Translational resistance elements suitable for installation in closed devices, which are so compact built, that for a position transducer with housing and actuating rod no sufficient place is available. Positioning drives represent a typical field of application.

The mounting of the resistance element should be on an even, clean surface in correct position to the wiper as indicated in the dimensional drawing.

In addition, the stated distance between the wiper carrier and the resistance element must be adhered to. Thus ensure the necessary wiper tracking force as well as the operability and durability. Two different wiper designs are available.

Only the standard lengths are specified in this data sheet. Other lengths and outlines of the resistance elements on request.

<table>
<thead>
<tr>
<th>Description</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Substrate</td>
<td>glass filled epoxy</td>
</tr>
<tr>
<td>Resistance element and collector</td>
<td>conductive plastic</td>
</tr>
<tr>
<td>Wiper</td>
<td>precious metal multi-finger wiper</td>
</tr>
<tr>
<td>Electrical connections</td>
<td>lead wires to be soldered onto soldering eyelet of resistance element</td>
</tr>
</tbody>
</table>
Type designations | PTN 025 | PTN 050 | PTN 075 | PTN 100 | PTN 150 | PTN 200 | PTN 250
--- | --- | --- | --- | --- | --- | --- | ---

**Electrical Data**

- Defined electrical range: 25 50 75 100 150 200 250 mm
- Electrical range: 27 52 77 102 152 205 255 ±0.1 mm
- Total resistance: 2.5 5 5 5 10 10 10 kΩ
- Resistance tolerance: 20 ±%
- Independent linearity: 0.25 0.25 0.1 0.1 0.1 0.1 0.1 ±%
- Repeatability: 0.01 mm
- Recommended operating wiper current: ≤ 1 µA
- Max. wiper current in case of malfunction: 10 mA
- Max. permissible applied voltage: 42 V
- Temperature coefficient of the output-to-applied voltage ratio: typ. 5 ppm/K
- Insulation resistance (500 VDC): ≥ 10 MΩ
- Dielectric strength (500 VAC, 50 Hz): < 100 µA

**Mechanical Data**

- Mechanical range (Dimension B): 34.5 59.5 84.5 109.5 159.5 212.5 262.5 mm
- Total length (Dimension A): 45 70 85 120 170 223 273 ±0.3 mm

**Environmental Data**

- Temperature range: -40 ... +100 °C
- Operating humidity range: 0...95 (no condensation) % R.H.
- Life: 50 x 10⁶ typ. cycles

**Order designations**

Type | Art.-No.
--- | ---
PTN 025 | 002181
PTN 050 | 002188
PTN 075 | 002189
PTN 100 | 002190
PTN 150 | 002191
PTN 200 | 002192
PTN 250 | 002193
Wiper S-115 | 002161
or
Wiper S-170 | 021110

When ordering please indicate art.no. for resistance element and corresponding wiper.

**Important**

All values specified in this data sheet for linearity, lifetime and temperature coefficient are only valid for a sensor used as a voltage divider with virtually no load applied to the wiper ($I_W \leq 1 \, \mu A$).