

Technical data sheet

Throughbeam photoelectric sensor

Part no.: 50117929

LS28/9D

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Figure can vary



Technical data

Basic data

| | |
|---------------------|-----------------------|
| Series | 28 |
| Operating principle | Throughbeam principle |
| Device type | Transmitter |

Special version

| | |
|-----------------|--------------------|
| Special version | Deactivation input |
|-----------------|--------------------|

Optical data

| | |
|--------------------------|--------------------------------------|
| Operating range | Guaranteed operating range |
| Operating range | 0 ... 10 m |
| Operating range limit | Typical operating range |
| Operating range limit | 0 ... 15 m |
| Light source | LED, Red |
| LED light wavelength | 620 nm |
| LED group | Exempt group (in acc. with EN 62471) |
| Transmitted-signal shape | Pulsed |

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 ... 15 mA |

Inputs

| | |
|-------------------------------|------------|
| Number of deactivation inputs | 2 Piece(s) |
|-------------------------------|------------|

Deactivation inputs

Deactivation input 1

| | |
|------------------------|---------------------------|
| Assignment | Connection 1, conductor 4 |
| Active switching state | Low |

Deactivation input 2

| | |
|------------------------|---------------------------|
| Assignment | Connection 1, conductor 2 |
| Active switching state | High |

Timing

| | |
|-----------------|--------|
| Readiness delay | 300 ms |
|-----------------|--------|

Connection

Connection 1

| | |
|----------------------|---------------------|
| Function | Signal IN |
| | Voltage supply |
| Type of connection | Cable |
| Cable length | 2,000 mm |
| Sheathing material | PUR |
| Cable color | Black |
| Number of conductors | 4 -wire |
| Wire cross section | 0.2 mm ² |

Mechanical data

| | |
|-----------------------|-----------------|
| Dimension (W x H x L) | 15 mm x 46.5 mm |
| Thread size | M18 |
| Length | 31.8 mm |
| Housing material | Plastic |
| Plastic housing | ABS |
| Lens cover material | Plastic |
| Net weight | 75 g |
| Housing color | Black |
| | Red |

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

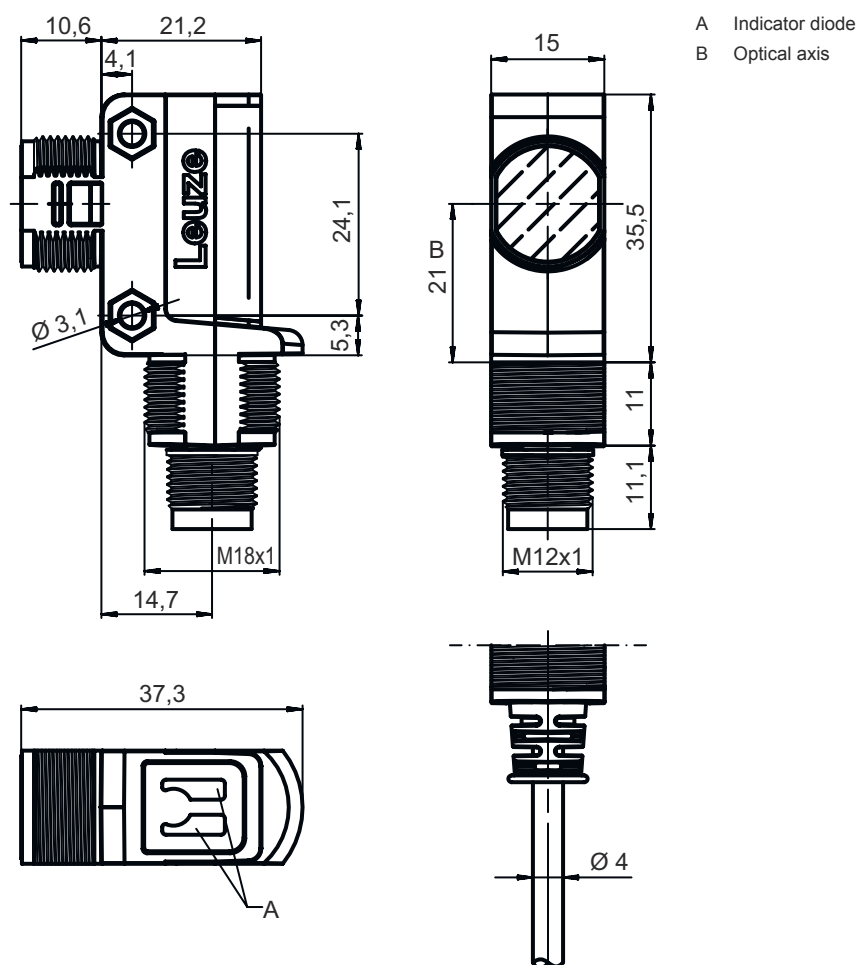
| | |
|----------------------|---------------|
| Degree of protection | IP 67 |
| Protection class | III |
| Certifications | c UL US |
| Standards applied | IEC 60947-5-2 |

