

## Technical data sheet

## Throughbeam photoelectric sensor

Part no.: 50138585

LS15/XX-M12



Figure can vary

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## Technical data

### Basic data

|                     |                       |
|---------------------|-----------------------|
| Series              | 15                    |
| Operating principle | Throughbeam principle |
| Device type         | Transmitter           |

### Optical data

|                          |                                      |
|--------------------------|--------------------------------------|
| Operating range          | Guaranteed operating range           |
| Operating range          | 0 ... 25 m                           |
| Operating range limit    | Typical operating range              |
| Operating range limit    | 0 ... 30 m                           |
| Light source             | LED, Red                             |
| LED light wavelength     | 640 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 ... 20 mA                            |

### Outputs

#### Switching outputs

#### Switching output 1

|                   |                     |
|-------------------|---------------------|
| Assignment        | Connection 1, pin 4 |
| Switching element | Transistor          |

### Timing

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

### Connection

#### Connection 1

|                    |                |
|--------------------|----------------|
| Function           | 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) | 15 mm x 42.7 mm x 30 mm      |
| Housing material      | Plastic, ABS                 |
| Lens cover material   | Plastic                      |
| Net weight            | 15 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

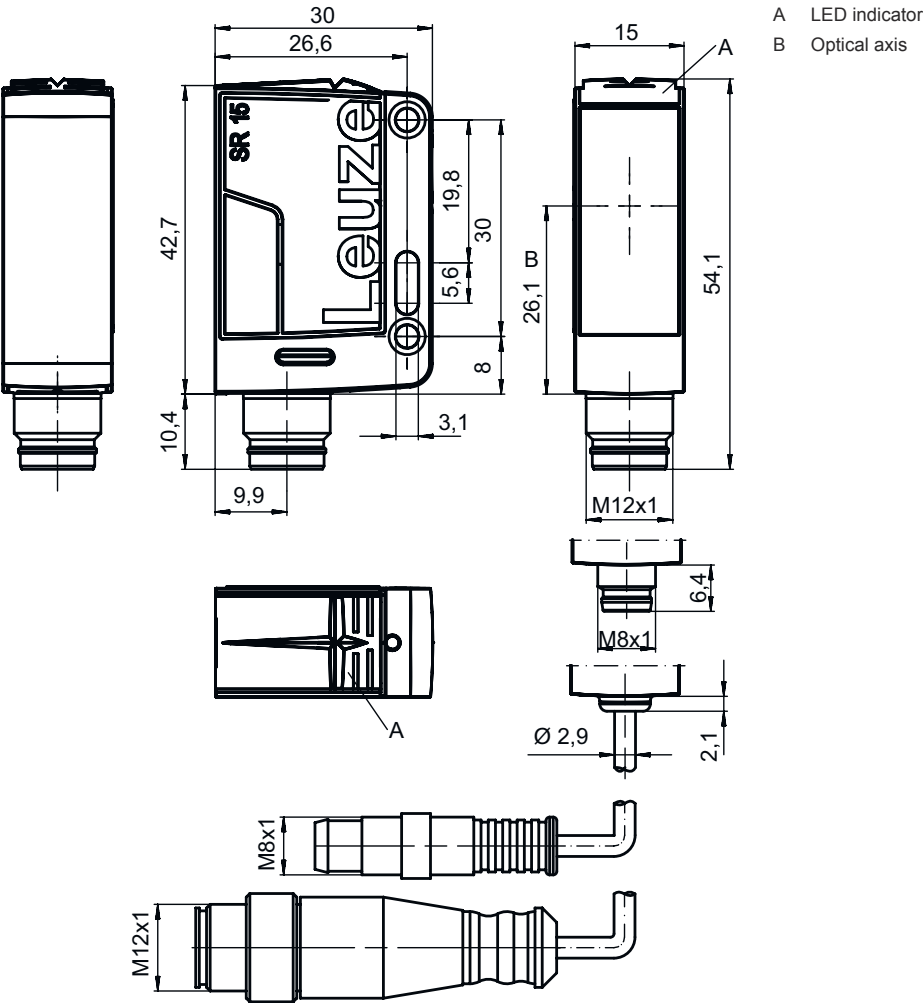
|                      |               |
|----------------------|---------------|
| Degree of protection | IP 67         |
| Protection class     | III           |
| Certifications       | c UL US       |
| Standards applied    | IEC 60947-5-2 |

