



Long range distance sensors  
Dx100, DL100, PROFIBUS DP

DL100-13AA2102



**Model Name** > **DL100-13AA2102**  
**Part No.** > **1059971**



**At a glance**

- Measuring range up to 220 m
- Numerous fieldbus interfaces
- Pre-failure notification and diagnostic data available
- Display with intuitive menu structure and clearly visible status LEDs
- Small, rugged metal housing
- 3-axis alignment bracket with quick-lock system as accessory available
- Elongated holes for zero point adjustment when replacing devices

**Your benefits**

- 100,000 hours of laser service life ensures that the sensor will have a long, useful life with maximum reliability
- Versions with integrated heating enable reliable use at ambient temperatures at up to -40°C. The TPCC cooling housing, available as an option, enables use at up to +75°C
- The numerous interfaces offer a high degree of flexibility as well as rapid communication for maximum productivity
- Pre-failure notification and diagnostic data for maximum plant availability
- Small, rugged metal housing with SpeedCon™ compatible connectors ensures smooth handling - even in confined spaces
- Alignment bracket with quick lock system ensures fast alignment and easy device replacement, reducing maintenance and mounting costs



**Performance**

Measuring range:	0.15 m ... 220 m, On reflective tape "Diamond Grade"
Resolution:	0.1 mm, 0.125 mm, 1 mm, 10 mm, 100 mm
Repeatability <sup>1)</sup> :	2.5 mm (at dead time 10 ms), 1.25 mm (at dead time 30 ms)
Accuracy <sup>2)</sup> :	± 5 mm
Light source <sup>3)</sup> :	Laser, red
Typ. light spot size (distance):	5 mm (+ 2 mm x distance in m)
Internal measurement cycle:	1 ms
Max. movement speed:	10 m/s
Laser class:	2 (EN 60825-1/CDRH)

<sup>1)</sup> Statistical error 1 σ, environmental conditions constant, depending on operating mode <sup>2)</sup> From 150 mm ... 180 mm measuring range the accuracy can reach ± 4 mm

<sup>3)</sup> Average service life of 100,000 h at T<sub>A</sub> = +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<sub>S</sub> - 3 V / LOW < 2 V    <sup>2)</sup> HIGH > 12 V / LOW < 3 V

## Mechanics/electronics

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Supply voltage V <sub>s</sub> :	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 <sub>A</sub> <sup>4)</sup> :	≤ 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<sub>S</sub> 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

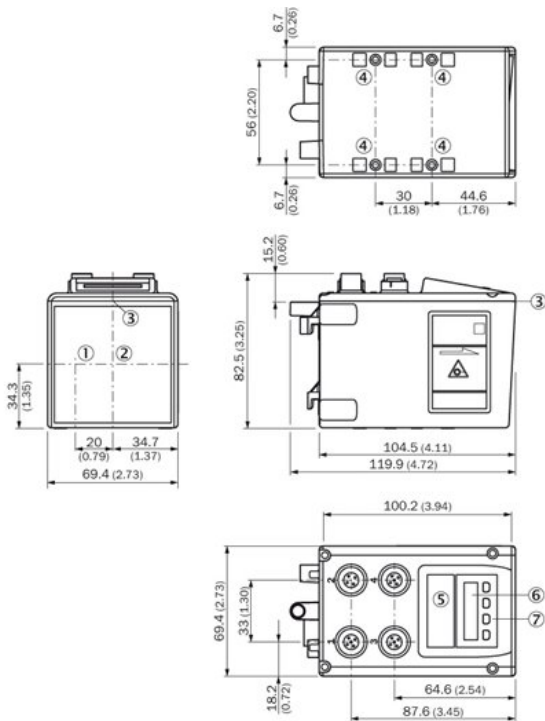
## Ambient data

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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

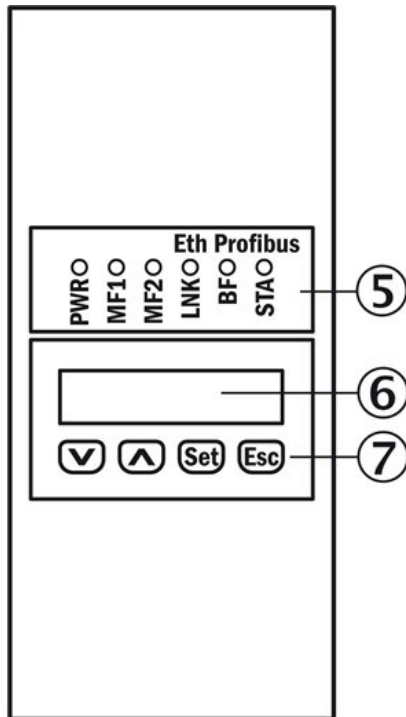
<sup>1)</sup> Temperatures < -10 °C require warm-up time of typ. 7 minutes.    <sup>2)</sup> This is a Class A device. This device can cause radio interference in living quarters.

