Product overview

Dx100

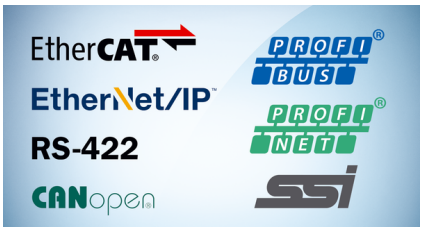
Reliable, fast, precise positioning

SICK
Sensor Intelligence.

Advantages

Dx100 Pro - flawless distance sensors for precise positioning tasks

When positioning automated storage and retrieval systems, automated parking systems, cranes and countless other moving system parts, the speed and low downtime, in addition to the accuracy and repeatability, are key. The DL100 long range distance sensor is not only the smallest sensor in its performance class, but was also developed specially for the highest drive speeds and rapid processing of signals in dynamic control circuits. DL100 devices are also predictive and send timely information to the control system if, for example, maintenance is required to due contamination. Countless interfaces and an innovative mounting concept improve the top performance of these sensors even further.



Additional product highlights

- SSI and PROFINET united: The combination of the SSI and PROFINET interfaces in one device offers countless benefits and extended application possibilities: **DL100-2xxx2213**.
- PROFINET netload class III: Thanks to PROFINET netload class III, the DL100 guarantees maximum reliability and durability - even at very high network utilization: **DL100-2xxx2212** and **DL100-2xxx2213**.
- Variants with spectral filter and frequency switching: No minimum distance required during installation of several DL100 devices next to one another or in the arrangement between DL100 devices and ISD400 Pro optical data transmission.

Much smaller than comparable distance sensors

The housing of the Dx100 long range distance sensors measures only 119.9 mm x 82.5 mm x 69.4 mm. This makes them the smallest distance sensors in their performance class. They impress with new installation options, low weight and easy handling during mounting.

Innovative mounting system for easy mounting and quick device exchange

(1) Clip device into tailor-made plate.
(2) Fasten with black fixing screw.
(3) Fine adjustment using 3 spring-loaded screws.

Maximum performance and innovative product features ensure extreme flexibility and maximum system productivity.

DL100 and ISD400 Pro - a powerful team for distance measurement and data transmission

The dynamic nature of state-of-the-art automated storage and retrieval systems and countless other applications not only demands fast and accurate positioning, but also effective communication with the stationary control technology. SICK offers a solution which is up to the challenge: The DL100 long range distance sensor in conjunction with the ISD400 Pro optical data transmission system.

A combination of economic efficiency and value creation: Both the DL100 and the ISD400 Pro are quick and easy to integrate in your plant, making them a well-coordinated and virtually unbeatable team. Both feature numerous diagnostics options which minimize downtimes while also optimizing system productivity.

SICK LifeTime Services

SICK's services increase machine and plant productivity, enhance the safety of people all over the world, provide a solid foundation for a sustainable business operation, and protect investment goods. In addition to its usual consulting services, SICK provides direct on-site support during the conceptual design and commissioning phases as well as during operation.

The range of services not only covers aspects like maintenance and inspection, but also includes performance checks as well as upgrades and retrofits. Modular or customized service contracts extend the service life of plants and therefore increase their availability. If faults occur or limit values are exceeded, these are detected at all times by the corresponding sensors and systems.

Consulting and design
Application-specific advice on the product, its integration and the application itself.

commissioning and maintenance
Application-optimized and sustainable — thanks to professional commissioning and maintenance by a trained SICK service technician.

service contracts
Extended warranty, SICK Remote Service, 24-hour helpdesk, maintenance, availability guarantees and other modular components can be individually combined on request.

