



Long range distance sensors Dx100, DL100 Hi, PROFIBUS DP

DL100-21HA2102



Model Name > [DL100-21HA2102](#)
Part No. > [1052687](#)

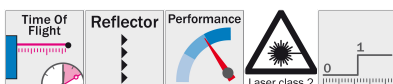


At a glance

- 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 ... 100 m, On reflective tape "Diamond Grade"
Resolution:	0.1 mm, 0.125 mm, 1 mm, 10 mm, 100 mm
Repeatability ¹⁾ :	0.5 mm
Accuracy ²⁾ :	± 2 mm
Light source ³⁾ :	Laser, red
Typ. light spot size (distance):	5 mm (+ 2 mm x distance in m)
Acceleration (max.):	15 m/s ²
Internal measurement cycle:	1 ms
Max. movement speed:	10 m/s
Dead time:	2 ms
Laser class:	2 (EN 60825-1/CDRH)

¹⁾ Statistical error 1 σ , environmental conditions constant, min. warm-up time 10 min ²⁾ From 150 mm ... 180 mm measuring range the accuracy can reach ± 4 mm ³⁾

Average service life of 100,000 h at $T_A = +25^\circ\text{C}$

Interfaces

Data interface:	PROFIBUS DP
Output type ¹⁾ :	B (push/pull) MF1, MF2
Multifunctional input (MF) ²⁾ :	1 x MF1

¹⁾ HIGH > $V_S - 3\text{ V}$ / LOW < 2 V ²⁾ HIGH > 12 V / LOW < 3 V

Mechanics/electronics

Supply voltage V_S :	DC 18 V ... 30 V, limit values
Ripple ¹⁾ :	5 Vpp
Initialization time ²⁾ :	Typ. 1.5 s
Indication:	6 digit 5 x 7 dot matrix display, LEDs
Weight ³⁾ :	Ca. 800 g ... 1,600 g
Output current I_A ⁴⁾ :	$\leq 100\text{ mA}$
Power consumption:	At 24 V DC < 1,000 mA
Connection type:	Connector M12, SPEEDCON™ compatible
Housing material:	Aluminum/zinc die-cast

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

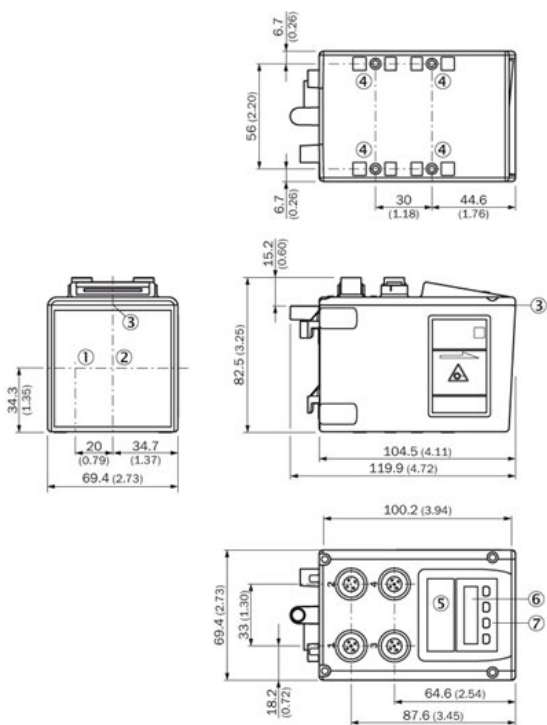
⁴⁾ Short circuit/overload protected. Max. 100 nF/20 mH

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:	Operation with heating: -40 ... 55 °C Operation with cooling case: -40 ... 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) ¹⁾ :	EN 61000-6-2/EN 61000-6-4

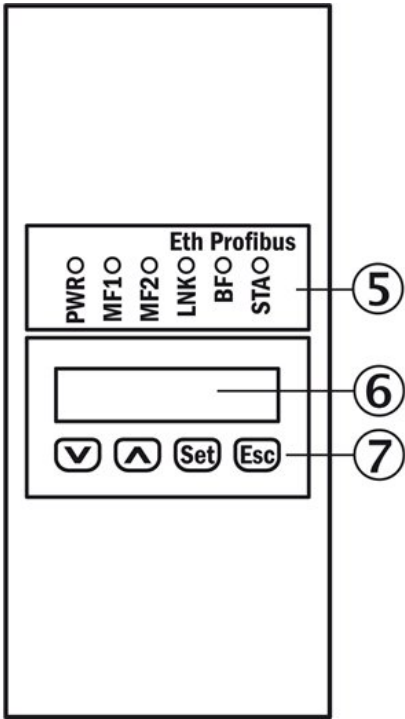
¹⁾ This is a Class A device. This device can cause radio interference in living quarters.

