



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

DL100-23AA2101



**Model Name** > [DL100-23AA2101](#)  
**Part No.** > [1052696](#)

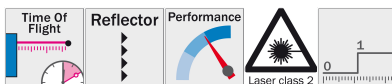


#### At a glance

- 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:                            | SSI                       |
| 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

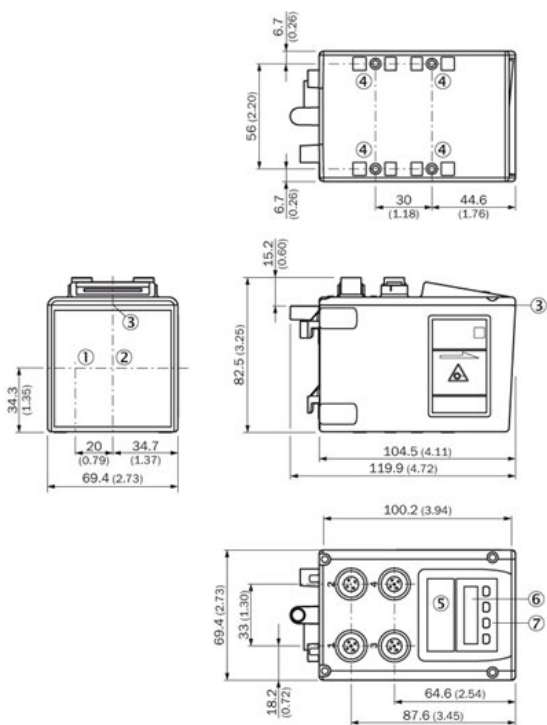
<sup>4)</sup> Short circuit/overload protected. Max. 100 nF/20 mH

## 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                                                                        |

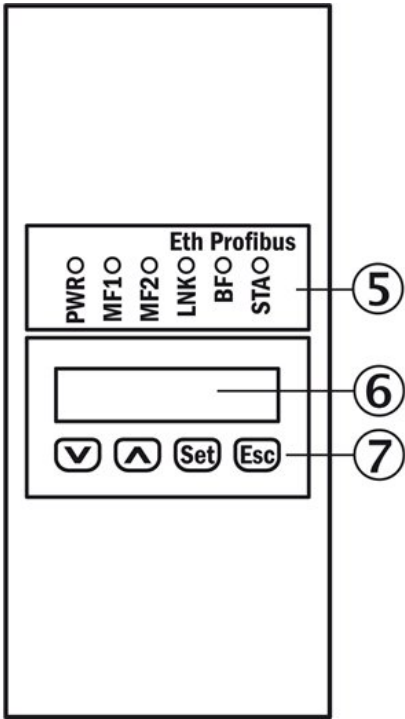
<sup>1)</sup> Temperatures < -10 °C require warm-up time of typ. 7 minutes. <sup>2)</sup> This is a Class A device. This device can cause radio interference in living quarters.

Dimensional drawing

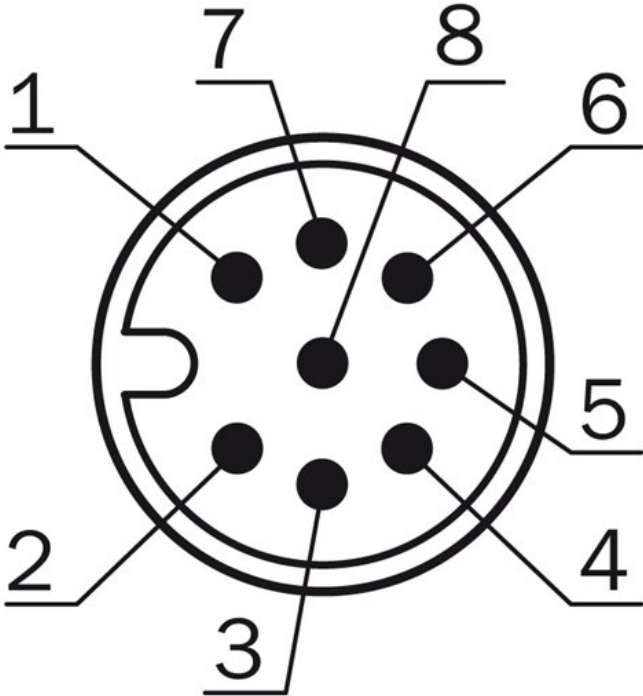


- |1| Optical axis, sender
- |2| Optical axis, receiver
- |3| Zero level
- |4| Threaded mounting hole M5
- |5| Status LED [status]
- |6| Display
- |7| Control elements

