

## DL 60

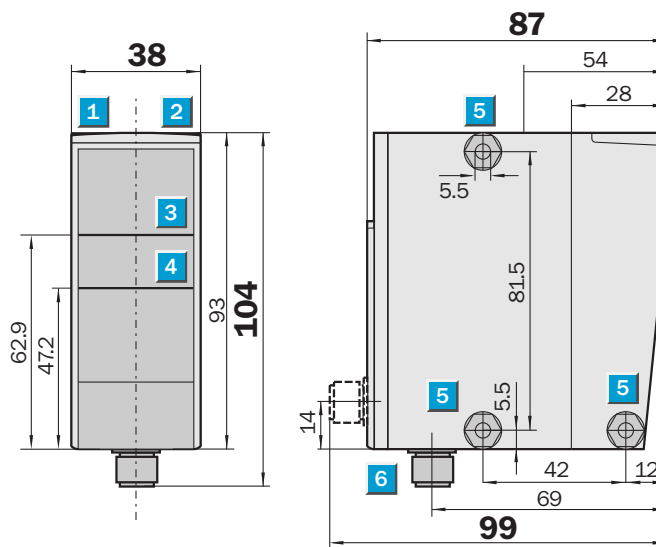
### Distance Sensor



**Measurement range**  
**300 mm ... 24 m**  
**Distance Sensor**

- Analogue output 4 ... 20 mA
- Teach-in and Plug & Play version
- High measuring accuracy
- Visible red light laser
- Power-On LED
- Acknowledgement after Teach-in

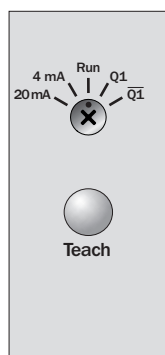
#### Dimensional drawing



#### Adjustments possible

DL 60-P111B

DL 60-N111B



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- 1 Power
- 2 Function indicator
- 3 Optical axis, sender
- 4 Optical axis, receiver
- 5 Mounting hole
- 6 M12 plug, 5-pin
- 7 Operating panel Teach-in version

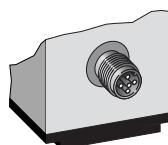
#### Connection type

DL 60-P111B

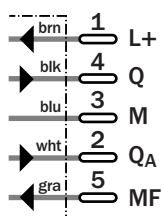
DL 60-P111Bbbee

DL 60-N111B

DL 60-N111Bbbee



5-pin, M12



Technical data		DL 60-	P111B	N111B	P111B bbee	N111B bbee						
<b>Teach-in version</b>												
<b>Plug &amp; Play version</b>												
(max. measuring distance)	Measuring range freely selectable											
<b>Measuring range</b>												
(min. measuring distance)												
Reflective Tape: REF-5870-K2	300 mm... 24000 mm <sup>1)</sup>											
<b>Light source</b> <sup>2)</sup>	Laser diode, red light											
Light spot at 2 m distance	Ø 20 mm											
<b>Supply voltage</b> V <sub>S</sub> <sup>3)</sup>	11 ... 30 V DC											
<b>Power consumption</b> <sup>4)</sup>	< 3 W											
<b>Residual ripple</b> <sup>5)</sup>	≤ 5 V <sub>PP</sub>											
<b>Analogue output (invertable)</b>	4 ... 20 mA											
Accuracy <sup>6)</sup>	± 15 mm											
Reproducibility	± 7 mm											
Resolution	12 Bit <sup>7)</sup>											
Response time	130 ms											
Cycle time	< 8 ms											
Output rate	< 8 ms											
Temperature drift	0.4 mm/K typ.											
<b>Switching outputs (invertable)</b>	Q											
	$\bar{Q}$											
DL 60-P: PNP	HIGH = U <sub>V</sub> - (< 2 V)/LOW = 0 V											
DL 60-N: NPN	HIGH = U <sub>V</sub> /LOW ≤ 2 V											
<b>Output current</b> I <sub>A</sub> <sup>8)</sup>	100 mA											
<b>Multifunction MF</b>	Laser off											
<b>Connection type</b>	M12 plug, 5-pin											
<b>VDE protection class</b> <sup>9)</sup>	II											
<b>Laser protection class</b>	2 (EN 60 825-1)											
<b>Enclosure rating</b>	IP 67											
<b>Ambient temperature</b>	Operation -25 ... +55 °C											
	Storage -25 ... +75 °C											
<b>Initialisation time</b>	550 ms											
<b>Weight</b>	202 g											

1) 40 m on request

2) Average service life 50,000 h at T<sub>A</sub> = +25 °C

3) Limit values, reverse-polarity protected

4) Without load

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

6) After 30 minutes on-time

7) At 24 m measuring distance = 7 mm

8) Output Q short-circuit protected

9) Reference voltage DC 50 V

**Plug & Play version: measuring range freely selectable, measuring range bb to ee ≅ 4 mA ... 20 mA**

DL 60-P/N111Bbbee	
bb: min. measuring distance <sup>10)</sup>	ee: max. measuring distance <sup>10)</sup>
00 <sup>11)</sup>	24 <sup>11)</sup>

10) Minimum distance between bb and ee must be 01 units (01 ≅ 1 m)

11) 00 ≅ 300 mm; 24 ≅ 24 m

**1<sup>st</sup> example: measuring range 300 mm ... 24 m**

DL 60-P/N111B0024	
4 mA ≅ 300 mm	20 mA ≅ 24 m

**2<sup>nd</sup> example: measuring range 2 m ... 10 m**

DL 60-P/N111B0210	
4 mA ≅ 2 m	20 mA ≅ 10 m

**Order information**

Type	Part no.	Type	Part no.
DL 60-P111B	1 025 848	DL 60-N111B0024	1 026 363
DL 60-N111B	1 026 360	DL 60-P111Bbbee <sup>*)</sup>	X XXX XXX
DL 60-P111B0024	1 026 361	DL 60-N111Bbbee <sup>*)</sup>	X XXX XXX
DL 60-P111B0210	1 026 362		

\*) Measuring range freely selectable

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