

## Technical data sheet

### Throughbeam photoelectric sensor

Part no.: 50125986

SET LS5/9D + LE5/4P + 2 BT205M






Figure can vary

#### Contents

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## Set consists of

|  | Quantity | Part no. | Designation   | Article                                      | Description  |
|--|----------|----------|---------------|--|--|
|  | 2        | 50124651 | BT 205M-10SET | Mounting device set                          | 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   |
|  | 1        | 50117691 | LE5/4P        | Throughbeam photoelectric sensor receiver    | Operating range limit: 0 ... 15 m<br>Supply voltage: DC<br>Digital switching outputs: 2 Piece(s)<br>Switching output 1: Transistor, PNP, Light switching<br>Switching output 2: Transistor, PNP, Dark switching<br>Switching frequency: 500 Hz<br>Connection: Cable, 2,000 mm, 4 -wire |
|  | 1        | 50117694 | LS5/9D        | Throughbeam photoelectric sensor transmitter | Operating range limit: 0 ... 15 m<br>Light source: LED, Red<br>Supply voltage: DC<br>Deactivation inputs: 2 Piece(s)<br>Connection: Cable, 2,000 mm, 4 -wire<br>Special design: Deactivation input   |

## Technical data

### Basic data

|                     |                                |
|---------------------|--------------------------------|
| Series              | 5                              |
| Operating principle | Throughbeam principle          |
| Device type         | Set (transmitter and receiver) |
| Contains            | 2x BT 205M<br>4x M3 x 8 screw  |

### Special design

|                |                                   |
|----------------|-----------------------------------|
| Special design | Article set<br>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                               |
| Transmitted-signal shape | Pulsed                               |
| LED group                | Exempt group (in acc. with EN 62471) |

### Electrical data

|                    |   |
|--------------------|---|
| Protective circuit | Polarity reversal protection<br>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                            |

### Outputs

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

### Switching outputs

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

### Switching output 1

|                     |                 |
|---------------------|-----------------|
| Switching element   | Transistor, PNP |
| Switching principle | Light switching |

### Switching output 2

|                     |                 |
|---------------------|-----------------|
| Switching element   | Transistor, PNP |
| Switching principle | Dark switching  |

### Timing

|                     |        |
|---------------------|--------|
| Switching frequency | 500 Hz |
| Response time       | 1 ms   |
| Readiness delay     | 300 ms |

### Connection

#### Connection 1

|                      |  |
|----------------------|--|
| Function             | Signal IN<br>Transmitter device connection<br>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 <sup>2</sup>  |

#### Connection 2

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

## Technical data

### Mechanical data

|                       |                           |
|-----------------------|---------------------------|
| Dimension (W x H x L) | 14 mm x 32.5 mm x 20.2 mm |
| Housing material      | Plastic, ABS              |
| Lens cover material   | Plastic                   |
| Housing color         | Black                     |
|                       | Red                       |

### Environmental data

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

### Certifications

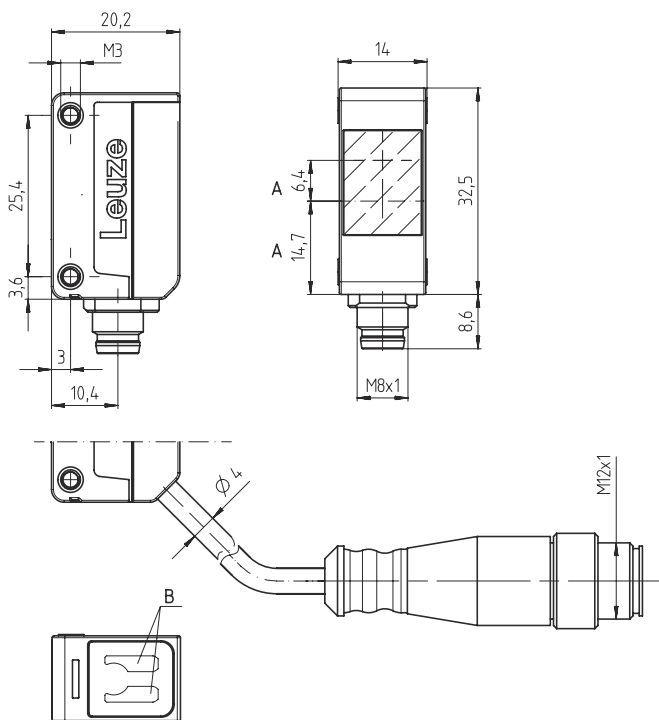
|                      |               |
|----------------------|---------------|
| Degree of protection | IP 67         |
| Protection class     | III           |
| Certifications       | c UL US       |
| Standards applied    | IEC 60947-5-2 |