Dimensional drawing

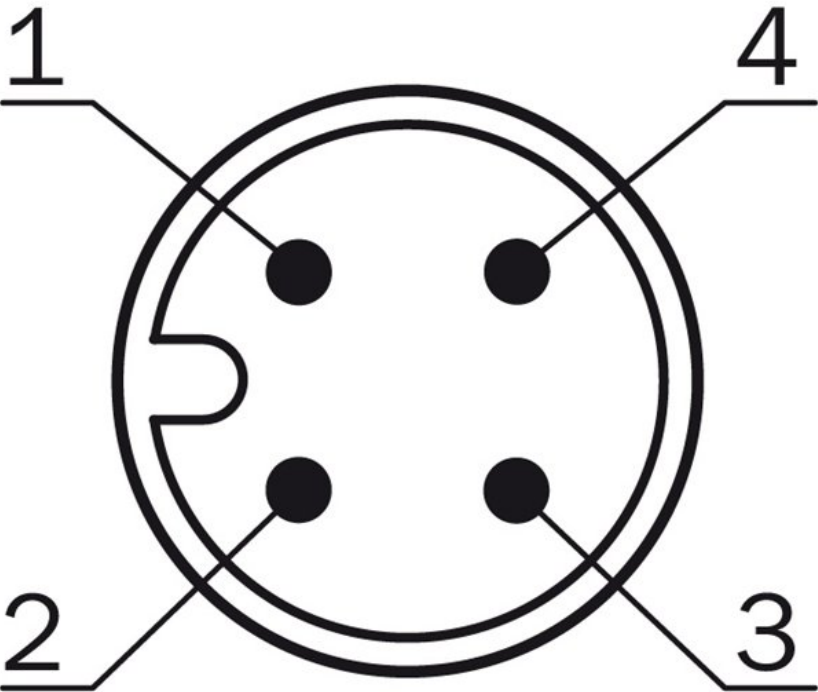


- |1| Optical axis, sender
- |2| Optical axis, receiver
- |3| Zero level
- |4| Threaded mounting hole M5
- |5| Status LED [status]
- |6| Display
- |7| Control elements

