



Mid range distance sensors  
Dx50, DL50 Hi, RS-422

DL50-N2225



**Model Name** > [DL50-N2225](#)  
**Part No.** > [1048419](#)

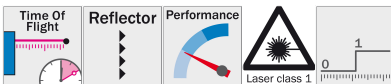


**At a glance**

- HDDM™ technology provides the best reliability, safety to ambient light and price/performance ratio
- Up to 50 m range on diamond grade reflector
- World's smallest sensor for high precision positioning
- Highest repeatability in its class, with 0.5 mm
- Fast RS-422 output rate - measurement value every 2.5 ms
- Immune to cross talk for use with multiple sensors
- Superior background suppression

**Your benefits**

- Precise positioning enables greater speed and accuracy, which increases throughput
- Highest performance at reasonable investment costs guarantee a short return on investment
- 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
- Intuitive setup via display or remote teach reduces installation time and costs
- Red light and an optional alignment bracket reduces installation time
- Metal housing withstands harsh environments, saving replacement costs
- World's smallest sensor for high precision positioning for use in applications with limited space



**Performance**

|   |  |
|---|--|
| Measuring range <sup>1)</sup> :                               | 200 mm ... 50,000 mm, on Diamond Grade |
| Resolution:   | 0.1 mm                                 |
| Repeatability <sup>2)</sup> , <sup>3)</sup> , <sup>4)</sup> : | 0.5 mm/0.3 mm/0.25 mm                  |
| Accuracy <sup>5)</sup> :                                      | ± 3 mm                                 |
| Response time <sup>6)</sup> , <sup>7)</sup> :                 | 10 ms/40 ms/160 ms                     |
| Output rate <sup>8)</sup> , <sup>9)</sup> :                   | 2.5 ms                                 |
| Light source:   | Laser, red                             |
| Laser protection class <sup>10)</sup> :                       | 1 (EN 60825-1)                         |
| Typ. light spot size (distance):                              | 15 mm x 15 mm (10 m)                   |

**Additional function:**

Switch-off display  
 Unique measurement value  
 Teach-in of switching outputs  
 Set baud rate: 19,200, 38,400, 57,600, 115,200 bps  
 Inverted switching output  
 Set moving average fast/medium/slow  
 Set hysteresis  
 Set parity check: none; even; odd  
 Crosstalk safety  
 Multifunctional in- and output: laser off, external teach, switching output 2, inactive  
 Teach-in of switching outputs  
 Serial data output: continuous, on request  
 Lock user interface  
 Reset to factory default  
 Switching mode Distance to object (DtO)

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

<sup>1)</sup> On Diamond Grade <sup>2)</sup> Equivalent to  $1\sigma$  <sup>3) 6)</sup> Dependent on the set average: fast/medium/slow <sup>4)</sup> Typical value <sup>5)</sup> May reach up to  $\pm 5$  mm at limited measuring range <sup>7)</sup> Lateral entry of object into measuring range <sup>8)</sup> For baud rate 115,200 bps <sup>9)</sup> Continuous change of distance in measuring range <sup>10)</sup> Wavelength: 658 nm;  
 max. output: 80 mW; pulse duration: 2.5 ns; pulse repetition rate: 1/240

**Interfaces**

|   |  |
|---|--|
| Output type::                               | 2 x / 1 x NPN (100 mA) <sup>1) 2) 3)</sup> |
| Multifunctional input <sup>4) 5) 6)</sup> : | - / 1 x NPN                                |
| Hysteresis:                                 | 1 mm ... 1,000 mm                          |
| Data interface:                             | RS-422                                     |

<sup>1)</sup> Output Q short-circuit protected <sup>2)</sup> NPN: HIGH =  $< 2.5$  V / LOW =  $V_S$  <sup>3) 4)</sup> Dependent on the set function MF: switching output 2 / laser off, external teach <sup>5)</sup>  
 Response time  $\leq 60$  ms <sup>6)</sup> NPN: HIGH =  $\leq 2.5$  V / LOW =  $V_S$