## Dimensional drawing



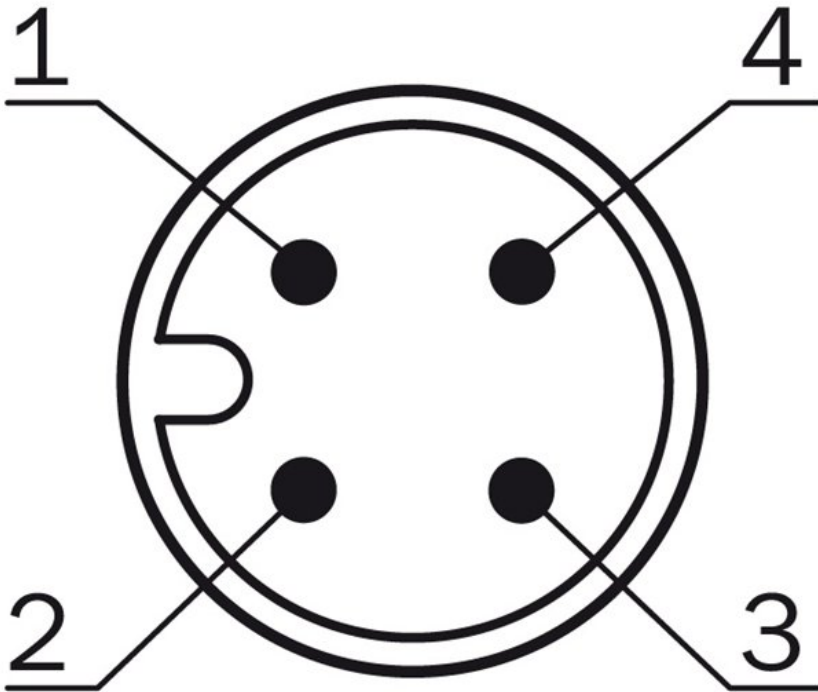
- |1| Optical axis, sender
- |2| Optical axis, receiver
- |3| Zero level
- |4| Threaded mounting hole M5
- |5| Status LED [status]
- |6| Display
- |7| Control elements

