



Short range distance sensors (displacement) DT20 Hi

DT20-P254B



Model Name > **DT20-P254B**
Part No. > **1041278**



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

Measurement range:	50 mm ... 150 mm, 6 % ... 90 % remission
Resolution ¹⁾ :	0.1 mm
Repeatability ^{2), 3), 4)} :	0.5 mm/0.25 mm/0.125 mm
Linearity ^{5), 6)} :	± 0.5 mm
Response time ⁷⁾ :	2,5 ms/10 ms/40 ms
Measuring frequency:	400 Hz
Light source:	Laser, red
Typ. light spot size (distance):	2 mm x 4 mm (150 mm)
Additional function:	Switch-off display, Teach-in of analog output, Teach-in of switching output, Set moving average fast/medium/slow, Invertible analog output, Switching output invertible, Multifunctional input: laser off/external teach-in/deactivated, Switching mode: distance to object (DtO), Lock user interface
Laser class:	2 (EN 60825-1)
Output time:	< 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 % remission

Interfaces

Output type ¹⁾ :	1 x PNP (100 mA)
Analog output:	1 x 4 mA ... 20 mA ($\leq 300 \Omega$)
Resolution analog output:	12 bit
Multifunctional input (MF) ²⁾ :	1 x MF

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

Mechanics/electronics

Connection type:	Male connector, M12, 5-pin
Supply voltage V_S ¹⁾ :	DC 10 V ... 30 V
Power consumption ²⁾ :	$\leq 1.8 W$
Warm-up time:	$\leq 10 \text{ min}$
Indication:	2 x LED, LC display
Weight:	135 g
Housing material:	Metal housing with PMMA lens
Ripple:	$\leq 5 V_{pp}$ ³⁾

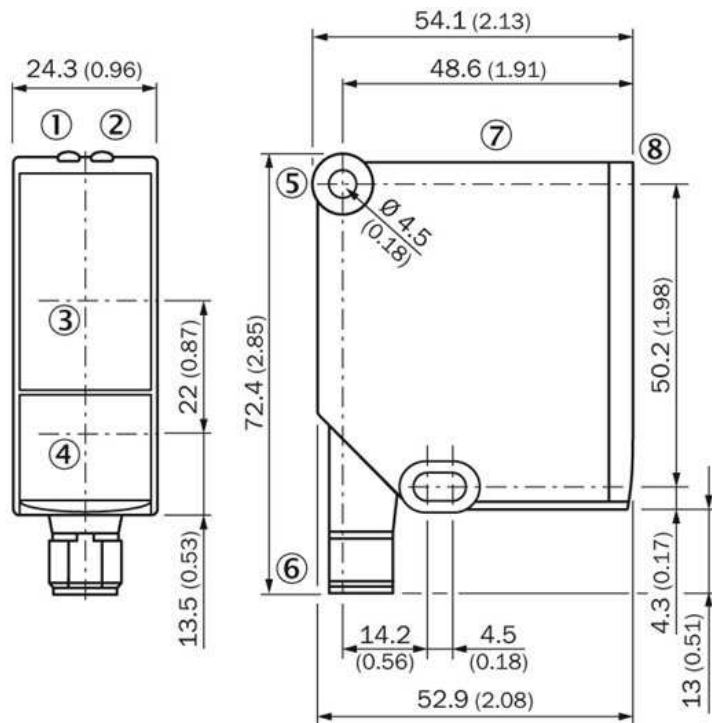
¹⁾ Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A ²⁾ Without load ³⁾ May not fall short of or exceed V_S tolerances

Ambient data

Enclosure rating:	IP 65
Protection class:	II
Ambient temperature:	Operation: $-20 \dots +55 \text{ }^\circ\text{C}$, Storage: $-40 \dots +60 \text{ }^\circ\text{C}$ ¹⁾
Temperature drift ²⁾ :	0.25 mm/K
Vibration resistance:	EN 60068-2-6/EN 60068-2-64
Shock resistance:	EN 60068-2-27
Typ. ambient light safety:	Artificial light: $\leq 3,000 \text{ lx}$, Sunlight: $\leq 10,000 \text{ lx}$

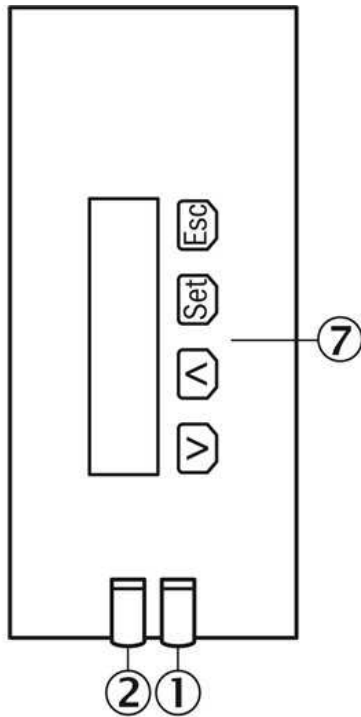
¹⁾ Operating temperature at $V_S = 24 V$ ²⁾ 0,5 mm/K: for distances $> 600 \text{ mm}$

