



DL60-N111B

Dx60

MID RANGE DISTANCE SENSORS

SICK
Sensor Intelligence.



Ordering information

Type	Part no.
DL60-N111B	1026360

Other models and accessories → www.sick.com/Dx60



Detailed technical data

Performance

Measuring range	300 mm ... 24,000 mm ¹⁾
Resolution	7 mm
Accuracy	± 15 mm ²⁾
Response time	130 ms
Cycle time	≤ 8 s
Output time	< 8 ms
Light source	Laser, red
Laser class	2 (EN 60825-1)
Typ. light spot size (distance)	20 mm x 20 mm (at 2 m)
Additional function	Invertable switching output
Laser service life (MTTF at 25 °C)	50,000 h

¹⁾ On reflector REF-3930-K2.

²⁾ After switch-on time of 30 min.

Interfaces

Analog output	4 mA ... 20 mA
Resolution analog output	12 bit
Switching output	1 x NPN (100 mA) ¹⁾
Multifunctional input (MF)	1x Laser off

¹⁾ Output Q short-circuit protected.

Mechanics/electronics

Supply voltage V_s	DC 11 V ... 30 V ¹⁾
Ripple	≤ 5 V _{pp} ²⁾

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.

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

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

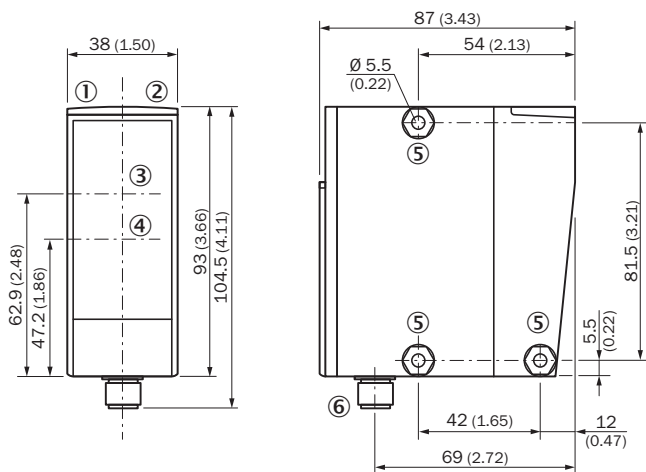
2) May not fall short of or exceed V_S tolerances.

3) Without load.

Ambient data

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

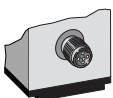
Dimensional drawing (Dimensions in mm (inch))



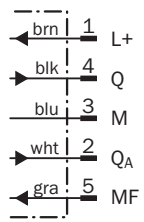
- ① Power
- ② Function indicator
- ③ Optical axis sender
- ④ Optical axis receiver
- ⑤ Fixing hole
- ⑥ Male connector M12, 5-pin

Connection type

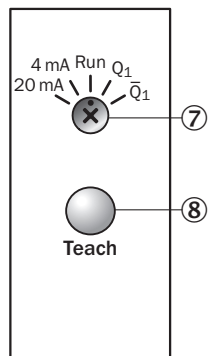
Male connector M12, 5-pin



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)

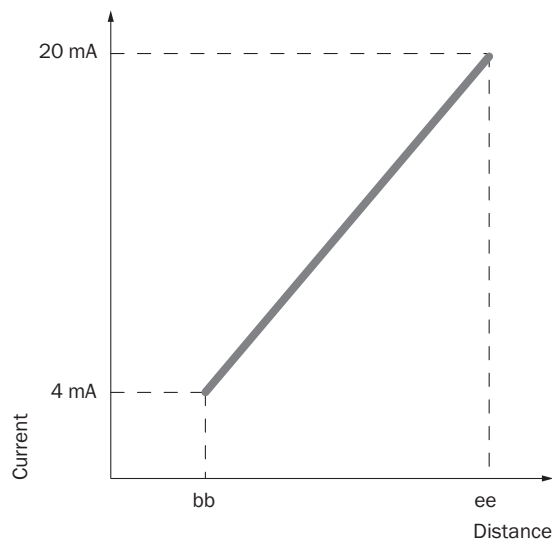
Range of values

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

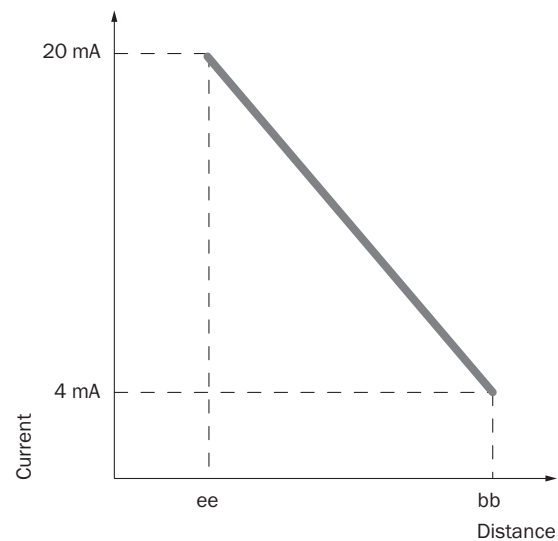
Examples

Model name	Description
DL60-P111B0010	DL60, switching output PNP, measurement range 300 mm ... 10,000 mm (4 mA $\hat{=}$ 0.3 m ... 20 mA $\hat{=}$ 10 m)
DL60-N111B0915	DL60, switching output NPN, measurement range 9,000 mm ... 15,000 mm (4 mA $\hat{=}$ 9 m ... 20 mA $\hat{=}$ 15 m)
DL60-P111B2402	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

	Brief description	Type	Part no.
Mounting brackets and mounting plates			
	Mounting bracket, steel, zinc coated, without mounting hardware	BEF-WN-DS60	4032937
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: 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
Reflectors			
	With alignment mark, self-adhesive, customizable size by roll, 91.4 cm x 45.7 m ¹⁾ , self-adhesive	REF-3930-K2	2057035

¹⁾ 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.

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