ONLINE DATA SHEET
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Short range distance sensors (displacement)
DT20 Hi

DT20-N244B

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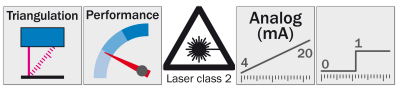
Model Name > DT20-N244B
Part No. > 1040713

At a glance

- Four measuring ranges from 50 mm up to 1,000 mm
- Very high linearity of up to ± 0.5 mm
- CMOS receiving element enables accurate distance measurement independent of color or shininess
- Red laser
- Scaleable analog and switching output
- Display with easy to use setup menu
- Advanced settings (e.g., averaging function, external laser-off, etc.)

Your benefits

- Reliable, precise measurement, independent of surface, increases production quality
- Reliable and consistent measurements, regardless of color, reduce changeover time
- Advanced settings provide increased application flexibility to easily solve customer-specific applications
- Fast commissioning via button, remote or numerical teach
- Easy, precise alignment and verification based on red laser light and LC display, decreasing commissioning time
- Tough metal housing permits operation in harsh environments



Performance

Measuring range:	100 mm ... 300 mm, 6 % ... 90 % remission
Resolution:	0.2 mm [1)]
Repeatability:::	1 mm/0.5 mm/0.25 mm [2) 3) 4)]
Linearity::	± 1 mm [5) 6)]
Response time [7)]:	2,5 ms/10 ms/40 ms
Measuring frequency:	400 Hz
Light source:	Laser, red
Laser protection class:	2 (EN 60825-1)
Typ. light spot size (distance):	3 mm x 6 mm (300 mm)
Additional function:	Switch-off display, Invertible analog output, Teach-in of analog output, Teach-in of switching output, Set moving average fast/medium/slow, Multifunctional input: laser off, external teach-in, deactivated, Inverted switching output, Switching mode Distance to object (DtO), Lock user interface
Output rate:	< 2.8 ms

[1] [2] 6 % ... 90 % remission [3] [7] Dependent on the set average: fast/medium/slow [4] [6] When calibrated in the application regularly [5] 90 % remision

Interfaces

Multifunctional input [1]:	1 x MF
Output type [2]:	1 x NPN (100 mA)
Analog output:	1 x 4 mA ... 20 mA (≤ 300 Ω)
Resolution analog output:	12 bit

[1] MF can be used as laser-off, external teach-in or deactivated [2] PNP: HIGH = V_S - (< 2 V)/LOW = < 2 V; NPN: HIGH = < 2 V/LOW = V_S

Mechanics/electronics

Connection type:	Connector M12, 5-pin
Supply voltage Vs [1]:	DC 10 V ... 30 V
Power consumption [2]:	≤ 1.8 W
Warm-up time:	≤ 10 min
Indication:	2 x LED, LC display
Weight:	135 g
Housing material:	Metal housing with PMMA lens
Ripple:	≤ 5 Vpp [3]

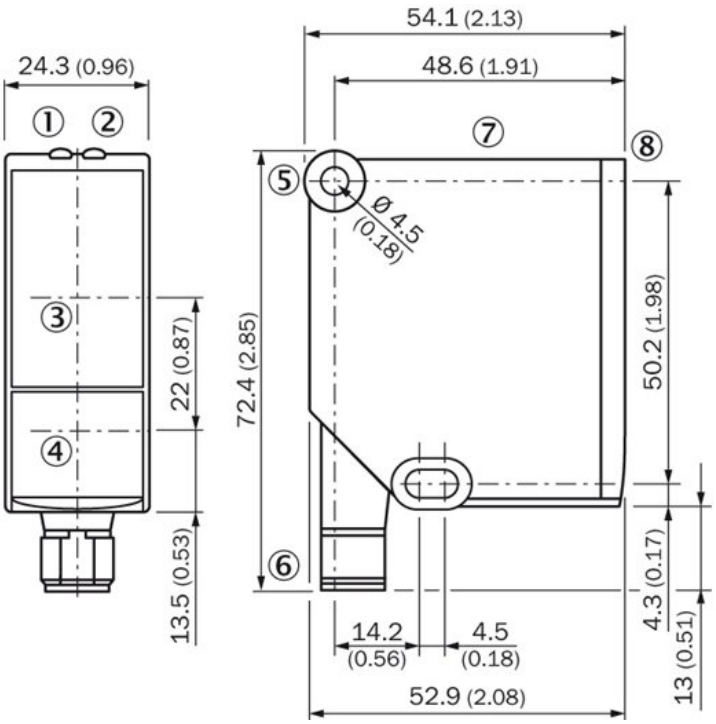
[1] Limit values, reverse-polarity protected, operation in short-circuit protected network, max. 8 A [2] Without load [3] May not fall short of or exceed V_S tolerances

Ambient data

Enclosure rating:	IP 65
Protection class:	II
Ambient temperature:	Operation: -20 ... 55 °C, Storage: -40 ... 60 °C [1]
Temperature drift:	0.25 mm/K [2]
Typ. ambient light safety:	Artificial light: ≤ 3,000 lx Sunlight: ≤ 10,000 lx
Vibration resistance:	EN 60068-2-6/-2-64
Shock resistance:	EN 60068-2-27

