



# DL50-P1123

Dx50

MID RANGE DISTANCE SENSORS

**SICK**  
Sensor Intelligence.



### Ordering information

Type	Part no.
DL50-P1123	1047361

Other models and accessories → [www.sick.com/Dx50](http://www.sick.com/Dx50)



### Detailed technical data

#### Performance

<b>Measuring range</b>	200 mm ... 50,000 mm, on reflective tape "Diamond Grade" <sup>1)</sup>
<b>Target</b>	Reflector
<b>Resolution</b>	1 mm
<b>Repeatability</b>	≥ 2 mm <sup>2) 3)</sup>
<b>Accuracy</b>	± 7 mm
<b>Response time</b>	15 ms ... 30 ms, 15 ms / 30 ms <sup>3) 4)</sup>
<b>Output time</b>	≥ 4 ms <sup>5)</sup>
<b>Light source</b>	Laser, red
<b>Laser class</b>	1 (IEC 60825-1:2014, EN 60825-1:2014) <sup>6)</sup>
<b>Typ. light spot size (distance)</b>	15 mm x 15 mm (10 m)
<b>Additional function</b>	Set moving average: fast/slow, switching mode: distance to object (DtO), teach-in, scaling and inversion of switching output, set hysteresis, teach-in, scaling and inversion of analog output, Multifunctional input: laser off / external teach / deactivated, switch-off display, reset to factory default, lock user interface
<b>Average laser service life (at 25 °C)</b>	100,000 h

<sup>1)</sup> On reflective tape "Diamond Grade".

<sup>2)</sup> Equivalent to 1  $\sigma$ .

<sup>3)</sup> Dependent on the averaging setting: fast/slow.

<sup>4)</sup> Lateral entry of the object into the measuring range.

<sup>5)</sup> Continuous change of distance in measuring range.

<sup>6)</sup> Wavelength: 658 nm; max. output: 120 mW; pulse duration: 2.5 ns; duty cycle: 1/400.

#### Interfaces

<b>Analog output</b>	1 x 4 mA ... 20 mA ( $\leq 300 \Omega$ )
<b>Resolution analog output</b>	16 bit

<sup>1)</sup> Output Q short-circuit protected.

<sup>2)</sup> PNP: HIGH =  $V_S - (< 2.5 V)$  / LOW = 0 V.

<sup>3)</sup> Response time  $\leq 15$ ms.

<sup>4)</sup> PNP: HIGH =  $V_S$  / LOW =  $\leq 2.5 V$ .

<b>Switching output</b>	1 x PNP (100 mA) <sup>1) 2)</sup>
<b>Multifunctional input (MF)</b>	1 x <sup>3) 4)</sup>
<b>Hysteresis</b>	10 mm ... 1,000 mm

- 1) Output Q short-circuit protected.  
 2) PNP: HIGH =  $V_S - (< 2.5 V)$  / LOW = 0 V.  
 3) Response time  $\leq 15\text{ms}$ .  
 4) PNP: HIGH =  $V_S$  / LOW =  $\leq 2.5 V$ .

### Mechanics/electronics

<b>Supply voltage <math>V_S</math></b>	DC 10 V ... 30 V <sup>1)</sup>
<b>Ripple</b>	$\leq 5 V_{pp}$ <sup>2)</sup>
<b>Power consumption</b>	$\leq 2.1 W$ <sup>3)</sup>
<b>Initialization time</b>	$\leq 250 \text{ ms}$
<b>Warm-up time</b>	$\leq 15 \text{ min}$
<b>Housing material</b>	Housing zinc die cast (ZNAL4CU1) Acrylic glass (PMMA)
<b>Connection type</b>	Male connector, M12, 5-pin
<b>Indication</b>	LC display, 2 x LED
<b>Weight</b>	200 g
<b>Enclosure rating</b>	IP65
<b>Protection class</b>	III

- 1) Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A.  
 2) May not fall short of or exceed  $V_S$  tolerances.  
 3) Without load.

