



## Long range distance sensors Dx100, DL100 Pro

DL100-21AA2102



**Model Name** > [DL100-21AA2102](#)  
**Part No.** > [1052686](#)



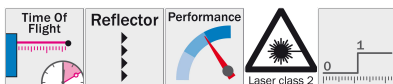
Illustration may differ

**At a glance**

- Measuring range up to 300 m (dependent on type)
- 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 (dependent on type)
- 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**

Measurement range:	0.15 m ... 100 m, On reflective tape "Diamond Grade"
Resolution:	0.1 mm, 0.125 mm, 1 mm, 10 mm, 100 mm
Repeatability <sup>1)</sup> :	0.5 mm
Accuracy <sup>2)</sup> :	± 2 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:	30 m/s
Dead time:	2 ms
Laser class:	2 (EN 60825-1/CDRH)

Output time: Synchronous to PLC request (dependent on interfaces)

<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

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Data interface: PROFIBUS DP  
Output type <sup>1)</sup>: B (push/pull)  
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

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Supply voltage  $V_S$ : DC 18 V ... 30 V, limit values  
Ripple <sup>1)</sup>: 5 V<sub>pp</sub>  
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: Male connector, M12, SPEEDCON™ compatible  
Housing material: Aluminum/zinc die-cast  
Modulation frequency: Fix

<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

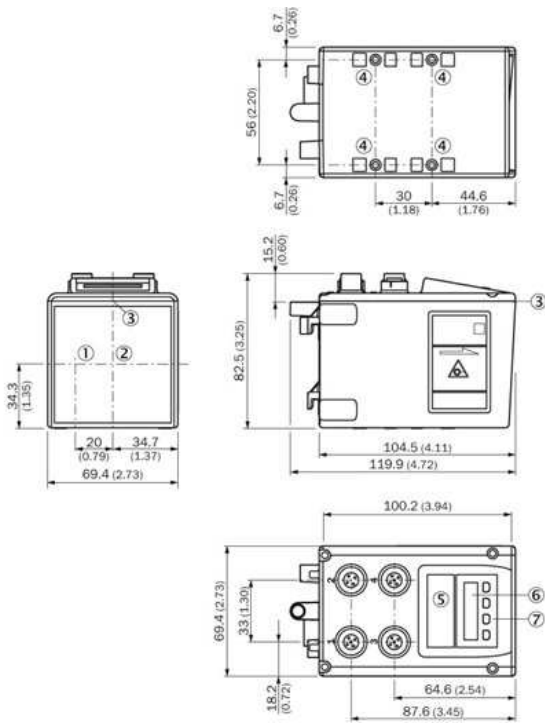
## Ambient data

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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  
Operation with cooling case: -20 ... +75 °C  
Storage: -40 ... +75 °C  
Mechanical load: Noise: EN 600 68-2-64  
Shock: EN 600 68-2-27  
Sine: EN 600 68-2-6  
Electromagnetic compatibility (EMC) <sup>2)</sup>: EN 61000-6-2/EN 61000-6-4

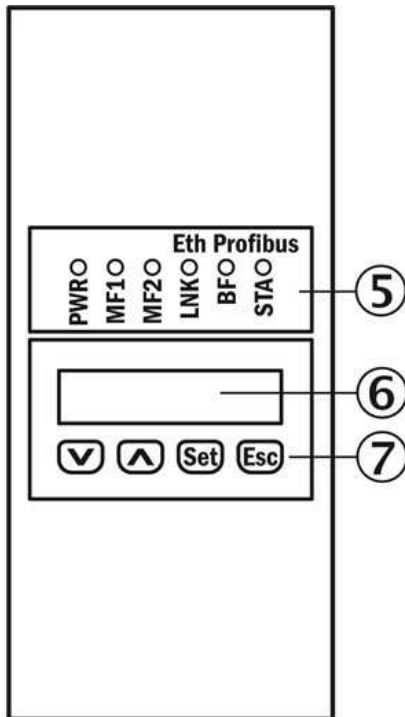
<sup>1)</sup> Temperatures < -10 °C require warm-up time of typ. 7 minutes. <sup>2)</sup> This is a Class A device. This device can cause radio interference in living quarters.

