



## Long range distance sensors Dx100, DL100 Hi, CANopen

DL100-23AA2109



**Model Name** > [DL100-23AA2109](#)  
**Part No.** > [1060390](#)

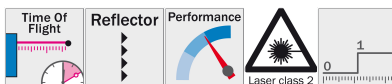


#### At a glance

- Measuring range up to 300 m
- Numerous fieldbus interfaces
- Pre-failure notification and diagnostic data available
- Display with intuitive menu and easy to see status LEDs
- Small, rugged metal housing
- 3-axis alignment bracket with quick lock system available as accessory
- Elongated holes for zero point adjustment when replacing devices
- SPEEDCON™ and standard M12 electrical connections

#### Your benefits

- Enhanced closed-loop behavior offers highest performance and productivity
- Operating temperature down to -40 °C ensures the highest reliability in cold storage warehouses and freezers
- Numerous fieldbus and Ethernet-based interfaces offer the highest flexibility and fast communication for maximum efficiency
- Pre-failure and extensive diagnostic data allow for preventive maintenance, ensuring the highest machine uptime
- Small, rugged metal housing and SpeedCon™ compatible connectors ensure hassle-free installation - even in confined spaces
- 3-axis alignment bracket ensures fast alignment and easy exchange, reducing maintenance and setup costs
- Numerous accessories allow flexible use and guarantee high operation functionality



#### Performance

|                                  |                                                      |
|----------------------------------|------------------------------------------------------|
| Measuring range:                 | 0.15 m ... 300 m, On reflective tape "Diamond Grade" |
| Resolution:                      | 0.1 mm, 0.125 mm, 1 mm, 10 mm, 100 mm                |
| Repeatability <sup>1)</sup> :    | 2 mm                                                 |
| Accuracy <sup>2)</sup> :         | ± 3 mm                                               |
| Light source <sup>3)</sup> :     | Laser, red                                           |
| Typ. light spot size (distance): | 5 mm (+ 2 mm x distance in m)                        |
| Acceleration (max.):             | 15 m/s <sup>2</sup>                                  |
| Internal measurement cycle:      | 1 ms                                                 |
| Max. movement speed:             | 10 m/s                                               |
| Dead time:                       | 2 ms                                                 |
| Laser class:                     | 2 (EN 60825-1/CDRH)                                  |

<sup>1)</sup> Statistical error 1  $\sigma$ , environmental conditions constant, min. warm-up time 10 min <sup>2)</sup> From 150 mm ... 180 mm measuring range the accuracy can reach  $\pm 4$  mm <sup>3)</sup>  
 Average service life of 100,000 h at  $T_A = +25$  °C

## Interfaces

|                                            |                           |
|--------------------------------------------|---------------------------|
| Data interface:                            | CANopen                   |
| Output type <sup>1)</sup> :                | B (push/pull)<br>MF1, MF2 |
| Multifunctional input (MF) <sup>2)</sup> : | 1 x MF1                   |

<sup>1)</sup> HIGH >  $V_S - 3$  V / LOW < 2 V <sup>2)</sup> HIGH > 12 V / LOW < 3 V

## Mechanics/electronics

|                                      |                                        |
|--------------------------------------|----------------------------------------|
| Supply voltage $V_S$ :               | DC 18 V ... 30 V, limit values         |
| Ripple <sup>1)</sup> :               | 5 Vpp                                  |
| Initialization time <sup>2)</sup> :  | Typ. 1.5 s                             |
| Indication:                          | 6 digit 5 x 7 dot matrix display, LEDs |
| Weight <sup>3)</sup> :               | Ca. 800 g ... 1,600 g                  |
| Output current $I_A$ <sup>4)</sup> : | $\leq 100$ mA                          |
| Power consumption:                   | At 24 V DC < 250 mA                    |
| Connection type:                     | Connector M12, SPEEDCON™ compatible    |
| Housing material:                    | Aluminum/zinc die-cast                 |

<sup>1)</sup> May not fall short of or exceed  $V_S$  tolerances <sup>2)</sup> After loss of reflector < 40 ms <sup>3)</sup> Without mounting bracket: approx. 800 g, with mounting bracket: approx. 1,600 g