Technical data overview

Resolution	0.1 mm, 0.125 mm, 1 mm, 10 mm, 100 mm / 0.1 mm, 0.125 mm, 1 mm, 10 mm, 100 mm, freely adjustable (depends on variant)
Repeatability	2 mm 0.5 mm 1 mm (depends on variant)
Response time	2 ms
Output time	1 ms, measurement cycle synchronous to PLC request (depends on variant)
Digital output	
Type	Push-pull: PNP/NPN
SSI	✓
Serial	✓, RS-422
PROFINET	✓
PROFIBUS DP	✓
CANopen	✓, CANopen
EtherNet/IP™	✓
EtherCAT ®	✓
Enclosure rating	IP65
Ambient temperature, operation	–20 °C ... +75 °C, operation with cooling case [1] –40 °C ... +75 °C, operation with heating, operation with cooling case [1] [2]

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

[2] For operation below –20 °C, a supply voltage of at least 24 V is required.

Product description

The Dx100 family combines leading edge technology with innovative design. The product's phase-shift measurement technology ensures the highest performance, which, in co-operation with drives manufacturers, has been optimized for perfect integration into closed control loops. Our innovative 3-axis bracket, the smallest housing in its sensor class, as well as the intelligent quick lock system with fast connectors, offers optimized handling and reduced costs of ownership.

At a glance

- Measuring range up to 300 m (dependent on type)
- 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

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 (dependent on type)
- 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

Fields of application

- Positioning of ASRS stacker cranes (x and y axis)
- Positioning of transfer cars
- Positioning of automated guided vehicles
- Anti-collision and positioning of cranes (indoor)
- Trolley positioning

Ordering information

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

- **Communication interface:** SSI
- **Measuring range:** 0.15 m ... 300 m, on “diamond grade” reflective tape
- **Laser class:** 2

Light source	Minimum response time	Digital output	Type	Part no.
Laser, red [1]	2 ms	2 x push-pull: PNP/NPN	DL100-23AA2101	1052696
			DL100-23AB2101	1060948
			DL100-23HA2101	1052697

[1] Average service life: 100,000 h at T_U = +25 °C.

- **Communication interface:** SSI
- **Measuring range:** 0.15 m ... 100 m, on “diamond grade” reflective tape
- **Laser class:** 2

Light source	Minimum response time	Digital output	Type	Part no.
Laser, red [1]	2 ms	2 x push-pull: PNP/NPN	DL100-21AA2101	1052684
			DL100-21HA2101	1052685

[1] Average service life: 100,000 h at T_U = +25 °C.

- **Communication interface:** SSI
- **Measuring range:** 0.15 m ... 200 m, on “diamond grade” reflective tape
- **Laser class:** 2

Light source	Minimum response time	Digital output	Type	Part no.
Laser, red [1]	2 ms	2 x push-pull: PNP/NPN	DL100-22AA2101	1052690
			DL100-22HA2101	1052691

[1] Average service life: 100,000 h at T_U = +25 °C.

- **Communication interface:** Serial
- **Measuring range:** 0.15 m ... 100 m, on “diamond grade” reflective tape
- **Laser class:** 2

Light source	Minimum response time	Digital output	Type	Part no.
Laser, red [1]	2 ms	2 x push-pull: PNP/NPN	DL100-21AA2103	1052688
			DL100-21AB2103	1060953
			DL100-21HA2103	1052689

[1] Average service life: 100,000 h at T_U = +25 °C.

- **Communication interface:** Serial
- **Measuring range:** 0.15 m ... 300 m, on “diamond grade” reflective tape
- **Laser class:** 2

Light source	Minimum response time	Digital output	Type	Part no.
Laser, red [1]	2 ms	2 x push-pull: PNP/NPN	DL100-23AA2103	1052700
			DL100-23AB2103	1060950
			DL100-23HA2103	1052701

[1] Average service life: 100,000 h at T_U = +25 °C.

- **Communication interface:** Serial
- **Measuring range:** 0.15 m ... 200 m, on “diamond grade” reflective tape
- **Laser class:** 2

Light source	Minimum response time	Digital output	Type	Part no.
Laser, red [1]	2 ms	2 x push-pull: PNP/NPN	DL100-22AA2103	1052694
			DL100-22HA2103	1052695

[1] Average service life: 100,000 h at T_U = +25 °C.