Classification

| | |
|-----------------------|----------|
| Customs tariff number | 85365019 |
| eCl@ss 5.1.4 | 27270901 |
| eCl@ss 8.0 | 27270901 |
| eCl@ss 9.0 | 27270901 |
| eCl@ss 10.0 | 27270901 |
| eCl@ss 11.0 | 27270901 |
| ETIM 5.0 | EC002716 |
| ETIM 6.0 | EC002716 |
| ETIM 7.0 | EC002716 |

Dimensioned drawings

All dimensions in millimeters



Electrical connection

Connection 1

| | |
|----------------------|---------------------|
| Function | Signal IN |
| | Voltage supply |
| Type of connection | Cable |
| Cable length | 2,000 mm |
| Sheathing material | PUR |
| Cable color | Black |
| Number of conductors | 4 -wire |
| Wire cross section | 0.2 mm ² |

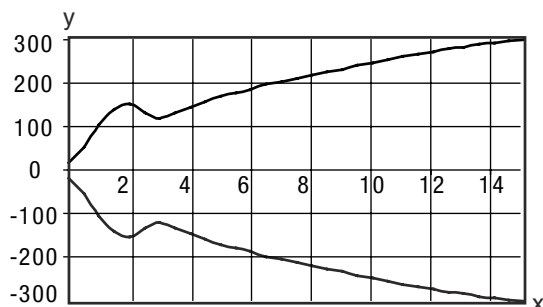
Conductor color

Conductor assignment

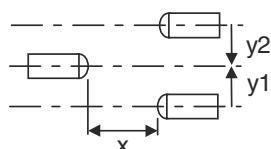
| | |
|-------|-----|
| Brown | V+ |
| White | In2 |
| Blue | GND |
| Black | In1 |

Diagrams

Typ. response behavior






x Distance [m]
y Misalignment [mm]



Operation and display

| LED | Display | Meaning |
|-----|--------------------------|-------------------------|
| 1 | Green, continuous light | Operational readiness |
| 2 | Yellow, continuous light | Transmitted beam active |

Suitable receivers

| | Part no. | Designation | Article | Description |
|--|----------|-------------|---|--|
|  | 50117933 | LE28/2N | Throughbeam photoelectric sensor receiver | Operating range limit: 0 ... 15 m Supply voltage: DC Digital switching outputs: 2 Piece(s) Switching output 1: Transistor, NPN, Light switching Switching output 2: Transistor, NPN, Dark switching Switching frequency: 500 Hz Connection: Cable, 2,000 mm, 4 -wire |
|  | 50143791 | LE28/4 | Throughbeam photoelectric sensor receiver | Operating range limit: 0 ... 15 m Supply voltage: DC Digital switching outputs: 1 Piece(s) Switching output 1: Transistor, PNP, Light switching Switching frequency: 500 Hz Connection: Cable, 2,000 mm, 4 -wire |
|  | 50117931 | LE28/4P | Throughbeam photoelectric sensor receiver | Operating range limit: 0 ... 15 m Supply voltage: DC Digital switching outputs: 2 Piece(s) Switching output 1: Transistor, PNP, Light switching Switching output 2: Transistor, PNP, Dark switching Switching frequency: 500 Hz Connection: Cable, 2,000 mm, 4 -wire |

Part number code

Part designation: AAA28d.E/ ff-hh

| | |
|--------------|---|
| AAA28 | Operating principle / construction LS28: throughbeam photoelectric sensor transmitter LE28: throughbeam photoelectric sensor receiver ET28: energetic diffuse reflection sensor FT28: diffuse reflection sensor with fading PRK28: retro-reflective photoelectric sensor with polarization filter |
| d | Light type n/a: red light I: infrared light |
| E | Equipment 3: teach-in via button |
| ff | Switching output / function / OUT1OUT2 (OUT1 = pin 4, OUT2 = pin 2) 2: NPN transistor output, light switching N: NPN transistor output, dark switching 4: PNP transistor output, light switching P: PNP transistor output, dark switching D: deactivation input (deactivation with low signal) 9: deactivation input (deactivation with high signal) |
| hh | n/a: cable, standard length 2000 mm, 4-wire 200-M12: cable, length 200 mm with M12 connector, 4-pin, axial (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.

For UL applications:




- ⌘ 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



- Sum of the output currents for both outputs, 50 mA for ambient temperatures > 40 °C

Accessories

Mounting technology - Mounting brackets

| | Part no. | Designation | Article | Description |
|--|----------|---------------|---------------------|--|
|  | 50124651 | BT 205M-10SET | Mounting device set | 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 |
|---|----------|--------------|-----------------|--|
|  | 50117255 | BTU 200M-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 M3 screws Type of mounting device: Clampable, Adjustable, Turning, 360° Material: Metal |
|  | 50117490 | BTU D18M-D12 | Mounting system | Design of mounting device: Mounting system Fastening, at system: Through-hole mounting Mounting bracket, at device: Screw type 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.