



DL100-23AA2102

Dx100

TIME-OF-FLIGHT SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

| Type | part no. |
|----------------|----------|
| DL100-23AA2102 | 1052698 |

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

Detailed technical data

Features

| | |
|----------------------------------|--|
| Measuring range | 0.15 m ... 300 m, on "diamond grade" reflective tape |
| Scope | Indoor |
| Target | Reflector |
| Resolution | 0.1 mm, 0.125 mm, 1 mm, 10 mm, 100 mm |
| Repeatability | 2 mm ¹⁾ |
| Measurement accuracy | ± 3 mm ²⁾ |
| Response time | 2 ms |
| Measurement cycle time | 1 ms |
| Output time | 1 ms |
| Emitted beam | |
| Light source | Laser, red ³⁾ |
| Type of light | Visible red light |
| Typ. light spot size (distance) | 5 mm + (2 mm x distance in m) |
| Key laser figures | |
| Normative reference | IEC 60825-1:2014, EN 60825-1:2014 |
| Laser class | 2 ⁴⁾ |
| 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_U = +25 °C.

⁴⁾ Do not intentionally look into the laser beam. Never point the laser beam at people's eyes.

Interfaces

| | |
|-----------------------------------|--|
| PROFIBUS DP | ✓ |
| 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 = $< 2 \text{ V}$.

²⁾ Max. 100 nF/20 mH.

³⁾ HIGH $> 12 \text{ V}$ / LOW $< 3 \text{ V}$.

Electronics

| | |
|--|---|
| Supply voltage U_B | DC 18 V ... 30 V, limit values |
| Current consumption | At 24 V DC $< 250 \text{ mA}$ |
| Ripple | 5 V _{pp} ¹⁾ |
| Modulation frequency | Fix |
| Initialization time | Typ. 1.5 s ²⁾ |
| Display | 6 digit 5 x 7 dot matrix display, LEDs |
| Enclosure rating | IP65 |
| Protection class | III |
| Connection type | Male connector, M12, SPEEDCON™ compatible |

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

²⁾ After loss of reflector $< 40 \text{ ms}$.

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) |

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 |

¹⁾ Temperatures $< -10 \text{ °C}$ require warm-up time of typ. 7 minutes.

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

| | |
|--|---|
| 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 | ≤ 100,000 lx |
| Mechanical load | Shock: (EN 600 68-2-27) 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.

Certificates

| | |
|--|---|
| EU declaration of conformity | ✓ |
| UK declaration of conformity | ✓ |
| ACMA declaration of conformity | ✓ |
| Moroccan declaration of conformity | ✓ |
| China RoHS | ✓ |
| cULus certificate | ✓ |
| Information according to Art. 3 of Data Act (Regulation EU 2023/2854) | ✓ |

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 |

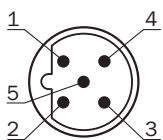
Dimensional drawing



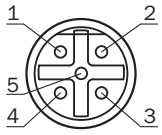
Dimensions in mm (inch)

- 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

PROFIBUS IN connection type



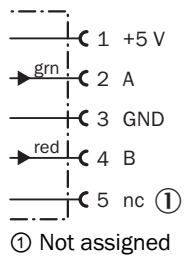
PROFIBUS OUT connection type



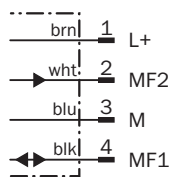
Voltage supply connection type



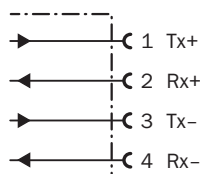
PROFIBUS OUT connection diagram



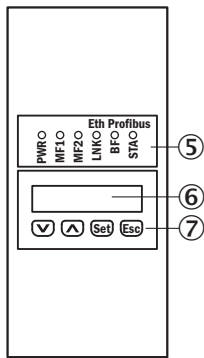
Voltage supply connection diagram



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. |
|---|---|--------------|----------|
| reflectors and optics | | | |
|  | <ul style="list-style-type: none"> 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 |
|  | <ul style="list-style-type: none"> 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 |
| Mounting systems | | | |
|  | <ul style="list-style-type: none"> Description: Alignment unit for Dx100, incl. mounting material Material: Steel Details: Steel, zinc coated | BEF-AH-DX100 | 2058653 |

| | Brief description | Type | part no. |
|--|---|--|----------|
| connectors and cables | | | |
|  | | DME3000 Dx100 PROFIBUS upgrade kit | 2065222 |
|  | <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 |
|  | <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"> • Description: PROFIBUS DP, terminal resistor • Connection type head A: Male connector, M12, 4-pin, straight, B-coded • Signal type: PROFIBUS DP | 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"> • Description: Sensor/actuator cable, unshielded • 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 • Application: Uncontaminated zones, Zones with chemicals | 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.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

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