Data sheet

DT20-P244B

DT20 Hi

DISPLACEMENT SENSORS

SICK
Sensor Intelligence.

Ordering information

Type	part no.
DT20-P244B	1040406

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

Detailed technical data

Features

Measuring range	100 mm ... 300 mm [1]
Repeatability	≥ 0.25 mm [1] [2] [3]
Linearity	± 1,000 µm ... ± 1 mm [3] [4]
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)	3 mm x 6 mm (300 mm)
Key laser figures	
Normative reference	IEC 60825-1:2014, EN 60825-1:2014
Laser class	2 [5]
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	

[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.

$MTTF_D$	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] 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	≤ 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

[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

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

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.

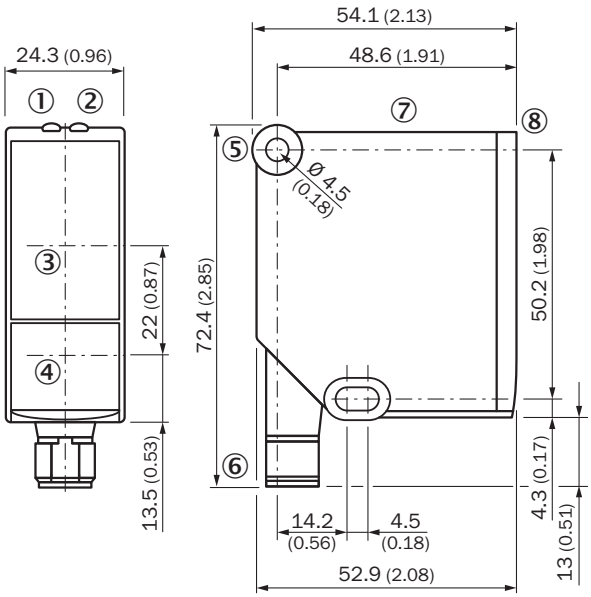
Classifications

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

Certificates

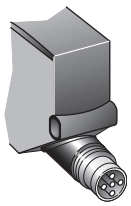
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
cULus certificate	✓

Dimensional drawing

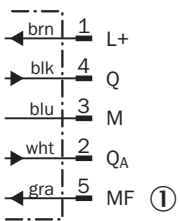


Dimensions in mm (inch)
① Status display for supply voltage active (green)
② status indicator digital output (orange)
③ Optical axis, receiver
④ Optical axis, sender
⑤ fixing hole
⑥ Connector M12, 5-pin, turnable
⑦ Control elements and display
⑧ Reference surface = 0 mm

Connection type Plug, M12, 5-pin

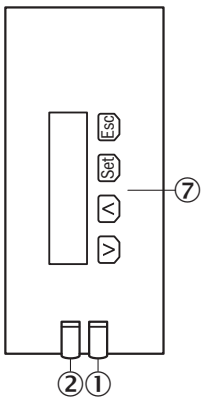


Connection diagram



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

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
device protection and care			
	• **Description:** Cooling plate for Dx50/Dx50-2/DT20 (for water cooling) • **Usable for:** DT20 Hi, Dx50, Dx50-2	BEF-KP-Dx50/DT20	2055755

	Brief description	Type	part no.
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:** Uncontaminated zones, Zones with chemicals	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:** Uncontaminated zones, Zones with chemicals	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:** Uncontaminated zones, Zones with chemicals	YF2A15-030VB5XLEAX	2145572

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.

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