**Mechanics/electronics**

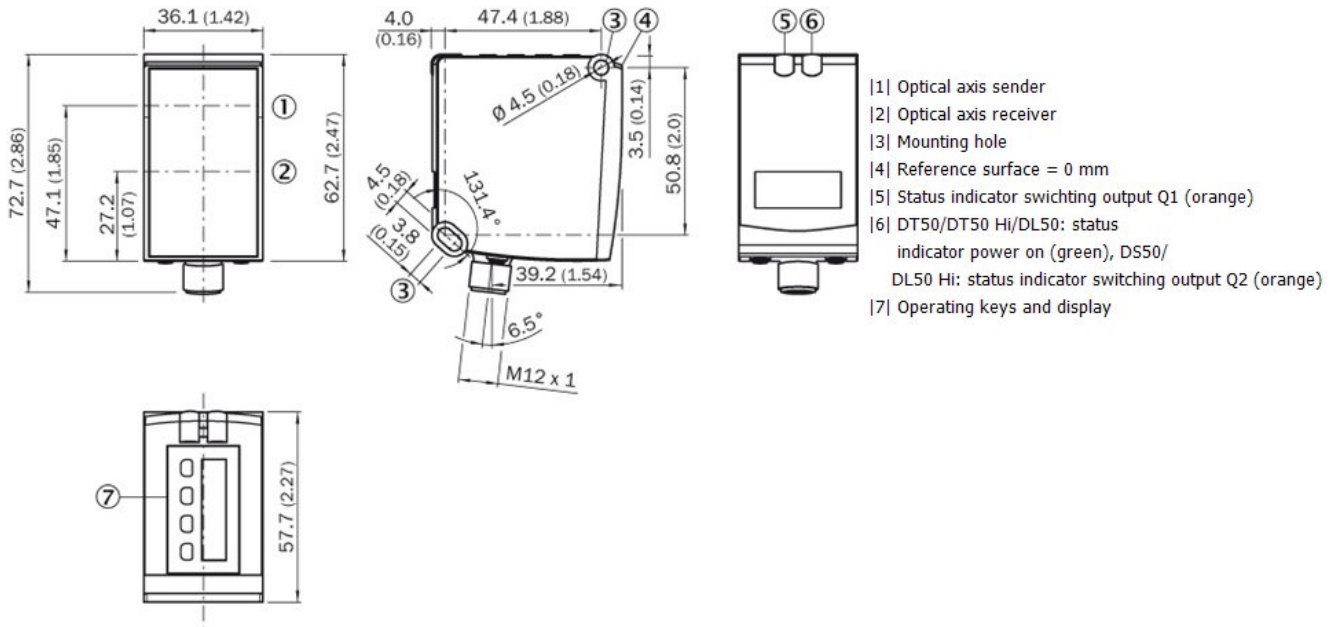
|                                      |  |
|--------------------------------------|--|
| Supply voltage $V_S$ <sup>1)</sup> : | DC 10 V ... 30 V   |
| Ripple <sup>2)</sup> :               | $\leq 5$ Vpp   |
| Power consumption <sup>3)</sup> :    | $\leq 2.1$ W   |
| Initialization time:                 | $\leq 250$ ms  |
| Warm-up time:                        | $\leq 15$ min  |
| Housing material:                    | Die-cast zinc housing (ZNAL4CU1)<br>acrylic glass (PMMA) |
| Connection type:                     | Connector M12, 8-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

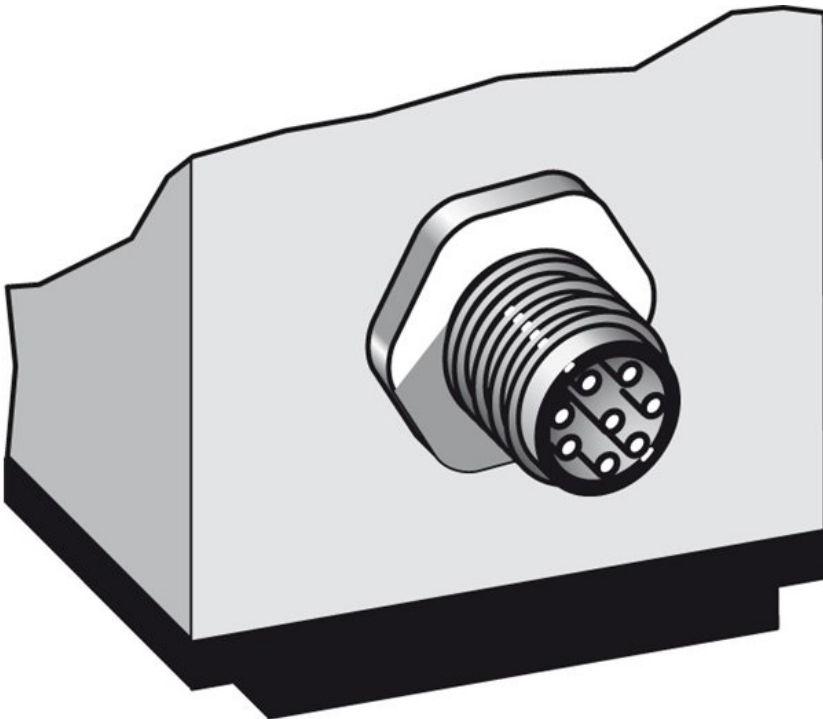
**Ambient data**

|                                      |  |
|--------------------------------------|--|
| 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 / -2-64                             |
| Shock resistance:                    | EN 60068-2-27                                    |
| Typ. ambient light safety:           | 40 klx   |

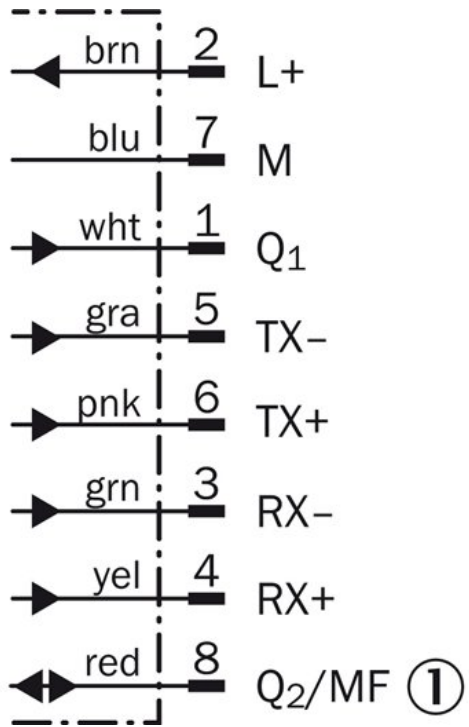
## Dimensional drawing



## Connection type



Connection diagram



[1] Multifunctional in- and output

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