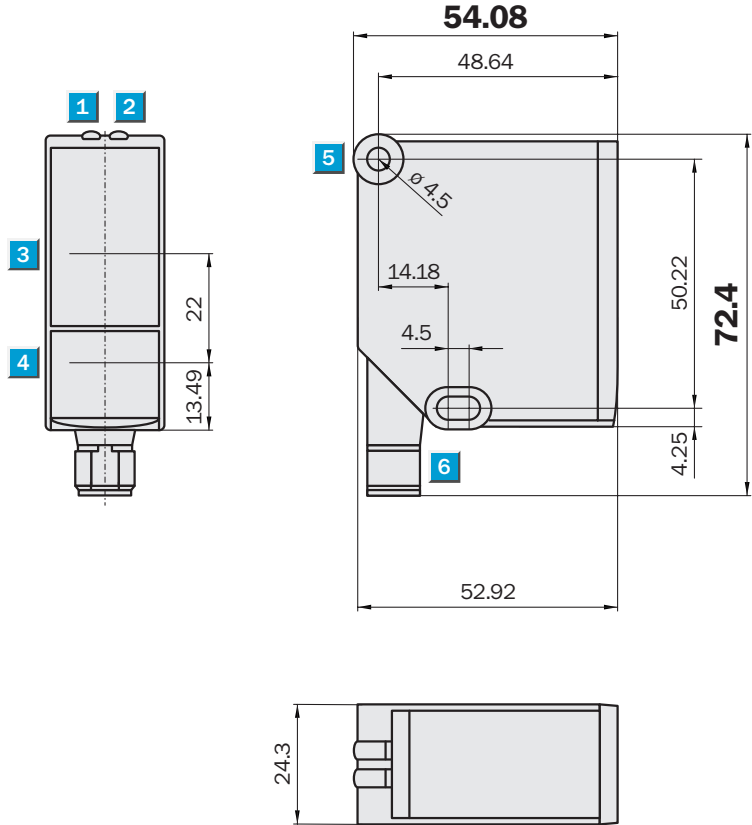




# Distance Sensor DT20

## Dimensional drawing

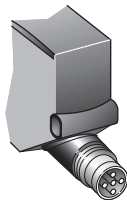


- 1** Power
- 2** Status indicator
- 3** Optical axis, receiver
- 4** Optical axis, sender
- 5** Fixing hole
- 6** Plug, M12, 5-pin

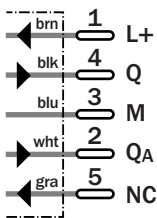


## Connection type

DT20



5-pin, M12



|                               |                          |
|-------------------------------|--------------------------|
|                               | <b>Measurement range</b> |
|                               | 90 ... 600 mm            |
|                               | 100 ... 1000 mm          |
| Distance sensor, scanner mode |                          |

- Analogue output 4 ... 20 mA
- High measuring accuracy
- Power-On LED
- Plug & Play sensor
- Insensitive to external light sources



## DT20 Distance sensor, scanner mode

| Technical data                                   |   | DT20 |  |  |  |  |  |  |  |  |  |  |  |
|--|---|------|--|--|--|--|--|--|--|--|--|--|--|
| <b>Measurement range<sup>1)</sup></b>            |   |      |  |  |  |  |  |  |  |  |  |  |  |
| Object with 6% remission                         | 90 ... 600 mm                             |      |  |  |  |  |  |  |  |  |  |  |  |
|  | 100 ... 820 mm                            |      |  |  |  |  |  |  |  |  |  |  |  |
| Object with 18% remission                        | 90 ... 600 mm                             |      |  |  |  |  |  |  |  |  |  |  |  |
|  | 100 ... 1,000 mm                          |      |  |  |  |  |  |  |  |  |  |  |  |
| Object with 90% remission                        | 90 ... 600 mm                             |      |  |  |  |  |  |  |  |  |  |  |  |
|  | 100 ... 1,000 mm                          |      |  |  |  |  |  |  |  |  |  |  |  |
| <b>Light source<sup>2)</sup></b>                 | LED, infrared light                       |      |  |  |  |  |  |  |  |  |  |  |  |
| Light spot diameter                              | 35 mm at 1 m                              |      |  |  |  |  |  |  |  |  |  |  |  |
| <b>Supply voltage V<sub>s</sub><sup>3)</sup></b> | 10 ... 30 V DC                            |      |  |  |  |  |  |  |  |  |  |  |  |
| <b>Current consumption<sup>4)</sup></b>          | 1.5 W                                     |      |  |  |  |  |  |  |  |  |  |  |  |
| <b>Residual ripple<sup>5)</sup></b>              | ≤ 5 V <sub>pp</sub>                       |      |  |  |  |  |  |  |  |  |  |  |  |
| <b>Analogue output</b>                           | 4 ... 20 mA                               |      |  |  |  |  |  |  |  |  |  |  |  |
| Reproducibility                                  | ± 1.5 mm                                  |      |  |  |  |  |  |  |  |  |  |  |  |
|  | ± 3 mm                                    |      |  |  |  |  |  |  |  |  |  |  |  |
| Resolution                                       | 1 mm                                      |      |  |  |  |  |  |  |  |  |  |  |  |
|  | 2 mm                                      |      |  |  |  |  |  |  |  |  |  |  |  |
| Response time                                    | 10 ms                                     |      |  |  |  |  |  |  |  |  |  |  |  |
|  | 15 ms                                     |      |  |  |  |  |  |  |  |  |  |  |  |
| Output rate                                      | 1 ms                                      |      |  |  |  |  |  |  |  |  |  |  |  |
| Temperature drift                                | 0.25 mm/K                                 |      |  |  |  |  |  |  |  |  |  |  |  |
| <b>Switching outputs</b>                         | PNP o. NPN, Q                             |      |  |  |  |  |  |  |  |  |  |  |  |
| Signal voltage PNP                               | HIGH = V <sub>s</sub> - (< 2 V)/LOW = 0 V |      |  |  |  |  |  |  |  |  |  |  |  |
| Signal voltage NPN                               | HIGH = V <sub>s</sub> /LOW ≤ 2 V          |      |  |  |  |  |  |  |  |  |  |  |  |
| <b>Connection type</b>                           | M12 plug, 5-pin                           |      |  |  |  |  |  |  |  |  |  |  |  |
| <b>VDE protection class</b>                      | <input type="checkbox"/>                  |      |  |  |  |  |  |  |  |  |  |  |  |
| <b>Enclosure rating</b>                          | IP 66/IP 67                               |      |  |  |  |  |  |  |  |  |  |  |  |
| <b>Ambient temperature T<sub>A</sub></b>         | Operation -25 ... +55 °C                  |      |  |  |  |  |  |  |  |  |  |  |  |
|  | Storage -40 ... +75 °C                    |      |  |  |  |  |  |  |  |  |  |  |  |
| <b>Weight</b>                                    | 135 g                                     |      |  |  |  |  |  |  |  |  |  |  |  |
| Housing material                                 | Metal                                     |      |  |  |  |  |  |  |  |  |  |  |  |