### Classification

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

Dimensioned drawings

All dimensions in millimeters

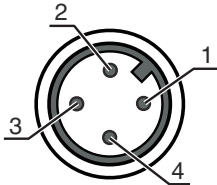


Electrical connection

Connection 1

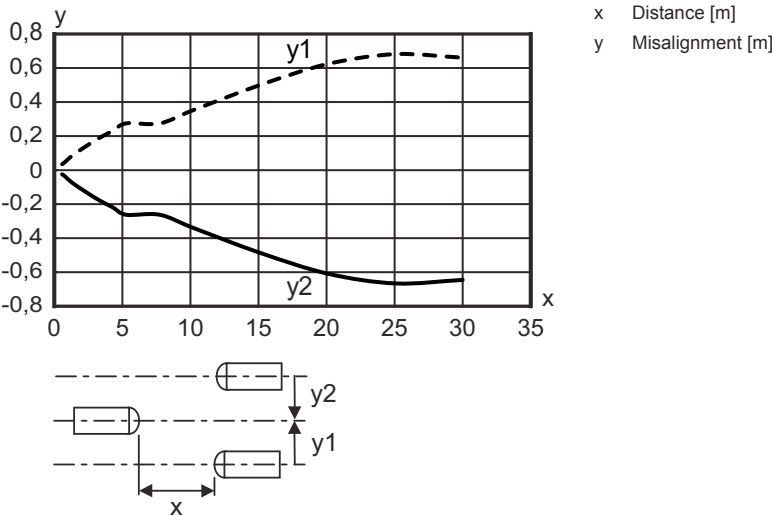
|                    |                |
|--------------------|----------------|
| Function           | Voltage supply |
| Type of connection | Connector      |
| Thread size        | M12            |
| Type               | Male           |
| Material           | Plastic        |
| No. of pins       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

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



Diagrams

Typ. response behavior



Operation and display

| LED | Display                  | Meaning               |
|-----|--------------------------|-----------------------|
| 1   | Yellow, continuous light | Object detected       |
| 2   | Green, continuous light  | Operational readiness |

Suitable receivers

|                                                                                     | Part no. | Designation | Article                                   | Description                                                                                                                                                                                                                            |
|-------------------------------------------------------------------------------------|----------|-------------|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50138589 | LE15/2X-M12 | Throughbeam photoelectric sensor receiver | Operating range limit: 0 ... 30 m<br>Supply voltage: DC<br>Digital switching outputs: 1 Piece(s)<br>Switching output 1: Transistor, NPN, Light switching<br>Switching frequency: 500 Hz<br>Connection: Connector, M12, Plastic, 4 -pin |
|  | 50138588 | LE15/4X-M12 | Throughbeam photoelectric sensor receiver | Operating range limit: 0 ... 30 m<br>Supply voltage: DC<br>Digital switching outputs: 1 Piece(s)<br>Switching output 1: Transistor, PNP, Light switching<br>Switching frequency: 500 Hz<br>Connection: Connector, M12, Plastic, 4 -pin |

Part number code

Part designation: AAA15d.EE/ ff-HH

|       |                                                                                                                                                                                                                                                                                            |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AAA15 | <b>Operating principle / construction</b><br>HT15: diffuse reflection sensor with background suppression<br>PRK15: retro-reflective photoelectric sensor with polarization filter<br>LS15: throughbeam photoelectric sensor transmitter<br>LE15: throughbeam photoelectric sensor receiver |
| d     | <b>Light type</b><br>n/a: red light<br>l: infrared light                                                                                                                                                                                                                                   |

## Part number code

|           |                                                                                                                                                                                                                                                                                 |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>EE</b> | <b>Equipment</b><br>1: adjustable range<br>D: detection of stretch-wrapped objects                                                                                                                                                                                              |
| <b>ff</b> | <b>Switching output / function / OUT1OUT2 (OUT1 = pin 4, OUT2 = pin 2)</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 |
| <b>HH</b> | <b>Electrical connection</b><br>n/a: cable, standard length 2000 mm, 4-wire<br>M8: M8 connector, 4-pin (plug)<br>200-M12: cable, length 200 mm with M12 connector, 4-pin, axial (plug)<br>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](http://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:



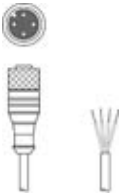
- ↪ Only for use in "class 2" circuits
- ↪ These proximity switches shall be used with UL Listed Cable assemblies rated 30V, 0.5A min, in the field installation, or equivalent (categories: CYJV/ CYJV7 or PVVA/PVVA7)

## Further information

- Light source: Average life expectancy 100,000 h at an ambient temperature of 25 °C

## 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<br>Connection 2: Open end<br>Shielded: No<br>Cable length: 5,000 mm<br>Sheathing material: PVC  |
|  | 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 |

### Mounting technology - Mounting brackets

|                                                                                    | Part no. | Designation | Article         | Description                                                                                                                                                                              |
|------------------------------------------------------------------------------------|----------|-------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 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 |

### 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                                             |
|  | 50117255 | BTU 200M-D12 | Mounting system | Design of mounting device: Mounting system<br>Fastening, at system: For 12 mm rod, Sheet-metal mounting<br>Mounting bracket, at device: Screw type, Suited for M3 screws<br>Type of mounting device: Clampable, Adjustable, Turning, 360°<br>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.