



## Long range distance sensors Dx100, DL100, PROFINET

DL100-12AA2112



**Model Name** > **DL100-12AA2112**  
**Part No.** > **1060047**



#### 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 ... 130 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 (at dead time 10 ms), 1 mm (at dead time 30 ms) |
| Accuracy <sup>2)</sup> :         | ± 4 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  $\sigma$ , 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  $T_A = +25^\circ\text{C}$

## Interfaces

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

<sup>1)</sup> HIGH >  $V_S - 3\text{ V}$  / 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 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> : | ≤ 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

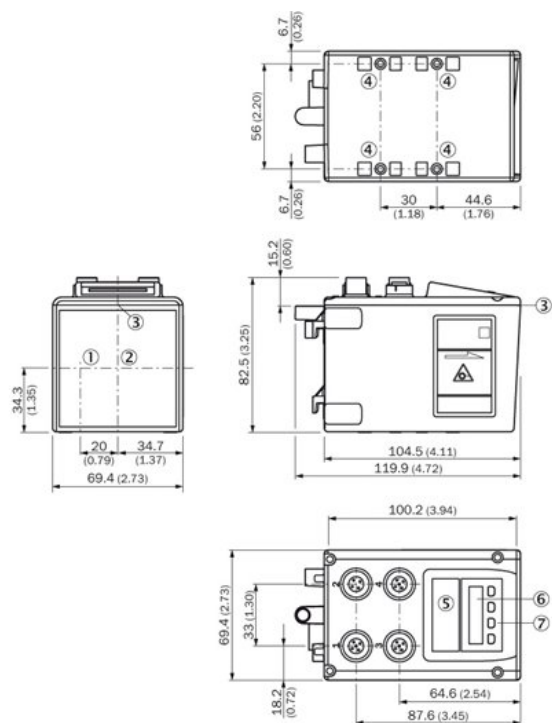
## Ambient data

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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<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                                                                        |

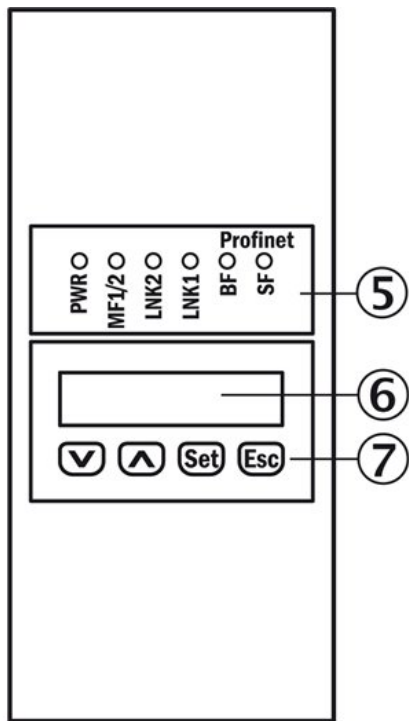
<sup>1)</sup> Temperatures < -10 °C require warm-up time of typ. 7 minutes.    <sup>2)</sup> This is a Class A device. This device can cause radio interference in living quarters.

Dimensional drawing

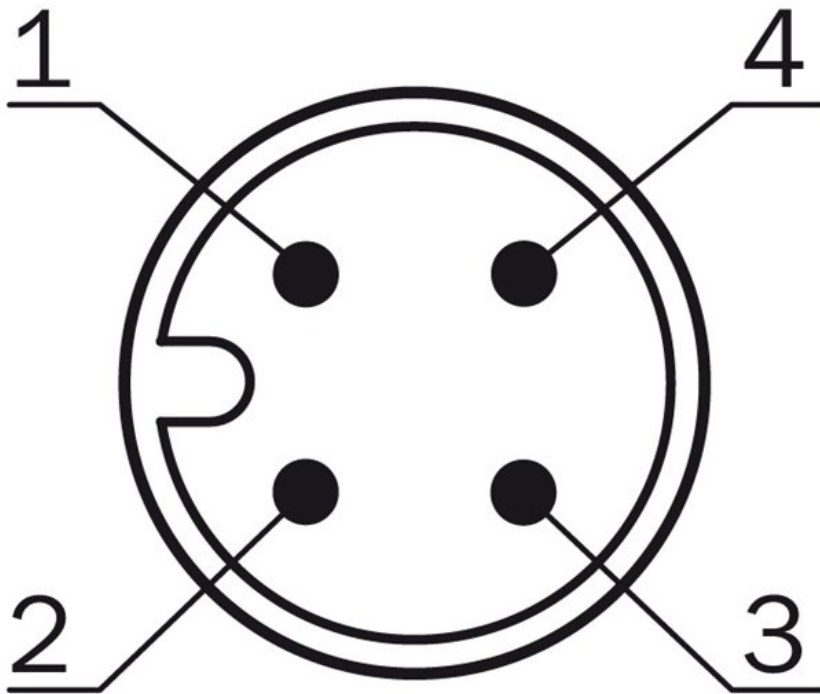


- |1| Optical axis, sender
- |2| Optical axis, receiver
- |3| Zero level
- |4| Threaded mounting hole M5
- |5| Status LED [status]
- |6| Display
- |7| Control elements