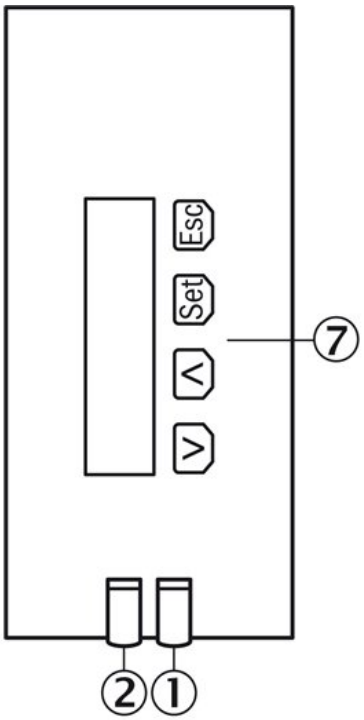
[1] Operating temperature at V_S = 24 V [2] 0,5 mm/K: for distances > 600 mm

Dimensional drawing



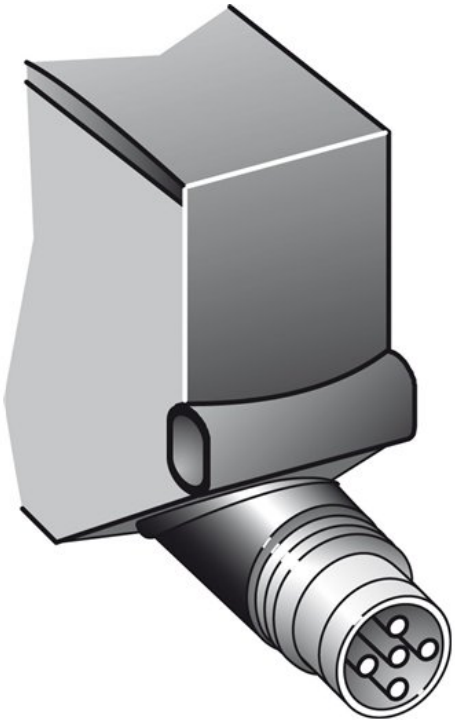
|1| Status indicator power on (green)
|2| Status indicator switching output (orange)
|3| Optical axis, receiver
|4| Optical axis, sender
|5| Mounting hole
|6| Connector M12, 5-pin
|7| Operating keys and display
|8| Reference surface = 0 mm

Adjustments

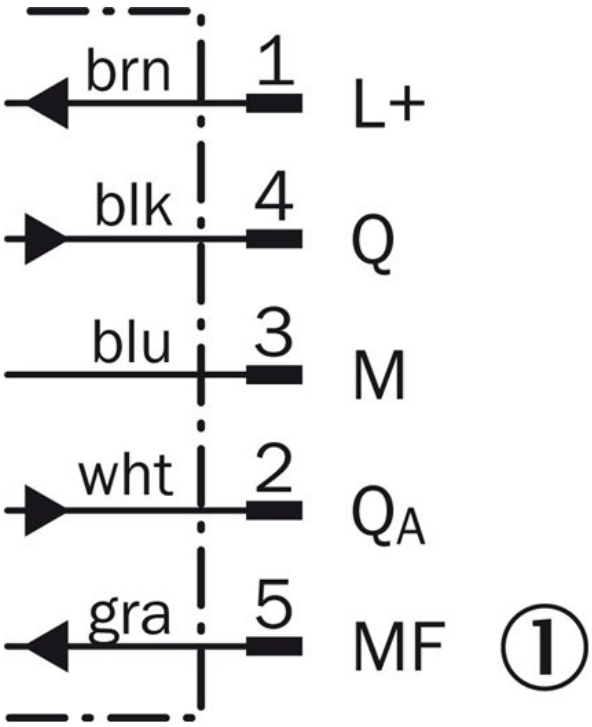


|1| Status indicator power on (green)
|2| Status indicator switching output (orange)
|7| Operating keys and display

Connection type



Connection diagram



|1| Multifunctional input

Einstellung der Tastensperre

Measurement range	Mode	Response time *)	Reproducibility
50 mm ... 150 mm	Fast	2.5 ms	± 0.5 mm
	Medium	10 ms	± 0.25 mm
	Slow	40 ms	± 0.13 mm
100 mm ... 300 mm	Fast	2.5 ms	± 1 mm
	Medium	10 ms	± 0.5 mm
	Slow	40 ms	± 0.25 mm
100 mm ... 600 mm	Fast	2.5 ms	± 2 mm
	Medium	10 ms	± 1 mm
	Slow	40 ms	± 0.5 mm
100 mm ... 1,000 mm	Fast	2.5 ms	± 5 mm
	Medium	10 ms	± 2.5 mm
	Slow	40 ms	± 1.25 mm

*) Continuous change of distance to object within measurement range.

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