## Adjustment possible

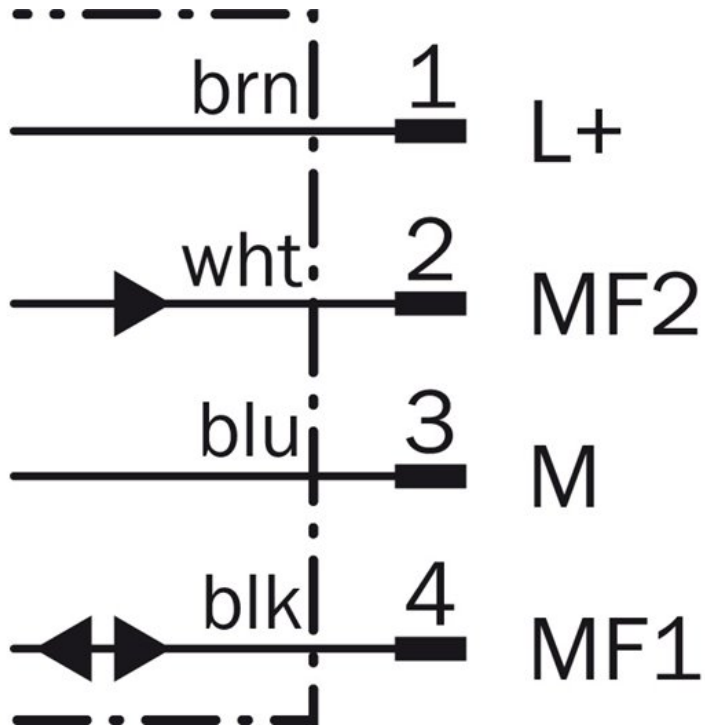


- |5| Status LED [status]
- |6| Display
- |7| Control elements

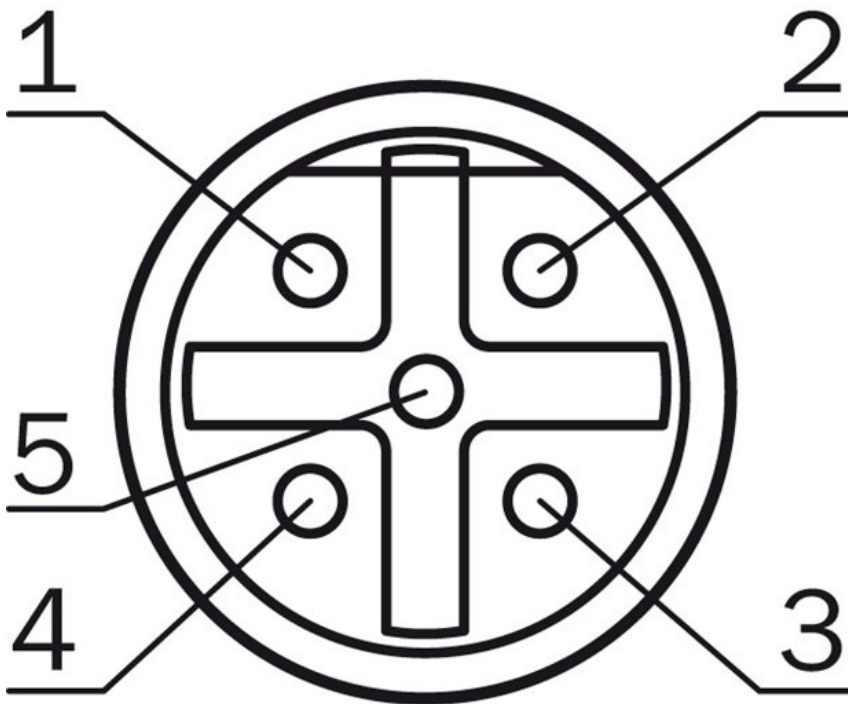
Connection type power supply



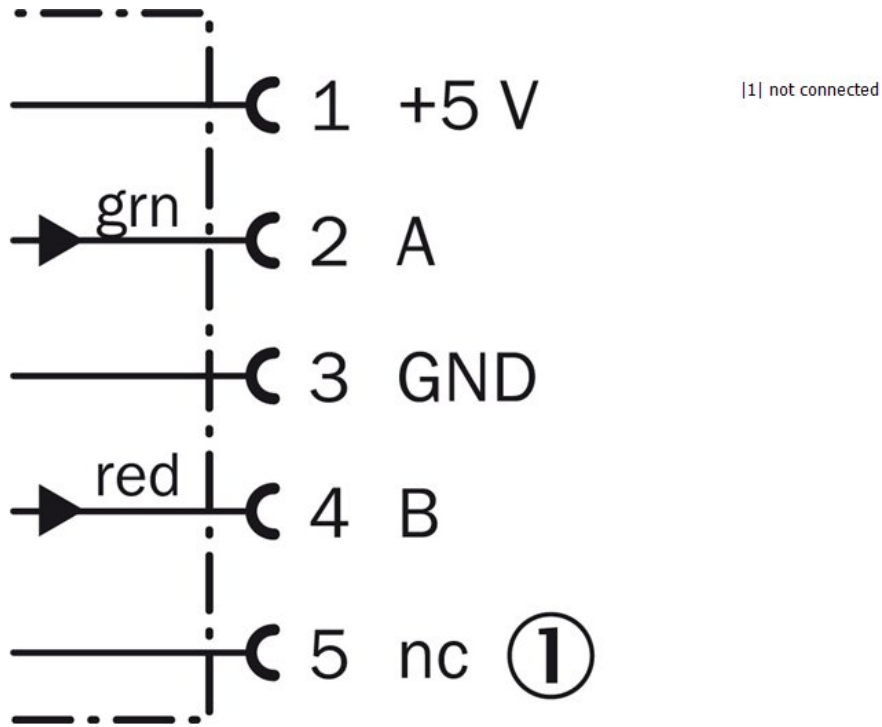
Connection diagram power supply



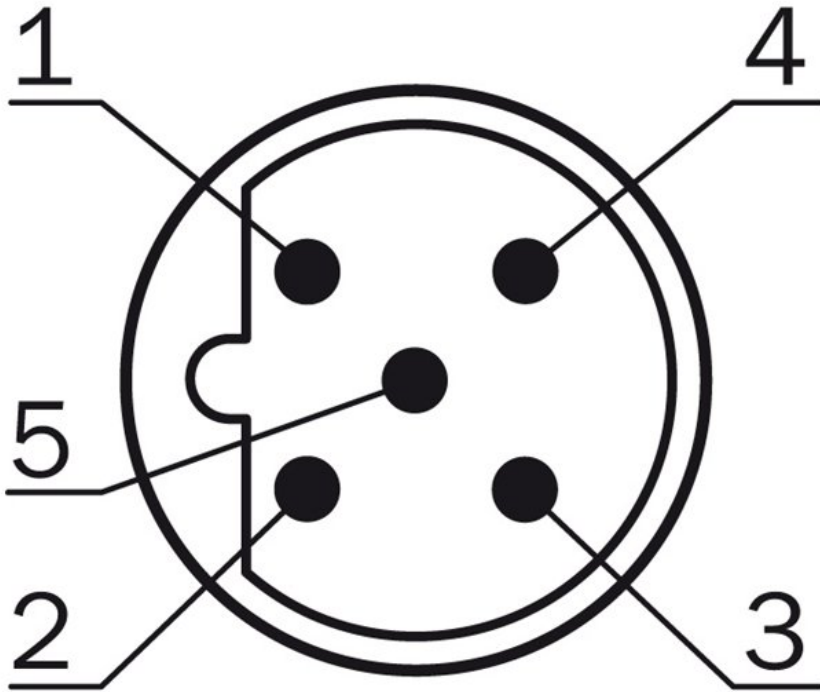