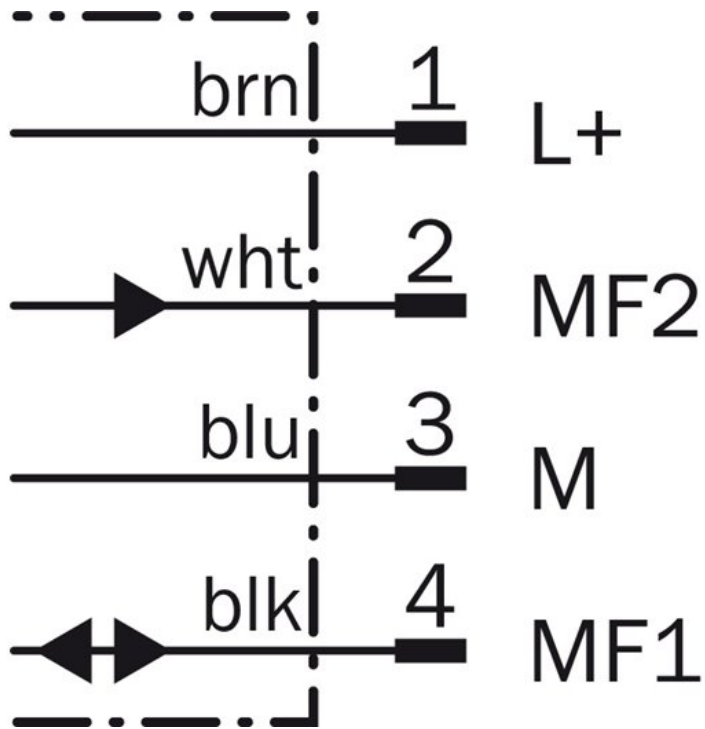
Adjustment possible

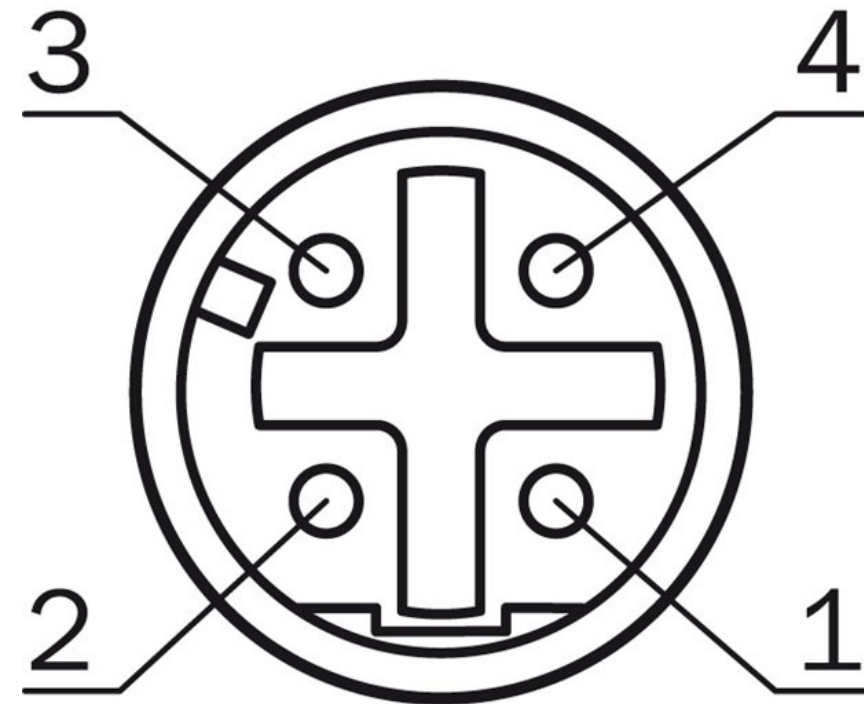


- |5| Status LED [status]
- |6| Display
- |7| Control elements

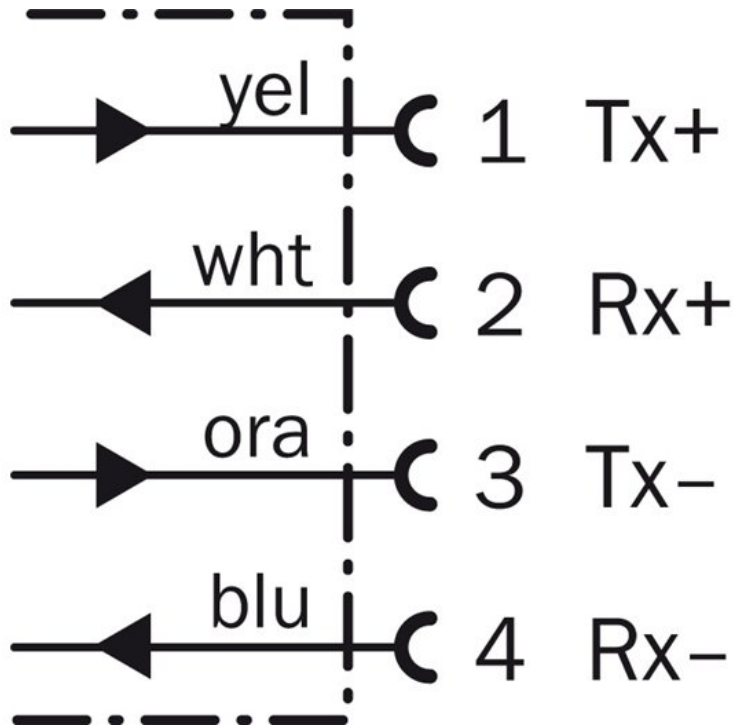


Connection diagram power supply





Connection diagram Ethernet



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