## Dimensional drawing



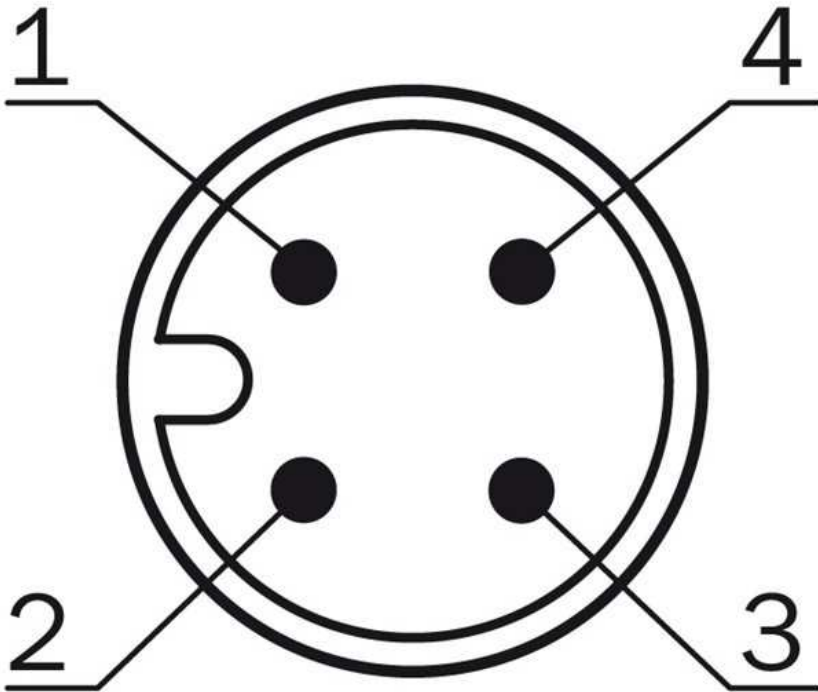
- |1| Optical axis, sender
- |2| Optical axis, receiver
- |3| Zero level
- |4| Threaded mounting hole M5
- |5| Status LED [status]
- |6| Display
- |7| Control elements

