



DL100-21AA2102

Dx100

LONG RANGE DISTANCE SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

| Type | Part no. |
|----------------|----------|
| DL100-21AA2102 | 1052686 |

Other models and accessories → www.sick.com/Dx100

Detailed technical data

Features

| | |
|--|--|
| Measuring range | 0.15 m ... 100 m, on "diamond grade" reflective tape |
| Scope | Indoor |
| Target | Reflector |
| Resolution | 0.1 mm, 0.125 mm, 1 mm, 10 mm, 100 mm |
| Repeatability | 0.5 mm ¹⁾ |
| Measurement accuracy | ± 2 mm ²⁾ |
| Response time | 2 ms |
| Measurement cycle time | 1 ms |
| Output time | 1 ms |
| Light source | Laser, red ³⁾ visible red light |
| Type of light | Visible red light |
| Laser class | 2, complies with 21 CFR 1040.10 and 1040.11 except for the conformance according to "Laser Notice No. 50" from June 24, 2007 (IEC 60825-1:2014, EN 60825-1:2014) |
| Typ. light spot size (distance) | 5 mm + (2 mm x distance in m) |
| Max. movement speed | 15 m/s |
| Acceleration (max.) | ≤ 15 m/s ² |
| Safety-related parameters | |
| | MTTF _D 101 years |
| | DC _{avg} 0% |

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: 100,000 h at T_J = +25 °C.

Interfaces

| | |
|--------------------|---|
| PROFIBUS DP | ✓ |
|--------------------|---|

¹⁾ HIGH = > V_S - 3 V / LOW = < 2 V.

²⁾ Max. 100 nF/20 mH.

³⁾ HIGH > 12 V / LOW < 3 V.

| | | |
|-----------------------------------|------------------------------|---|
| Digital output | Number | 2 ¹⁾ |
| | Type | Push-pull: PNP/NPN |
| | Function | Distance: Distance switching output Speed: Speed output Service: Warning message as the sensor ages, if the damping value is exceeded (for example when contaminated, if the permitted interior device temperature is exceeded or undercut, if the measured value has a plausibility error, if the laser is not ready for operation, if the heating is switched on Laser off Preset |
| | Maximum output current I_A | $\leq 100 \text{ mA}$ ²⁾ |
| Multifunctional input (MF) | | 1 x MF1 ³⁾ |

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

²⁾ Max. 100 nF/20 mH.

³⁾ HIGH > 12 V / LOW < 3 V.

Electronics

| | |
|--|--|
| Supply voltage U_B | DC 18 V ... 30 V, limit values |
| Current consumption | At 24 V DC < 250 mA |
| Ripple | 5 V _{pp} ¹⁾ |
| Modulation frequency | Fix |
| Initialization time | Typ. 1.5 s ²⁾ |
| Indication | 6 digit 5 x 7 dot matrix display, LEDs |
| Enclosure rating | IP65 |
| Protection class | III |

¹⁾ May not fall short of or exceed V_S tolerances.

²⁾ After loss of reflector < 40 ms.

Mechanics

| | |
|-------------------------------|--|
| Dimensions (W x H x D) | 69.4 mm x 82.5 mm x 100.2 mm |
| Housing material | Metal (Aluminum die cast) |
| Window material | Plastic (PMMA) |
| Weight | Approx. 800 g (with mounting bracket: approx. 1,600 g) |
| Connection type | Male connector, M12, SPEEDCON™ compatible |

Ambient data

| | |
|---------------------------------------|---|
| Ambient temperature, operation | -20 °C ... +55 °C ¹⁾ -20 °C ... +75 °C, operation with cooling case ¹⁾ |
| Ambient temperature, storage | -40 °C ... +75 °C |
| Effect of air pressure | 0.3 ppm/hPa |
| Effect of air temperature | 1 ppm/K |
| Temperature drift | Typ. 0.1 mm/K |
| Typ. Ambient light immunity | $\leq 100,000 \text{ lx}$ |
| Mechanical load | Shock: (EN 600 68-2-27) |

¹⁾ Temperatures < -10 °C require warm-up time of typ. 7 minutes.

²⁾ This is a Class A device. This device can cause radio interference in living quarters.

| | |
|--|--|
| | Sine: (EN 600 68-2-6) Noise: (EN 600 68-2-64) |
| Electromagnetic compatibility (EMC) | EN 61000-6-2, EN 61000-6-4 ²⁾ |

¹⁾ Temperatures < -10 °C require warm-up time of typ. 7 minutes.

²⁾ This is a Class A device. This device can cause radio interference in living quarters.

