



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



Detailed technical data

Features

Target	Natural objects
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Performance

Measuring range	100 mm ... 1,000 mm ¹⁾
Resolution	1,000 μm ^{1) 2)}
Reproducibility	10 mm / 5 mm / 2.5 mm ^{1) 2) 3) 4)}
Linearity	± 6 mm ^{2) 4) 5)}
Response time	2.5 ms ... 40 ms, 2,5 ms / 10 ms / 40 ms ³⁾
Measuring frequency	400 Hz
Light source	Laser, red
Laser class	2 (IEC 60825-1:2014, EN 60825-1:2014)
Typ. light spot size (distance)	6 mm x 12 mm (1000 mm)
Additional function	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

¹⁾ 6 % ... 90 % remission.

²⁾ 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.

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

⁴⁾ When calibrated in the application regularly.

⁵⁾ 90 % remission.

Interfaces

Analog output	1 x 4 mA ... 20 mA (≤ 300 Ω)
Resolution analog output	12 bit
Switching output	1 x PNP (100 mA) ¹⁾

¹⁾ PNP: HIGH = V_S - (< 2 V) / LOW = < 2 V; NPN: HIGH = < 2 V / LOW = V_S.

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

Multifunctional input (MF)	1 x MF ²⁾
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¹⁾ PNP: HIGH = $V_S - (< 2 V)$ / LOW = $< 2 V$; NPN: HIGH = $< 2 V$ / LOW = V_S .

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

Mechanics/electronics

Supply voltage V_S	DC 10 V ... 30 V ¹⁾
Ripple	$\leq 5 V_{pp}$ ²⁾
Power consumption	$\leq 1.8 W$ ³⁾
Warm-up time	≤ 10 min
Housing material	Metal housing with PMMA lens
Connection type	Male connector, M12, 5-pin, swivel connector unit
Indication	LC display, 2 x LED
Weight	135 g
Enclosure rating	IP65
Protection class	II

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

²⁾ May not fall short of or exceed V_S tolerances.

³⁾ Without load.

Ambient data

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

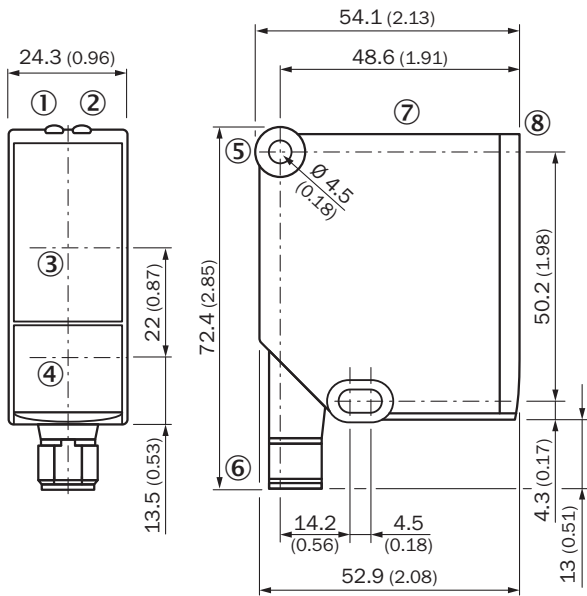
¹⁾ Operating temperature at $V_S = 24 V$.

²⁾ 0.5 mm/K ; for distances $> 600\text{ mm}$.

Classifications

ECl@ss 5.0	27270801
ECl@ss 5.1.4	27270801
ECl@ss 6.0	27270801
ECl@ss 6.2	27270801
ECl@ss 7.0	27270801
ECl@ss 8.0	27270801
ECl@ss 8.1	27270801
ECl@ss 9.0	27270801
ETIM 5.0	EC001825
ETIM 6.0	EC001825
UNSPSC 16.0901	41111613

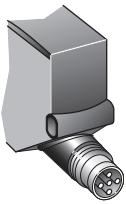
Dimensional drawing (Dimensions in mm (inch))



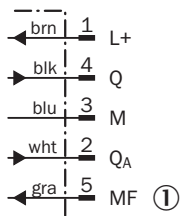
- ① Status indicator operating voltage active (green)
- ② Status indicator switching output (orange)
- ③ Optical axis, receiver
- ④ Optical axis, sender
- ⑤ Fixing hole
- ⑥ Connector M12, 5-pin, turnable
- ⑦ Operating keys and display
- ⑧ Reference surface = 0 mm

Connection type

Male connector M12, 5-pin

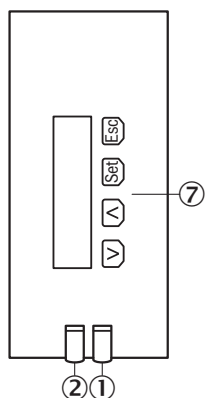


Connection diagram



- 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

	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
	Stainless-steel mounting bracket, Stainless steel	BEF-WN-OD1000	4089813
Terminal and alignment brackets			
	Galvanized steel alignment bracket with mounting accessories, steel, zinc coated, mounting hardware for the sensor included	BEF-AH-OD1000	2087355
Plug connectors and cables			
	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, 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

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.”

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