



Mid range distance sensors Dx50, DT50 Hi

DT50-N2123



Model Name > [DT50-N2123](#)
Part No. > [1047400](#)



At a glance

- HDDM™ technology provides the best reliability, safety to ambient light and price/performance ratio
- Most compact sensor offering up to 20 m range directly on the object
- Amazing repeatability up to 1 mm
- Very fast measurement and output rate with 500 Hz
- Analog output with 4 mA ... 20 mA and one switching output
- Red laser light for precise alignment
- Tough metal housing with LC display

Your benefits

- Improved production quality based on high precision and small black/white shift of the measurement
- The fast measurement frequency increases the production throughput
- Thanks to its compact housing size, the DT50 Hi offers precise measurement in applications with limited space
- Red light and an optional alignment bracket reduces installation time
- Intuitive setup via display or remote teach reduces installation time and costs
- Immune to any type of ambient light - allows for use in optically challenging environments
- Widest temperature range allows for outdoor use without additional cooling or heating accessories
- Metal housing withstands harsh environments, saving replacement costs



Performance

Measuring range:	200 mm ... 13,000 mm, 90 % remission 200 mm ... 3,400 mm, 6 % remission 200 mm ... 5,800 mm, 18 % remission
Resolution:	1 mm
Repeatability ^{1): 2): 3):}	3 mm/2 mm/1 mm
Accuracy ^{4):}	± 7 mm
Response time ^{5): 6):}	15 ms/30 ms/80 ms
Output rate ^{7):}	2 ms
Light source:	Laser, red
Laser protection class ^{8):}	1 (EN 60825-1)
Typ. light spot size (distance):	15 mm x 15 mm (10 m)

Additional function:

Switch-off display
Teach-in of analog output
Invertible analog output
Teach-in of switching output
Inverted switching output
Set moving average fast/medium/slow
Set hysteresis
Scaling of analog outputs
Set levels of switching outputs
Lock user interface
Reset to factory default
Multifunctional input: laser off/external teach/inactive
Switching mode Distance to object (DtO)

Service life laser (MTTF at 25 °C): 100,000 h

- 1) Equivalent to 1 σ 2) 6 % ... 90 % remission 3) 5) Dependent on the set average: fast/medium/slow 4) 90 % remission 6) Lateral entry of object into measuring range
7) Continuous change of distance in measuring range 8) Wavelength: 658 nm; max. output: 120 mW; pulse duration: 2.5 ns; pulse repetition rate: 1/400

Interfaces

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

Resolution analog output: 16 bit

Output type:: 1 x NPN (100 mA) 1) 2) 3)

Multifunctional input 4) 5): 1 x NPN

Hysteresis: 10 mm ... 1,000 mm

- 1) Output Q short-circuit protected 2) 3) NPN: HIGH = $< 2.5 \text{ V}$ / LOW = V_S 4) Response time $\leq 15 \text{ ms}$ 5) NPN: HIGH = $\leq 2.5 \text{ V}$ / LOW = V_S

Mechanics/electronics

Supply voltage V_S 1): DC 10 V ... 30 V

Ripple 2): $\leq 5 \text{ Vpp}$

Power consumption 3): $\leq 2.1 \text{ W}$

Initialization time: $\leq 250 \text{ ms}$

Warm-up time: $\leq 15 \text{ min}$

Housing material: Die-cast zinc housing (ZNAL4CU1)
acrylic glass (PMMA)

Connection type: Connector M12, 5-pin

Indication: 2 x LED, LC display

Weight: 200 g

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

Ambient data

Enclosure rating: IP 65

Protection class: III

Ambient temperature: Operation: $-30 \dots 65 \text{ }^\circ\text{C}$, Storage: $-40 \dots 75 \text{ }^\circ\text{C}$

