



Short range distance sensors (displacement) DT20

DT20-P130B2535



Model Name > [DT20-P130B2535](#)
Part No. > [1028721](#)



At a glance

- Different measuring ranges from 90 mm ... 1,000 mm
- Repeatability up to ± 1.5 mm
- Infrared sender, which is not visible to the human eye
- Analog and switching output provide distance and out of range information
- Plug and play sensor that is factory-programmed based on customer specifications
- High output rate - distance outputs are provided every millisecond
- Rugged, metal housing

Your benefits

- Fast, easy commissioning based on customer-specific presets saves time
- Tamper-proof sensor concept ensures high machine availability
- Inconspicuous and therefore non distracting by use of infrared light
- High ambient light immunity increases machine availability
- Solid, IP 67-rated metal housing permits operation in harsh environments, making the sensor suitable for a wide range of applications



Performance

Measuring range:	250 mm ... 350 mm, 18 % ... 90 % remission. On 6 % remission the maximal measurable distance is 820 mm.
Resolution:	1 mm/2 mm ¹⁾
Repeatability:	± 1.5 mm/ ± 3 mm ²⁾
Response time ³⁾ :	10 ms/15 ms
Light source:	LED, infrared
Typ. light spot size (distance):	15 mm x 15 mm (at 1 m)
Additional function:	Customer specific scaled measuring range, Plug & Play, Switching output to monitor the measuring range
Output rate:	1 ms
Accuracy:	± 4 mm ^{4) 5)}
Service life:	100,000 h

^{1) 3)} Depending on measurement range: 90 ... 600 mm / > 600 mm. ²⁾ 18 % ... 90 % remission. On 6 % remission the maximal measurable distance is 820 mm. ⁴⁾ 6 % ... 90 % remission ⁵⁾ ± 4 mm u to 600 mm; $\leq \pm 7$ mm for distances larger < 600 mm; refer to accuracy diagram

Interfaces

Output type ¹⁾ :	1 x PNP (100 mA)
Analog output:	1 x 4 mA ... 20 mA ($\leq 300 \Omega$)

1) PNP: HIGH = $V_S - (< 2 V)$ / LOW = 0 V

Mechanics/electronics

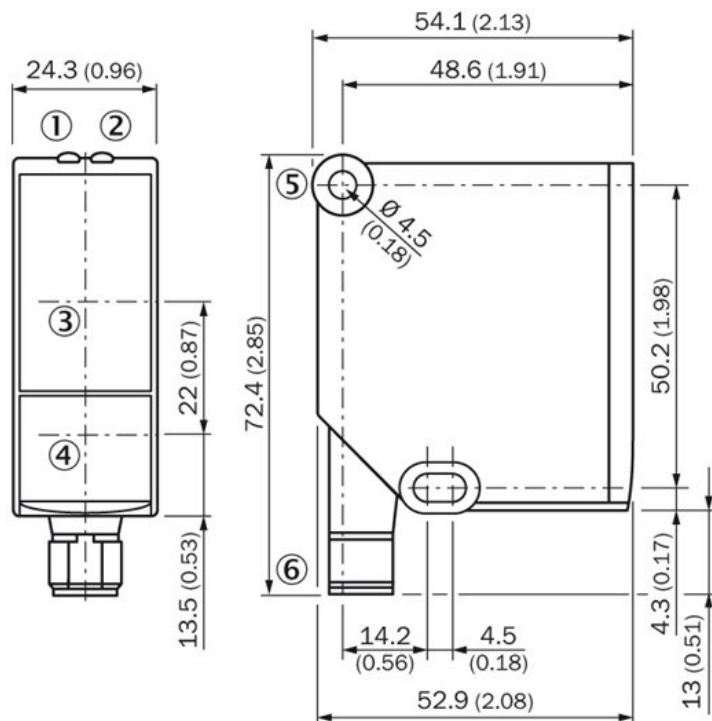
Connection type:	Connector M12, 5-pin
Supply voltage V_S ¹⁾ :	DC 10 V ... 30 V
Power consumption ²⁾ :	$\leq 1.5 W$
Warm-up time:	$\leq 30 \text{ min}$
Indication:	2 x LED
Weight:	135 g
Housing material:	Metal housing with PMMA lens
Initialization time:	$\leq 250 \text{ ms}$
Ripple:	$\leq 5 V_{pp}$ ³⁾

