



# DL100-13HA2109

Dx100

**LONG RANGE DISTANCE SENSORS**

**SICK**  
Sensor Intelligence.



Illustration may differ



## Ordering information

Type	Part no.
DL100-13HA2109	1060397

Other models and accessories → [www.sick.com/Dx100](http://www.sick.com/Dx100)

## Detailed technical data

### Performance

<b>Measuring range</b>	0.15 m ... 220 m, on reflective tape "Diamond Grade"
<b>Resolution</b>	0.1 mm, 0.125 mm, 1 mm, 10 mm, 100 mm
<b>Repeatability</b>	2.5 mm (at dead time 10 ms), 1.25 mm (at dead time 30 ms) <sup>1)</sup>
<b>Accuracy</b>	± 5 mm <sup>2)</sup>
<b>Output time</b>	Synchronous to PLC request (dependent on interfaces)
<b>Light source</b>	Laser, red <sup>3)</sup>
<b>Laser class</b>	2 (EN 60825-1 / CDRH)
<b>Typ. light spot size (distance)</b>	5 mm (+ 2 mm x distance in m)
<b>Max. movement speed</b>	30 m/s
<b>Internal measurement cycle</b>	1 ms
<b>Heating</b>	✓

<sup>1)</sup> Statistical error 1  $\sigma$ , environmental conditions constant, depending on operating mode.

<sup>2)</sup> From 150 mm ... 180 mm measuring range the accuracy can reach ± 4 mm.

<sup>3)</sup> Average service life: 100,000 h at  $T_U = +25$  °C.

### Interfaces

<b>Switching output</b>	B (push/pull), MF1, MF2 <sup>1)</sup>
<b>Multifunctional input (MF)</b>	1 x MF1 <sup>2)</sup>
<b>Data interface</b>	CANopen

<sup>1)</sup> HIGH >  $V_S - 3$  V / LOW < 2 V.

<sup>2)</sup> HIGH > 12 V / LOW < 3 V.

### Mechanics/electronics

<b>Supply voltage <math>V_S</math></b>	DC 18 V ... 30 V, limit values
<b>Ripple</b>	5 $V_{pp}$ <sup>1)</sup>

<sup>1)</sup> May not fall short of or exceed  $V_S$  tolerances.

<sup>2)</sup> After loss of reflector < 40 ms.

<sup>3)</sup> Without mounting bracket: approx. 800 g, with mounting bracket: approx. 1,600 g.

<sup>4)</sup> Short-circuit protected, overload-protected. Max. 100 nF / 20 mH.

<b>Initialization time</b>	Typ. 1.5 s <sup>2)</sup>
<b>Housing material</b>	Aluminum/zinc die-cast
<b>Connection type</b>	Male connector, M12, SPEEDCON™ compatible
<b>Indication</b>	6 digit 5 x 7 dot matrix display, LEDs
<b>Weight</b>	Approx. 800 g ... 1,600 g <sup>3)</sup>
<b>Output current I<sub>A</sub></b>	≤ 100 mA <sup>4)</sup>
<b>Current consumption</b>	At 24 V DC < 1,000 mA
<b>Modulation frequency</b>	Fix

<sup>1)</sup> May not fall short of or exceed V<sub>S</sub> tolerances.

<sup>2)</sup> After loss of reflector < 40 ms.

<sup>3)</sup> Without mounting bracket: approx. 800 g, with mounting bracket: approx. 1,600 g.

<sup>4)</sup> Short-circuit protected, overload-protected. Max. 100 nF / 20 mH.

### Ambient data

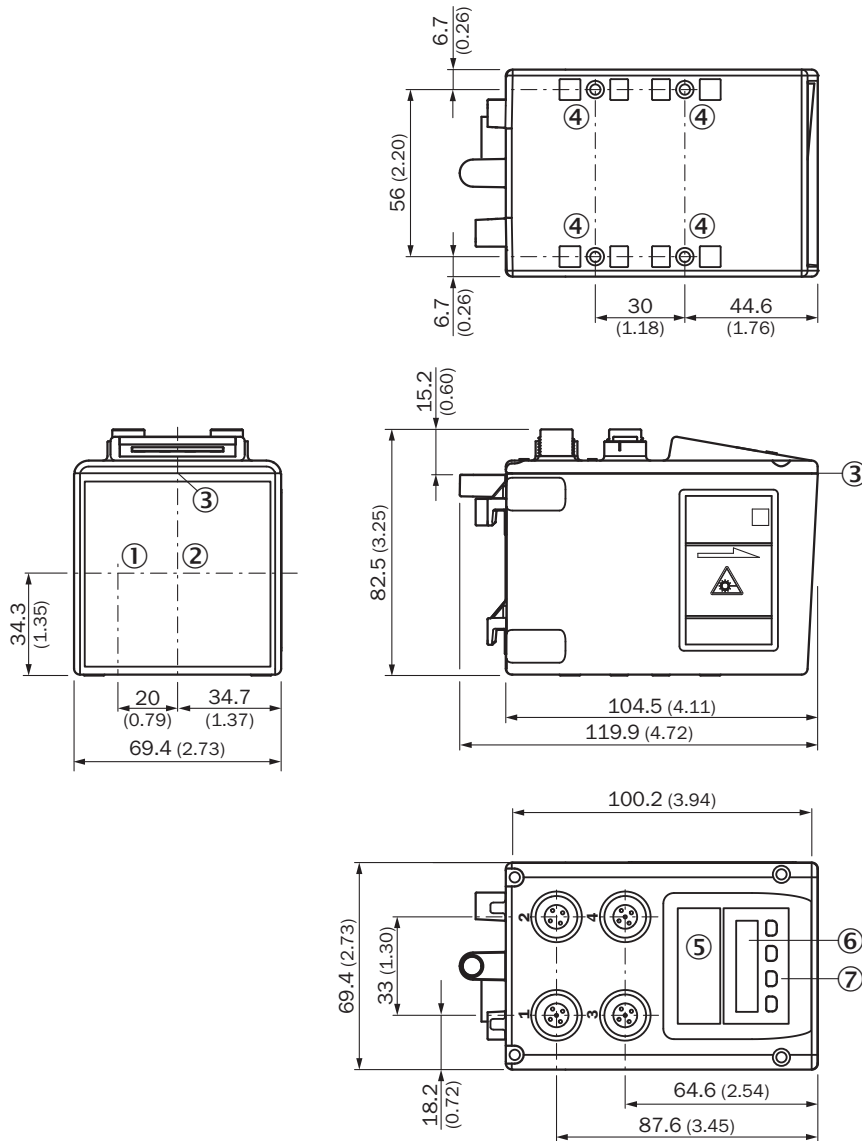
<b>Enclosure rating</b>	IP 65
<b>Protection class</b>	III
<b>Electromagnetic compatibility (EMC)</b>	EN 61000-6-2, EN 61000-6-4 <sup>1)</sup>
<b>Ambient temperature</b>	Operation with heating: -40 °C ... +55 °C <sup>2)</sup> Operation with cooling case: -40 °C ... +75 °C Storage: -40 °C ... +75 °C
<b>Effect of air pressure</b>	0.3 ppm/hPa
<b>Effect of air temperature</b>	1 ppm/K
<b>Temperature drift</b>	Typ. 0.1 mm/K
<b>Mechanical load</b>	Shock: (EN 600 68-2-27) Sine: (EN 600 68-2-6) Noise: (EN 600 68-2-64)

