



## Short range distance sensors (displacement) DT20

DT20-P130B4000



**Model Name** > [DT20-P130B4000](#)  
**Part No.** > [1028722](#)



**At a glance**

- Different measuring ranges from 90 mm ... 1,000 mm
- Repeatability up to  $\pm 1.5$  mm
- Infrared sender, which is not visible to the human eye
- Analog and switching output provide distance and out of range information
- Plug and play sensor that is factory-programmed based on customer specifications
- High output rate - distance outputs are provided every millisecond
- Rugged, metal housing

**Your benefits**

- Fast, easy commissioning based on customer-specific presets saves time
- Tamper-proof sensor concept ensures high machine availability
- Inconspicuous and therefore non distracting by use of infrared light
- High ambient light immunity increases machine availability
- Solid, IP 67-rated metal housing permits operation in harsh environments, making the sensor suitable for a wide range of applications



**Performance**

|                                     |  |
|-------------------------------------|--|
| Measurement range:                  | 400 mm ... 1,000 mm, 18 % ... 90 % remission <sup>1)</sup>   |
| Resolution <sup>2)</sup> :          | 1 mm/2 mm  |
| Repeatability <sup>3)</sup> :       | $\pm 1.5$ mm/ $\pm 3$ mm   |
| Response time <sup>4)</sup> :       | 10 ms/15 ms  |
| Light source:                       | LED, infrared  |
| Typ. light spot size (distance):    | 15 mm x 15 mm (at 1 m)   |
| Additional function:                | Customer specific scaled measuring range, Plug & Play, Switching output to monitor the measuring range |
| Accuracy::                          | $\pm 4$ mm <sup>5) 6)</sup>  |
| Laser service life (MTTF at 25 °C): | 100,000 h  |
| Output time:                        | 1 ms   |

<sup>1)</sup> On 6 % remission the maximal measurable distance is 820 mm <sup>2) 4)</sup> Depending on measurement range: 90 ... 600 mm/> 600 mm. <sup>3)</sup> 18 % ... 90 % remission <sup>5) 6)</sup> % ... 90 % remission <sup>6)</sup>  $\pm 4$  mm u to 600 mm;  $\leq \pm 7$  mm for distances larger < 600 mm; refer to accuracy diagram

**Interfaces**

|                             |  |
|-----------------------------|--|
| Output type <sup>1)</sup> : | 1 x PNP (100 mA)                         |
| Analog output:              | 1 x 4 mA ... 20 mA ( $\leq 300 \Omega$ ) |

1) PNP: HIGH =  $V_S$  - (< 2 V)/LOW = 0 V

### Mechanics/electronics

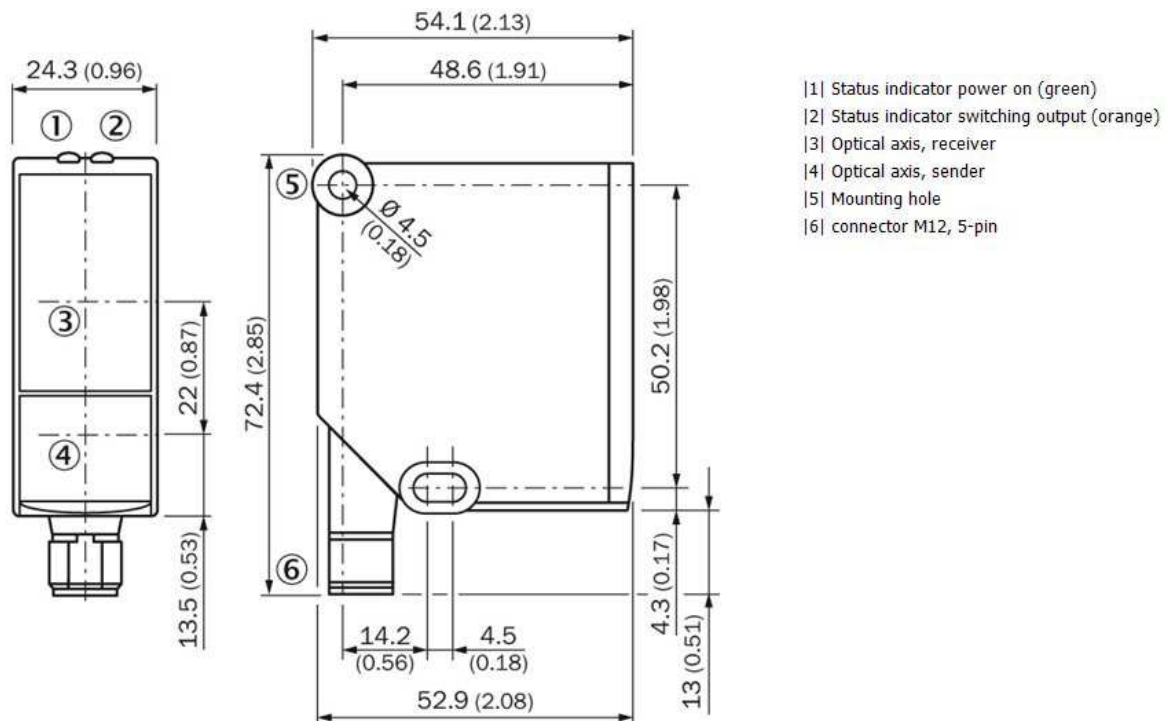
|                                      |                              |
|--------------------------------------|------------------------------|
| Connection type:                     | Male connector, M12, 5-pin   |
| Supply voltage $V_S$ <sup>1)</sup> : | DC 10 V ... 30 V             |
| Power consumption <sup>2)</sup> :    | ≤ 1.5 W                      |
| Warm-up time:                        | ≤ 30 min                     |
| Indication:                          | 2 x LED                      |
| Weight:                              | 135 g                        |
| Housing material:                    | Metal housing with PMMA lens |
| Initialization time:                 | ≤ 250 ms                     |
| Ripple:                              | ≤ 5 Vpp <sup>3)</sup>        |

1) Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A <sup>2)</sup> Without load <sup>3)</sup> May not fall short of or exceed  $V_S$  tolerances

### Ambient data

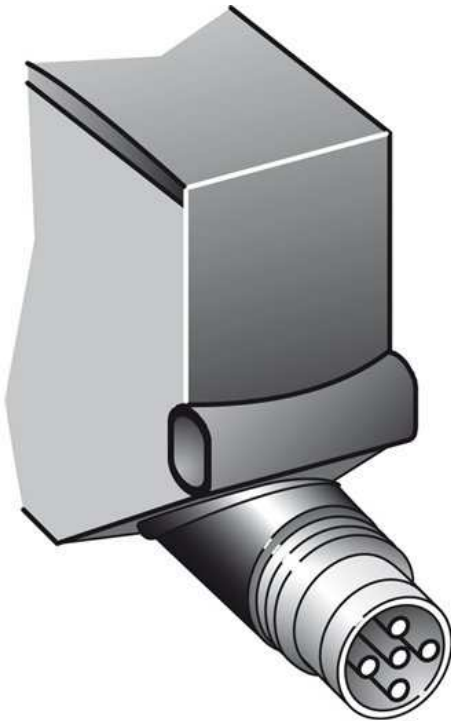
|                       |  |
|-----------------------|--|
| Enclosure rating:     | IP 65  |
| Protection class:     | II   |
| Ambient temperature:  | Operation: -25 ... +55 °C, Storage: -40 ... +75 °C |
| Temperature drift:    | 0.25 mm/K  |
| Vibration resistance: | EN 60068-2-6/EN 60068-2-64                         |
| Shock resistance:     | EN 60068-2-27                                      |

### Dimensional drawing



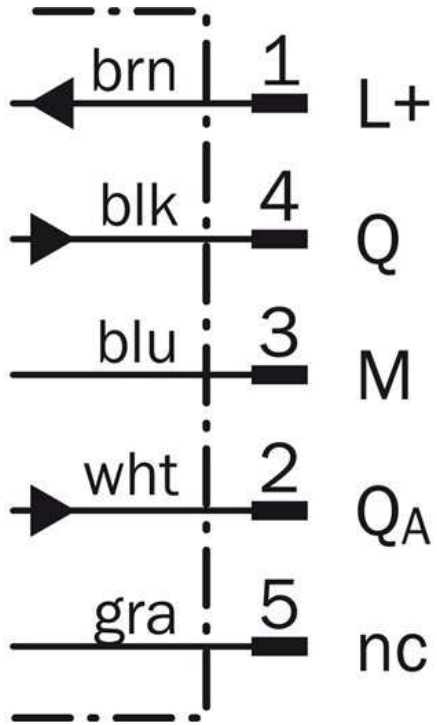
Connection type

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Connection diagram

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