- **Communication interface:** PROFINET
- **Measuring range:** 0.15 m ... 300 m, on “diamond grade” reflective tape
- **Laser class:** 2

Light source	Minimum response time	Digital output	Type	Part no.
Laser, red [1]	2 ms	2 x push-pull: PNP/NPN	DL100-23AA2112	1058168
			DL100-23AA2212	1086986
			DL100-23AB2112	1060952
			DL100-23AB2212	1086988
			DL100-23HA2112	1058169
			DL100-23HA2212	1086987

[1] Average service life: 100,000 h at T_U = +25 °C.

- **Communication interface:** PROFINET
- **Measuring range:** 0.15 m ... 100 m, on “diamond grade” reflective tape
- **Laser class:** 2

Light source	Minimum response time	Digital output	Type	Part no.
Laser, red [1]	2 ms	2 x push-pull: PNP/NPN	DL100-21AA2112	1058164
			DL100-21AA2112 PROFINET Set 5	1105942
			DL100-21AA2212	1086984
			DL100-21HA2112	1058165

[1] Average service life: 100,000 h at T_U = +25 °C.

- **Communication interface:** PROFINET
- **Measuring range:** 0.15 m ... 200 m, on “diamond grade” reflective tape
- **Laser class:** 2

Light source	Minimum response time	Digital output	Type	Part no.
Laser, red [1]	2 ms	2 x push-pull: PNP/NPN	DL100-22AA2112	1058166
			DL100-22AA2212	1086985
			DL100-22HA2112	1058167

[1] Average service life: 100,000 h at T_U = +25 °C.

- **Communication interface:** PROFINET, SSI
- **Measuring range:** 0.15 m ... 100 m, on “diamond grade” reflective tape
- **Laser class:** 2

Light source	Minimum response time	Digital output	Type	Part no.
Laser, red [1]	2 ms	2 x push-pull: PNP/NPN	DL100-21AA2213	1096493
			DL100-21HA2213	1096494

[1] Average service life: 100,000 h at T_U = +25 °C.

- **Communication interface:** PROFINET, SSI
- **Measuring range:** 0.15 m ... 200 m, on “diamond grade” reflective tape
- **Laser class:** 2

Light source	Minimum response time	Digital output	Type	Part no.
Laser, red [1]	2 ms	2 x push-pull: PNP/NPN	DL100-22AA2213	1096495
			DL100-22HA2213	1096496

[1] Average service life: 100,000 h at T_U = +25 °C.

- **Communication interface:** PROFINET, SSI
- **Measuring range:** 0.15 m ... 300 m, on “diamond grade” reflective tape
- **Laser class:** 2

Light source	Minimum response time	Digital output	Type	Part no.
Laser, red [1]	2 ms	2 x push-pull: PNP/NPN	DL100-23AA2213	1096497
			DL100-23AB2213	1096499
			DL100-23HA2213	1096498
			DL100-23HB2213	1096500

[1] Average service life: 100,000 h at T_U = +25 °C.

- **Communication interface:** PROFIBUS DP
- **Measuring range:** 0.15 m ... 100 m, on “diamond grade” reflective tape
- **Laser class:** 2

Light source	Minimum response time	Digital output	Type	Part no.
Laser, red [1]	2 ms	2 x push-pull: PNP/NPN	DL100-21AA2102	1052686
			DL100-21HA2102	1052687
			DL100-21HB2102	1064835

[1] Average service life: 100,000 h at T_U = +25 °C.

- **Communication interface:** PROFIBUS DP
- **Measuring range:** 0.15 m ... 300 m, on “diamond grade” reflective tape
- **Laser class:** 2

Light source	Minimum response time	Digital output	Type	Part no.
Laser, red [1]	2 ms	2 x push-pull: PNP/NPN	DL100-23AA2102	1052698
			DL100-23AB2102	1060949
			DL100-23HA2102	1052699

[1] Average service life: 100,000 h at T_U = +25 °C.

- **Communication interface:** PROFIBUS DP
- **Measuring range:** 0.15 m ... 200 m, on “diamond grade” reflective tape
- **Laser class:** 2

Light source	Minimum response time	Digital output	Type	Part no.
Laser, red [1]	2 ms	2 x push-pull: PNP/NPN	DL100-22AA2102	1052692
			DL100-22HA2102	1052693

[1] Average service life: 100,000 h at T_U = +25 °C.

