

## Technical data sheet

### Fork photoelectric sensor

Part no.: 50146172  
GS04B/P.1-220-M8.3



For illustration purposes only

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## Technical data

### Basic data

|                      |                          |
|----------------------|--------------------------|
| Series               | 04B                      |
| Principle of physics | Optical                  |
| Application          | Detection of small parts |

### Characteristic parameters

|      |              |
|------|--------------|
| MTTF | 700.42 years |
|------|--------------|

### Optical data

|                          |          |
|--------------------------|----------|
| Light source             | LED, Red |
| Wavelength               | 660 nm   |
| Transmitted-signal shape | Pulsed   |

### Measurement data

|                         |         |
|-------------------------|---------|
| Repeatability           | 0.03 mm |
| Minimum object diameter | 1 mm    |

### Electrical data

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

### Performance data

|                      |                        |
|----------------------|------------------------|
| Supply voltage $U_B$ | 10 ... 30 V, DC        |
| Residual ripple      | 0 ... 15 %, From $U_B$ |
| Open-circuit current | 0 ... 30 mA            |
| Switching hysteresis | 100 $\mu$ m            |

### Outputs

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

### Switching outputs

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

### Switching output 1

|                     |                       |
|---------------------|-----------------------|
| Assignment          | Connection 1, pin 4   |
| Switching element   | Transistor, PNP       |
| Switching principle | Light/dark switchable |

### Time behavior

|                     |          |
|---------------------|----------|
| Switching frequency | 5,000 Hz |
| Response time       | 0.1 ms   |
| Readiness delay     | 150 ms   |

### Connection

|                       |            |
|-----------------------|------------|
| Number of connections | 1 Piece(s) |
|-----------------------|------------|

### Connection 1

|                    |                              |
|--------------------|------------------------------|
| Function           | Signal OUT<br>Voltage supply |
| Type of connection | Connector                    |
| Thread size        | M8                           |
| Type               | Male                         |
| Material           | Metal                        |
| No. of pins        | 3 -pin                       |

### Mechanical data

|                       |                         |
|-----------------------|-------------------------|
| Design                | Fork                    |
| Mouth width           | 220 mm                  |
| Mouth depth           | 110 mm                  |
| Dimension (W x H x L) | 12 mm x 244 mm x 140 mm |
| Housing material      | Metal                   |
| Metal housing         | Diecast zinc            |
| Lens cover material   | Glass                   |
| Net weight            | 432 g                   |
| Housing color         | Black, RAL 9005         |
| Type of fastening     | Through-hole mounting   |

### Operation and display

|                                     |                                                |
|-------------------------------------|------------------------------------------------|
| Type of display                     | LED                                            |
| Number of LEDs                      | 1 Piece(s)                                     |
| Operational controls                | 270° potentiometer                             |
| Function of the operational control | Light/dark switching<br>Sensitivity adjustment |

### Environmental data

|                                |               |
|--------------------------------|---------------|
| Ambient temperature, operation | -25 ... 60 °C |
|--------------------------------|---------------|

### Certifications

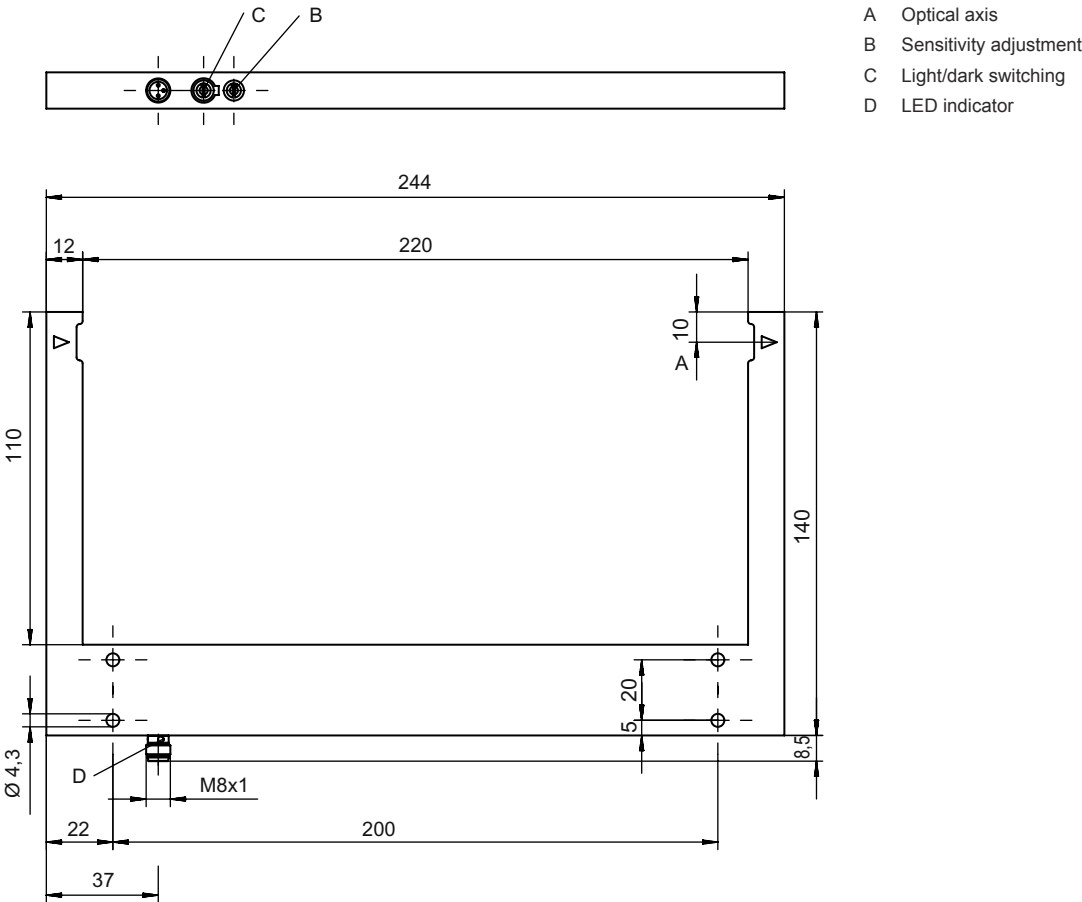
|                      |                                                    |
|----------------------|----------------------------------------------------|
| Degree of protection | IP 67                                              |
| Protection class     | III                                                |
| Approvals            | c UL US                                            |
| Standards applied    | IEC 60947-5-2, DIN EN ISO 1389-1:2016 appendix C,D |

