

## Technical data sheet

### Throughbeam photoelectric sensor set

Part no.: 50156078

SETLS+LE20-500/4X-200-M8

#### Contents

- Technical data
- Dimensioned drawings
- Electrical connection
- Operation and display
- Part number code
- Notes



For illustration purposes only



## Technical data

### Basic data

|                     |                                |
|---------------------|--------------------------------|
| Series              | 20 slim                        |
| Operating principle | Throughbeam principle          |
| Device type         | Set (transmitter and receiver) |

### Optical data

|                                |                                          |
|--------------------------------|------------------------------------------|
| Operating range                | 0 ... 0.5 m (guaranteed operating range) |
| Operating range limit          | 0 ... 0.5 m (typical operating range)    |
| Beam path                      | Divergent                                |
| Light source                   | LED, Red                                 |
| Wavelength                     | 630 nm                                   |
| LED group                      | Exempt group (in acc. with EN 62471)     |
| Type of light spot geometry    | square                                   |
| Minimum detectable object size | typ. 2 mm                                |
| Light beam exit                | Lateral                                  |

### Electrical data

|                                        |                                                     |
|----------------------------------------|-----------------------------------------------------|
| Protective circuit                     | Overload protection<br>Polarity reversal protection |
| Open-circuit current, max. Receiver    | 10 mA                                               |
| Open-circuit current, max. Transmitter | 15 mA                                               |

### Performance data

|                      |                        |
|----------------------|------------------------|
| Supply voltage $U_B$ | 10 ... 30 V, DC        |
| Residual ripple      | 0 ... 10 %, From $U_B$ |

### Outputs

|                                     |            |
|-------------------------------------|------------|
| Number of digital switching outputs | 1 Piece(s) |
|-------------------------------------|------------|

### Switching outputs

|                          |                          |
|--------------------------|--------------------------|
| Type                     | Digital switching output |
| Switching voltage, type. | 30 V                     |
| Voltage type             | DC                       |
| Switching current, max.  | 50 mA                    |

### Switching output 1

|                     |                     |
|---------------------|---------------------|
| Assignment          | Connection 2, pin 4 |
| Switching element   | Transistor, PNP     |
| Switching principle | Light switching     |

### Time behavior

|                        |          |
|------------------------|----------|
| Switching frequency    | 1,000 Hz |
| Response time          | 0.5 ms   |
| Switch-on delay string | < 100 ms |

### Connection

|                       |                                    |
|-----------------------|------------------------------------|
| Number of connections | 2 Piece(s)                         |
| Connection 1          |                                    |
| Function              | Voltage supply                     |
| Type of connection    | Cable with connector (transmitter) |
| Cable length          | 200 mm                             |
| Sheathing material    | PVC                                |
| Cable color           | Gray                               |
| Wire cross section    | 0.1 mm <sup>2</sup>                |
| Thread size           | M8                                 |
| Type                  | Male                               |
| Material              | Plastic                            |
| No. of pins           | 4 -pin                             |

### Connection 2

|                    |                                 |
|--------------------|---------------------------------|
| Function           | Signal OUT<br>Voltage supply    |
| Type of connection | Cable with connector (receiver) |
| Cable length       | 200 mm                          |
| Sheathing material | PVC                             |
| Cable color        | Black                           |
| Wire cross section | 0.1 mm <sup>2</sup>             |
| Thread size        | M8                              |
| Type               | Male                            |
| Material           | Plastic                         |
| No. of pins        | 4 -pin                          |

### Mechanical data

|                        |                                     |
|------------------------|-------------------------------------|
| Transmitter width      | 5.2 mm x 19 mm x 10 mm              |
| Receiver width         | 5.2 mm x 20.5 mm x 10 mm            |
| Housing material       | Plastic                             |
| Plastic housing        | PBT+ABS                             |
| Lens cover material    | Plastic / PMMA                      |
| Transmitter net weight | 10 g                                |
| Receiver net weight    | 10 g                                |
| Housing color          | Red                                 |
| Type of fastening      | Through-hole mounting, 2 x ø 2.2 mm |

### Operation and display

|                 |            |
|-----------------|------------|
| Type of display | LED        |
| Number of LEDs  | 2 Piece(s) |

### Environmental data

|                                |               |
|--------------------------------|---------------|
| Ambient temperature, operation | -25 ... 55 °C |
| Ambient temperature, storage   | -30 ... 70 °C |

