



Short range distance sensors (displacement) DT10

DT10-N10B5

Model Name > [DT10-N10B5](#)
Part No. > [1027327](#)

At a glance

- Measuring range of 50 mm ... 500 mm
- Repeatability of ± 3 mm
- High output rate - distance outputs are provided every millisecond
- Visible red light
- Analog output with fixed scaling
- Switching output - simple one-button teach-in

Your benefits

- Compact sensor design and short stand-off make it ideal for applications with limited space
- Red light and pre-set analog output ensure easy alignment and fast commissioning
- Non-scalable, tamper-proof analog output increases machine uptime
- Low investment costs and good performance provide quick return on investment
- Fast measurement frequency and good repeatability help improve process control
- Analog and switching output make it possible to solve several applications at once, reducing investment costs



Performance

Measuring range:	50 mm ... 500 mm, 6 % remission 50 mm ... 500 mm, 90 % remission 50 mm ... 500 mm, 18 % remission
Resolution:	1.5 mm, 6 % ... 90 % remission
Repeatability:	3 mm ¹⁾
Response time:	20 ms
Light source:	LED, red
Typ. light spot size (distance):	20 mm x 20 mm (at 400 mm)
Additional function:	Switching output Q
Output rate:	1 ms
Accuracy:	± 3 mm ²⁾ ³⁾
Service life:	100,000 h

¹⁾ 90 % remission ²⁾ 6 % ... 90 % Remission = ± 3 mm ... 8 mm, at room temperature ³⁾ See accuracy diagram

Interfaces

Multifunctional input:	1 x NPN
Output type ¹⁾ :	1 x NPN (100 mA)
Analog output:	4 mA ... 20 mA ($\leq 200 \Omega$) ²⁾

¹⁾ PNP: HIGH = $V_s - (< 1 \text{ V})$, LOW $\leq 1 \text{ V}$. NPN: HIGH = $V_s - (< 1 \text{ V})$, LOW $\leq 1 \text{ V}$. ²⁾ At $U_s \geq 16 \text{ V}$ max. load $< 500 \Omega$

Mechanics/electronics

Connection type:	Connector M12, 5-pin
Supply voltage V_s ¹⁾ :	DC 10 V ... 30 V
Power consumption ²⁾ :	$\leq 1.2 \text{ W}$
Warm-up time:	$\leq 30 \text{ min}$
Indication:	2 x LED
Weight:	40 g
Housing material:	Plastic
Initialization time:	$\leq 650 \text{ ms}$
Ripple:	$\leq 5 \text{ Vpp}$ ³⁾

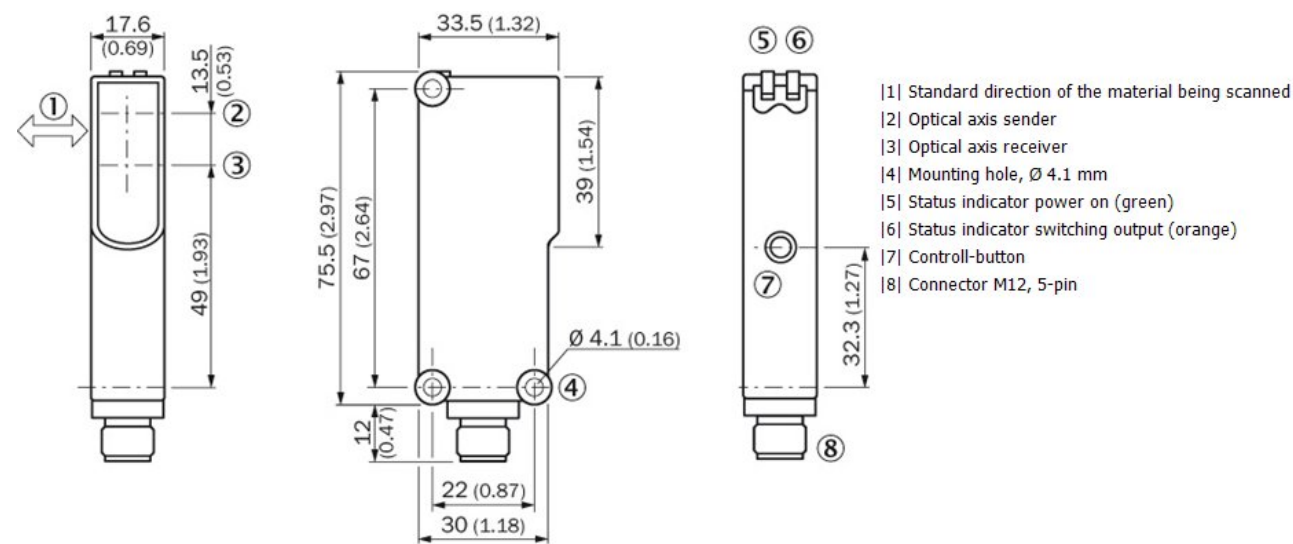
¹⁾ Limit values, reverse-polarity protected, operation in short-circuit protected network, max. 8 A ²⁾ Without load ³⁾ May not fall short of or exceed V_s tolerances

