

# Technical data sheet

## Fork photoelectric sensor

Part no.: 50146180  
GS04B/N.1-70-M8.3



For illustration purposes only

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- Electrical connection
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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           | 0.02 mm |
| Minimum object diameter | 0.3 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, NPN       |
| 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           | 70 mm                 |
| Mouth depth           | 55 mm                 |
| Dimension (W x H x L) | 10 mm x 90 mm x 80 mm |
| Housing material      | Metal                 |
| Metal housing         | Aluminum              |
| Lens cover material   | Glass                 |
| Net weight            | 62 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 |
|--------------------------------|---------------|

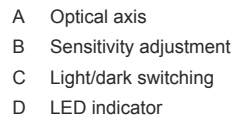
### Certifications

|                      |                                                    |
|----------------------|----------------------------------------------------|
| 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 |
| ETIM 5.0              | EC002720 |
| ETIM 6.0              | EC002720 |
| ETIM 7.0              | EC002720 |
| ETIM 8.0              | EC002720 |
| ETIM 9.0              | EC002720 |
| ETIM 10.0             | EC002720 |

All dimensions in millimeters



## Connection 1

| Pin | Pin assignment |
|-----|----------------|
| 1   | 5V             |
| 2   | NC             |
| 3   | NC             |
| 4   | NC             |
| 5   | NC             |
| 6   | NC             |
| 7   | NC             |
| 8   | NC             |
| 9   | NC             |
| 10  | NC             |
| 11  | NC             |
| 12  | NC             |
| 13  | NC             |
| 14  | NC             |
| 15  | NC             |
| 16  | NC             |
| 17  | NC             |
| 18  | NC             |
| 19  | NC             |
| 20  | NC             |
| 21  | NC             |
| 22  | NC             |
| 23  | NC             |
| 24  | NC             |
| 25  | NC             |
| 26  | NC             |
| 27  | NC             |
| 28  | NC             |
| 29  | NC             |
| 30  | NC             |
| 31  | NC             |
| 32  | NC             |
| 33  | NC             |
| 34  | NC             |
| 35  | NC             |
| 36  | NC             |
| 37  | NC             |
| 38  | NC             |
| 39  | NC             |
| 40  | NC             |
| 41  | NC             |
| 42  | NC             |
| 43  | NC             |
| 44  | NC             |
| 45  | NC             |
| 46  | NC             |
| 47  | NC             |
| 48  | NC             |
| 49  | NC             |
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| 87  | NC             |
| 88  | NC             |
| 89  | NC             |
| 90  | NC             |
| 91  | NC             |
| 92  | NC             |
| 93  | NC             |
| 94  | NC             |
| 95  | NC             |
| 96  | NC             |
| 97  | NC             |
| 98  | NC             |
| 99  | NC             |
| 100 | NC             |

| LED | Display | Meaning |
|-----|---------|---------|
| 1   | 1       | 1       |
| 2   | 2       | 2       |
| 3   | 3       | 3       |
| 4   | 4       | 4       |
| 5   | 5       | 5       |
| 6   | 6       | 6       |
| 7   | 7       | 7       |
| 8   | 8       | 8       |
| 9   | 9       | 9       |
| 10  | 10      | 10      |
| 11  | 11      | 11      |
| 12  | 12      | 12      |
| 13  | 13      | 13      |
| 14  | 14      | 14      |
| 15  | 15      | 15      |
| 16  | 16      | 16      |
| 17  | 17      | 17      |
| 18  | 18      | 18      |
| 19  | 19      | 19      |
| 20  | 20      | 20      |
| 21  | 21      | 21      |
| 22  | 22      | 22      |
| 23  | 23      | 23      |
| 24  | 24      | 24      |
| 25  | 25      | 25      |
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| 31  | 31      | 31      |
| 32  | 32      | 32      |
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| 64  | 64      | 64      |
| 65  | 65      | 65      |
| 66  | 66      | 66      |
| 67  | 67      | 67      |
| 68  | 68      | 68      |
| 69  | 69      | 69      |
| 70  | 70      | 70      |
| 71  | 71      | 71      |
| 72  | 72      | 72      |
| 73  | 73      | 73      |
| 74  | 74      | 74      |
| 75  | 75      | 75      |
| 76  | 76      | 76      |
| 77  | 77      | 77      |
| 78  | 78      | 78      |
| 79  | 79      | 79      |
| 80  | 80      | 80      |
| 81  | 81      | 81      |
| 82  | 82      | 82      |
| 83  | 83      | 83      |
| 84  | 84      | 84      |
| 85  | 85      | 85      |
| 86  | 86      | 86      |
| 87  | 87      | 87      |
| 88  | 88      | 88      |
| 89  | 89      | 89      |
| 90  | 90      | 90      |
| 91  | 91      | 91      |
| 92  | 92      | 92      |
| 93  | 93      | 93      |
| 94  | 94      | 94      |
| 95  | 95      | 95      |
| 96  | 96      | 96      |
| 97  | 97      | 97      |
| 98  | 98      | 98      |
| 99  | 99      | 99      |
| 100 | 100     | 100     |

## The Sensor People

## 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 | 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 | 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> |