



Mid range distance sensors  
Dx50, DL50 Hi

DL50-N2228



**Model Name** > [DL50-N2228](#)  
**Part No.** > [1058987](#)

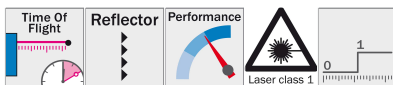


**At a glance**

- 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 with SSI or RS-422 interfaces
- Highest repeatability in its class, with 0.5 mm
- Fast output rate - an updated 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
- SSI or RS-422 interfaces allow a fast and easy integration into any control or positioning application
- 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**

Measurement range <sup>1)</sup> :	200 mm ... 50,000 mm, on reflective tape "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
Light source:	Laser, red
Typ. light spot size (distance):	15 mm x 15 mm (10 m)

Additional function:	Switch-off display Unique measurement value Set moving average fast/medium/slow Set hysteresis Crosstalk safety Switching mode: distance to object (DtO) Serial data output: continuous, on request Lock user interface Reset to factory default Set data transmission rate: 19,200, 38,400, 57,600, 115,200 bps Set distance resolution for the SSI data output: 0.0625 mm/0.1 mm/ 0.125 mm/1 mm Teach-in, scaling and inversion of switching output Multifunctional in- and output: laser off, external teach, switching output 2, inactive
Laser class:	1 (EN 60825-1) <sup>8)</sup>
Laser service life (MTTF at 25 °C):	100,000 h
Output time <sup>9)</sup> :	2.5 ms

<sup>1)</sup> On reflective tape "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> 200 mm ... 4,000 mm:  $\leq \pm 5$  mm <sup>7)</sup> Lateral entry of object into measuring range <sup>8)</sup> Wavelength: 658 nm; max. output: 80 mW; pulse duration: 2.5 ns; pulse repetition rate: 1/240 <sup>9)</sup> Continuous change of distance in measuring range

## Interfaces

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

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

## Mechanics/electronics

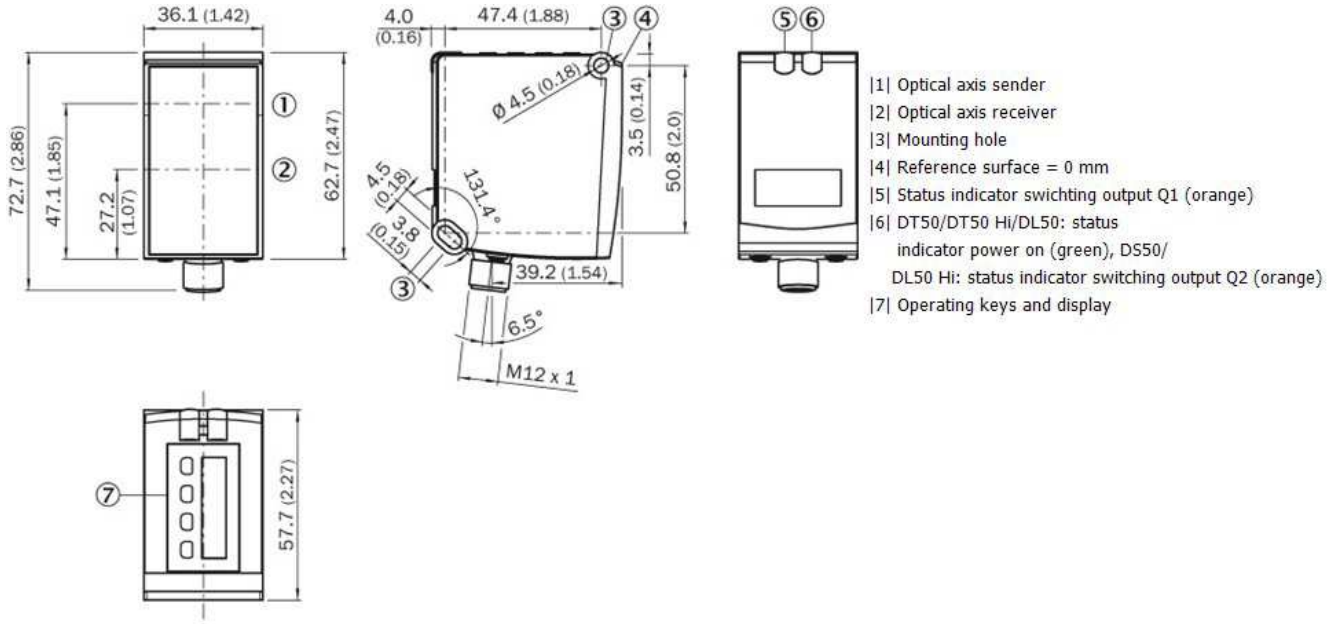
Supply voltage $V_S$ <sup>1)</sup> :	DC 10 V ... 30 V
Ripple <sup>2)</sup> :	$\leq 5\text{ Vpp}$
Power consumption <sup>3)</sup> :	$\leq 2.1\text{ W}$
Initialization time:	$\leq 250\text{ ms}$
Warm-up time:	$\leq 15\text{ min}$
Housing material:	Die-cast zinc housing (ZNAL4CU1) acrylic glass (PMMA)
Connection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

