



# DL60-P111B0015

Dx60

MID RANGE DISTANCE SENSORS

**SICK**  
Sensor Intelligence.



## Ordering information

Type	Part no.
DL60-P111B0015	1043406

Other models and accessories → [www.sick.com/Dx60](http://www.sick.com/Dx60)



## Detailed technical data

### Performance

<b>Measuring range</b>	300 mm ... 15,000 mm <sup>1)</sup>
<b>Resolution</b>	7 mm
<b>Accuracy</b>	± 15 mm <sup>2)</sup>
<b>Response time</b>	130 ms
<b>Cycle time</b>	8
<b>Output time</b>	< 8 ms
<b>Light source</b>	Laser, red
<b>Laser class</b>	2 (EN 60825-1)
<b>Typ. light spot size (distance)</b>	20 mm x 20 mm (at 2 m)
<b>Additional function</b>	Invertable switching output
<b>Laser service life (MTTF at 25 °C)</b>	50,000 h

<sup>1)</sup> On reflector REF-3930-K2.

<sup>2)</sup> After switch-on time of 30 min.

### Interfaces

<b>Analog output</b>	4 mA ... 20 mA
<b>Resolution analog output</b>	12 bit
<b>Switching output</b>	1 x PNP (100 mA) <sup>1)</sup>
<b>Multifunctional input (MF)</b>	1x Laser off

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

### Mechanics/electronics

<b>Supply voltage V<sub>s</sub></b>	DC 11 V ... 30 V <sup>1)</sup>
<b>Ripple</b>	≤ 5 V <sub>pp</sub> <sup>2)</sup>

<sup>1)</sup> Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A.

<sup>2)</sup> May not fall short of or exceed V<sub>s</sub> tolerances.

<sup>3)</sup> Without load.

<b>Power consumption</b>	≤ 3 W <sup>3)</sup>
<b>Initialization time</b>	550 ms
<b>Warm-up time</b>	≤ 30 min
<b>Connection type</b>	Male connector, M12, 5-pin
<b>Indication</b>	Status LED
<b>Weight</b>	202 g

1) Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A.

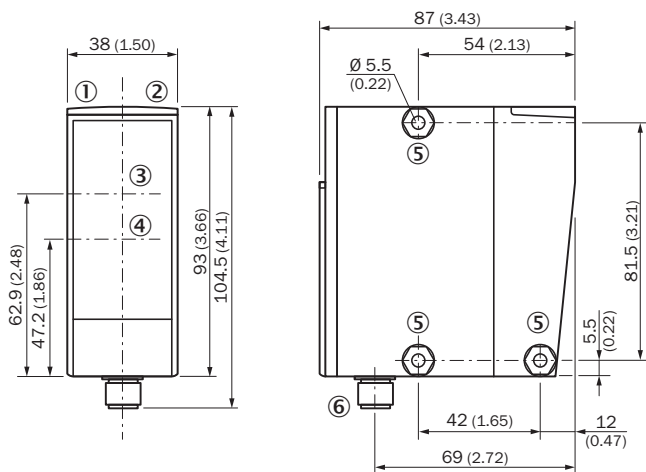
2) May not fall short of or exceed V<sub>S</sub> tolerances.

3) Without load.

### Ambient data

<b>Enclosure rating</b>	IP 67
<b>Protection class</b>	II
<b>Electromagnetic compatibility (EMC)</b>	EN 61000-6-2 EN 60947-5-2
<b>Ambient temperature</b>	Operation: -25 °C ... +55 °C Storage: -25 °C ... +75 °C

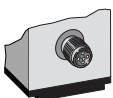
### Dimensional drawing (Dimensions in mm (inch))



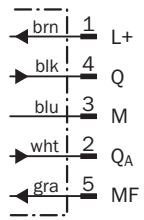
- ① Power
- ② Function indicator
- ③ Optical axis sender
- ④ Optical axis receiver
- ⑤ Fixing hole
- ⑥ Male connector M12, 5-pin

### Connection type

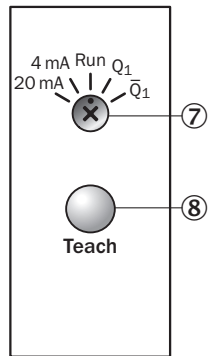
Male connector M12, 5-pin



### Connection diagram



### Adjustment possible



- ⑦ Rotary switch
- ⑧ Control element

Selection Guide

**Plug & Play: How to choose different measurement ranges by the type code (4 mA ... 20 mA)**

The DL60 can be factory scaled for customer specific measurement ranges based on the type code.