### Certifications

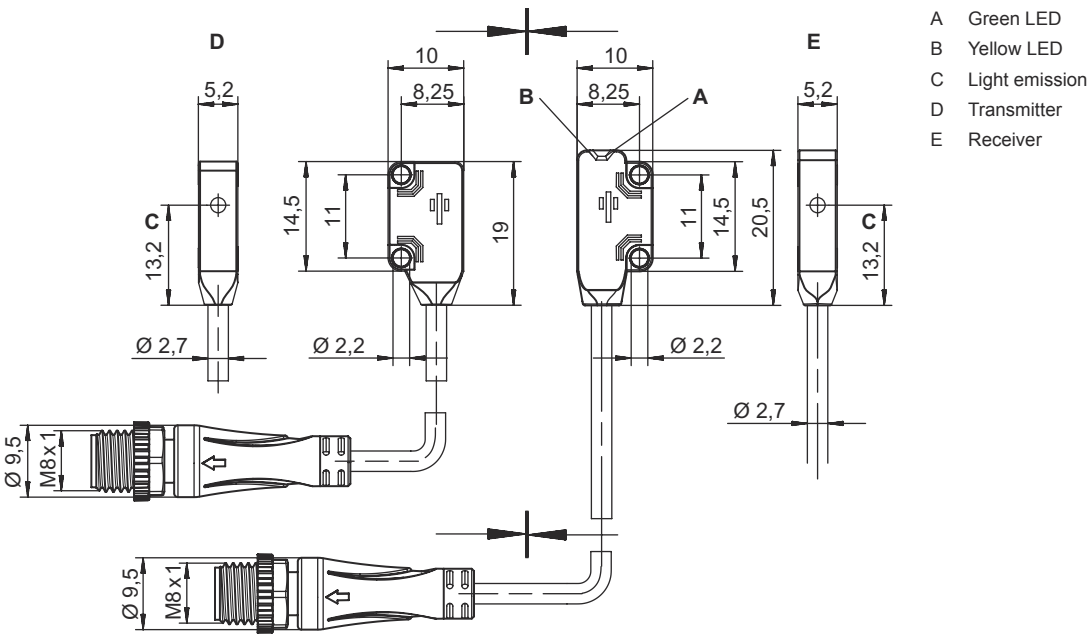
|                      |               |
|----------------------|---------------|
| Degree of protection | IP 67         |
| Protection class     | III           |
| Approvals            | c UL US<br>CE |
| Standards applied    | IEC 60947-5-2 |

### Classification

|                       |          |
|-----------------------|----------|
| Customs tariff number | 85365019 |
| ECLASS 5.1.4          | 27270901 |
| ECLASS 8.0            | 27270901 |
| ECLASS 9.0            | 27270901 |
| ECLASS 10.0           | 27270901 |
| ECLASS 11.0           | 27270901 |
| ECLASS 12.0           | 27270901 |
| ECLASS 13.0           | 27270901 |
| ECLASS 14.0           | 27270901 |
| ECLASS 15.0           | 27270901 |
| ECLASS 16.0           | 27270901 |
| ETIM 5.0              | EC002716 |
| ETIM 6.0              | EC002716 |
| ETIM 7.0              | EC002716 |
| ETIM 8.0              | EC002716 |
| ETIM 9.0              | EC002716 |
| ETIM 10.0             | EC002716 |
| UNSPSC 26.08          | 39121528 |

Dimensioned drawings

All dimensions in millimeters



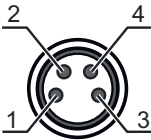
Electrical connection

Connection 1

Transmitter

|                    |                                    |
|--------------------|------------------------------------|
| Function           | Voltage supply                     |
| Type of connection | Cable with connector (transmitter) |
| Cable length       | 200 mm                             |
| Sheathing material | PVC                                |
| Cable color        | Gray                               |
| Wire cross section | 0.1 mm²                            |
| Thread size        | M8                                 |
| Type               | Male                               |
| Material           | Plastic                            |
| No. of pins        | 4 -pin                             |

| Pin | Pin assignment | Conductor color |
|-----|----------------|-----------------|
| 1   | V+             | Brown           |
| 2   | n.c.           | White           |
| 3   | GND            | Blue            |
| 4   | n.c.           | Black           |



Connection 2

Receiver

|                    |                                 |
|--------------------|---------------------------------|
| Function           | Signal OUT                      |
|                    | Voltage supply                  |
| Type of connection | Cable with connector (receiver) |
| Cable length       | 200 mm                          |
| Sheathing material | PVC                             |

## Electrical connection

### Connection 2

### Receiver

|                    |         |
|--------------------|---------|
| Cable color        | Black   |
| Wire cross section | 0.1 mm² |
| Thread size        | M8      |
| Type               | Male    |
| Material           | Plastic |
| No. of pins        | 4 -pin  |

| Pin | Pin assignment | Conductor color |
|-----|----------------|-----------------|
| 1   | V+             | Brown           |
| 2   | n.c.           | White           |
| 3   | GND            | Blue            |
| 4   | OUT            | Black           |



## Operation and display

| LED | Display | Meaning                                     |
|-----|---------|---------------------------------------------|
| 1   | Green   | Operational readiness / Stability indicator |
| 2   | Orange  | Switching output function                   |

## Part number code

Part designation: AAA20 D-E/GG.HH-JJ

|       |                                                                                                                                                                                                                                 |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AAA20 | <b>Operating principle / construction</b><br>SETLS+LE20: Throughbeam photoelectric sensor transmitter + receiver<br>HT20: Diffuse reflection sensor with background suppression                                                 |
| D     | <b>Light type</b><br>n/a: red light                                                                                                                                                                                             |
| E     | <b>Preset range (optional)</b><br>15F: 15 mm<br>30F: 30 mm<br>150: operating range 150 mm<br>500: operating range 500 mm<br>1000: operating range 1000 mm                                                                       |
| GG    | <b>Switching output / Function</b><br>2: NPN transistor output, light switching<br>4: PNP transistor output, light switching<br>N: NPN transistor output, dark switching<br>P: PNP transistor output, dark switching<br>X: n.c. |
| HH    | <b>Electrical connection</b><br>n/a: Cable, standard length 2000 mm, 2 wire (LS), 3 wire (LE, HT)<br>M8: M8 connector, 4-pin (plug)<br>200-M8: cable, length 200 mm with M8 connector, 4-pin, axial (plug)                      |
| JJ    | <b>Design detail</b><br>n/a: Slim<br>FL: Flat                                                                                                                                                                                   |

### 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:



- ⚠ For UL applications, use is only permitted in Class 2 circuits in accordance with the NEC (National Electric Code).