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

<sup>2)</sup> Temperatures < -10 °C require warm-up time of typ. 7 minutes.

## Dimensional drawing (Dimensions in mm (inch))

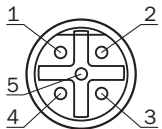
Dimensional drawing



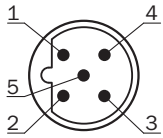
- ① Optical axis, sender
- ② Optical axis, receiver
- ③ Zero level
- ④ Threaded mounting hole M5
- ⑤ Status LED [status]
- ⑥ Display
- ⑦ Operating elements

## Connection type

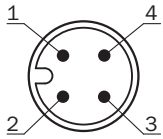
Dx100 CANopen, M12 female connector, 5-pin, CANout



Dx100 CANopen, M12 male connector, 5-pin, CANin

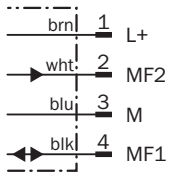


Dx100 PROFIBUS/PROFINET/CANopen/Ethernet/IP, M12 male connector, 4-pin, A-coded

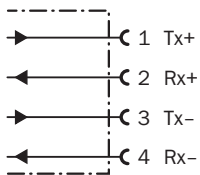


### Connection diagram

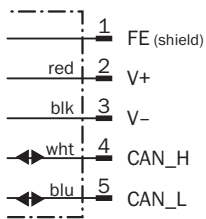
Dx100 PROFIBUS/PROFINET, M12 male connector, 4-pin



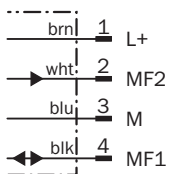
Ethernet M12 female connector, 4-pin



Dx100 CANopen, M12 male connector, 5-pin, CANin



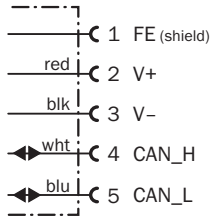
Dx100 power supply, M12 male connector, 4-pin



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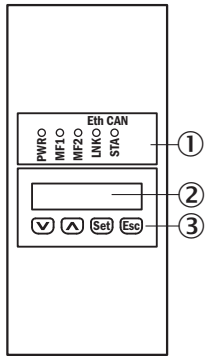
## LONG RANGE DISTANCE SENSORS

Dx100 CANopen, M12 female connector, 5-pin, CANout



### Adjustment possible

DL100-xxXXxx09



- ① Status LED [status]
- ② Display
- ③ Operating elements

### Recommended accessories

Other models and accessories → [www.sick.com/Dx100](http://www.sick.com/Dx100)

	Brief description	Type	Part no.
<b>Terminal and alignment brackets</b>			
	Alignment unit for Dx100, incl. mounting material, steel, zinc coated	BEF-AH-DX100	2058653
<b>Plug connectors and cables</b>			
	Head A: male connector, M12, 4-pin, straight, D-coded Head B: male connector, RJ45, 8-pin, straight Cable: Ethernet, drag chain use, PUR, shielded, 2 m	SSL-2J04-G02ME	6034414
	Head A: male connector, M12, 4-pin, straight, D-coded Head B: male connector, RJ45, 8-pin, straight Cable: PROFINET, drag chain use, PUR, shielded, 5 m CAT 5e	SSL-2J04-G05ME	6035389
	Head A: male connector, M12, 4-pin, straight, D-coded Head B: male connector, RJ45, 8-pin, straight Cable: Ethernet, drag chain use, PUR, shielded, 10 m	SSL-2J04-G10ME	6030928
<b>Reflectors</b>			

	<b>Brief description</b>	<b>Type</b>	<b>Part no.</b>
	Reflector plate, reflective tape "Diamond Grade", 665 mm x 665 mm, material base plate: aluminum, screw connection, Screw-on, 4 hole mounting	PL560DG	1016806

## 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](http://www.sick.com)