



Mid range distance sensors  
Dx50, DL50

DL50-N1123



**Model Name** > [DL50-N1123](#)  
**Part No.** > [1047401](#)

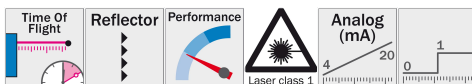


**At a glance**

- HDDM™ technology provides the best reliability, safety to ambient light and price/performance ratio
- Up to 50 m range on diamond grade reflector
- Very good repeatability for positioning tasks up to 2 mm
- Fast measurement and output rate with 250 Hz
- Analog output with 4 mA ... 20 mA and one switching output
- Red laser light for precise alignment
- Wide operating temperature range from -30 °C to +65 °C

**Your benefits**

- A wide measurement range, analog and switching output create an easy, fast and flexible solution for any positioning task
- Red light and an optional alignment bracket reduces installation time
- Intuitive setup via display or remote teach reduces installation time and costs
- Widest temperature range allows for outdoor use without additional cooling or heating accessories
- Immune to any type of ambient light - allows for use in optically challenging environments
- Metal housing withstands harsh environments, saving replacement costs
- Low investment costs and high performance guarantee quick return on investment
- Dx50 product family is based on a common platform, which offers multiple performance levels, making it easy to accommodate future changes



**Performance**

Measurement range <sup>1)</sup> :	200 mm ... 50,000 mm, on reflective tape "Diamond Grade"
Resolution:	1 mm
Repeatability <sup>2)</sup> , <sup>3)</sup> :	3 mm/2 mm
Accuracy:	± 7 mm
Response time <sup>4)</sup> , <sup>5)</sup> :	15 ms/30 ms
Light source:	Laser, red
Typ. light spot size (distance):	15 mm x 15 mm (10 m)

Additional function:	Switch-off display Set moving average: fast/slow Set hysteresis Switching mode: distance to object (DtO) Lock user interface Reset to factory default Teach-in, scaling and inversion of analog output Teach-in, scaling and inversion of switching output Multifunctional input: laser off/external teach/deactivated
Laser class:	1 (EN 60825-1) <sup>6)</sup>
Laser service life (MTTF at 25 °C):	100,000 h
Output time <sup>7)</sup> :	≥ 4 ms

<sup>1)</sup> On reflective tape "Diamond Grade" <sup>2)</sup> Equivalent to 1  $\sigma$  <sup>3) 4)</sup> Dependent on the set average: fast/slow <sup>5)</sup> Lateral entry of object into measuring range <sup>6)</sup>

Wavelength: 658 nm; max. output: 120 mW; pulse duration: 2.5 ns; pulse repetition rate: 1/400 <sup>7)</sup> Continuous change of distance in measuring range

## Interfaces

Analog output:	1 x 4 mA ... 20 mA ( $\leq 300 \Omega$ )
Resolution analog output:	16 bit
Output type <sup>1), 2)</sup> :	1 x NPN (100 mA)
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

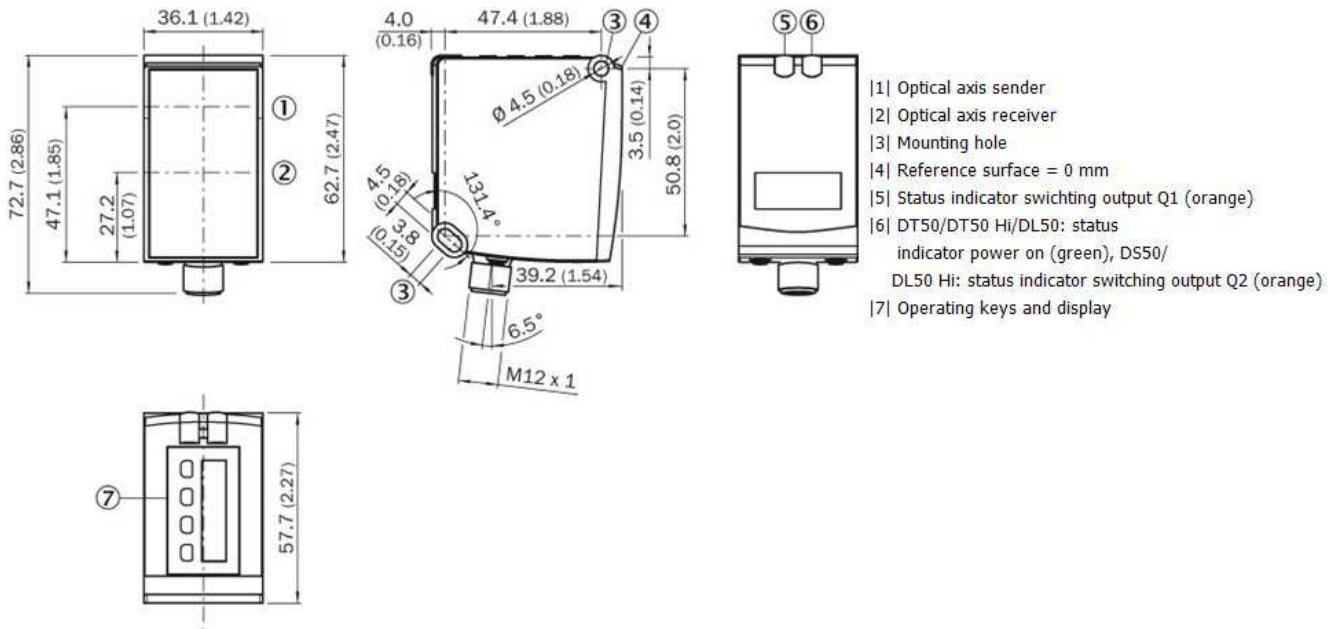
Supply voltage $V_S$ <sup>1)</sup> :	DC 10 V ... 30 V
Ripple <sup>2)</sup> :	$\leq 5 \text{ Vpp}$
Power consumption <sup>3)</sup> :	$\leq 2.1 \text{ W}$
Initialization time:	$\leq 250 \text{ ms}$
Warm-up time:	$\leq 15 \text{ min}$
Housing material:	Die-cast zinc housing (ZNAL4CU1) acrylic glass (PMMA)
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