Connection type PROFIBUS OUT



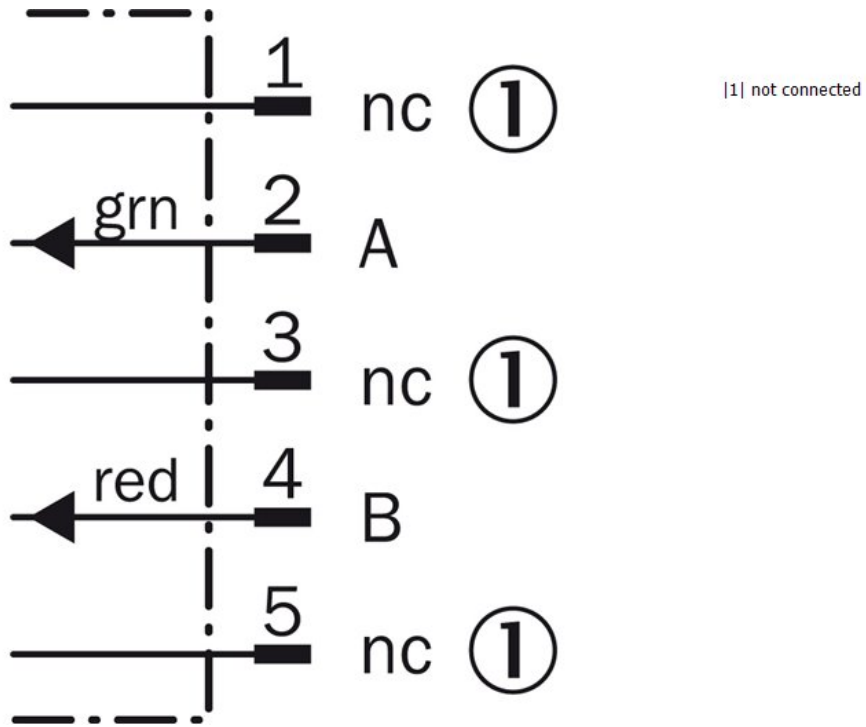
Connection diagram PROFIBUS OUT



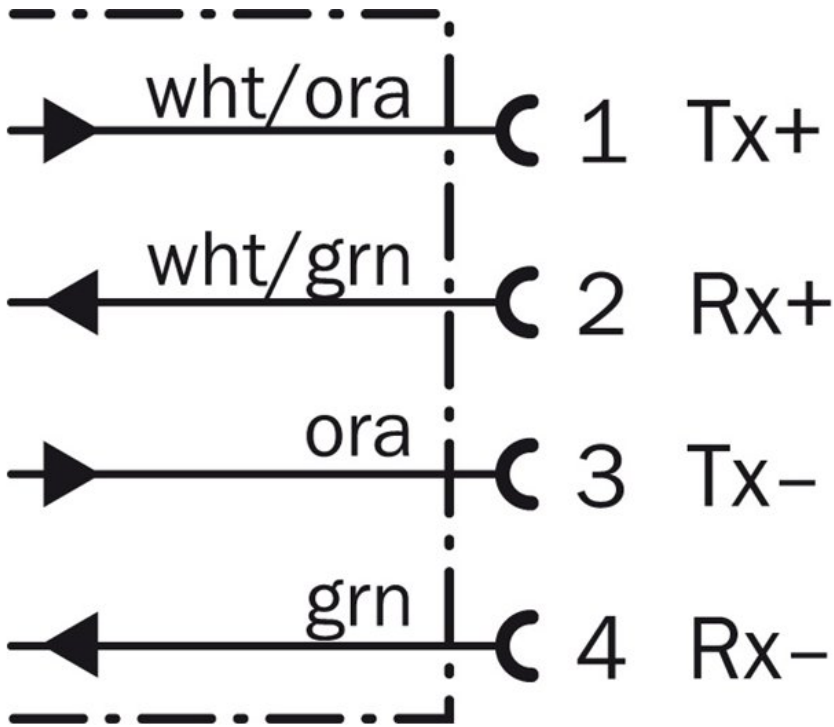
Connection type PROFIBUS IN



Connection diagramm PROFIBUS IN



Connection diagram Ethernet



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