



## Mid range distance sensors Dx50, DT50 Hi

DT50-N2113



**Model Name** > **DT50-N2113**  
**Part No.** > **1047398**



#### 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 ... 20,000 mm, 90 % remission 200 mm ... 5,000 mm, 6 % remission 200 mm ... 8,500 mm, 18 % remission
Resolution:	1 mm
Repeatability <sup>1)</sup> ; <sup>2)</sup> ; <sup>3)</sup> :	3 mm/2 mm/1 mm
Accuracy <sup>4)</sup> :	± 7 mm
Response time <sup>5)</sup> ; <sup>6)</sup> :	15 ms/30 ms/80 ms
Output rate <sup>7)</sup> :	≥ 2 ms
Light source:	Laser, red
Typ. light spot size (distance):	15 mm x 15 mm (10 m)

Additional function:

Switch-off display  
Teach-in of analog output  
Teach-in of switching output  
Set moving average fast/medium/slow  
Set hysteresis  
Scaling of analog outputs  
Set levels of switching outputs  
Switching mode: distance to object (DtO)  
Lock user interface  
Reset to factory default  
Multifunctional input: laser off/external teach/inactive  
Invertible analog output  
Switching output invertible  
Laser class:  
2 (EN 60825-1)<sup>8)</sup>  
Laser service life (MTTF at 25 °C):  
100,000 h

- <sup>1)</sup> Equivalent to 1  $\sigma$  <sup>2)</sup> 6 % ... 90 % remission <sup>3) 5)</sup> Dependent on the set average: fast/medium/slow <sup>4)</sup> 90 % remission <sup>6)</sup> Lateral entry of object into measuring range  
<sup>7)</sup> Continuous change of distance in measuring range <sup>8)</sup> Wavelength: 658 nm; max. output: 180 mW; pulse duration: 5 ns; pulse repetition rate: 1/200

## Interfaces

Analog output: 1 x 4 mA ... 20 mA ( $\leq 300 \Omega$ )  
Resolution analog output: 16 bit  
Output type: 1 x NPN (100 mA) <sup>1) 2)</sup>  
Hysteresis: 10 mm ... 1,000 mm  
Multifunctional input (MF) <sup>3) 4)</sup>: 1 x

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

## Mechanics/electronics

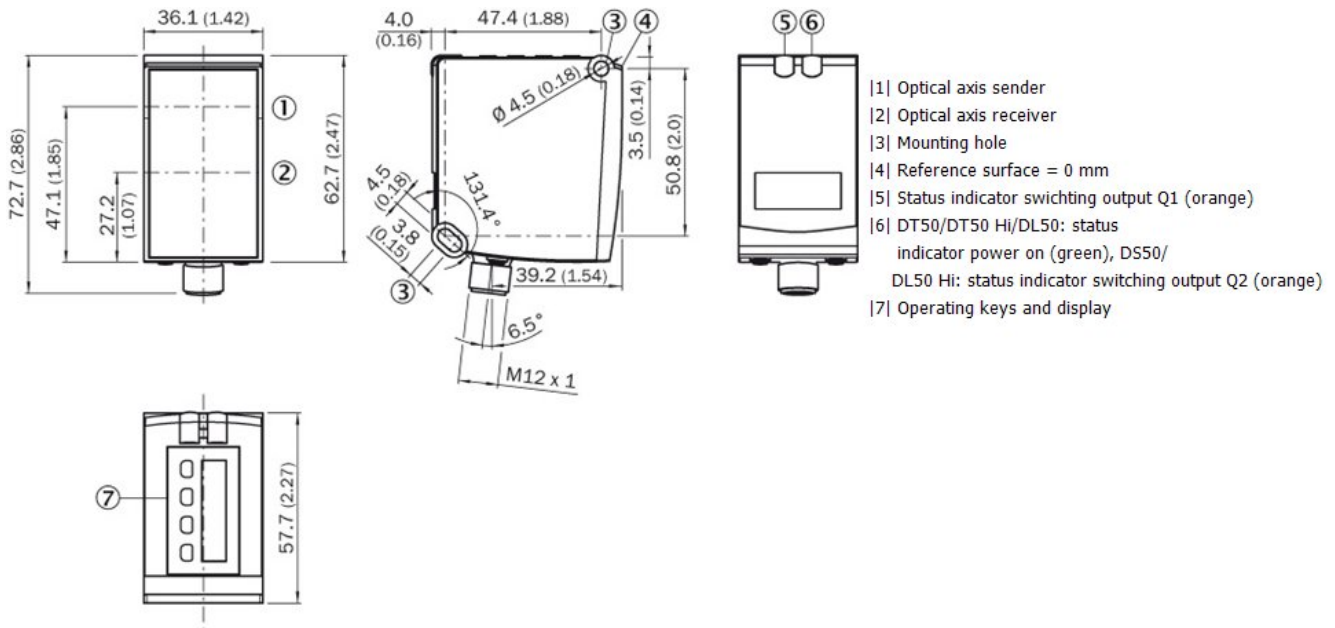
Supply voltage  $V_S$  <sup>1)</sup>: DC 10 V ... 30 V  
Ripple <sup>2)</sup>:  $\leq 5 \text{ Vpp}$   
Power consumption <sup>3)</sup>:  $\leq 2.1 \text{ W}$   
Initialization time:  $\leq 250 \text{ ms}$   
Warm-up time:  $\leq 15 \text{ min}$   
Housing material: Die-cast zinc housing (ZNAL4CU1)  
acrylic glass (PMMA)  
Connection type: Male connector, M12, 5-pin  
Indication: 2 x LED, LC display  
Weight: 200 g

