



# DT50-P1113

Dx50

MID RANGE DISTANCE SENSORS

**SICK**  
Sensor Intelligence.



### Ordering information

Type	Part no.
DT50-P1113	1044369

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



### Detailed technical data

#### Performance

<b>Measuring range</b>	200 mm ... 10,000 mm, 90 % remission 200 mm ... 6,500 mm, 18 % remission 200 mm ... 4,000 mm, 6 % remission
<b>Resolution</b>	1 mm
<b>Repeatability</b>	5 mm / 2.5 mm <sup>1) 2) 3)</sup>
<b>Accuracy</b>	± 10 mm <sup>4)</sup>
<b>Response time</b>	20 ms / 30 ms <sup>3) 5)</sup>
<b>Output time</b>	≥ 4 ms <sup>6)</sup>
<b>Light source</b>	Laser, red
<b>Laser class</b>	2 (EN 60825-1) <sup>7)</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>Laser service life (MTTF at 25 °C)</b>	100,000 h

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

<sup>2)</sup> 6 % ... 90 % remission.

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

<sup>4)</sup> 90 % remission.

<sup>5)</sup> Lateral entry of the object into the measuring range.

<sup>6)</sup> Continuous change of distance in measuring range.

<sup>7)</sup> Wavelength: 658 nm; max. output: 180 mW; pulse duration: 5 ns; duty cycle: 1/200.

#### Interfaces

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

- <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 =  $\leq 2.5 V$ .

### Mechanics/electronics

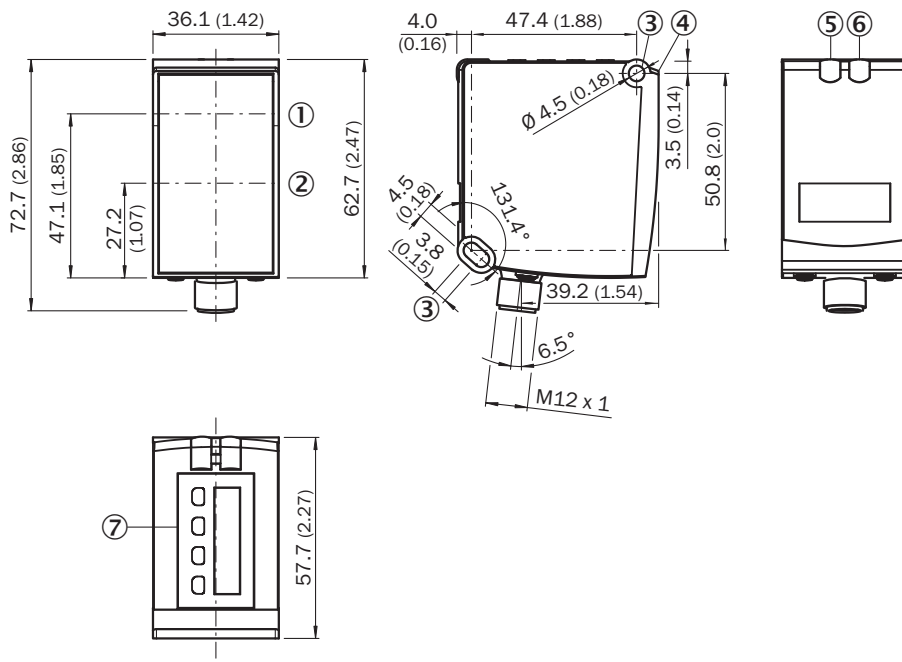
<b>Supply voltage <math>V_S</math></b>	DC 10 V ... 30 V <sup>1) 2)</sup>
<b>Ripple</b>	$\leq 5 V_{pp}$ <sup>3)</sup>
<b>Power consumption</b>	$\leq 2.1 W$ <sup>4)</sup>
<b>Initialization time</b>	$\leq 250$ ms
<b>Warm-up time</b>	$\leq 15$ min
<b>Housing material</b>	Housing zinc die cast (ZNAL4CU1) 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

- <sup>1)</sup> Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A.  
<sup>2)</sup> For DT50-xxxx4:  $V_S > 15 V$ .  
<sup>3)</sup> May not fall short of or exceed  $V_S$  tolerances.  
<sup>4)</sup> Without load.

### Ambient data

<b>Enclosure rating</b>	IP 65
<b>Protection class</b>	III
<b>Ambient temperature</b>	Operation: $-30\text{ }^\circ\text{C} \dots +65\text{ }^\circ\text{C}$ Storage: $-40\text{ }^\circ\text{C} \dots +75\text{ }^\circ\text{C}$
<b>Max. rel. humidity (not condensing)</b>	$\leq 95\%$
<b>Typ. Ambient light immunity</b>	40 klx
<b>Vibration resistance</b>	EN 60068-2-6 / EN 60068-2-64
<b>Shock resistance</b>	EN 60068-2-27

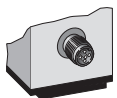
### Dimensional drawing (Dimensions in mm (inch))



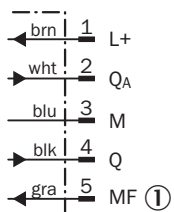
- ① Optical axis sender
- ② Optical axis receiver
- ③ Fixing hole
- ④ Reference surface = 0 mm
- ⑤ Status indicator switching output Q<sub>1</sub> (orange)
- ⑥ DT50/DT50 Hi/DL50: status indicator power on (green), DS50/DL50 Hi: status indicator switching output Q<sub>2</sub> (orange)
- ⑦ Operating keys 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.
Plug connectors and cables			
	Head A: female connector, M12, 5-pin, straight Head B: cable Cable: PVC, unshielded, 2 m	DOL-1205-G02M	6008899
	Head A: female connector, M12, 5-pin, straight Head B: cable Cable: drag chain use, PUR, halogen-free, unshielded, 2 m	DOL-1205-G02MC	6025906
	Head A: female connector, M12, 5-pin, angled Head B: cable Cable: PVC, unshielded, 2 m	DOL-1205-W02M	6008900
	Head A: female connector, M12, 5-pin, angled Head B: cable Cable: drag chain use, PUR, halogen-free, unshielded, 2 m	DOL-1205-W02MC	6025909
	Head A: female connector, M12, 5-pin, angled, A-coded Head B: cable Cable: HIPERFACE®, drag chain use, PUR, halogen-free, shielded, 5 m Sensor/actuator cable	DOL-1205-W05MAC	6041751

## 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)