Classifications

| | |
|-----------------------|----------|
| ECLASS 5.0 | 27270801 |
| ECLASS 5.1.4 | 27270801 |
| ECLASS 6.0 | 27270801 |
| ECLASS 6.2 | 27270801 |
| ECLASS 7.0 | 27270801 |
| ECLASS 8.0 | 27270801 |
| ECLASS 8.1 | 27270801 |
| ECLASS 9.0 | 27270801 |
| ECLASS 10.0 | 27270801 |
| ECLASS 11.0 | 27270801 |
| ECLASS 12.0 | 27270916 |
| ETIM 5.0 | EC001825 |
| ETIM 6.0 | EC001825 |
| ETIM 7.0 | EC001825 |
| ETIM 8.0 | EC001825 |
| UNSPSC 16.0901 | 41111613 |

Dimensional drawing (Dimensions in mm (inch))

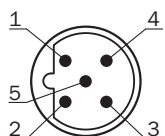
Dimensional drawing



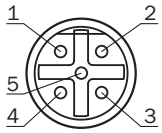
- ① Optical axis, sender
- ② Optical axis, receiver
- ③ Zero level
- ④ Threaded mounting hole M5
- ⑤ Status LED [status]
- ⑥ Display
- ⑦ Control elements

Connection type

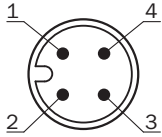
PROFIBUS IN connection type



PROFIBUS OUT connection type

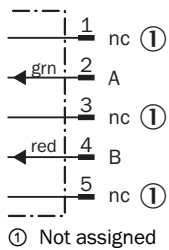


Voltage supply connection type

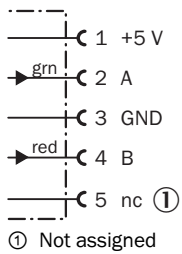


Connection diagram

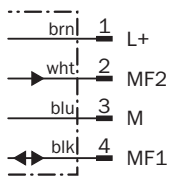
PROFIBUS IN connection diagram



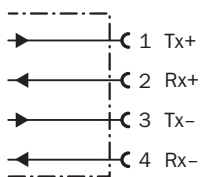
PROFIBUS OUT connection diagram



Voltage supply connection diagram

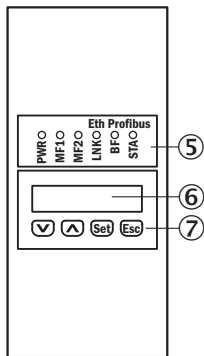


Ethernet connection diagram



Adjustment possible

DL100-xxXXxx02







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

Recommended accessories

Other models and accessories → www.sick.com/Dx100

| | Brief description | Type | Part no. |
|--|---|---|----------|
| Sets and kits | | | |
| | <ul style="list-style-type: none"> Description: Accessory kit for upgrade from DME3000 PROFIBUS to Dx100 PROFIBUS | DME3000 Dx100 PROFIBUS upgrade kit | 2065222 |
| | <ul style="list-style-type: none"> Description: Accessory kit for upgrade from DME4000/5000 PROFIBUS to Dx100 PROFIBUS | DME4000/5000 Dx100 PROFIBUS upgrade kit | 2065220 |
| Reflectors | | | |
| | <ul style="list-style-type: none"> Accessory group: Reflectors Accessory family: Angular Description: Reflector plate, "diamond grade" reflective tape, 330 mm x 330 mm, base plate material: aluminum, screw connection Ambient operating temperature: -34 °C ... +70 °C | PL240DG | 1017910 |
| | <ul style="list-style-type: none"> Accessory group: Reflectors Accessory family: Angular Description: Reflector plate, "diamond grade" reflective tape, 665 mm x 665 mm, base plate material: aluminum, screw connection Ambient operating temperature: -25 °C ... +65 °C | PL560DG | 1016806 |
| Terminal and alignment brackets | | | |
| | <ul style="list-style-type: none"> Description: Alignment unit for Dx100, incl. mounting material Material: Steel Details: Steel, zinc coated | BEF-AH-DX100 | 2058653 |
| Others | | | |
| | <ul style="list-style-type: none"> Connection type head A: Male connector, M12, 4-pin, straight, D-coded Connection type head B: Male connector, RJ45, 8-pin, straight Signal type: PROFINET Cable: 5 m, 4-wire, AWG22, PUR, halogen-free Description: PROFINET, shielded | SSL-2J04-G05MZ | 6035389 |

| | Brief description | Type | Part no. |
|---|---|--------------------|----------|
|  | <ul style="list-style-type: none"> • Connection type head A: Male connector, M12, 5-pin, straight, B-coded • Connection type head B: Flying leads • Signal type: PROFIBUS DP • Cable: 10 m, 2-wire, PUR, halogen-free • Description: PROFIBUS DP, twisted pair, shielded • Note: Wire shield Al-Pt film, overall shield C-screen tin-plated • Application: Zones with oils and lubricants, Drag chain operation | STL-1205-G10MQ | 6026007 |
|  | <ul style="list-style-type: none"> • Connection type head A: Male connector, M12, 4-pin, straight, B-coded • Signal type: PROFIBUS DP • Description: PROFIBUS DP, terminal resistor | STE-END-Q | 6021156 |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 5-pin, straight, B-coded • Connection type head B: Flying leads • Signal type: PROFIBUS DP • Cable: 10 m, 2-wire, PUR, halogen-free • Description: PROFIBUS DP, twisted pair, shielded • Connection systems: Flying leads • Application: Zones with oils and lubricants | DOL-1205-G10MQ | 6026008 |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 4-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 5 m, 4-wire, PVC • Description: Sensor/actuator cable, unshielded • Application: Zones with chemicals, Uncontaminated zones | YF2A14-050VB3XLEAX | 2096235 |

SICK AT A GLANCE

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We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

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For us, that is “Sensor Intelligence.”

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