Data sheet




# DL100-12AA2110

Dx100

TIME-OF-FLIGHT SENSORS

SICK
Sensor Intelligence.



Illustration may differ

## Ordering information

| Type | part no. |
|---|---|
| DL100-12AA2110 | 1066434 |

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

## Detailed technical data

### Features

| | |
|---|---|
| **Measuring range** | 0.15 m ... 130 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, at dead time 10 ms [1]<br>1 mm, at dead time 30 ms [1] |
| **Measurement accuracy** | ± 4 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** | 10 m/s |
| **Safety-related parameters** | |
| $MTTF_D$ | 101 years |
| $DC_{avg}$ | 0% |

[1] Statistical error 1 σ, environmental conditions constant, depending on operating mode.
[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.

## Interfaces

| | |
|---|---|
| **EtherNet/IP™** | ✓ |
| **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 $I_A$ | ≤ 100 mA [2] |
| **Multifunctional input (MF)** | 1 x MF1 [3] |

[1] HIGH = > $V_S$ - 3 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]<br>–20 °C ... +75 °C, operation with cooling case |
| **Ambient temperature, storage** | –40 °C ... +75 °C |
| **Effect of air pressure** | 0.3 ppm/hPa |

[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.

| | |
|---|---|
| **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)<br>Sine: (EN 600 68-2-6)<br>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.

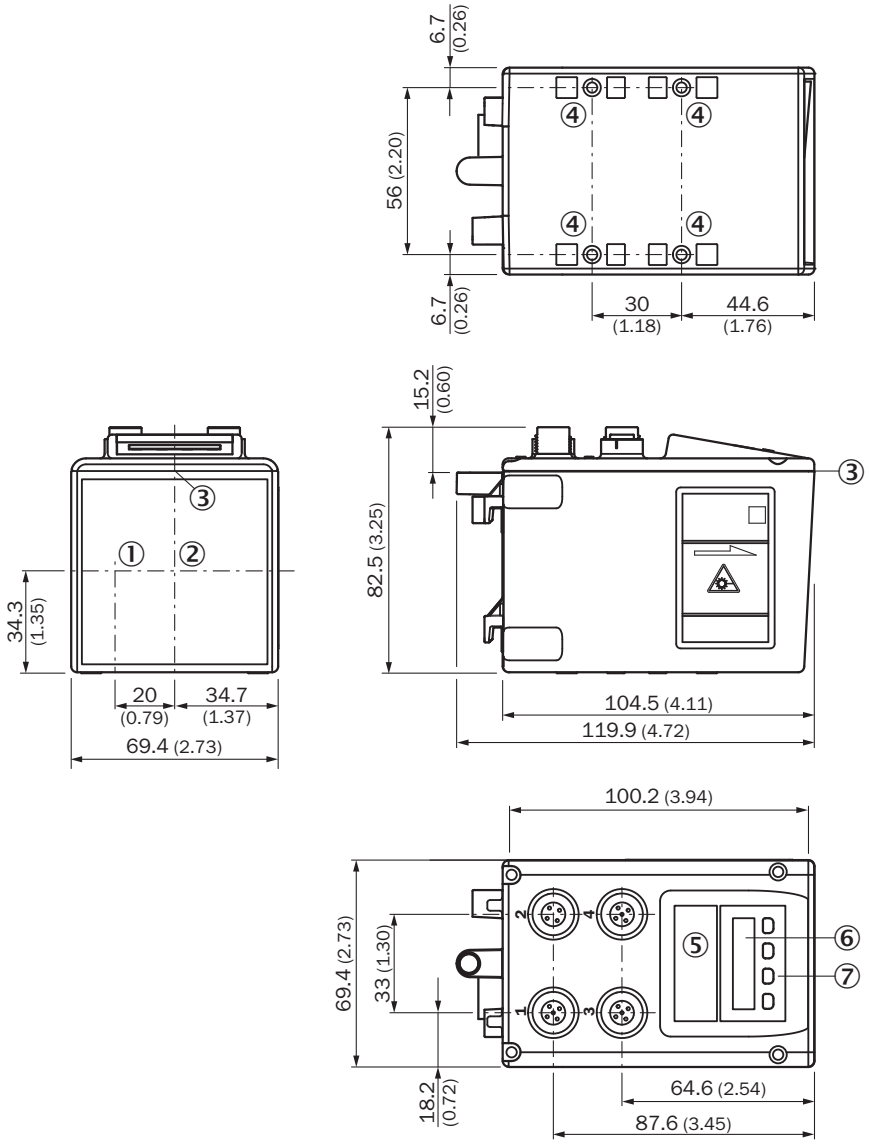
## Certificates

| | |
|---|---|
| **EU declaration of conformity** | ✓ |
| **UK declaration of conformity** | ✓ |
| **ACMA declaration of conformity** | ✓ |
| **Moroccan declaration of conformity** | ✓ |
| **China-RoHS** | ✓ |
| **cULus certificate** | ✓ |
| **Ethernet/IP certificate** | ✓ |

## Classifications

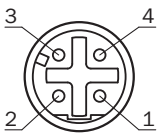
| | |
|---|---|
| **ECLASS 5.0** | 27270801 |
| **ECLASS 5.1.4** | 27270801 |
| **ECLASS 6.0** | 27270801 |
| **ECLASS 6.2** | 27270801 |
| **ECLASS 7.0** | 27270801 |
| **ECLASS 8.0** | 27270801 |
| **ECLASS 8.1** | 27270801 |
| **ECLASS 9.0** | 27270801 |
| **ECLASS 10.0** | 27270801 |
| **ECLASS 11.0** | 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

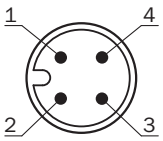



Dimensions in mm (inch)
① Optical axis, sender
② Optical axis, receiver
③ Zero level
④ Threaded mounting hole M5
⑤ status LED [status]
⑥ Display
⑦ Control elements

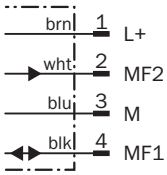
## Ethernet connection type



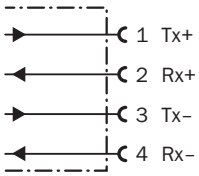
## Voltage supply connection type



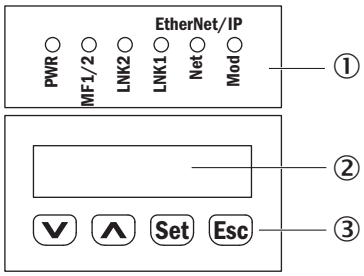

## Voltage supply connection diagram




## Ethernet connection diagram




## Adjustment possible DL100-xxxxxx10




① status LED [status]
② Display
③ Control element

## Recommended accessories

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

| | Brief description | Type | part no. |
|---|---|---|---|
| Mounting systems | | | |
|  | • **Description:** Alignment unit for Dx100, incl. mounting material<br>• **Material:** Steel<br>• **Details:** Steel, zinc coated | BEF-AH-DX100 | 2058653 |
| reflectors and optics | | | |
|  | • **Description:** Reflector plate, “diamond grade” reflective tape, 665 mm x 665 mm, base plate material: aluminum, screw connection<br>• **Ambient operating temperature:** –25 °C ... +65 °C | PL560DG | 1016806 |
|  | • **Description:** Reflector plate, “diamond grade” reflective tape, 330 mm x 330 mm, base plate material: aluminum, screw connection<br>• **Ambient operating temperature:** –34 °C ... +70 °C | PL240DG | 1017910 |

# SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

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.”**

# WORLDWIDE PRESENCE:

Contacts and other locations –www.sick.com