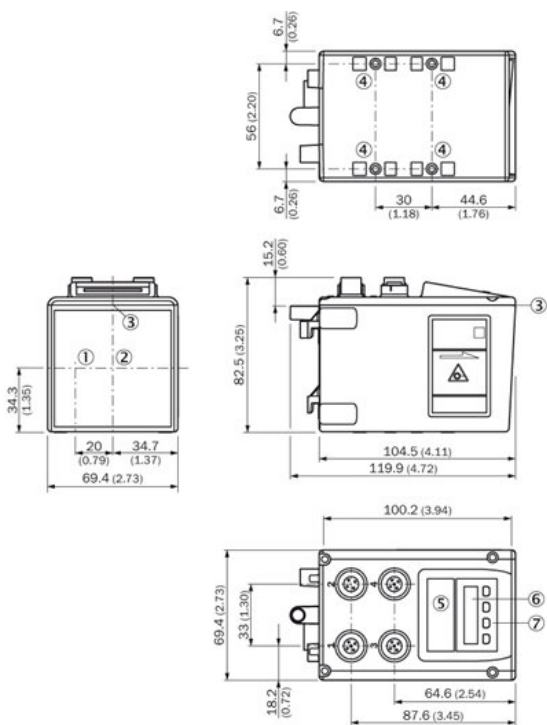
<sup>4)</sup> Short circuit/overload protected. Max. 100 nF/20 mH

## Ambient data

|                                                     |                                                                                                  |
|-----------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Enclosure rating:                                   | IP 65                                                                                            |
| Protection class:                                   | III                                                                                              |
| Effect of air pressure:                             | 0.3 ppm/hPa                                                                                      |
| Effect of air temperature:                          | 1 ppm/K                                                                                          |
| Temperature drift:                                  | Typ. 0.1 mm/K                                                                                    |
| Ambient temperature <sup>1)</sup> :                 | Operation: -20 ... 55 °C<br>Operation with cooling case: -20 ... 75 °C<br>Storage: -40 ... 75 °C |
| Mechanical load:                                    | Noise: EN 600 68-2-64<br>Shock: EN 600 68-2-27<br>Sine: EN 600 68-2-6                            |
| Electromagnetic compatibility (EMC) <sup>2)</sup> : | EN 61000-6-2/EN 61000-6-4                                                                        |

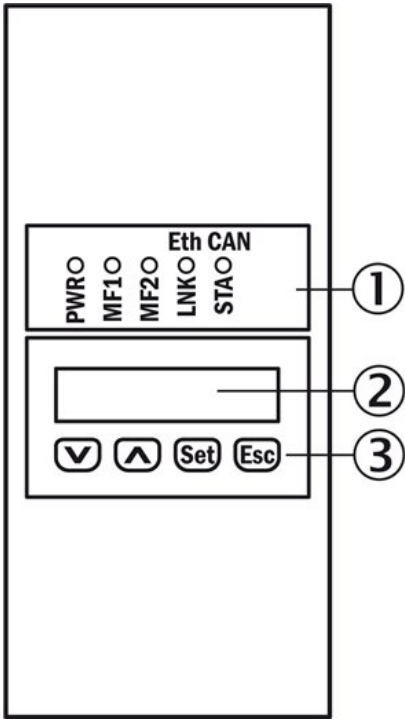
<sup>1)</sup> Temperatures < -10 °C require warm-up time of typ. 7 minutes. <sup>2)</sup> This is a Class A device. This device can cause radio interference in living quarters.

