection of stretch-wrapped objects X: extended model HF: Suppression of HF illumination (LED) XL: Extra long light spot T: autocollimation principle (single lens) for highly transparent bottles without tracking TT: autocollimation principle (single lens) for highly transparent bottles with tracking F: Foreground suppression R: greater operating range SL: Slit diaphragm |
| H | Operating range adjustment 1: 270° potentiometer 2: multiturn potentiometer 3: teach-in via button R: greater operating range |
| i | Switching output/function OUT 1/IN: Pin 4 or black conductor 2: NPN transistor output, light switching N: NPN transistor output, dark switching 4: PNP transistor output, light switching P: PNP transistor output, dark switching X: pin not used 8: activation input (activation with high signal) L: IO-Link interface (SIO mode: PNP light switching, NPN dark switching) 6: push-pull switching output, PNP light switching, NPN dark switching G: Push-pull switching output, PNP dark switching, NPN light switching |
| J | Switching output / function OUT 2/IN: pin 2 or white conductor 2: NPN transistor output, light switching N: NPN transistor output, dark switching 4: PNP transistor output, light switching P: PNP transistor output, dark switching W: warning output X: pin not used 6: push-pull switching output, PNP light switching, NPN dark switching T: teach-in via cable G: Push-pull switching output, PNP dark switching, NPN light switching 8: activation input (activation with high signal) |
| K | Electrical connection n/a: cable, standard length 2000 mm, 4-wire 200-M12: cable, length 200 mm with M12 connector, 4-pin, axial (plug) M8: M8 connector, 4-pin (plug) M12: M12 connector, 4-pin (plug) 200-M8: cable, length 200 mm with M8 connector, 4-pin, axial (plug) M8.1: Snap-in, M8 connector, 4-pin (plug) |

Note



A list with all available device types can be found on the Leuze website at 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.

Notes


WARNING! LASER RADIATION – CLASS 1 LASER PRODUCT


The device satisfies the requirements of IEC/EN 60825-1:2014 safety regulations for a product of **laser class 1** and complies with 21 CFR 1040.10 except for conformance with IEC 60825-1 Ed. 3., as described in Laser Notice No. 56, dated May 8, 2019.



- ↳ Observe the applicable statutory and local laser protection regulations.
- ↳ The device must not be tampered with and must not be changed in any way.
There are no user-serviceable parts inside the device.
Repairs must only be performed by Leuze electronic GmbH + Co. KG.

Further information


- Use in safety-relevant applications in accordance with EN ISO 13849-1:2015, e.g. muting, protective field switchover of safety laser scanners

Accessories

Connection technology - Connection cables



| | Part no. | Designation | Article | Description |
|---|----------|-------------------|------------------|---|
|  | 50130850 | KD U-M8-4A-V1-050 | Connection cable | Application: Chemical resistant Connection 1: Connector, M8, Axial, Female, 4 -pin Connector, LED: No Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PVC |
|  | 50130871 | KD U-M8-4W-V1-050 | Connection cable | Application: Chemical resistant Connection 1: Connector, M8, Angled, Female, 4 -pin Connector, LED: No Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PVC |

Mounting technology - Mounting brackets

| | Part no. | Designation | Article | Description |
|---|----------|-------------|------------------|---|
|  | 50118543 | BT 300M.5 | Mounting bracket | Design of mounting device: Angle, L-shape Fastening, at system: Through-hole mounting Mounting bracket, at device: Screw type, Suited for M4 screws Type of mounting device: Adjustable Material: Stainless steel |

Accessories

Mounting technology - Rod mounts

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