



# DT20-P244B

DT20 Hi

DISPLACEMENT MEASUREMENT SENSORS

**SICK**  
Sensor Intelligence.



### Ordering information

| Type       | Part no. |
|------------|----------|
| DT20-P244B | 1040406  |

Other models and accessories → [www.sick.com/DT20\\_Hi](http://www.sick.com/DT20_Hi)



### Detailed technical data

#### Mechanics/electronics

|                                        |                                                   |
|----------------------------------------|---------------------------------------------------|
| <b>Supply voltage <math>V_s</math></b> | DC 10 V ... 30 V <sup>1)</sup>                    |
| <b>Ripple</b>                          | $\leq 5 V_{pp}$ <sup>2)</sup>                     |
| <b>Power consumption</b>               | $\leq 1.8 W$ <sup>3)</sup>                        |
| <b>Warm-up time</b>                    | $\leq 10 \text{ min}$                             |
| <b>Housing material</b>                | Metal                                             |
| <b>Window material</b>                 | PMMA                                              |
| <b>Connection type</b>                 | Male connector, M12, 5-pin, swivel connector unit |
| <b>Indication</b>                      | LC display, 2 x LED                               |
| <b>Weight</b>                          | 135 g                                             |
| <b>Enclosure rating</b>                | IP65 (EN 60529)                                   |
| <b>Protection class</b>                | II                                                |

<sup>1)</sup> Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A.

<sup>2)</sup> May not fall short of or exceed  $V_s$  tolerances.

<sup>3)</sup> Without load.

#### Performance

|                            |                                            |
|----------------------------|--------------------------------------------|
| <b>Measuring range</b>     | 100 mm ... 300 mm <sup>1)</sup>            |
| <b>Target</b>              | Natural objects                            |
| <b>Repeatability</b>       | $\geq 0.25 \text{ mm}$ <sup>1) 2) 3)</sup> |
| <b>Linearity</b>           | $\pm 1 \text{ mm}$ <sup>3) 4)</sup>        |
| <b>Response time</b>       | $\geq 2.5 \text{ ms}$ <sup>2)</sup>        |
| <b>Measuring frequency</b> | $\leq 400 \text{ Hz}$ <sup>1)</sup>        |
| <b>Output time</b>         | $\geq 2.5 \text{ ms}$                      |

<sup>1)</sup> 6 % ... 90 % remission.

<sup>2)</sup> Dependent on the set average or sensitivity.

<sup>3)</sup> When calibrated in the application regularly.

<sup>4)</sup> 90 % remission.

|                                        |                                                                                                                                                                                                                                                                                                        |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Light source</b>                    | Laser, red                                                                                                                                                                                                                                                                                             |
| <b>Laser class</b>                     | 2 (IEC 60825-1:2014, EN 60825-1:2014)                                                                                                                                                                                                                                                                  |
| <b>Typ. light spot size (distance)</b> | 3 mm x 6 mm (300 mm)                                                                                                                                                                                                                                                                                   |
| <b>Additional function</b>             | Set moving average fast/medium/slow, switching mode: distance to object (Dt0), teach-in of digital output, invertable digital output, teach-in of analog output, Invertable analog output, Multifunctional input: laser off / external teach-in / deactivated, switch-off display, lock user interface |

<sup>1)</sup> 6 % ... 90 % remission.

<sup>2)</sup> Dependent on the set average or sensitivity.

<sup>3)</sup> When calibrated in the application regularly.

<sup>4)</sup> 90 % remission.

## Interfaces

|                                   |                                       |                         |
|-----------------------------------|---------------------------------------|-------------------------|
| <b>Digital output</b>             |                                       |                         |
|                                   | Number                                | 1 <sup>1)</sup>         |
|                                   | Type                                  | PNP                     |
|                                   | Maximum output current I <sub>A</sub> | ≤ 100 mA                |
| <b>Analog output</b>              |                                       |                         |
|                                   | Number                                | 1                       |
|                                   | Type                                  | Power output            |
|                                   | Current                               | 4 mA ... 20 mA, ≤ 300 Ω |
|                                   | Resolution                            | 12 bit                  |
| <b>Multifunctional input (MF)</b> |                                       | 1 x MF <sup>2)</sup>    |

<sup>1)</sup> PNP: HIGH = V<sub>S</sub> - (< 2 V) / LOW = < 2 V; NPN: HIGH = < 2 V / LOW = V<sub>S</sub>.

<sup>2)</sup> MF can be used as laser-off, external teach-in or deactivated.

## Ambient data

|                                      |                                                                   |
|--------------------------------------|-------------------------------------------------------------------|
| <b>Ambient temperature operation</b> | -20 °C ... +55 °C, Operating temperature at V <sub>S</sub> = 24 V |
| <b>Ambient storage temperature</b>   | -40 °C ... +60 °C                                                 |
| <b>Temperature drift</b>             | 0.25 mm/K <sup>1)</sup>                                           |
| <b>Typ. Ambient light immunity</b>   | Artificial light: ≤ 3,000 lx<br>Sunlight: ≤ 10,000 lx             |
| <b>Vibration resistance</b>          | EN 60068-2-6, EN 60068-2-64                                       |
| <b>Shock resistance</b>              | EN 60068-2-27                                                     |