### 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

### Transmitter

|                      |                               |
|----------------------|-------------------------------|
| Function             | Signal IN                     |
|                      | Transmitter device connection |
|                      | 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 <sup>2</sup>           |

### Conductor color

### Conductor assignment

|       |      |
|-------|------|
| Brown | V+   |
| White | IN 2 |
| Blue  | GND  |
| Black | IN 1 |

### Connection 2

### Receiver

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

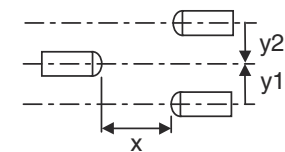
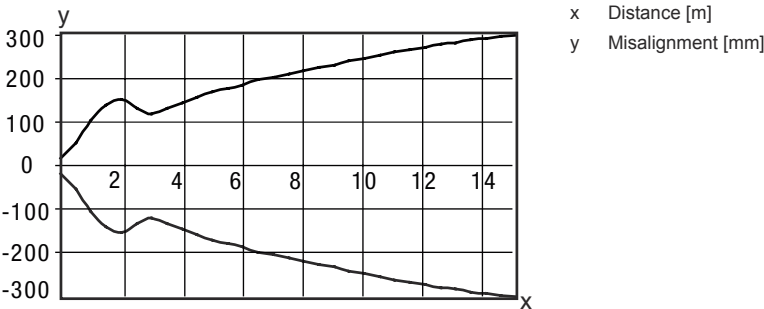
### Conductor color

### Conductor assignment

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

Diagrams

Typ. response behavior



Part number code

Part designation: AAA5d.EE/ ff-GG-hh-l

|      |  |
|------|--|
| AAA5 | <b>Operating principle / construction</b><br>HT5: diffuse reflection sensor with background suppression<br>LS5: throughbeam photoelectric sensor transmitter<br>LE5: throughbeam photoelectric sensor receiver<br>ET5: energetic diffuse reflection sensor<br>FT5: diffuse reflection sensor with fading<br>PRK5: retro-reflective photoelectric sensor with polarization filter                 |
| d    | <b>Light type</b><br>n/a: red light<br>I: infrared light   |
| EE   | <b>Equipment</b><br>1: adjustable range<br>M: for semi-transparent objects<br>H: for the detection of transparent films<br>X: reinforced fading<br>3: teach-in via button<br>R: combination product for reflector DTKS 30x50   |
| ff   | <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<br>9: deactivation input (deactivation with high signal)<br>D: deactivation input (deactivation with low signal) |
| GG   | <b>Design</b><br>P1: narrow light beam   |

## Part number code

|    |   |
|----|---|
| hh | <b>Electrical connection</b><br>n/a: cable, standard length 2000 mm, 4-wire<br>M8: M8 connector, 4-pin (plug)<br>M8.3: M8 connector, 3-pin (plug)<br>200-M8: cable, length 200 mm with M8 connector, 4-pin, axial (plug)<br>200-M8.3: cable, length 200 mm with M8 connector, 3-pin, axial (plug)<br>200-M12: cable, length 200 mm with M12 connector, 4-pin, axial (plug)<br>M8.1: Snap-in, M8 connector, 4-pin (plug) |
| I  | <b>Configuration</b><br>P1: different configuration   |

### 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

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