The type code is: "DL60-x11xBbbee". The „bbee“-part defines the measurement range as follows:

**bb** (begin)  $\hat{=}$  distance value chosen by the customer to be output with 4 mA. The "bb"-value is defined in m.

**ee** (end)  $\hat{=}$  distance value chosen by the customer to be output with 20 mA. The "ee"-value is defined in m.

**Be aware**

ee/bb  $\hat{=}$  00  $\hat{=}$  300 mm (smallest possible distance value).

There is a minimum difference between "bb" and "ee" of at least 1 unit (1,000 mm) (e.g. bb  $\hat{=}$  02  $\rightarrow$  ee  $\geq$  03)

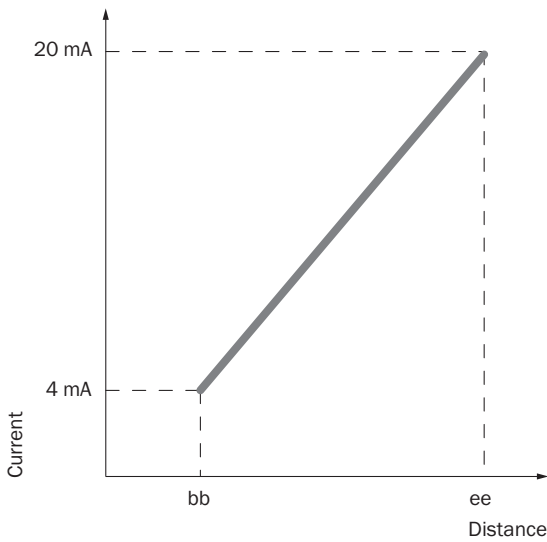
**Range of values**

00 ... 24  $\hat{=}$  300 mm ... 24,000 mm, any configuration within this range can be chosen (e.g. 0010, 0224 etc.).

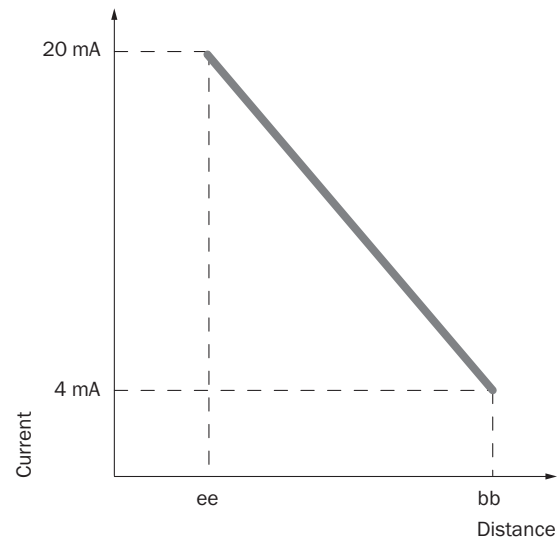
**Examples**

Model name	Description
<b>DL60-P111B0010</b>	DL60, switching output PNP, measurement range 300 mm ... 10,000 mm (4 mA $\hat{=}$ 0.3 m ... 20 mA $\hat{=}$ 10 m)
<b>DL60-N111B0915</b>	DL60, switching output NPN, measurement range 9,000 mm ... 15,000 mm (4 mA $\hat{=}$ 9 m ... 20 mA $\hat{=}$ 15 m)
<b>DL60-P111B2402</b>	DL60, switching output PNP, measurement range 24,000 mm ... 2,000 mm (inverted measuring area) (4 mA $\hat{=}$ 24 m ... 20 mA $\hat{=}$ 2 m)

**ee > bb**





**bb > ee (inverted measuring area)**



Recommended accessories

Other models and accessories → [www.sick.com/Dx60](http://www.sick.com/Dx60)

	Brief description	Type	Part no.
<b>Mounting brackets and mounting plates</b>			
	Mounting bracket, steel, zinc coated, without mounting hardware	BEF-WN-DS60	4032937
<b>Plug connectors and cables</b>			
	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: PVC, unshielded, 5 m	DOL-1205-G05M	6009868
	Head A: female connector, M12, 5-pin, straight Head B: cable Cable: PVC, unshielded, 10 m	DOL-1205-G10M	6010544
	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: PVC, unshielded, 5 m	DOL-1205-W05M	6009869
	Head A: female connector, M12, 5-pin, angled Head B: cable Cable: PVC, unshielded, 10 m	DOL-1205-W10M	6010542
<b>Reflectors</b>			
	With alignment mark, self-adhesive, customizable size by roll, 91.4 cm x 45.7 m <sup>1)</sup> , self-adhesive	REF-3930-K2	2057035

<sup>1)</sup> Customizable length by roll. Width 91.4 cm, length max. 45.7 m.

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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)