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

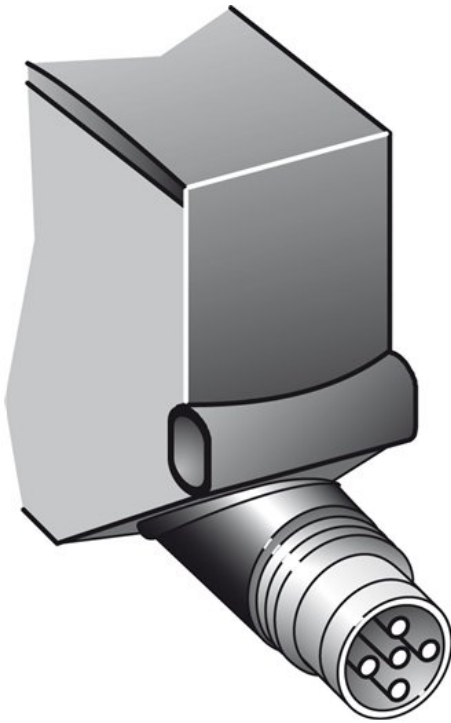
Enclosure rating:	IP 65
Protection class:	II
Ambient temperature:	Operation: -25 ... 55 °C, Storage: -40 ... 75 °C
Temperature drift:	0.25 mm/K
Vibration resistance:	EN 60068-2-6 / -2-64
Shock resistance:	EN 60068-2-27

Dimensional drawing

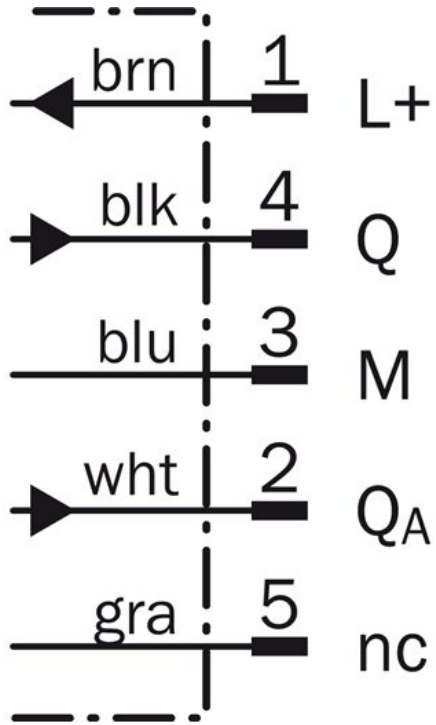


- [1] Status indicator power on (green)
- [2] Status indicator switching output (orange)
- [3] Optical axis, receiver
- [4] Optical axis, sender
- [5] Mounting hole
- [6] Connector M12, 5-pin

Connection type



Connection diagram



Einstellung der Tastensperre

The DT20 can be scaled ex factory for specific measurement ranges based on the type code.

The type code is: „DT20-X130Xbbe“. The „bbe“ part defines the measurement range as follows:

bb (begin) $\hat{=}$ distance value chosen by the customer for 4 mA output. The „bb“ value is in cm.

ee (end) $\hat{=}$ distance value chosen by the customer for 20 mA output. The „ee“ value is in cm.

Measurement ranges

-90 mm ... 600 mm, any configuration within this range can be chosen. (e.g. 0919, 4060, etc.).

-100 mm ... 1000 mm, any configuration within this range can be chosen. (e.g. 1070, 7000, etc.).