- **Communication interface:** CANopen
- **Measuring range:** 0.15 m ... 300 m, on “diamond grade” reflective tape
- **Laser class:** 2

Light source	Minimum response time	Digital output	Type	Part no.
Laser, red [1]	2 ms	2 x push-pull: PNP/NPN	DL100-23AA2109	1060390
			DL100-23AB2109	1060951
			DL100-23HA2109	1060391

[1] Average service life: 100,000 h at T_U = +25 °C.

- **Communication interface:** CANopen
- **Measuring range:** 0.15 m ... 100 m, on “diamond grade” reflective tape
- **Laser class:** 2

Light source	Minimum response time	Digital output	Type	Part no.
Laser, red [1]	2 ms	2 x push-pull: PNP/NPN	DL100-21AA2109	1060386
			DL100-21HA2109	1060387

[1] Average service life: 100,000 h at T_U = +25 °C.

- **Communication interface:** CANopen
- **Measuring range:** 0.15 m ... 200 m, on “diamond grade” reflective tape
- **Laser class:** 2

Light source	Minimum response time	Digital output	Type	Part no.
Laser, red [1]	2 ms	2 x push-pull: PNP/NPN	DL100-22AA2109	1060388
			DL100-22HA2109	1060389

[1] Average service life: 100,000 h at T_U = +25 °C.

- **Communication interface:** EtherNet/IP™
- **Measuring range:** 0.15 m ... 300 m, on “diamond grade” reflective tape
- **Laser class:** 2

Light source	Minimum response time	Digital output	Type	Part no.
Laser, red [1]	2 ms	2 x push-pull: PNP/NPN	DL100-23AA2110	1066429
			DL100-23HA2110	1066426
			DL100-23HB2110	1066438

[1] Average service life: 100,000 h at T_U = +25 °C.

- **Communication interface:** EtherNet/IP™
- **Measuring range:** 0.15 m ... 100 m, on “diamond grade” reflective tape
- **Laser class:** 2

Light source	Minimum response time	Digital output	Type	Part no.
Laser, red [1]	2 ms	2 x push-pull: PNP/NPN	DL100-21AA2110	1066427
			DL100-21HA2110	1066423

[1] Average service life: 100,000 h at T_U = +25 °C.

- **Communication interface:** EtherNet/IP™
- **Measuring range:** 0.15 m ... 200 m, on “diamond grade” reflective tape
- **Laser class:** 2

Light source	Minimum response time	Digital output	Type	Part no.
Laser, red [1]	2 ms	2 x push-pull: PNP/NPN	DL100-22AA2110	1066428
			DL100-22HA2110	1066425

[1] Average service life: 100,000 h at T_U = +25 °C.

- **Communication interface:** EtherCAT®
- **Measuring range:** 0.15 m ... 100 m, on “diamond grade” reflective tape
- **Laser class:** 2

Light source	Minimum response time	Digital output	Type	Part no.
Laser, red [1]	2 ms	2 x push-pull: PNP/NPN	DL100-21AA2211	1095769

[1] Average service life: 100,000 h at T_U = +25 °C.

- **Communication interface:** EtherCAT®
- **Measuring range:** 0.15 m ... 200 m, on “diamond grade” reflective tape
- **Laser class:** 2

Light source	Minimum response time	Digital output	Type	Part no.
Laser, red [1]	2 ms	2 x push-pull: PNP/NPN	DL100-22AA2211	1095770

[1] Average service life: 100,000 h at T_U = +25 °C.

- **Communication interface:** EtherCAT®
- **Measuring range:** 0.15 m ... 300 m, on “diamond grade” reflective tape
- **Laser class:** 2

Light source	Minimum response time	Digital output	Type	Part no.
Laser, red [1]	2 ms	2 x push-pull: PNP/NPN	DL100-23AA2211	1095771
			DL100-23AB2211	1095772
			DL100-23HA2211	1092652

[1] Average service life: 100,000 h at T_U = +25 °C.

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