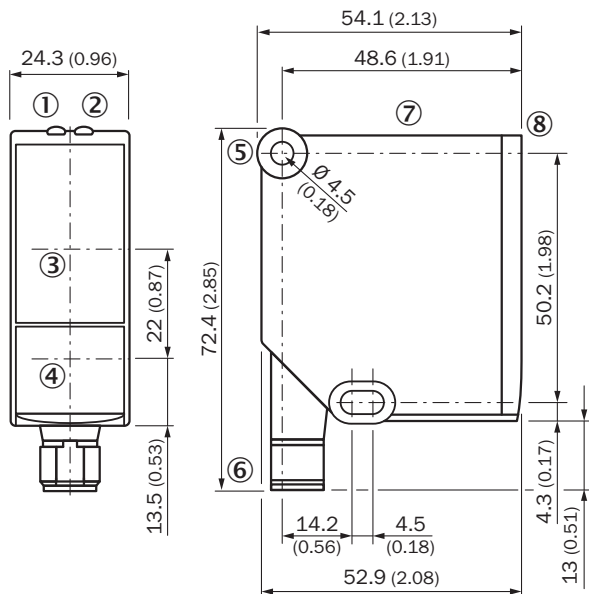
<sup>1)</sup> 0,5 mm/K: for distances > 600 mm.

## Classifications

|                     |          |
|---------------------|----------|
| <b>ECI@ss 5.0</b>   | 27270801 |
| <b>ECI@ss 5.1.4</b> | 27270801 |
| <b>ECI@ss 6.0</b>   | 27270801 |
| <b>ECI@ss 6.2</b>   | 27270801 |
| <b>ECI@ss 7.0</b>   | 27270801 |
| <b>ECI@ss 8.0</b>   | 27270801 |
| <b>ECI@ss 8.1</b>   | 27270801 |
| <b>ECI@ss 9.0</b>   | 27270801 |
| <b>ETIM 5.0</b>     | EC001825 |

|                       |          |
|-----------------------|----------|
| <b>ETIM 6.0</b>       | EC001825 |
| <b>UNSPSC 16.0901</b> | 41111613 |

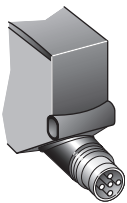
### Dimensional drawing (Dimensions in mm (inch))



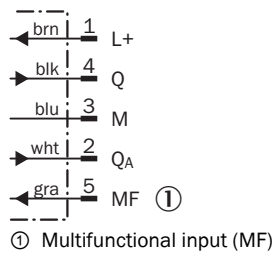
- ① Status display for supply voltage active (green)
- ② Status indicator digital output (orange)
- ③ Optical axis, receiver
- ④ Optical axis, sender
- ⑤ Fixing hole
- ⑥ Connector M12, 5-pin, turnable
- ⑦ Operating keys and display
- ⑧ Reference surface = 0 mm

### Connection type

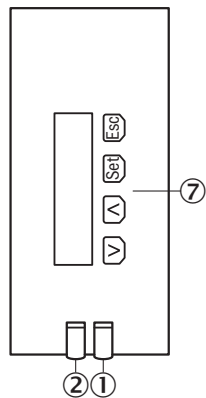
Male connector M12, 5-pin



## Connection diagram



## Adjustment possible



- ① Status display for supply voltage active (green)
- ② Status indicator digital output (orange)
- ⑦ Operating keys and display

## Recommended accessories

Other models and accessories → [www.sick.com/DT20\\_Hi](http://www.sick.com/DT20_Hi)

|                              | Brief description                                                                                                                     | Type               | Part no. |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
| Mounting brackets and plates |                                                                                                                                       |                    |          |
|                              | Mounting bracket, stainless steel, without mounting material, for DT20 Hi, without mounting hardware                                  | BEF-WN-DT20        | 4043524  |
| Plug connectors and cables   |                                                                                                                                       |                    |          |
|                              | Head A: female connector, M12, 5-pin, straight, A-coded<br>Head B: Flying leads<br>Cable: Sensor/actuator cable, PVC, unshielded, 2 m | YF2A15-020VB5XLEAX | 2096239  |

### Recommended services

Additional services → [www.sick.com/DT20\\_Hi](http://www.sick.com/DT20_Hi)

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Type                        | Part no. |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|----------|
| Warranty extensions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                             |          |
| <ul style="list-style-type: none"> <li>• <b>Product area:</b> Identification solutions, Vision, Distance sensors, Detection and ranging solutions</li> <li>• <b>Range of services:</b> The services correspond to the scope of the statutory manufacturer warranty (SICK general terms and conditions of purchase), Long-term protection for calculable lump sum.</li> <li>• <b>Duration:</b> Five-year warranty from date of purchase.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Five-year extended warranty | 1680671  |
| Commissioning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                             |          |
| <ul style="list-style-type: none"> <li>• <b>Product area:</b> Displacement measurement sensors</li> <li>• <b>Range of services:</b> Inspection of connection and mounting, optimization of parameters of SICK product as well as verification tests, set-up of previously defined functions of the scaling of the analog measuring range, switching point position, hysteresis, measuring frequency, measured value filter, signal quality, evaluation function, or communication interface</li> <li>• <b>Documentation:</b> Archiving of product parameters in a SICK database, Documentation of performance, Creation of a commissioning log</li> <li>• <b>Duration:</b> Additional work will be invoiced separately based on time spent</li> <li>• <b>Travel expenses:</b> The prices do not include expenses or costs for the travel time, travel costs, such as flight or hotel expenses, are not included</li> </ul> | DT20 Hi/OD/OL commissioning | 1612241  |

## SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

**For us, that is “Sensor Intelligence.”**

## WORLDWIDE PRESENCE:

Contacts and other locations –[www.sick.com](http://www.sick.com)