Online data sheet



DT20-N224B

DT20 Hi

DISPLACEMENT MEASUREMENT SENSORS

SICK
Sensor Intelligence.



Ordering information

Type	Part no.
DT20-N224B	1044216

Other models and accessories ➜ www.sick.com/DT20_Hi

Detailed technical data

Performance

Measuring range	100 mm ... 1,000 mm, 6 % ... 90 % remission
Resolution	1,000 µm [1) 2)]
Repeatability	10 mm / 5 mm / 2.5 mm [1) 3) 4) 2)]
Linearity	± 6 mm [5) 4) 2)]
Response time	2,5 ms / 10 ms / 40 ms [3)]
Measuring frequency	400 Hz
Light source	Laser, red
Laser class	2 (EN 60825-1)
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 NPN (100 mA) [1)]
Multifunctional input (MF)	1 x MF [2)]
Data interface	1 x 4 mA ... 20 mA (< 300 Ω)

[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	≤ 5 V_{pp} [2]
Power consumption	≤ 1.8 W [3]
Warm-up time	≤ 10 min
Housing material	Metal housing with PMMA lens
Connection type	Male connector, M12, 5-pin
Indication	LC display, 2 x LED
Weight	135 g

[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.

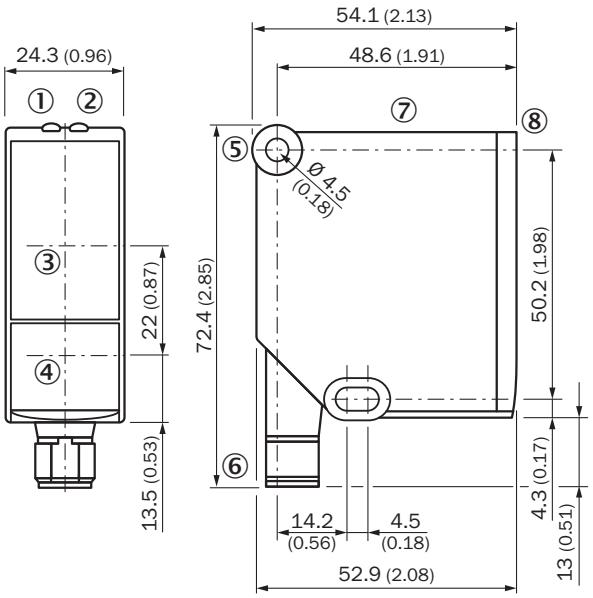
Ambient data

Enclosure rating	IP 65
Protection class	II
Ambient temperature	Operation: –20 °C ... +55 °C [1] Storage: –40 °C ... +60 °C
Temperature drift	0.25 mm/K [2]
Typ. Ambient light immunity	Artificial light: ≤ 3,000 lx Sunlight: ≤ 10,000 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 mm.

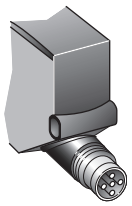
Dimensional drawing (Dimensions in mm (inch))



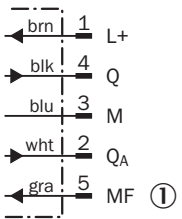
① Status indicator operating voltage active (green)
② Status indicator switching output (orange)
③ Optical axis, receiver
④ Optical axis, sender
⑤ Fixing hole
⑥ Connector M12, 5-pin, turnable
⑦ Operating keys and display
⑧ Reference surface = 0 mm

Connection type

Male connector M12, 5-pin

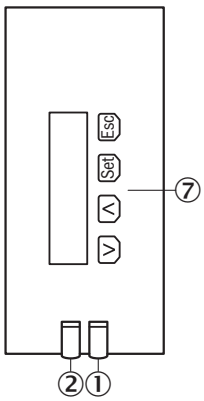


Connection diagram



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

	Brief description	Type	Part no.
Mounting brackets and mounting plates			
	Mounting bracket, stainless steel (1.4404), 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 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

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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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