

Technical data sheet

Polarized retro-reflective photoelectric sensor

Part no.: 50147117

PRK36.D/2X-M12



For illustration purposes only

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Technical data

Basic data

| | |
|---------------------|--------------------------------------|
| Series | 36 |
| Operating principle | Reflection principle |
| Application | Detection of stretch-wrapped objects |

Optical data

| | |
|--------------------------|--|
| Operating range | 0.3 ... 11 m |
| Operating range | Guaranteed operating range |
| Reference reflector | With reflector TK(S) 100x100 |
| Operating range limit | Typical operating range |
| Operating range limit | 0.3 ... 14 m, With reflector TK(S) 100x100 |
| Light source | LED, Red |
| Wavelength | 645 nm |
| Transmitted-signal shape | Pulsed |
| LED group | Exempt group (in acc. with EN 62471) |

Electrical data

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

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 | 1 Piece(s) |
|-------------------------------------|------------|

Switching outputs

| | |
|-------------------------|---|
| Voltage type | DC |
| Switching current, max. | 100 mA |
| Switching voltage | high: $\geq(U_B - 2V)$ low: $\leq 2 V$ |

Switching output 1

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

Time behavior

| | |
|---------------------|---------|
| Switching frequency | 300 Hz |
| Response time | 1.66 ms |
| Readiness delay | 300 ms |

Connection

Connection 1

| | |
|--------------------|----------------|
| Function | Signal OUT |
| | Voltage supply |
| Type of connection | Connector |
| Thread size | M12 |
| Type | Male |
| Material | Plastic |
| No. of pins | 4 -pin |
| Encoding | A-coded |

Mechanical data

| | |
|-----------------------|---|
| Dimension (W x H x L) | 20.5 mm x 76.3 mm x 44 mm |
| Housing material | Plastic |
| Plastic housing | PC-PBT |
| Lens cover material | Plastic / PMMA |
| Net weight | 60 g |
| Housing color | Black |
| Type of fastening | Through-hole mounting Via optional mounting device |

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

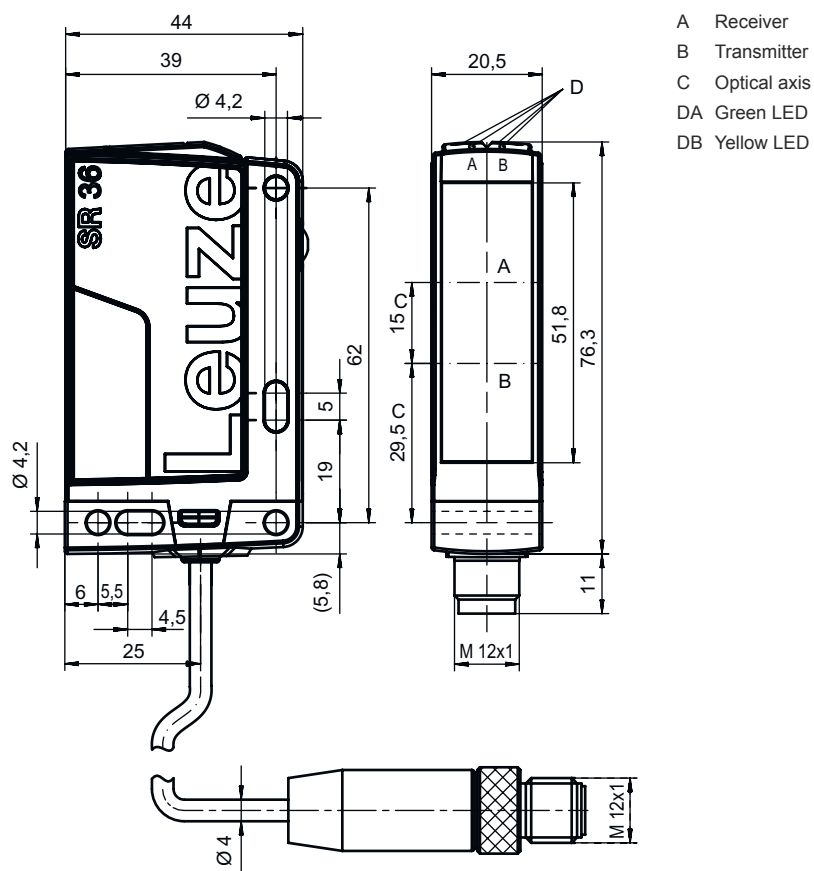
| | |
|----------------------|---------------|
| Degree of protection | IP 67 |
| Protection class | III |
| Certifications | c UL US |
| Standards applied | IEC 60947-5-2 |

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 |
| 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



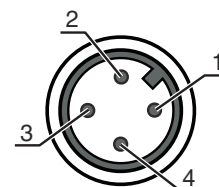
Electrical connection

Connection 1

| | |
|--------------------|----------------|
| Function | Signal OUT |
| | Voltage supply |
| Type of connection | Connector |
| Thread size | M12 |
| Type | Male |
| Material | Plastic |
| No. of pins | 4 -pin |
| Encoding | A-coded |

