DT20-P224B

DT20 Hi

DISPLACEMENT MEASUREMENT SENSORS

SICK
Sensor Intelligence.

DT20-P224B | DT20 Hi

DISPLACEMENT MEASUREMENT SENSORS

Ordering information

Type	part no.
DT20-P224B	1040405

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

CE

Detailed technical data

Features

Measuring range	100 mm ... 1,000 mm [1]
Target	Natural objects
Repeatability	≥ 2.5 mm [1] [2] [3] [4]
Linearity	± 6 mm [3] [4] [5]
Response time	≥ 2.5 ms [2]
Output time	≥ 2.5 ms
Light source	Laser, redvisible red light
Type of light	Visible red light
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 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	
$MTTF_D$	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.

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
Indication	LC display, 2 x LED
Enclosure rating	IP65 (EN 60529)
Protection class	II

[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
Connection type	Male connector, M12, 5-pin, swivel connector unit

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
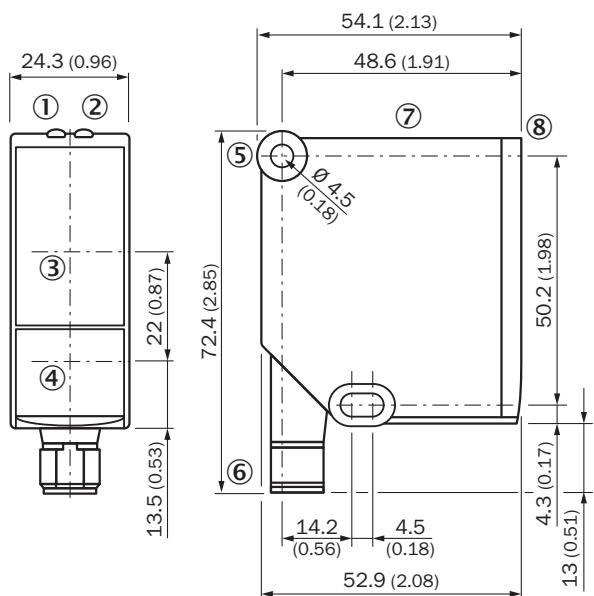
EU declaration of conformity	✓

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

Classifications

ECLASS 5.0	27270801
ECLASS 5.1.4	27270801
ECLASS 6.0	27270801
ECLASS 6.2	27270801
ECLASS 7.0	27270801
ECLASS 8.0	27270801
ECLASS 8.1	27270801
ECLASS 9.0	27270801
ECLASS 10.0	27270801
ECLASS 11.0	27270801
ECLASS 12.0	27270916
ETIM 5.0	EC001825
ETIM 6.0	EC001825
ETIM 7.0	EC001825
ETIM 8.0	EC001825
UNSPSC 16.0901	41111613

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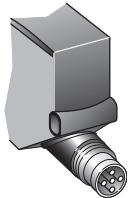
Dimensions in mm (inch)
① Status display for supply voltage active (green)
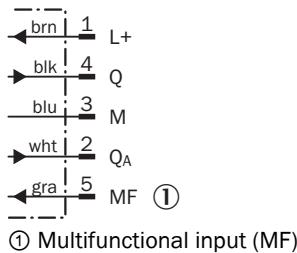
② status indicator digital output (orange)
③ Optical axis, receiver
④ Optical axis, sender
⑤ fixing hole
⑥ Connector M12, 5-pin, turnable
⑦ Control elements and display
⑧ Reference surface = 0 mm
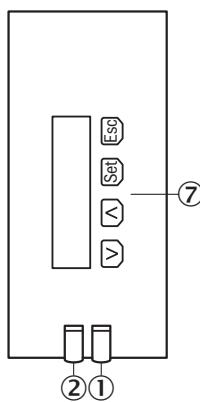
Connection type Male connector M12, 5-pin

Connection diagram

brn	1	L+
blk	4	Q
blu	3	M
wht	2	Q$_A$
gra	5	MF ①

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

Recommended accessories

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

Brief description	Type	part no.
Mounting systems		
• **Description:** Mounting bracket, stainless steel, without mounting material, for DT20 Hi • **Items supplied:** Without mounting hardware	BEF-WN-DT20	4043524
connectors and cables		
• **Connection type head A:** Female connector, M12, 5-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 2 m, 5-wire, PVC • **Description:** Sensor/actuator cable, unshielded • **Application:** Zones with chemicals, Uncontaminated zones	YF2A15-020VB5XLEAX	2096239
• **Connection type head A:** Female connector, M12, 5-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 0.6 m, 5-wire, PVC • **Description:** Sensor/actuator cable, unshielded • **Application:** Zones with chemicals, Uncontaminated zones	YF2A15-C60VB5XLEAX	2145570
• **Connection type head A:** Female connector, M12, 5-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 3 m, 5-wire, PVC • **Description:** Sensor/actuator cable, unshielded • **Application:** Zones with chemicals, Uncontaminated zones	YF2A15-030VB5XLEAX	2145572

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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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