



DATA SHEET

DT20-P254B

DT20 Hi
Displacement Sensors

SICK

Sensor Intelligence



DISPLACEMENT SENSORS

DT20-P254B

ORDERING INFORMATION

Type	part no.
DT20-P254B	1041278

Further device versions and accessories at www.sick.com/DT20_Hi



DETAILED TECHNICAL DATA

FEATURES

Measuring range	50 mm ... 150 mm ¹⁾
Repeatability	≥ 0.125 mm ^{1) 2) 3)}
Linearity	± 500 µm ... ± 0.5 mm ^{3) 4)}
Response time	≥ 2.5 ms ²⁾
Measuring frequency	≤ 400 Hz ¹⁾
Output time	≥ 2.5 ms
Emitted beam	Light sourceLaser, red Typ. light spot size (distance)2 mm x 4 mm (150 mm)
Key laser figures	Normative referenceIEC 60825-1:2014, EN 60825-1:2014 Laser class2⁵⁾
Additional function	Set moving average fast/medium/slow Switching mode: distance to object (DtO) 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
Safety-related parameters	MTTF_o101 years DC_{avg}0%

¹⁾ 6% ... 90% remission factor.

²⁾ Dependent on the set average or sensitivity.

³⁾ When calibrated in the application regularly.

⁴⁾ 90% remission factor.

⁵⁾ Do not intentionally look into the laser beam. Never point the laser beam at people's eyes.

INTERFACES

Digital output	Number	1 ¹⁾
	Type	PNP
	Maximum output current I_A	$\leq 100 \text{ mA}$
Analog output	Number	1
	Type	Current output
	Current	4 mA ... 20 mA, $\leq 300 \Omega$
	Resolution	12 bit
Multifunctional input (MF)		1 x MF ²⁾

¹⁾ PNP: HIGH = $V_s - (< 2 \text{ V})$ / LOW = $< 2 \text{ V}$; NPN: HIGH = $< 2 \text{ V}$ / LOW = V_s .

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

ELECTRONICS

Supply voltage U_s	DC 10 V ... 30 V ¹⁾
Power consumption	$\leq 1.8 \text{ W}$ ²⁾
Ripple	$\leq 5 \text{ V}_{pp}$ ³⁾
Warm-up time	$\leq 10 \text{ min}$
Display	LC display, 2 x LED
Enclosure rating	IP65 (EN 60529)
Protection class	II
Connection type	Male connector, M12, 5-pin

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

²⁾ Without load.

³⁾ May not fall short of or exceed V_s tolerances.

MECHANICS

Dimensions (W x H x D)	24.3 mm x 72.4 mm x 54.1 mm
Housing material	Metal (zinc diecast)
Window material	Plastic (PMMA)
Weight	135 g

AMBIENT DATA

Ambient temperature, operation	-20 °C ... +55 °C, Operating temperature at $V_s = 24 \text{ V}$
Ambient temperature, storage	-20 °C ... +60 °C
Temperature drift	0.25 mm/K ¹⁾
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

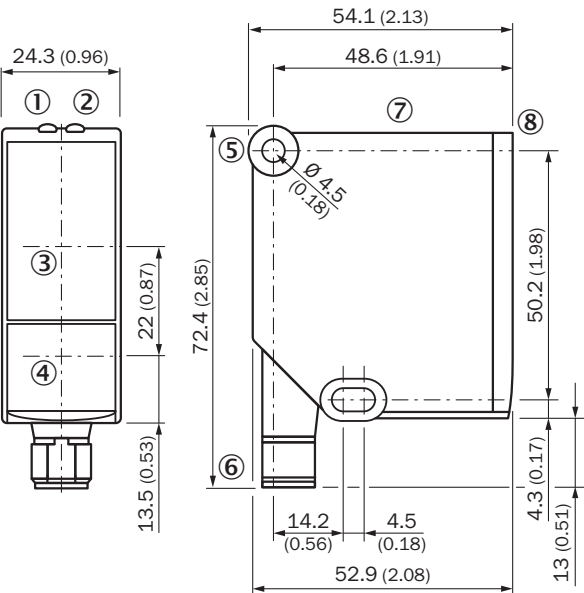
¹⁾ 0.5 mm/K; for distances $> 600 \text{ mm}$.

CERTIFICATES

EU declaration of conformity	✓
UK declaration of conformity	✓

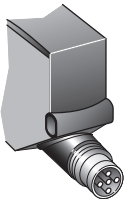
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
cULus certificate	✓
Optical radiation safety (GB 44703:2024) declaration of manufacturer (low risk)	✓

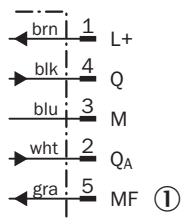
DIMENSIONAL DRAWING



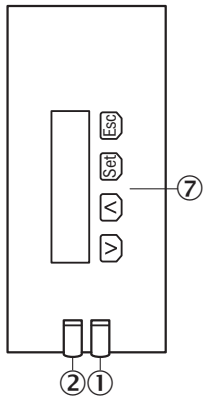
- Dimensions in mm (inch)
- ① Status display for supply voltage active (green)
 - ② status indicator digital output (orange)
 - ③ Optical axis, receiver
 - ④ Optical axis, sender
 - ⑤ fixing hole
 - ⑥ Connector M12, 5-pin, turnable
 - ⑦ Control elements and display
 - ⑧ Reference surface = 0 mm

CONNECTION TYPE PLUG, M12, 5-PIN



CONNECTION DIAGRAM

① Multifunctional input (MF)

ADJUSTMENT POSSIBLE

- ① Status display for supply voltage active (green)
- ② status indicator digital output (orange)
- ⑦ Control elements and display

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/1041278



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SICK AT A GLANCE

SICK is a leading global technology company for intelligent sensors and integrated solutions in industrial automation. Our technologies set benchmarks, making your industrial processes more efficient, safer and more sustainable – both in logistics and manufacturing operations.

SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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