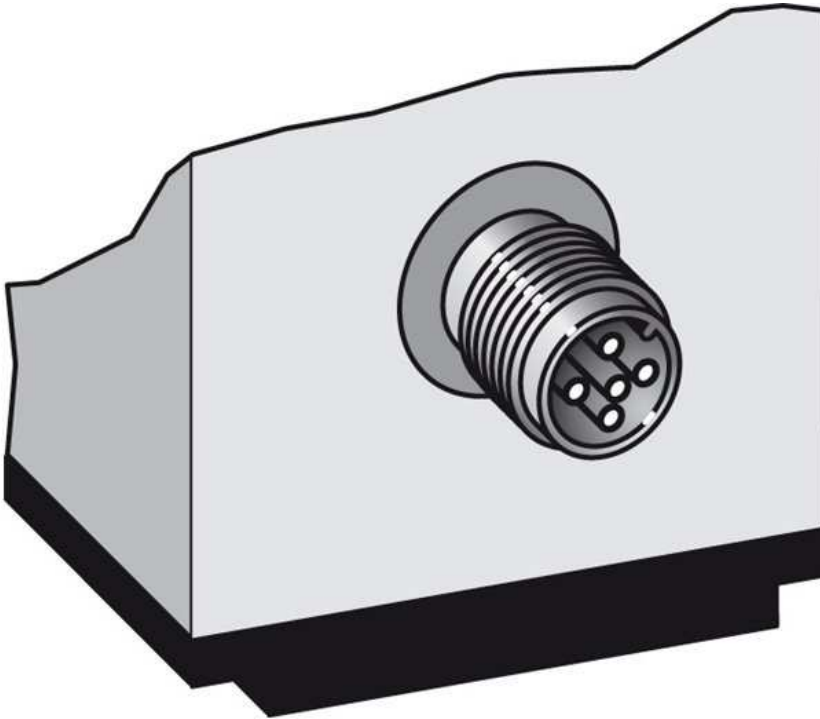
## Ambient data

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

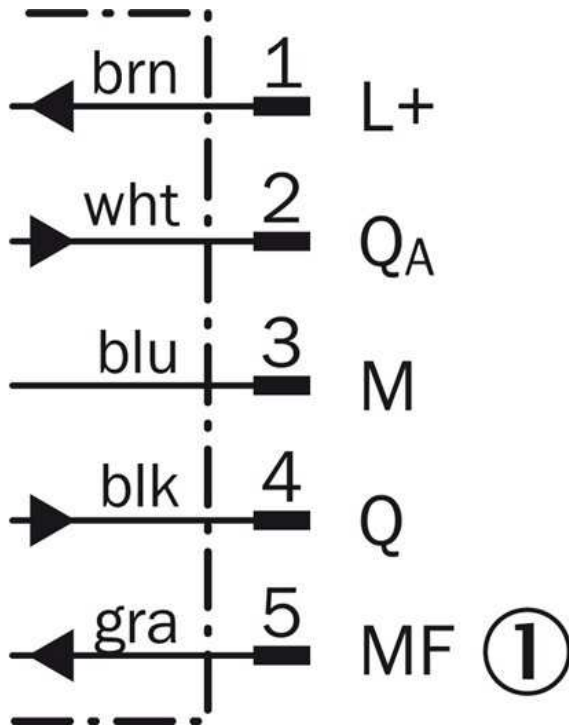
## Dimensional drawing



## Connection type



Connection diagram



[1] Multifunctional input (MF)

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