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

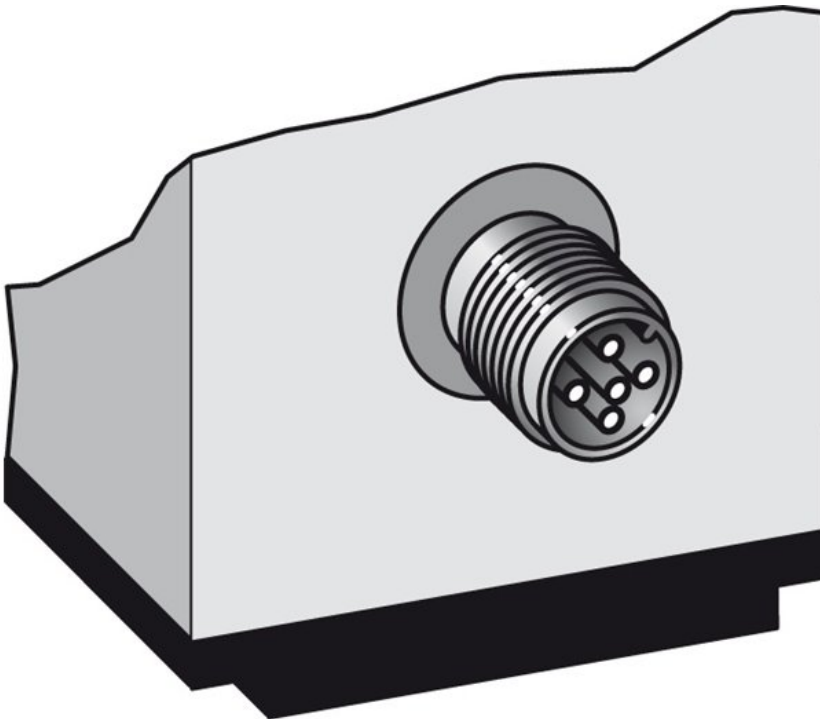
## Ambient data

Enclosure rating: IP 65  
Protection class: III  
Ambient temperature: Operation: -30 ... +65 °C, Storage: -40 ... +75 °C  
Max. rel. humidity (not condensing):  $\leq 95 \%$   
Vibration resistance: EN 60068-2-6/EN 60068-2-64  
Shock resistance: EN 60068-2-27  
Typ. ambient light safety: 40 klx

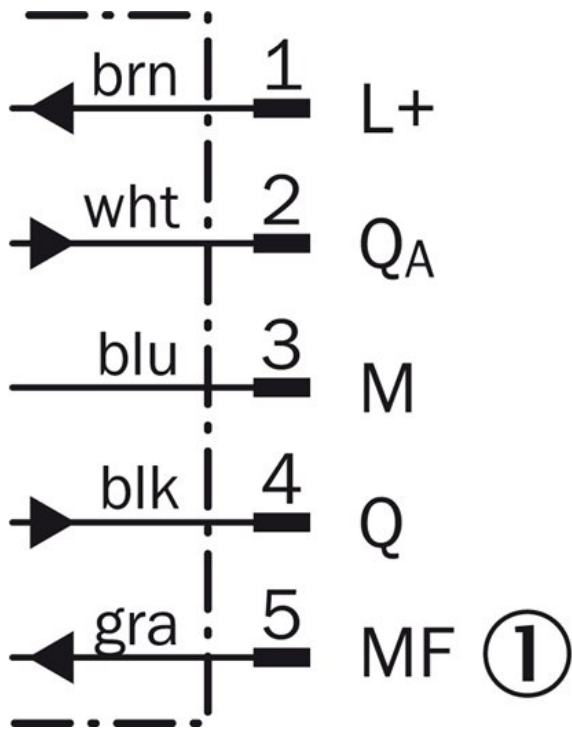
## Dimensional drawing



## Connection type



Connection diagram



[1] Multifunctional input (MF)

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