Dimensional drawing

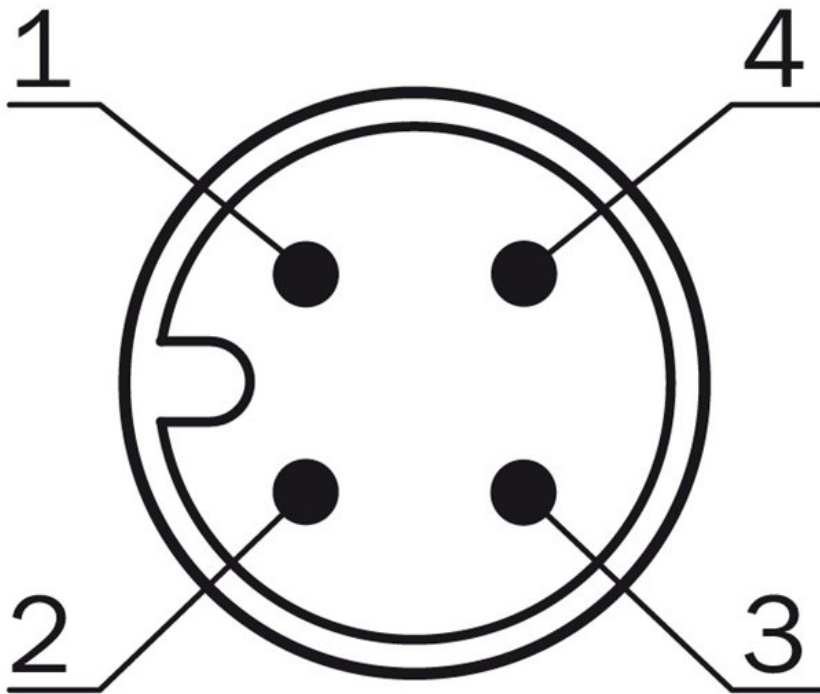


- |1| Optical axis, sender
- |2| Optical axis, receiver
- |3| Zero level
- |4| Threaded mounting hole M5
- |5| Status LED [status]
- |6| Display
- |7| Control elements

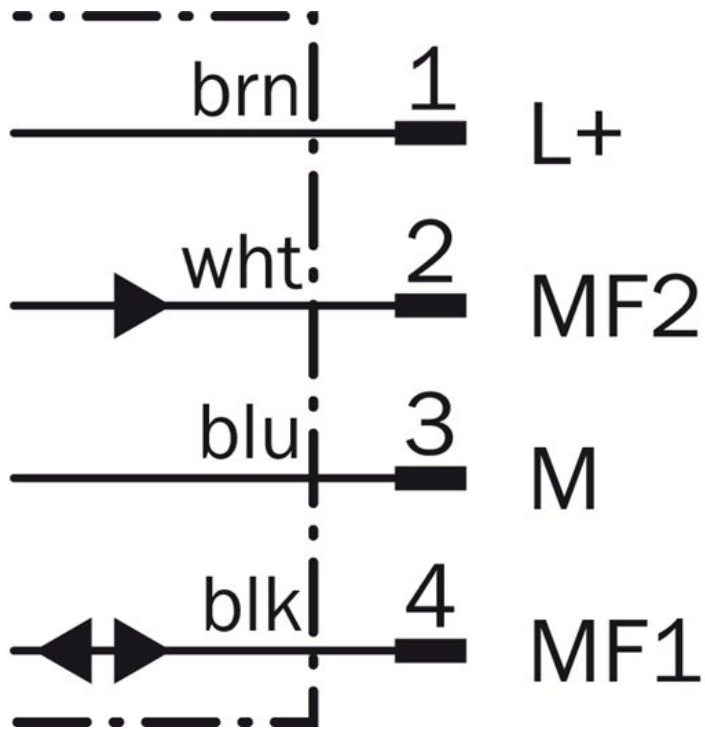
Adjustment possible



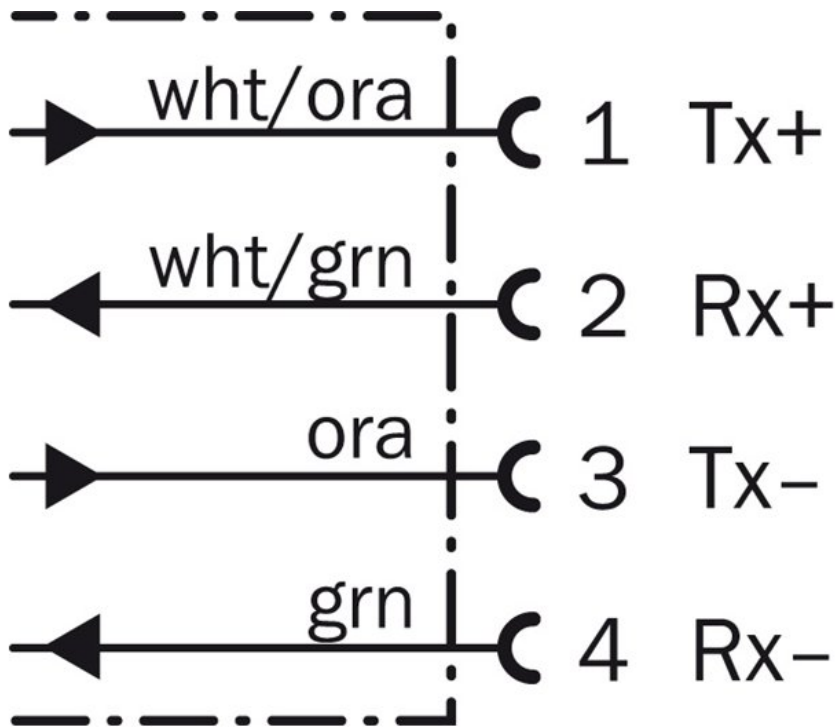
- |1| Status LED [status]
- |2| Display
- |3| Control elements