Ambient data

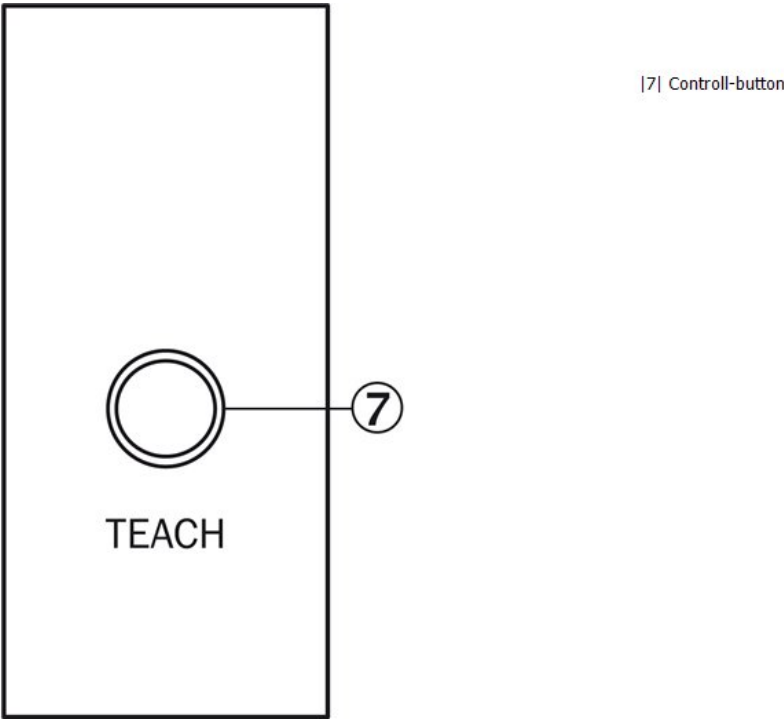
Enclosure rating:	IP 67
Protection class:	II ¹⁾
Ambient temperature:	Operation: $-25 \dots 50 \text{ }^\circ\text{C}$, Storage: $-40 \dots 75 \text{ }^\circ\text{C}$
Temperature drift:	1 mm/K
Vibration resistance:	EN 60068-2-6/-2-64
Shock resistance:	EN 60068-2-27

¹⁾ Reference voltage DC 50 V

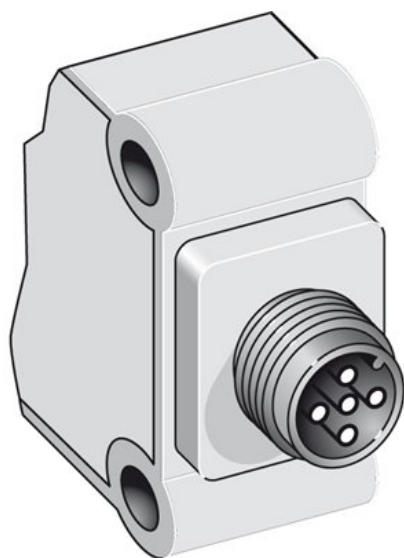
Dimensional drawing



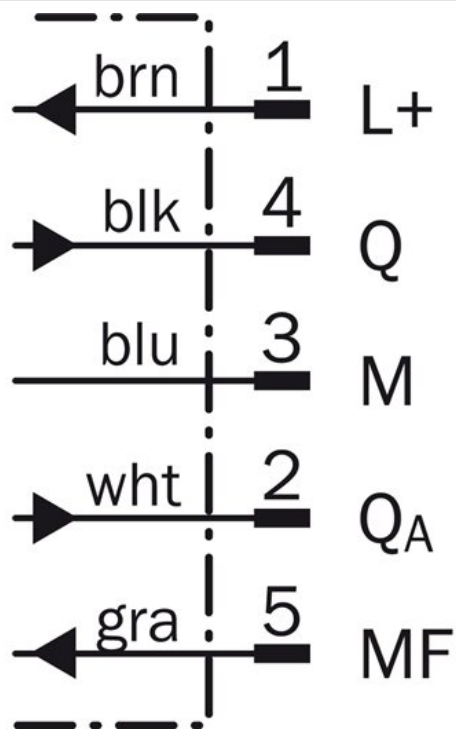
Adjustments



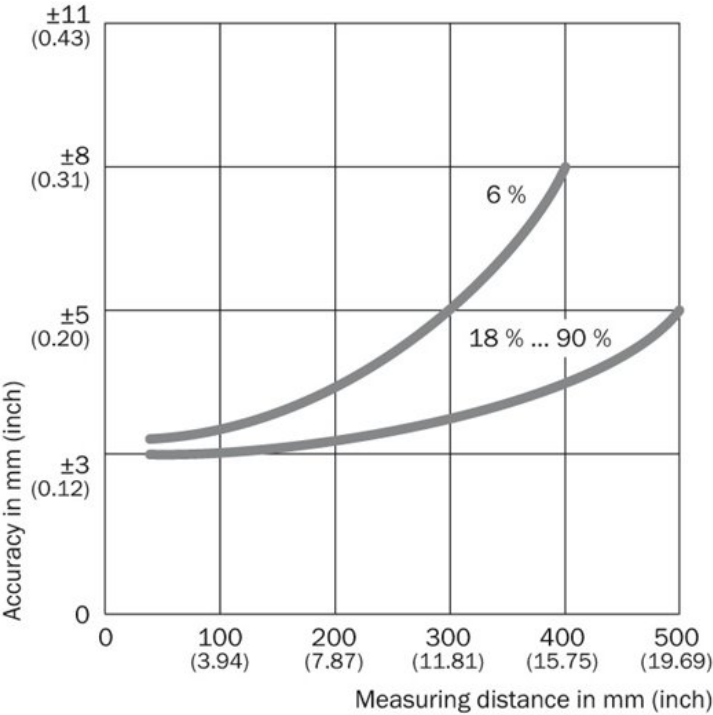
Connection type



Connection diagram



Characteristic curve: accuracy



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