Single-Turn Wirewound Potentiometers

PD210 Series

Special features
• very small dimensions
• 200 x 10^3 movements
• excellent linearity ±0.4%
• very robust
• highest protection class

Sealed potentiometer with a wirewound resistance element for control electronics and measuring applications.

Recommended for applications in harsh environments requiring a sealed potentiometer, the PD210 Series combines extraordinarily-high media resistance and robust engineering.

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

Special designs with other angular ranges, shaft dimensions, connections and higher torque are available on request.

Description

<table>
<thead>
<tr>
<th>Size</th>
<th>housing diameter 20 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing</td>
<td>high-quality, temperature-consistent plastic</td>
</tr>
<tr>
<td>Shaft</td>
<td>brass, nickel plated</td>
</tr>
<tr>
<td>Bearings</td>
<td>sleeve bearings</td>
</tr>
<tr>
<td>Resistance element</td>
<td>wirewound</td>
</tr>
<tr>
<td>Wiper assembly</td>
<td>precious metal</td>
</tr>
<tr>
<td>Electrical connections</td>
<td>gold plated</td>
</tr>
</tbody>
</table>
Mechanical Data

Dimensions
Mounting
Mechanical travel
Permitted shaft loading (axial and radial)
static or dynamic force
Torque
Permitted max. torque for mech. stops
Maximum operational speed
Weight

Electrical Data
Actual electrical travel
Available resistance values
Resistance tolerance
Repeatability
Effective temperature coefficient of the output-to-applied voltage ratio
Independent linearity
Max. permissible applied voltage
Recommended operating wiper current
Max. wiper current in case of malfunction
Dielectric strength

Environmental Data
Temperature range
Vibration
Life
Shock (DIN IEC 68 T2-27)
Protection class (DIN 40053)

Order designations / Abbreviations
4B: connecting pin, radial
MB: bushing M10 x 0.75, axis Ø 6 mm with slot

Included in delivery
1 nut M10 x 0.75
1 serrated washer 3/8"

Recommended accessories
Fork coupling Z 104 G6, Art. no. 005690;
Fork coupling Z 105 G6 (backlash-free), Art. no. 005691,
MAP process-control indicators and display. MUP signal conditioner for standardized output signals.

Important
All values given for this series – including linearity, lifetime, microlinearity, 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).

Order designations
<table>
<thead>
<tr>
<th>Type</th>
<th>Art. no.</th>
<th>R in kΩ</th>
<th>Length shaft in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>PD210 1K0</td>
<td>4B080 MB</td>
<td>71605</td>
<td>1</td>
</tr>
<tr>
<td>PD210 2K0</td>
<td>4B080 MB</td>
<td>71606</td>
<td>2</td>
</tr>
<tr>
<td>PD210 5K0</td>
<td>4B080 MB</td>
<td>71607</td>
<td>5</td>
</tr>
<tr>
<td>PD210 10K0</td>
<td>4B080 MB</td>
<td>71608</td>
<td>10</td>
</tr>
<tr>
<td>PD210 20K0</td>
<td>4B080 MB</td>
<td>71609</td>
<td>20</td>
</tr>
<tr>
<td>PD210 1K0</td>
<td>4B160 MB</td>
<td>71617</td>
<td>1</td>
</tr>
<tr>
<td>PD210 2K0</td>
<td>4B160 MB</td>
<td>71618</td>
<td>2</td>
</tr>
<tr>
<td>PD210 5K0</td>
<td>4B160 MB</td>
<td>71619</td>
<td>5</td>
</tr>
<tr>
<td>PD210 10K0</td>
<td>4B160 MB</td>
<td>71620</td>
<td>10</td>
</tr>
<tr>
<td>PD210 20K0</td>
<td>4B160 MB</td>
<td>71621</td>
<td>20</td>
</tr>
</tbody>
</table>