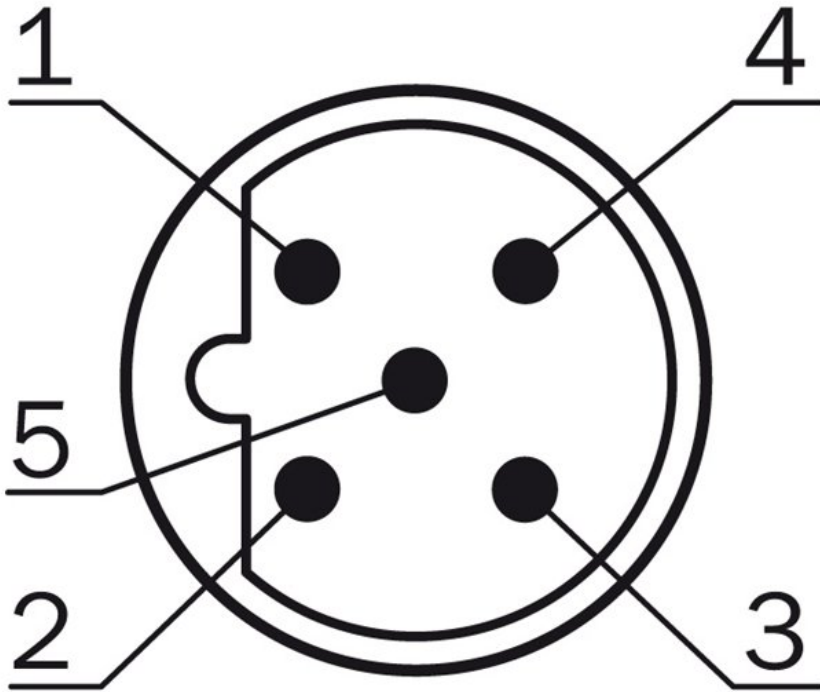
Connection diagram power supply



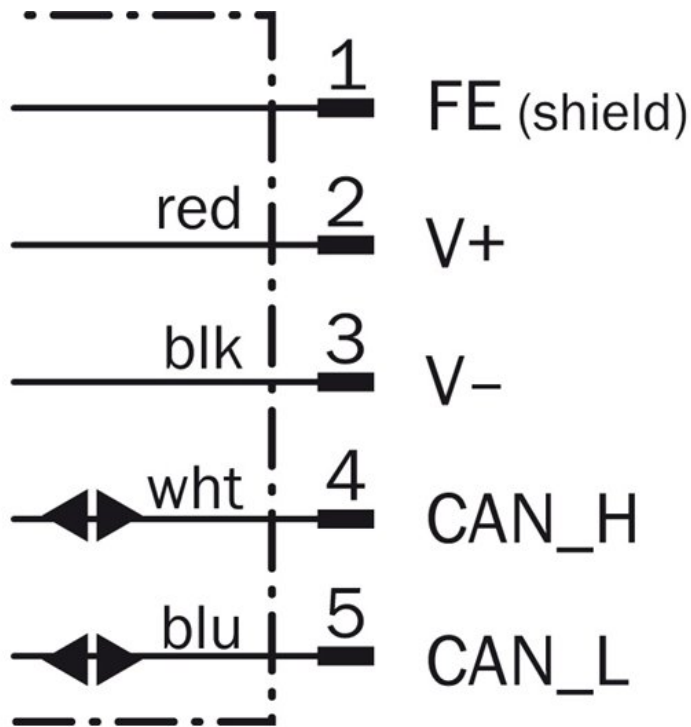
Connection diagram Ethernet



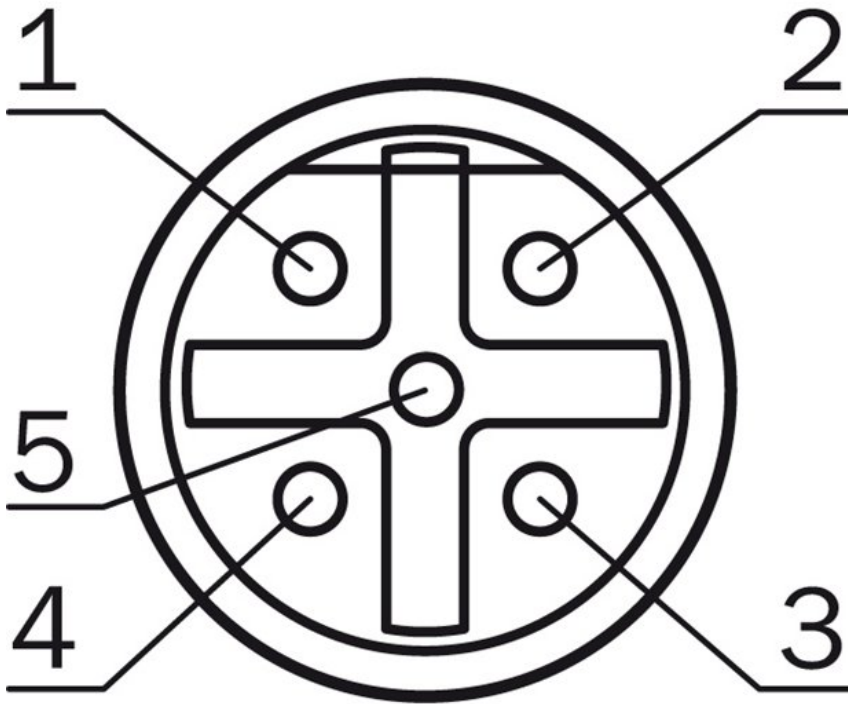
Connection type CANin

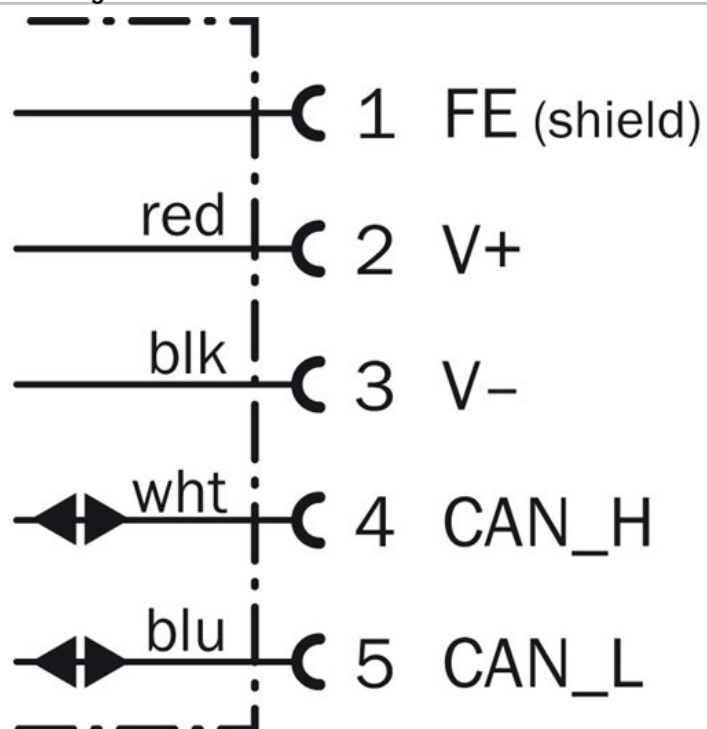


Connection diagramm CANin



Connection type CANout







#### **Australia**

Phone +61 3 9457 0600  
1800 334 802 – 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 sac@sick.com.br

#### **Canada**

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

#### **Ceská 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 kundenservice@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 +972-4-6801000  
E-Mail info@sick-sensors.com

#### **Italia**

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

#### **Japan**

Phone +81 (0)3 3358 1341  
E-Mail support@sick.jp

#### **Magyarország**

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

#### **Nederlands**

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

#### **Norge**

Phone +47 67 81 50 00  
E-Mail austefjord@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 admin@sicksgp.com.sg

#### **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 8865 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)