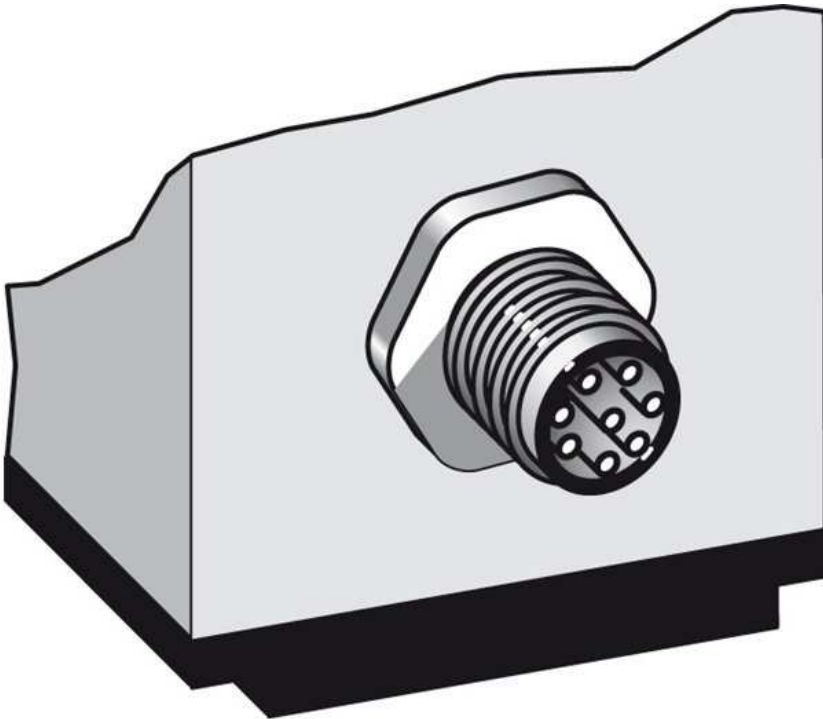
## Ambient data

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

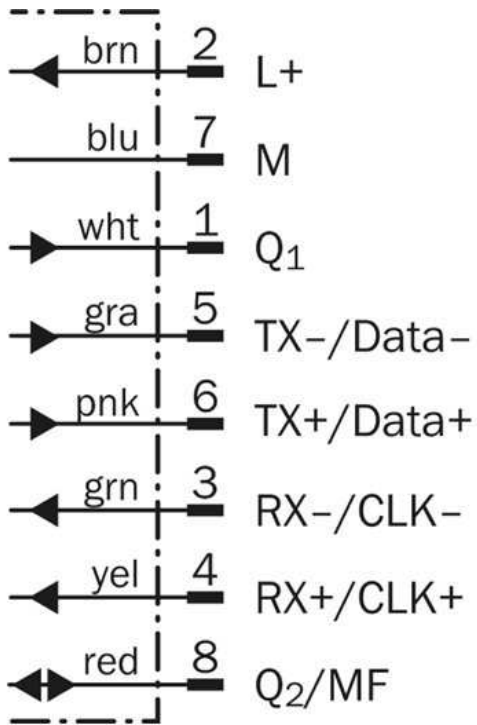
## Dimensional drawing



## Connection type



Connection diagram



**Australia**

Phone +61 3 9457 0600  
1800 33 48 02 – tollfree  
E-Mail sales@sick.com.au

**Belgium/Luxembourg**

Phone +32 (0)2 466 55 66  
E-Mail info@sick.be

**Brasil**

Phone +55 11 3215-4900  
E-Mail marketing@sick.com.br

**Canada**

Phone +1 905 771 14 44  
E-Mail information@sick.com

**Česká republika**

Phone +420 2 57 91 18 50  
E-Mail sick@sick.cz

**China**

Phone +86 4000 121 000  
E-Mail info.china@sick.net.cn  
Phone +852-2153 6300  
E-Mail ghk@sick.com.hk

**Danmark**

Phone +45 45 82 64 00  
E-Mail sick@sick.dk

**Deutschland**

Phone +49 211 5301-301  
E-Mail info@sick.de

**España**

Phone +34 93 480 31 00  
E-Mail info@sick.es

**France**

Phone +33 1 64 62 35 00  
E-Mail info@sick.fr

**Great Britain**

Phone +44 (0)1727 831121  
E-Mail info@sick.co.uk

**India**

Phone +91-22-4033 8333  
E-Mail info@sick-india.com

**Israel**

Phone +972-4-6881000  
E-Mail info@sick-sensors.com

**Italia**

Phone +39 02 27 43 41  
E-Mail info@sick.it

**Japan**

Phone +81 (0)3 5309 2112  
E-Mail support@sick.jp