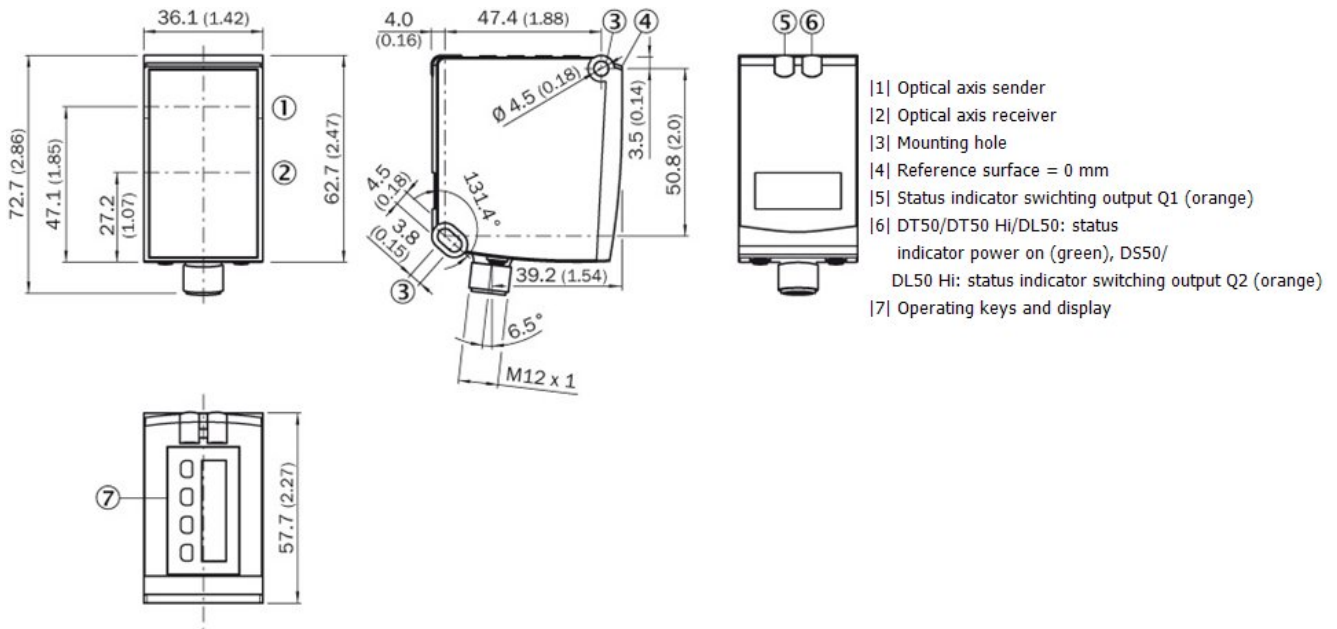
Max. rel. humidity (not condensing): $\leq 95 \%$

Vibration resistance: EN 60068-2-6/-2-64

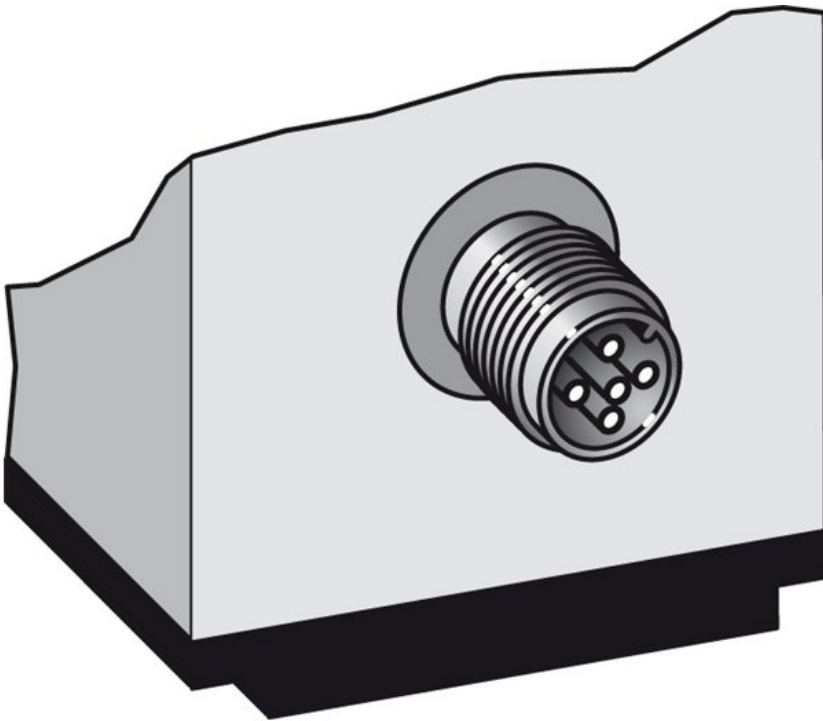
Shock resistance: EN 60068-2-27

Typ. ambient light safety: 40 klx

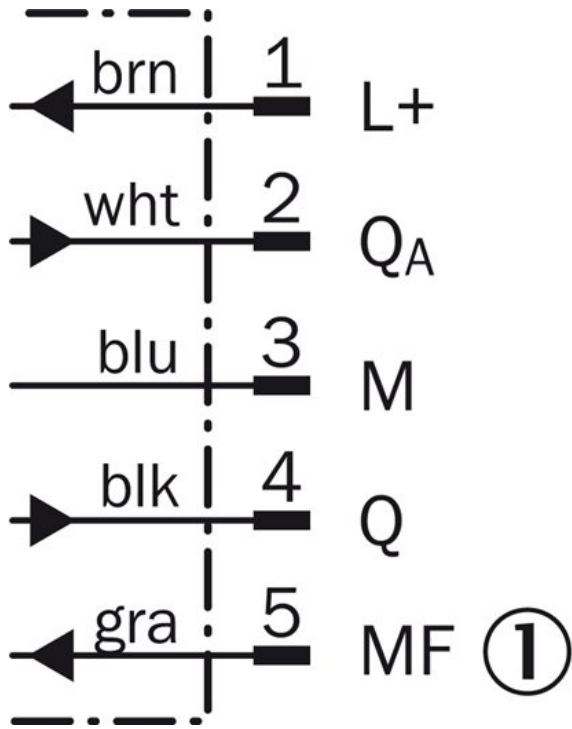
Dimensional drawing



Connection type



Connection diagram



[1] Multifunctional input

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