## Adjustment possible

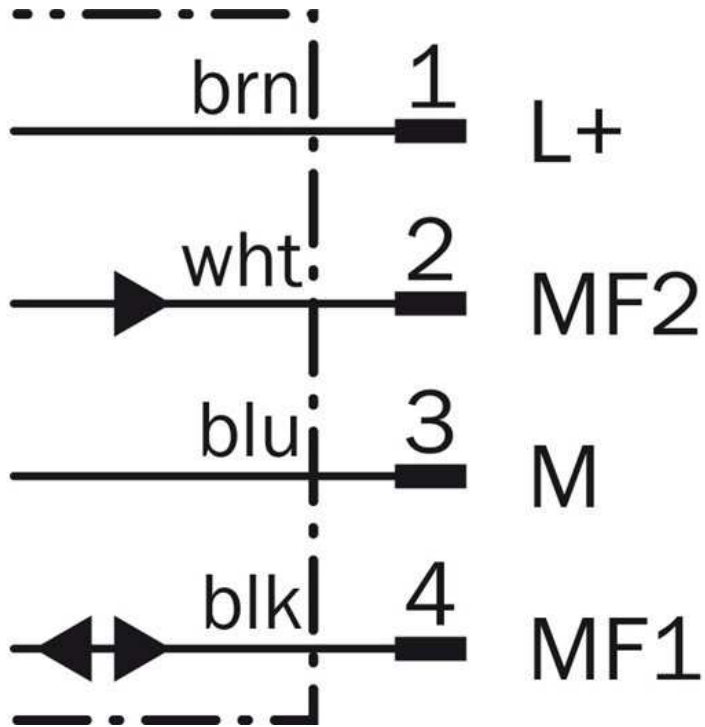


- |5| Status LED [status]
- |6| Display
- |7| Control elements

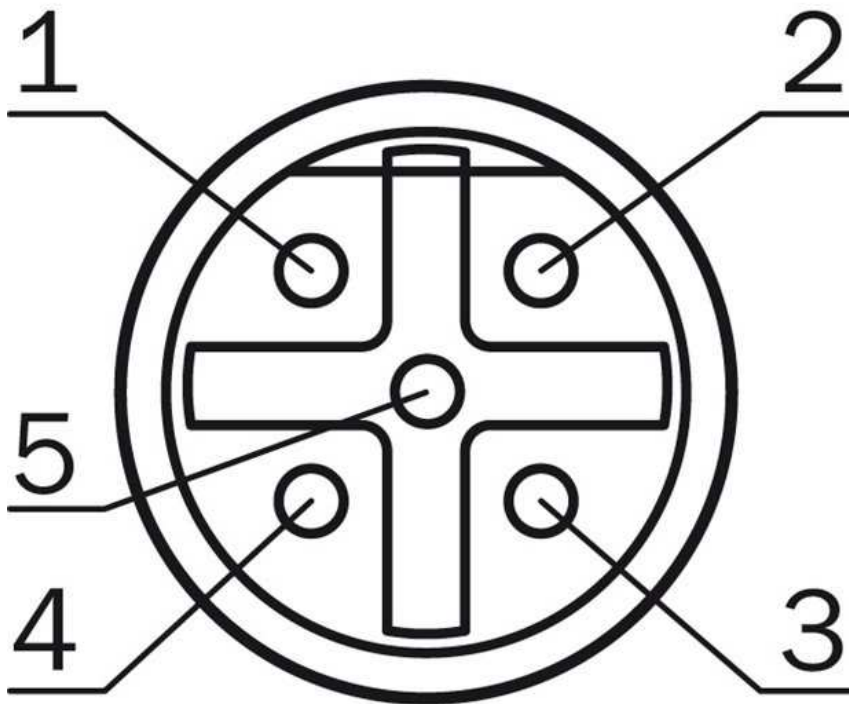
Connection type supply voltage



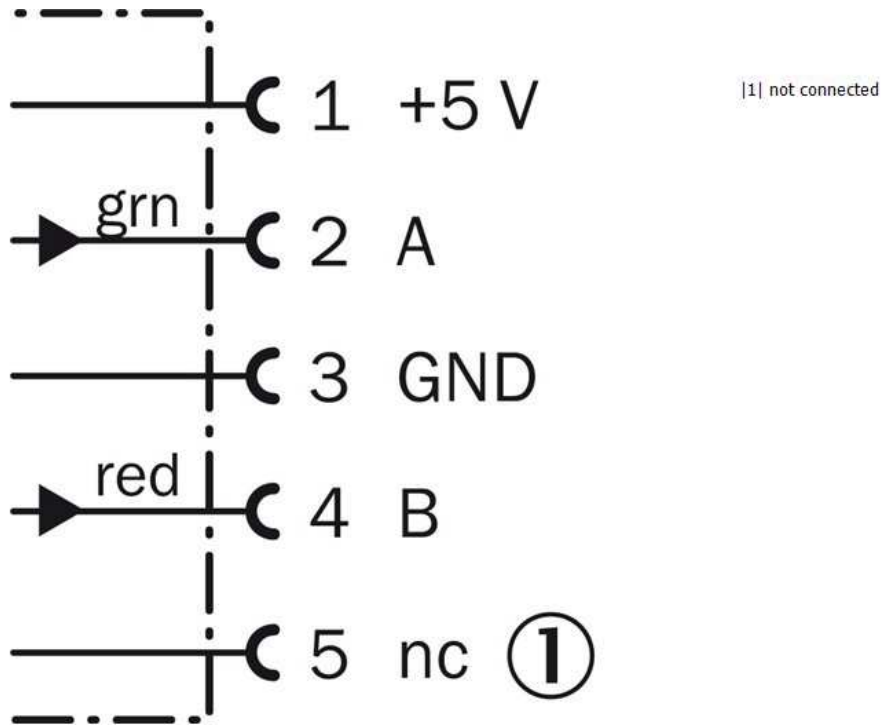
Connection diagram power supply



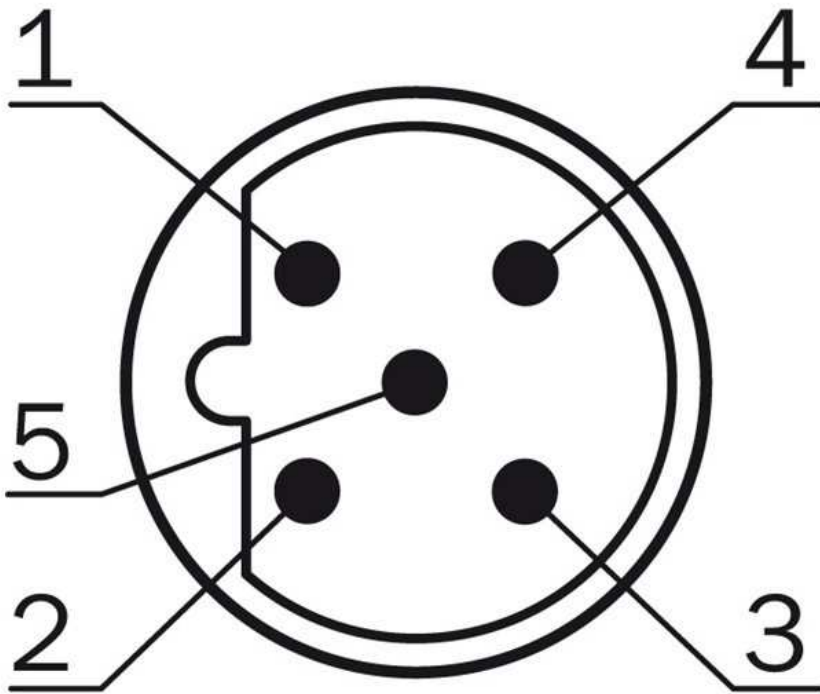