### Classification

|                       |          |
|-----------------------|----------|
| Customs tariff number | 85365019 |
| ECLASS 5.1.4          | 27270909 |
| ECLASS 8.0            | 27270909 |
| ECLASS 9.0            | 27270909 |
| ECLASS 10.0           | 27270909 |
| ECLASS 11.0           | 27270909 |
| ECLASS 12.0           | 27270909 |
| ECLASS 13.0           | 27270909 |
| ECLASS 14.0           | 27270909 |
| ECLASS 15.0           | 27270909 |
| ECLASS 16.0           | 27270909 |
| ETIM 5.0              | EC002720 |
| ETIM 6.0              | EC002720 |
| ETIM 7.0              | EC002720 |
| ETIM 8.0              | EC002720 |
| ETIM 9.0              | EC002720 |
| ETIM 10.0             | EC002720 |

Dimensioned drawings

All dimensions in millimeters

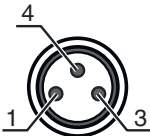


Electrical connection

Connection 1

|                    |                |
|--------------------|----------------|
| Function           | Signal OUT     |
|                    | Voltage supply |
| Type of connection | Connector      |
| Thread size        | M8             |
| Type               | Male           |
| Material           | Metal          |
| No. of pins        | 3 -pin         |

| Pin | Pin assignment |
|-----|----------------|
| 1   | V+             |
| 3   | GND            |
| 4   | OUT 1          |



Operation and display

| LED | Display                  | Meaning                                 |
|-----|--------------------------|-----------------------------------------|
| 1   | Yellow, continuous light | Switching output/switching state active |

## Part number code

Part designation: **AAA04B/C.D-EEE-FFF**

|               |                                                                                                                                                                                         |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>AAA04B</b> | <b>Operating principle / construction</b><br>GS04B: Optical fork sensor, LED light source<br>GSL04B: Optical fork sensor, laser light source                                            |
| <b>C</b>      | <b>Switching output / Function</b><br>P: PNP transistor output, dark switching<br>N: NPN transistor output, dark switching<br>1: IO-Link / light switching (NPN) / dark switching (PNP) |
| <b>D</b>      | <b>Equipment</b><br>1: 270° potentiometer                                                                                                                                               |
| <b>EEE</b>    | <b>Mouth width [mm]</b><br>Mouth width in millimeters                                                                                                                                   |
| <b>FFF</b>    | <b>Electrical connection</b><br>M8.3: M8 connector, 3-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.

## Accessories

### Connection technology - Connection cables

|  | Part no. | Designation       | Article          | Description                                                                                                                                                                                                 |
|--|----------|-------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50130832 | KD U-M8-3A-V1-050 | Connection cable | Application: Chemical resistant<br>Connection 1: Connector, M8, Axial, Female, 3 -pin<br>Connector, LED: No<br>Connection 2: Open end<br>Shielded: No<br>Cable length: 5,000 mm<br>Sheathing material: PVC  |
|  | 50130862 | KD U-M8-3W-V1-050 | Connection cable | Application: Chemical resistant<br>Connection 1: Connector, M8, Angled, Female, 3 -pin<br>Connector, LED: No<br>Connection 2: Open end<br>Shielded: No<br>Cable length: 5,000 mm<br>Sheathing material: PVC |

Accessories

| Note                                                                             |                                                                                                                                  |
|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
|  | <p>A list with all available accessories can be found on the Leuze website in the Download tab of the article detailed page.</p> |