**Magyarország**

Phone +36 1 371 2680  
E-Mail office@sick.hu

**Nederland**

Phone +31 (0)30 229 25 44  
E-Mail info@sick.nl

**Norge**

Phone +47 67 81 50 00  
E-Mail sick@sick.no

**Österreich**

Phone +43 (0)22 36 62 28 8-0  
E-Mail office@sick.at

**Polska**

Phone +48 22 837 40 50  
E-Mail info@sick.pl

**România**

Phone +40 356 171 120  
E-Mail office@sick.ro

**Russia**

Phone +7-495-775-05-30  
E-Mail info@sick.ru

**Schweiz**

Phone +41 41 619 29 39  
E-Mail contact@sick.ch

**Singapore**

Phone +65 6744 3732  
E-Mail sales.gsg@sick.com

**Slovenija**

Phone +386 (0)1-47 69 990  
E-Mail office@sick.si

**South Africa**

Phone +27 11 472 3733  
E-Mail info@sickautomation.co.za

**South Korea**

Phone +82 2 786 6321/4  
E-Mail info@sickkorea.net

**Suomi**

Phone +358-9-25 15 800  
E-Mail sick@sick.fi

**Sverige**

Phone +46 10 110 10 00  
E-Mail info@sick.se

**Taiwan**

Phone +886 2 2375-6288  
E-Mail sales@sick.com.tw

**Türkiye**

Phone +90 (216) 528 50 00  
E-Mail info@sick.com.tr

**United Arab Emirates**

Phone +971 (0) 4 88 65 878  
E-Mail info@sick.ae

**USA/México**

Phone +1(952) 941-6780  
1 (800) 325-7425 – tollfree  
E-Mail info@sickusa.com

More representatives and agencies  
at [www.sick.com](http://www.sick.com)