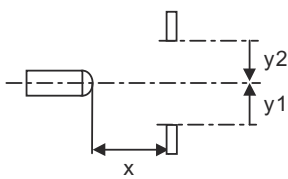
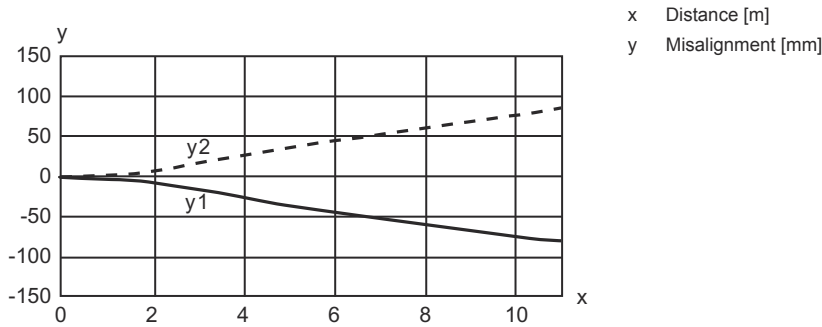
Pin Pin assignment

| | |
|---|-------|
| 1 | V+ |
| 2 | n.c. |
| 3 | GND |
| 4 | OUT 1 |

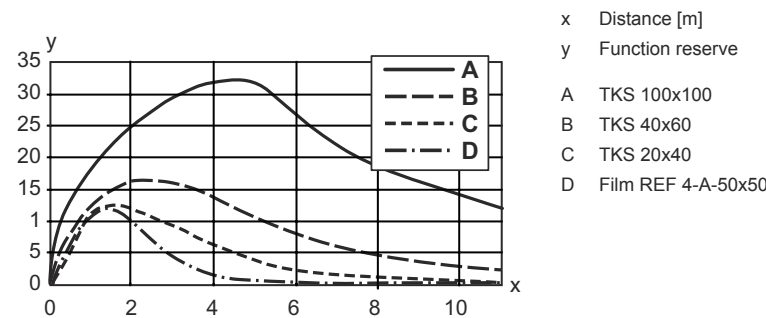


Diagrams

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 |
|--|----------|--------------|---|--|
| | 50117583 | MTKS 50x50.1 | 0.5 ... 8 m 0.5 ... 10 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 |

Reflectors & reflective tapes

| | Part no. | Designation | Operating range Operating range limit | Description |
|---|----------|---------------|---|--|
|  | 50108300 | REF 4-A-50x50 | 0.8 ... 2 m 0.8 ... 3 m | Design: Rectangular Reflective surface: 50 mm x 50 mm Material: Plastic Chemical designation of the material: PMMA Fastening: Self-adhesive |
|  | 50003192 | TK 100x100 | 0.3 ... 11 m 0.3 ... 14 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: Rear side can be glued |
|  | 50024127 | TK 82.2 | 0.3 ... 8 m 0.3 ... 10 m | Design: Round Triple reflector size: 4 mm Reflective surface, diameter: 79 mm Material: Plastic Base material: Plastic Chemical designation of the material: PMMA8N Fastening: Through-hole mounting, Rear side can be glued |
|  | 50022816 | TKS 100X100 | 0.3 ... 11 m 0.3 ... 14 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 | 0.3 ... 3 m 0.3 ... 4 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 | 0.3 ... 6 m 0.3 ... 8 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: AAA36 D.E/FG-K

| | |
|--------------|--|
| AAA36 | Operating principle / construction HT36: Diffuse reflection sensor with background suppression LS36: Throughbeam photoelectric sensor transmitter LE36: Throughbeam photoelectric sensor receiver PRK36: Retro-reflective photoelectric sensor with polarization filter |
| D | Light type n/a: red light I: infrared light |
| E | Equipment n/a: standard 1: 270° potentiometer D: Depolarizing media |

Part number code

| | |
|-----------|---|
| FG | Switching output / Function 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 |
| K | n/a: cable, standard length 2000 mm, 3-wire 200-M12: cable, length 200 mm with M12 connector, 4-pin, axial (plug) 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 . |

Notes

| ⚠ Observe intended use! | |
|-------------------------|---|
| | <ul style="list-style-type: none"> ↪ 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: | |
|----------------------|---|
| | <ul style="list-style-type: none"> ↪ For UL applications, use is only permitted in Class 2 circuits in accordance with the NEC (National Electric Code). ↪ 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) |

Further information


- Light source: Average life expectancy 100,000h at an ambient temperature of 25 °C
- Response time: For short decay times, an ohmic load of approx. 5kOhm is recommended
- 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 |
|--|----------|--------------------|------------------|---|
| | 50130652 | KD U-M12-4A-V1-050 | Connection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 4 -pin Connector, LED: No Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PVC |


Accessories

| | Part no. | Designation | Article | Description |
|--|----------|--------------------|------------------|--|
|  | 50130690 | KD U-M12-4W-V1-050 | Connection cable | Connection 1: Connector, M12, Angled, Female, A-coded, 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 |
|---|----------|-------------|-----------------|--|
|  | 50105315 | BT 46 | Mounting device | Design of mounting device: Angle, L-shape Fastening, at system: Through-hole mounting Mounting bracket, at device: Screw type Type of mounting device: Rigid Material: Metal |

Mounting technology - Rod mounts

| | Part no. | Designation | Article | Description |
|---|----------|--------------|-----------------|--|
|  | 50117252 | BTU 300M-D12 | Mounting system | 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 |

Standard reflectors

| | Part no. | Designation | Article | Description |
|---|----------|-------------|-----------|--|
|  | 50081283 | TKS 20X40 | Reflector | 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 | Reflector | 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 |

Note



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