Single-Turn
Conductive Plastic
Potentiometers

PL130 Series

Special features
• very small dimensions
• individual variability
• $10 \times 10^6$ movements
• excellent linearity
• very high resolution – better than $0.1\,^\circ$

Small dimensions characterize this potentiometer.

With a housing diameter of only 13 mm, the PL130 series provides high precision in an extremely small package for use in servo systems and measuring applications.

Careful selection of materials and high-quality components ensure a consistent measurement throughout the entire service life of the sensor.

Special designs with other angular ranges and shaft dimensions are available on request.

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<td>Size</td>
<td>housing diameter 13 mm</td>
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<tr>
<td>Housing</td>
<td>brass, nickel plated</td>
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<td>Shaft</td>
<td>stainless steel</td>
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<td>Bearings</td>
<td>sleeve bearings</td>
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<td>Resistance element</td>
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<td>Wiper assembly</td>
<td>precious metal multi-finger wiper</td>
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**Type designations**

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<th>PL130 MB</th>
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### Mechanical Data

- **Dimensions**: see drawing
- **Mounting**: nut M8 x 0.75 and serrated washer
- **Mechanical travel**: 316 °
- **Permitted shaft loading (axial and radial)**:
  - Static or dynamic force: 1 N
- **Torque**: ≤ 0.5 Ncm
- **Maximum operational speed**: 120 RPM
- **Weight**: 8 g

### Electrical Data

- **Actual electrical travel**: 300 ±3 °
- **Available resistance values**: 1; 5 kΩ
- **Resistance tolerance**: ± 15 %
- **Repeatability**: 0.07 (~0.2°) %
- **Effective temperature coefficient of the output-to-applied voltage**: 5 (typical) ppm/K
- **Independent linearity**: ± 2.5 %
- **Max. permissible applied voltage**: 12 V
- **Recommended operating wiper current**: ≤ 1 µA
- **Max. wiper current in case of malfunction**: 5 mA
- **Dielectric strength (500 VDC, 1 bar, 2 s)**: ≤ 10,000 MΩ
- **Dielectric strength (AC, 50 Hz, 1 min, 1 bar)**: 750 V

### Environmental Data

- **Temperature range**: -25...+85 °C
- **Vibration**: 30...2000 Hz
  - A<sub>max</sub> = 0.75 mm/s
  - a<sub>max</sub> = 10 g
- **Life**: 10 x 10<sup>6</sup> movements
- **Shock (DIN IEC 68 T2-27)**: 50 g
- **Protection class (DIN 40050)**: IP 65

### Important

All values given for this series – including linearity, lifetime, micro-linearity, resistance to external disturbances and temperature coefficient in voltage dividing mode – are quoted for the device operating with the wiper voltage driving an operational amplifier working as a voltage follower where virtually no load is applied to the wiper (i.e. ≤ 1 µA).

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**Order designations / Abbreviations**

3G: connecting solder pin axial
MB: bushing M8 x 0.75
axis Ø 3 mm with slot

**Included in delivery**

1 nut M8 x 0.75
1 serrated washer Ø 8.15 mm

**Recommended accessories**

MAP process-control indicators and display. MUP signal conditioner for standardized output signals.

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Novotechnik U.S., Inc.
155 Northboro Road
Southborough, MA 01772

Phone: 508-485-2244
Fax: 508-485-2430
Email: info@novotechnik.com

Subject to changes
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