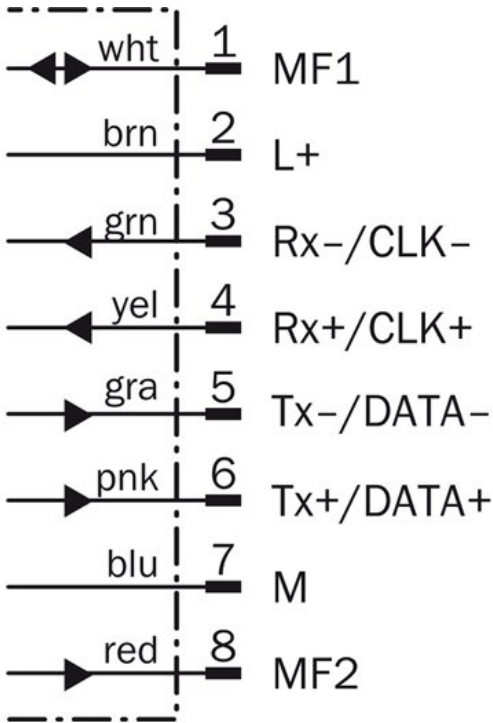
Adjustment possible

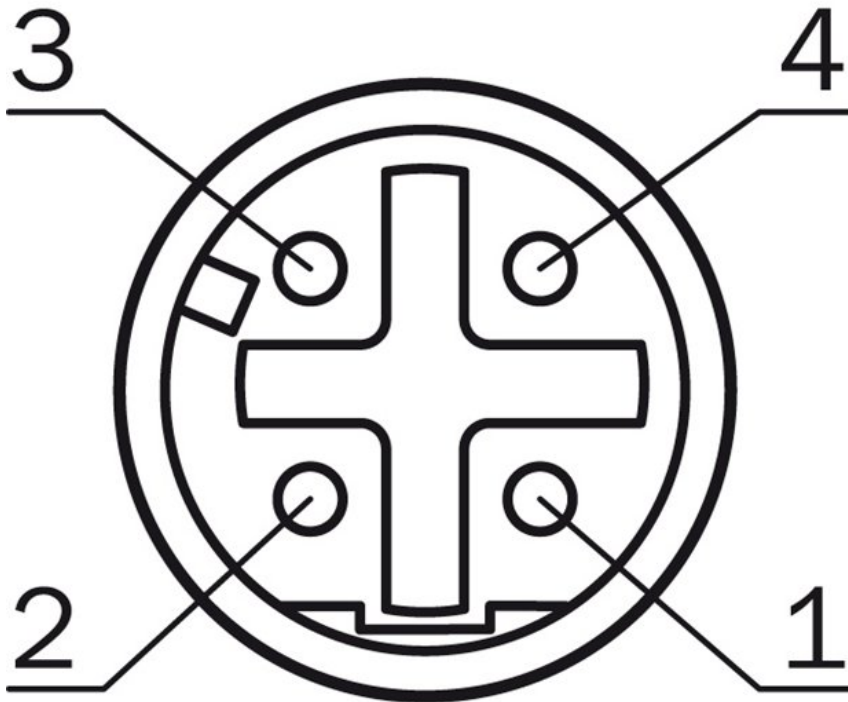


- |5| Status LED [status]
- |6| Display
- |7| Control elements

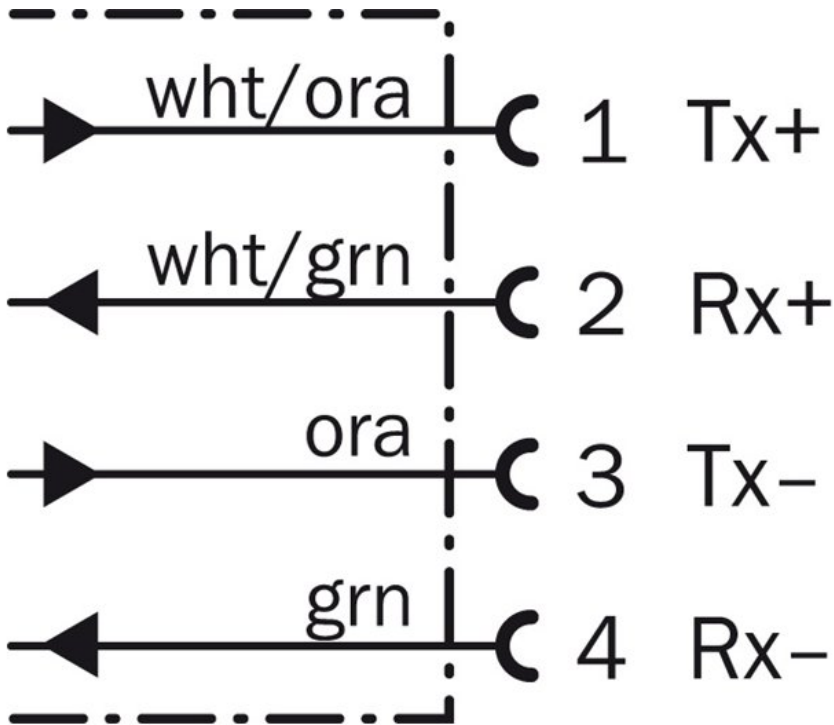


Connection diagram SSI/RS-422





Connection diagram Ethernet



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