<sup>1)</sup> For types with max. measurement range: > 600 mm for min. measurement range = 100 mm < 600 mm for min. measurement range = 90 mm

Various measurement ranges are possible (see type-based ordering information below)

<sup>2)</sup> Average service life 100,000 h at T<sub>A</sub> = +25 °C

<sup>3)</sup> Limit values, reverse-polarity protected

<sup>4)</sup> Without load

<sup>5)</sup> May not exceed or fall short of V<sub>s</sub> tolerances

### Plug & Play: measurement range freely selectable, measurement range bb to ee ± 4 mA ... 20 mA

|  |  |
|--|--|
| DT20-P/N130Bbbe                          |  |
| bb: min. measurement range <sup>6)</sup> | ee: max. measurement range <sup>6)</sup> |
| 09 <sup>7)</sup>                         | 00 <sup>7)</sup>                         |

<sup>6)</sup> Minimum range between bb and ee must be 10 units (05 ± 5 cm; 10 ± 10 cm)

<sup>7)</sup> 09 ± 9 cm; 00 ± 100 cm

#### 1<sup>st</sup> example: measurement range 100 mm ... 1000 mm

|                |                |
|----------------|----------------|
| DT20-P130B1000 |                |
| 4 mA ± 10 cm   | 20 mA ± 100 cm |

#### 2<sup>nd</sup> example: measurement range 600 mm ... 90 mm (Inverse diagram)

|                |              |
|----------------|--------------|
| DT20-P130B6009 |              |
| 4 mA ± 60 cm   | 20 mA ± 9 cm |

#### Basic types:

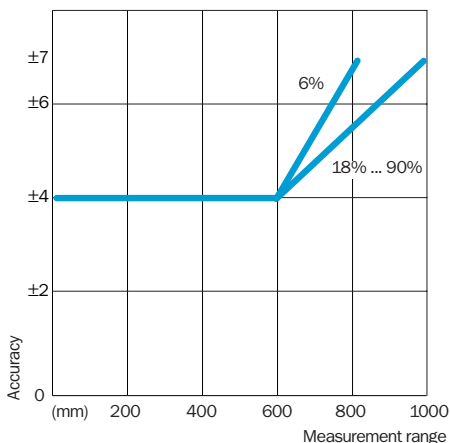
##### Ordering information

| Type           | Order no. |
|----------------|-----------|
| DT20-P130B0960 | 1029273   |
| DT20-P130B1000 | 1028800   |
| DT20-P130B1050 | 1027831   |
| DT20-P130B1080 | 1028720   |
| DT20-P130B2535 | 1028721   |
| DT20-P130B2545 | 1028724   |
| DT20-P130B2560 | 1028723   |
| DT20-P130B4000 | 1028722   |
| DT20-N130B0960 | 1029274   |
| DT20-N130B1000 | 1029275   |

##### Measurement range

|                 |
|-----------------|
| 90 ... 600 mm   |
| 100 ... 1000 mm |
| 100 ... 500 mm  |
| 100 ... 800 mm  |
| 250 ... 350 mm  |
| 250 ... 450 mm  |
| 250 ... 600 mm  |
| 400 ... 1000 mm |
| 90 ... 600 mm   |
| 100 ... 1000 mm |

##### Accuracy



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