Dimensional drawing



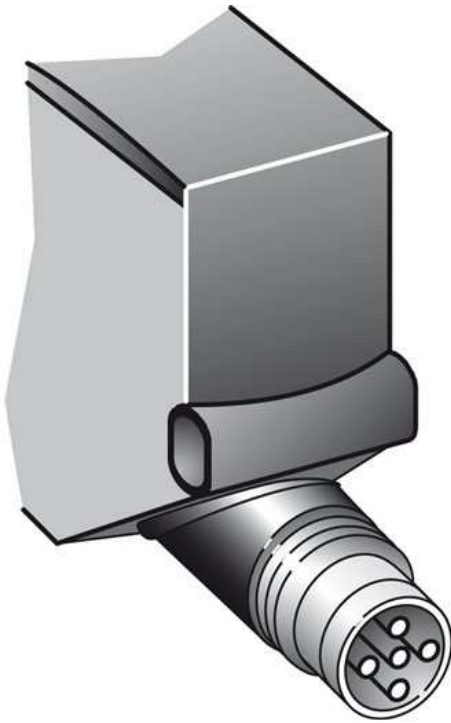
- |1| Status indicator power on (green)
- |2| Status indicator switching output (orange)
- |3| Optical axis, receiver
- |4| Optical axis, sender
- |5| Mounting hole
- |6| Connector M12, 5-pin, turnable
- |7| Operating keys and display
- |8| Reference surface = 0 mm

Adjustments

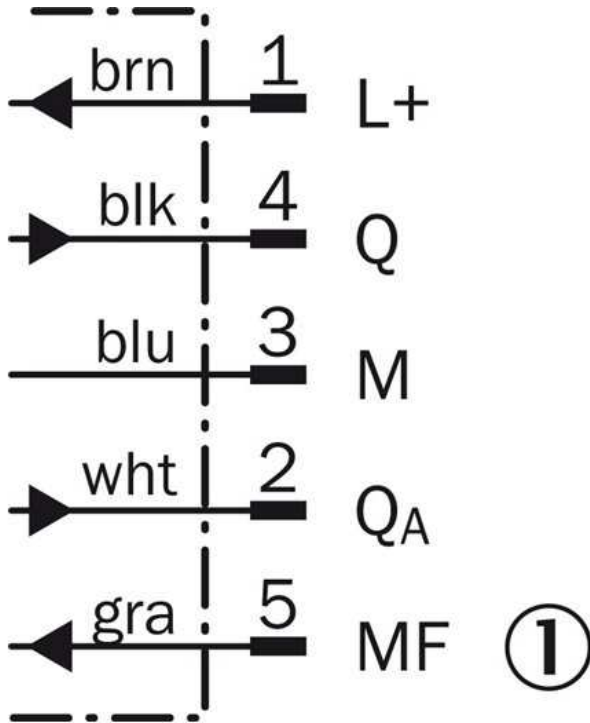


- |1| Status indicator power on (green)
- |2| Status indicator switching output (orange)
- |7| Operating keys and display

Connection type



Connection diagram



[1] Multifunctional input (MF)

Australia

Phone +61 3 9457 0600
1800 33 48 02 – tollfree
E-Mail sales@sick.com.au

Belgium/Luxembourg

Phone +32 (0)2 466 55 66
E-Mail info@sick.be

Brasil

Phone +55 11 3215-4900
E-Mail marketing@sick.com.br

Canada

Phone +1 905 771 14 44
E-Mail information@sick.com

Česká republika

Phone +420 2 57 91 18 50
E-Mail sick@sick.cz

China

Phone +86 4000 121 000
E-Mail info.china@sick.net.cn
Phone +852-2153 6300
E-Mail ghk@sick.com.hk

Danmark

Phone +45 45 82 64 00
E-Mail sick@sick.dk

Deutschland

Phone +49 211 5301-301
E-Mail info@sick.de

España

Phone +34 93 480 31 00
E-Mail info@sick.es

France

Phone +33 1 64 62 35 00
E-Mail info@sick.fr

Great Britain

Phone +44 (0)1727 831121
E-Mail info@sick.co.uk

India

Phone +91-22-4033 8333
E-Mail info@sick-india.com

Israel

Phone +972-4-6881000
E-Mail info@sick-sensors.com

Italia

Phone +39 02 27 43 41
E-Mail info@sick.it

Japan

Phone +81 (0)3 5309 2112
E-Mail support@sick.jp

Magyarország

Phone +36 1 371 2680
E-Mail office@sick.hu

Nederland

Phone +31 (0)30 229 25 44
E-Mail info@sick.nl

Norge

Phone +47 67 81 50 00
E-Mail sick@sick.no

Österreich

Phone +43 (0)22 36 62 28 8-0
E-Mail office@sick.at

Polska

Phone +48 22 837 40 50
E-Mail info@sick.pl

România

Phone +40 356 171 120
E-Mail office@sick.ro

Russia

Phone +7-495-775-05-30
E-Mail info@sick.ru

Schweiz

Phone +41 41 619 29 39
E-Mail contact@sick.ch

Singapore

Phone +65 6744 3732
E-Mail sales.gsg@sick.com

Slovenija

Phone +386 (0)1-47 69 990
E-Mail office@sick.si

South Africa

Phone +27 11 472 3733
E-Mail info@sickautomation.co.za

South Korea

Phone +82 2 786 6321/4
E-Mail info@sickkorea.net

Suomi

Phone +358-9-25 15 800
E-Mail sick@sick.fi

Sverige

Phone +46 10 110 10 00
E-Mail info@sick.se

Taiwan

Phone +886 2 2375-6288
E-Mail sales@sick.com.tw

Türkiye

Phone +90 (216) 528 50 00
E-Mail info@sick.com.tr

United Arab Emirates

Phone +971 (0) 4 88 65 878
E-Mail info@sick.ae

USA/México

Phone +1(952) 941-6780
1 (800) 325-7425 – tollfree
E-Mail info@sickusa.com

More representatives and agencies
at www.sick.com