



Short range distance sensors (displacement) DT20

DT20-P130B2545



Model Name > [DT20-P130B2545](#)
Part No. > [1028724](#)



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

Measurement range:	250 mm ... 450 mm, 18 % ... 90 % remission ¹⁾
Resolution ²⁾ :	1 mm/2 mm
Repeatability ³⁾ :	± 1.5 mm/ ± 3 mm
Response time ⁴⁾ :	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
Accuracy::	± 4 mm ^{5) 6)}
Laser service life (MTTF at 25 °C):	100,000 h
Output time:	1 ms

¹⁾ On 6 % remission the maximal measurable distance is 820 mm ^{2) 4)} Depending on measurement range: 90 ... 600 mm/> 600 mm. ³⁾ 18 % ... 90 % remission ^{5) 6)} % ... 90 % remission ⁶⁾ ± 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

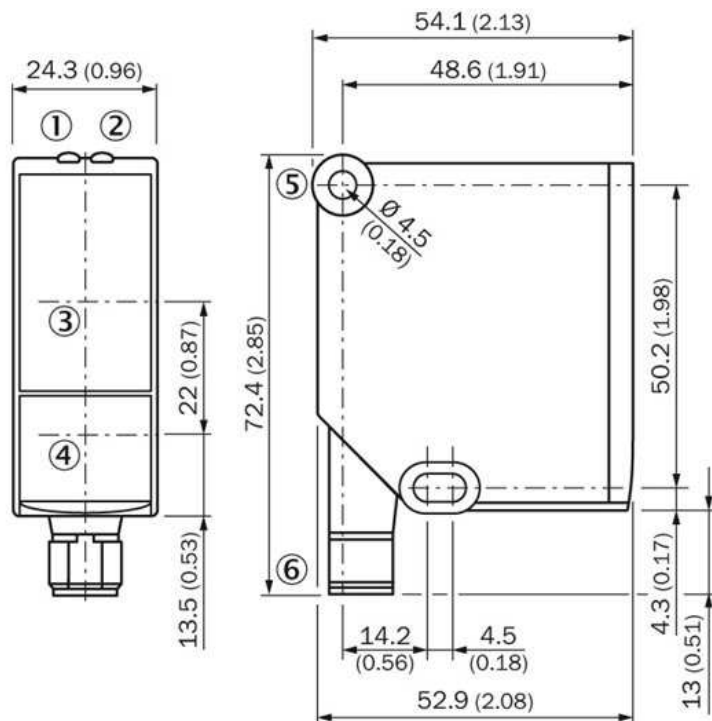
Connection type:	Male connector, M12, 5-pin
Supply voltage V_S ¹⁾ :	DC 10 V ... 30 V
Power consumption ²⁾ :	$\leq 1.5 W$
Warm-up time:	$\leq 30 \text{ min}$
Indication:	2 x LED
Weight:	135 g
Housing material:	Metal housing with PMMA lens
Initialization time:	$\leq 250 \text{ ms}$
Ripple:	$\leq 5 V_{pp}$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

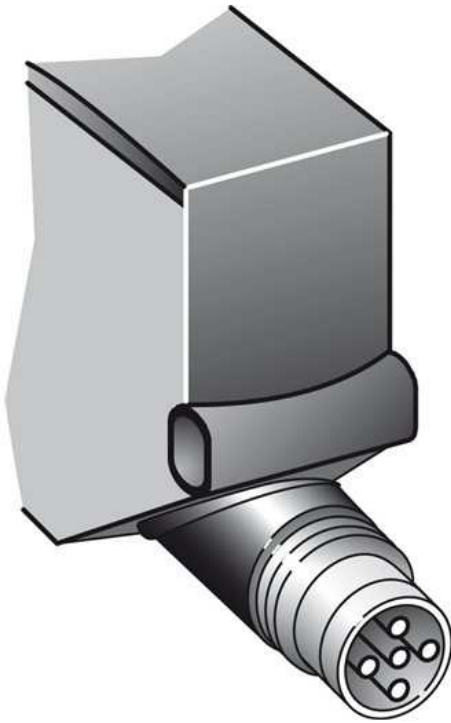
Enclosure rating:	IP 65
Protection class:	II
Ambient temperature:	Operation: -25 ... +55 °C, Storage: -40 ... +75 °C
Temperature drift:	0.25 mm/K
Vibration resistance:	EN 60068-2-6 / EN 60068-2-64
Shock resistance:	EN 60068-2-27

Dimensional drawing

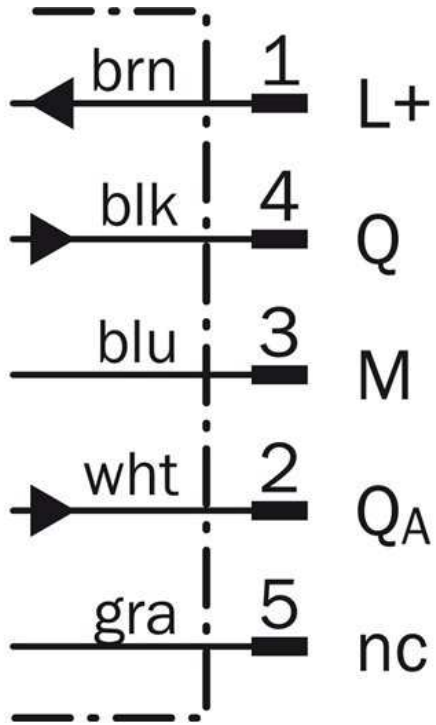


- [1] Status indicator power on (green)
- [2] Status indicator switching output (orange)
- [3] Optical axis, receiver
- [4] Optical axis, sender
- [5] Mounting hole
- [6] connector M12, 5-pin

Connection type



Connection diagram



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