### Ambient data

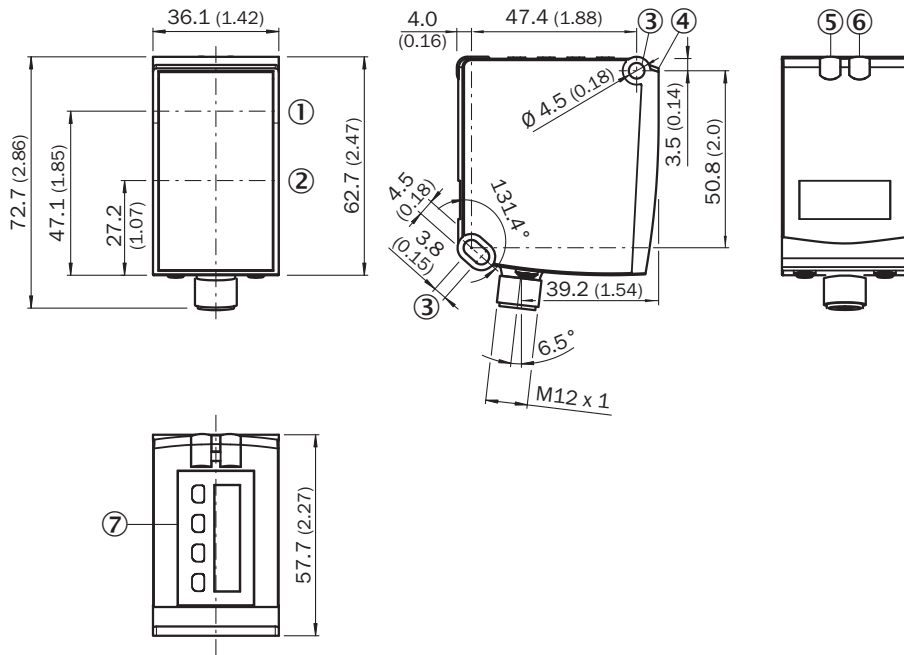
<b>Ambient temperature operation</b>	-30 °C ... +65 °C -30 °C ... +80 °C -30 °C ... +140 °C
<b>Ambient storage temperature</b>	-40 °C ... +75 °C
<b>Max. rel. humidity (not condensing)</b>	$\leq 95 \%$
<b>Typ. Ambient light immunity</b>	40,000 lx
<b>Vibration resistance</b>	EN 60068-2-6, EN 60068-2-64
<b>Shock resistance</b>	EN 60068-2-27

### Classifications

<b>ECl@ss 5.0</b>	27270801
<b>ECl@ss 5.1.4</b>	27270801
<b>ECl@ss 6.0</b>	27270801
<b>ECl@ss 6.2</b>	27270801
<b>ECl@ss 7.0</b>	27270801
<b>ECl@ss 8.0</b>	27270801
<b>ECl@ss 8.1</b>	27270801
<b>ECl@ss 9.0</b>	27270801
<b>ETIM 5.0</b>	EC001825

<b>ETIM 6.0</b>	EC001825
<b>UNSPSC 16.0901</b>	41111613

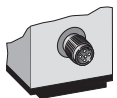
### Dimensional drawing (Dimensions in mm (inch))



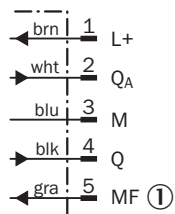
- ① Optical axis, sender
- ② Optical axis, receiver
- ③ Fixing hole
- ④ Reference surface = 0 mm
- ⑤ Status indicator swichting output Q<sub>1</sub> (orange)
- ⑥ DT50/DT50 Hi/DL50: status indicator power on (green), DS50/DL50 Hi: status indicator switching output Q<sub>2</sub> (orange)
- ⑦ Operating keys and display

### Connection type

Male connector M12, 5-pin







## Connection diagram



① Multifunctional input (MF)

## Recommended accessories

Other models and accessories → [www.sick.com/Dx50](http://www.sick.com/Dx50)

	Brief description	Type	Part no.
<b>Terminal and alignment brackets</b>			
	Alignment unit, steel, zinc coated, mounting hardware for the sensor included	BEF-AH-DX50	2048397
<b>Plug connectors and cables</b>			
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 2 m	YF2A15-020VB5XLEAX	2096239
	Head A: female connector, M12, 5-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 2 m	YG2A15-020VB5XLEAX	2096215
<b>Reflectors</b>			
	Reflector plate, "diamond grade" reflective tape, 330 mm x 330 mm, base plate material: aluminum, screw connection, Screw-on, 4 hole mounting	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:

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