



# DT20-P224B

DT20 Hi

DISPLACEMENT MEASUREMENT SENSORS

**SICK**  
Sensor Intelligence.



### Ordering information

Type	Part no.
DT20-P224B	1040405

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



### Detailed technical data

#### Performance

<b>Measuring range</b>	100 mm ... 1,000 mm, 6 % ... 90 % remission
<b>Resolution</b>	1,000 μm <sup>1) 2)</sup>
<b>Repeatability</b>	10 mm / 5 mm / 2.5 mm <sup>1) 3) 4) 2)</sup>
<b>Linearity</b>	± 6 mm <sup>5) 4) 2)</sup>
<b>Response time</b>	2,5 ms / 10 ms / 40 ms <sup>3)</sup>
<b>Measuring frequency</b>	400 Hz
<b>Light source</b>	Laser, red
<b>Laser class</b>	2 (EN 60825-1)
<b>Typ. light spot size (distance)</b>	6 mm x 12 mm (1000 mm)
<b>Additional function</b>	Set moving average fast/medium/slow, switching mode: distance to object (DtO), teach-in of switching output, Invertable switching 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> The models with measuring range of 100 mm ... 1,000 mm meets the specification of the models with measuring range of 100 mm ... 1,000 mm for distances < 600 mm.

<sup>3)</sup> Dependent on the averaging setting: fast/medium/slow.

<sup>4)</sup> When calibrated in the application regularly.

<sup>5)</sup> 90 % remission.

#### Interfaces

<b>Analog output</b>	1 x 4 mA ... 20 mA (≤ 300 Ω)
<b>Resolution analog output</b>	12 bit
<b>Switching output</b>	1 x PNP (100 mA) <sup>1)</sup>
<b>Multifunctional input (MF)</b>	1 x MF <sup>2)</sup>
<b>Data interface</b>	1 x 4 mA ... 20 mA (< 300 Ω)

<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.

## 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>	$\leq 10$ min
<b>Housing material</b>	Metal housing with PMMA lens
<b>Connection type</b>	Male connector, M12, 5-pin
<b>Indication</b>	LC display, 2 x LED
<b>Weight</b>	135 g

<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.

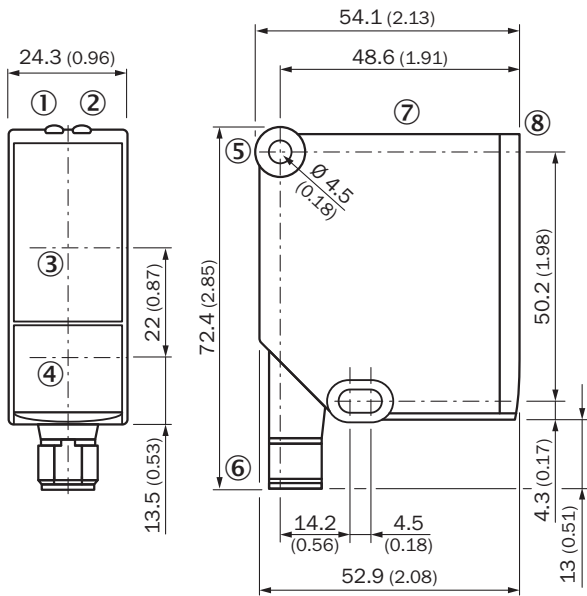
## Ambient data

<b>Enclosure rating</b>	IP 65
<b>Protection class</b>	II
<b>Ambient temperature</b>	Operation: $-20\text{ °C} \dots +55\text{ °C}$ <sup>1)</sup> Storage: $-40\text{ °C} \dots +60\text{ °C}$
<b>Temperature drift</b>	0.25 mm/K <sup>2)</sup>
<b>Typ. Ambient light immunity</b>	Artificial light: $\leq 3,000$ lx Sunlight: $\leq 10,000$ lx
<b>Vibration resistance</b>	EN 60068-2-6 / EN 60068-2-64
<b>Shock resistance</b>	EN 60068-2-27

<sup>1)</sup> Operating temperature at  $V_S = 24$  V.

<sup>2)</sup> 0,5 mm/K: for distances  $> 600$  mm.

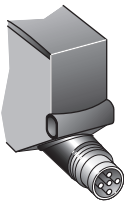
**Dimensional drawing** (Dimensions in mm (inch))



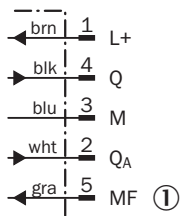
- ① Status indicator operating voltage active (green)
- ② Status indicator switching output (orange)
- ③ Optical axis, receiver
- ④ Optical axis, sender
- ⑤ Fixing hole
- ⑥ Connector M12, 5-pin, turnable
- ⑦ Operating keys and display
- ⑧ Reference surface = 0 mm

**Connection type**

Male connector M12, 5-pin

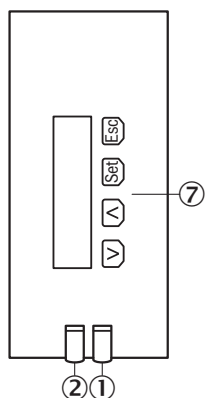


**Connection diagram**



- ① Multifunctional input (MF)




## Adjustment possible



- ① Status indicator operating voltage active (green)
- ② Status indicator switching 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.
<b>Mounting brackets and mounting plates</b>			
	Mounting bracket, stainless steel (1.4404), without mounting material, for DT20 Hi, without mounting hardware	BEF-WN-DT20	4043524
<b>Plug connectors and cables</b>			
	Head A: female connector, M12, 5-pin, straight Head B: cable Cable: PVC, unshielded, 2 m	DOL-1205-G02M	6008899
	Head A: female connector, M12, 5-pin, straight Head B: cable Cable: PVC, unshielded, 5 m	DOL-1205-G05M	6009868
	Head A: female connector, M12, 5-pin, straight Head B: cable Cable: PVC, unshielded, 10 m	DOL-1205-G10M	6010544
	Head A: female connector, M12, 5-pin, angled Head B: cable Cable: PVC, unshielded, 2 m	DOL-1205-W02M	6008900
	Head A: female connector, M12, 5-pin, angled Head B: cable Cable: PVC, unshielded, 5 m	DOL-1205-W05M	6009869
	Head A: female connector, M12, 5-pin, angled Head B: cable Cable: PVC, unshielded, 10 m	DOL-1205-W10M	6010542

## 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)