Connection type PROFIBUS OUT



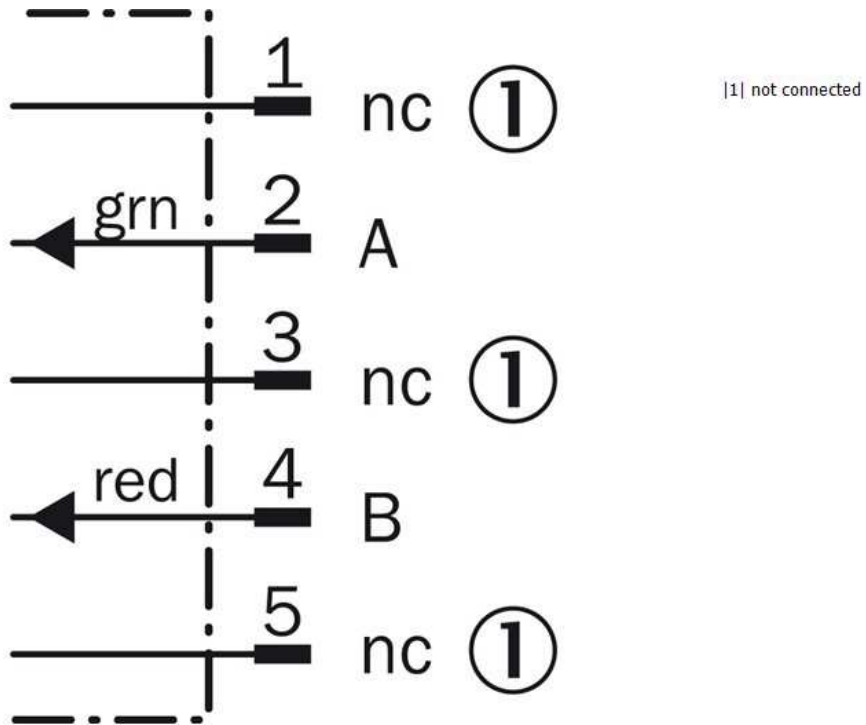
Connection diagram PROFIBUS OUT



Connection type PROFIBUS IN

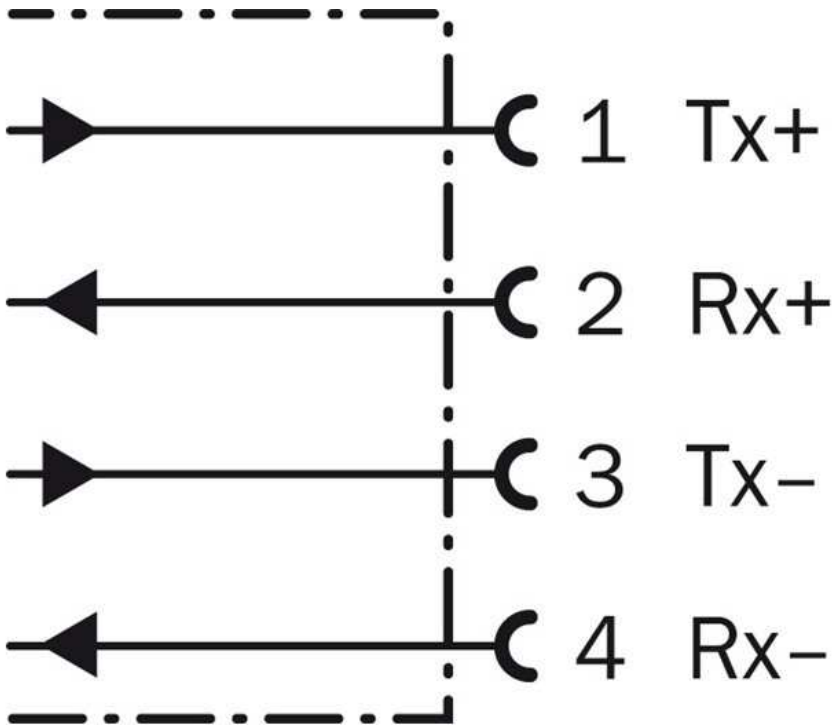


Connection diagramm PROFIBUS IN



Connection diagram Ethernet

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