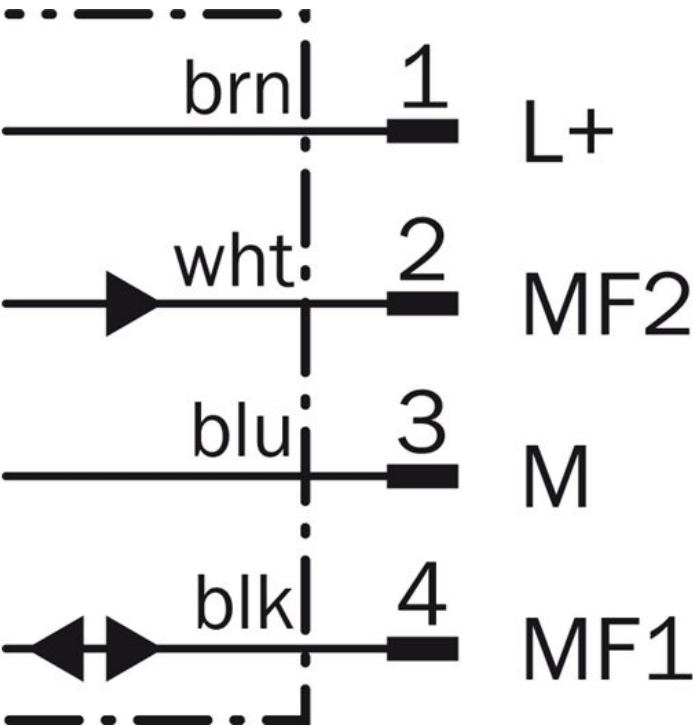
Adjustment possible

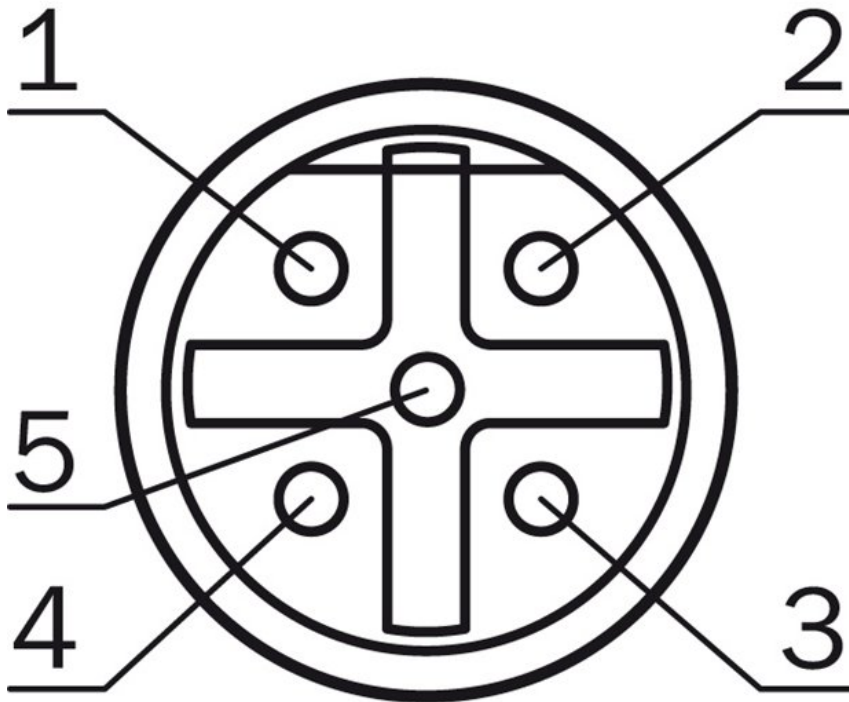


- |5| Status LED [status]
- |6| Display
- |7| Control elements

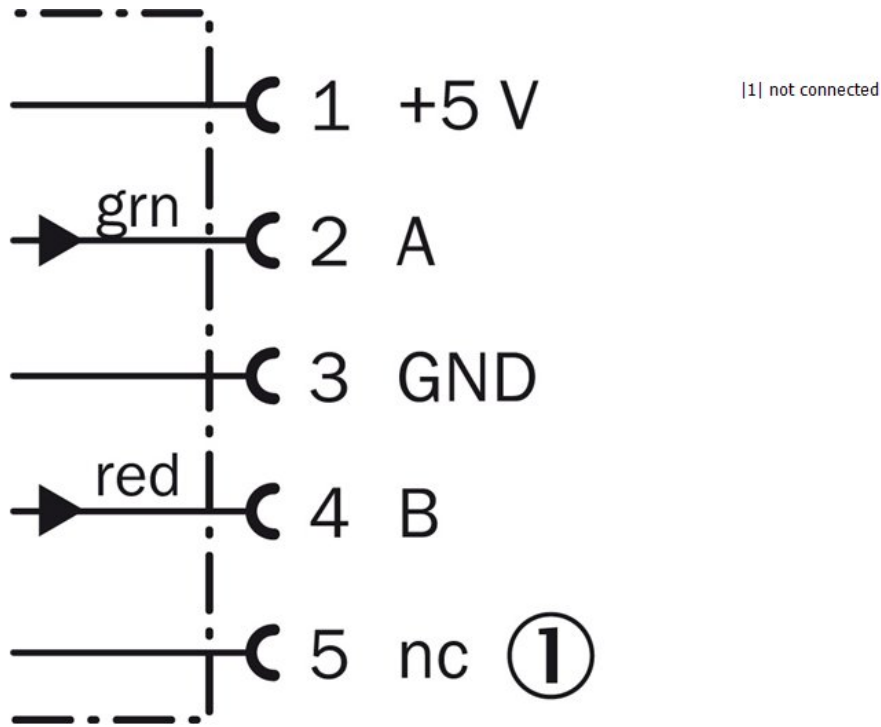


