SICK.COM



DATA SHEET

DT20-P224B

DT20 Hi
Displacement Sensors

SICK Sensor Intelligence



DISPLACEMENT SENSORS

DT20-P224B

ORDERING INFORMATION

Type	part no.
DT20-P224B	1040405

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

DETAILED TECHNICAL DATA

FEATURES

Measuring range	100 mm ... 1,000 mm [1]
Repeatability	≥ 2.5 mm [1] [2] [3] [4]
Linearity	± 6,000 µm ... ± 6 mm [3] [4] [5]
Response time	≥ 2.5 ms [2]
Measuring frequency	≤ 400 Hz [1]
Output time	≥ 2.5 ms
Emitted beam	
Light source	Laser, red
Typ. light spot size (distance)	6 mm x 12 mm (1000 mm)
Key laser figures	
Normative reference	IEC 60825-1:2014, EN 60825-1:2014
Laser class	2 [6]
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

[1] 6% ... 90% remission factor.

[2] Dependent on the set average or sensitivity.

[3] When calibrated in the application regularly.

[4] 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.

[5] 90% remission factor.

[6] Do not intentionally look into the laser beam. Never point the laser beam at people's eyes.

	Lock user interface
Safety-related parameters	
$MTTF_D$	101 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] 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.

[5] 90% remission factor.

[6] 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	≤ 100 mA
Analog output	
Number	1
Type	Current output
Current	4 mA ... 20 mA, ≤ 300 Ω
Resolution	12 bit
Multifunctional input (MF)	1 x MF [2]

[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.

ELECTRONICS

Supply voltage U_B	DC 10 V ... 30 V [1]
Power consumption	≤ 1.8 W [2]
Ripple	≤ 5 V_{pp} [3]
Warm-up time	≤ 10 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

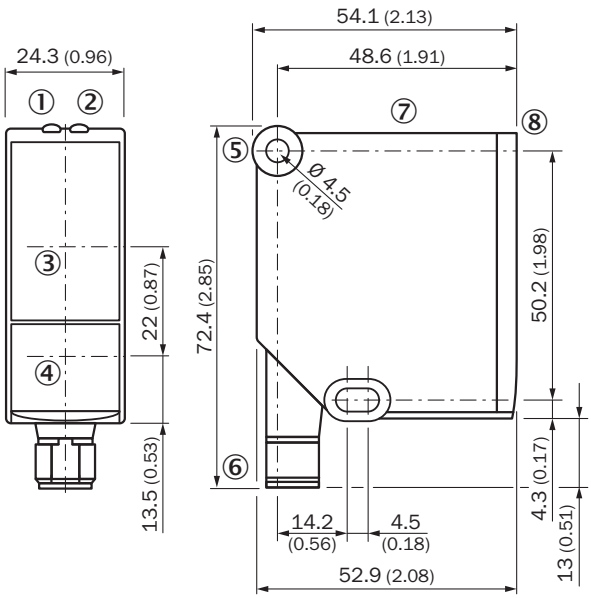
Ambient temperature, operation	–20 °C ... +55 °C, Operating temperature at V_S = 24 V
Ambient temperature, storage	–20 °C ... +60 °C
Temperature drift	0.25 mm/K [1]
Typ. Ambient light immunity	Artificial light: ≤ 3,000 lx Sunlight: ≤ 10,000 lx
Vibration resistance	EN 60068-2-6, EN 60068-2-64
Shock resistance	EN 60068-2-27

[1] 0,5 mm/K: for distances > 600 mm.

CERTIFICATES

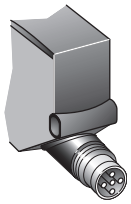
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
cULus certificate	✓

DIMENSIONAL DRAWING

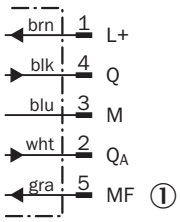


Dimensions in mm (inch)
① Status display for supply voltage active (green)
② status indicator digital output (orange)
③ Optical axis, receiver
④ Optical axis, sender
⑤ fixing hole
⑥ Connector M12, 5-pin, turnable
⑦ Control elements and display
⑧ Reference surface = 0 mm

CONNECTION TYPE PLUG, M12, 5-PIN

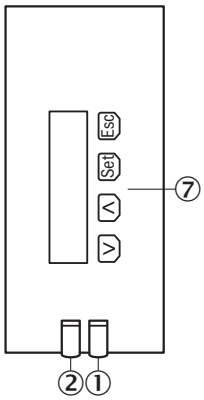


CONNECTION DIAGRAM



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/1040405

SICK AG
WALDKIRCH
GERMANY
SICK.COM

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

SICK

Sensor Intelligence