Examples

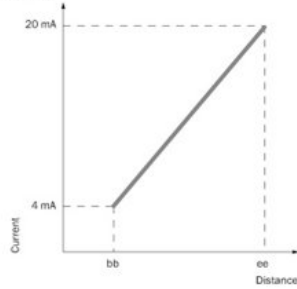
bbee $\hat{=}$ 0960 $\hat{=}$ measurement range of sensor: 90 mm ... 600 mm with 4 mA output at 9 cm and 20 mA output at 60 cm.

bbee $\hat{=}$ 7020 $\hat{=}$ measurement range of sensor: 700 mm ... 200 mm (inverted measurement range).

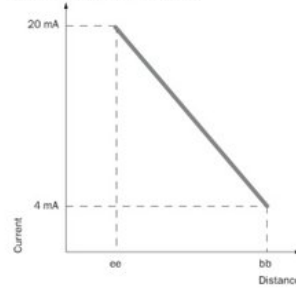
Be aware: ee/bb $\hat{=}$ 00 $\hat{=}$ 100 cm. (E.g.: bbee = 1000 $\hat{=}$ measurement range of 100 mm ... 1000 mm).

Model name	Description
DT20-P130B1000	DT20, switching output PNP, measurement range 100 mm ... 1.000 mm (4 mA ... 20 mA)
DT20-N130B0990	DT20, switching output NPN, measurement range 90 mm ... 900 mm (4 mA ... 20 mA)
DT20-P130B0009	DT20, switching output PNP, measurement range (inverted measuring area) 600 mm ... 90 mm (4 mA ... 20 mA)

ee > bb



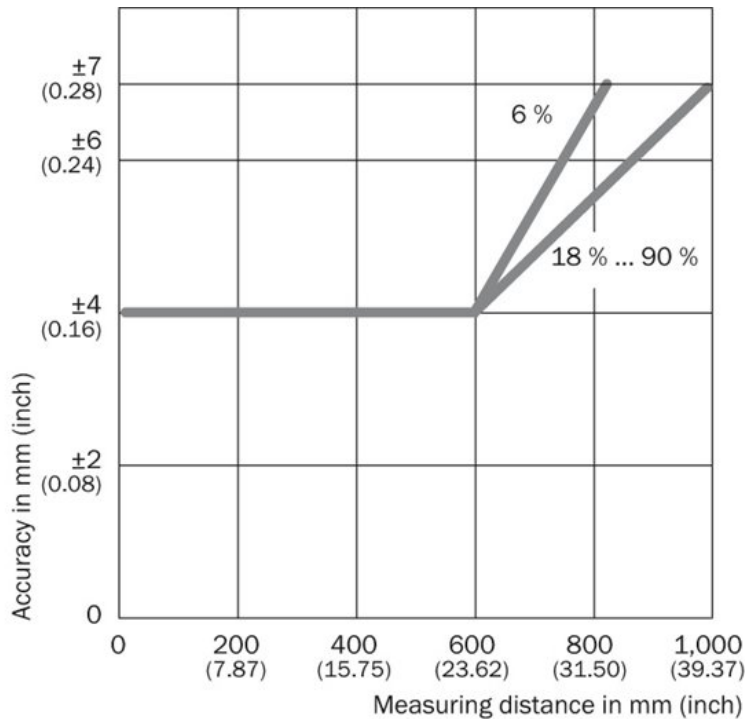
bb > ee (inverted measuring area)



Please be aware:

There is a minimum difference between „bb“ and „ee“ of at least 10 units (100 mm). (e.g. bb $\hat{=}$ 09 \rightarrow min. ee $\hat{=}$ 19)

Characteristic curve: accuracy



Australia

Phone +61 3 9457 0600
1800 334 802 – 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 sac@sick.com.br

Canada

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

Ceská 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 kundenservice@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 +972-4-6801000
E-Mail info@sick-sensors.com

Italia

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

Japan

Phone +81 (0)3 3358 1341
E-Mail support@sick.jp

Magyarország

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

Nederlands

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

Norge

Phone +47 67 81 50 00
E-Mail austefjord@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 admin@sicksgp.com.sg

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 8865 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