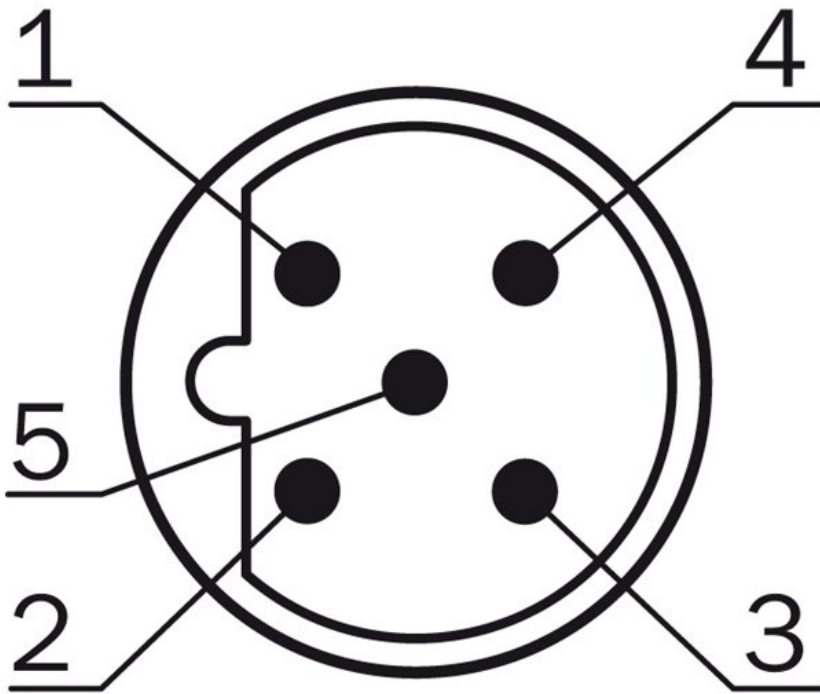
Connection diagram power supply



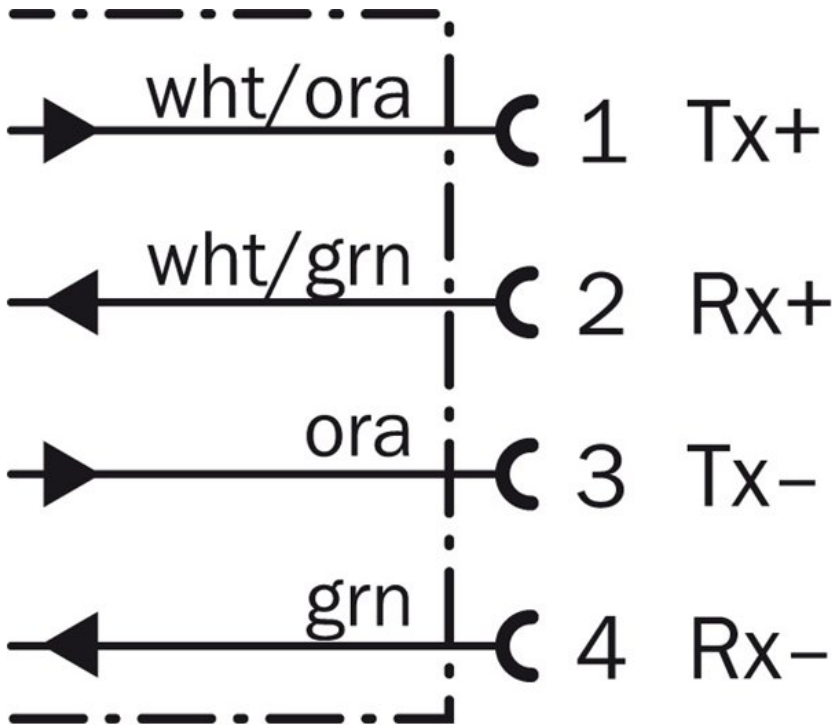


Connection diagram PROFIBUS OUT





Connection diagram Ethernet



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