Special features

- compact dimensions
- cost-optimized solution with open housing
- suitable for mounting in closed applications
- very long life up to 50 million movements, depending on application
- resolution better than 0.01 mm
- variable mechanical customer interfaces
- outstanding linearity up to ±0.05%
- easy mounting

Position transducers with open housing are suitable for mounting in closed devices. They are a cost-optimized solution for applications, where density against fluid and dust isn’t necessary, but reliability and accuracy.

Fixing clamps, screwing the housing directly as well as further mounting possibilities allow an optimum adaption to the particular environmental conditions.

Depending on the construction the position transducers with housing are available in different order sizes.

They are also a basis version for customized and modified solutions.

<table>
<thead>
<tr>
<th>Description</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing</td>
<td>aluminium, anodized</td>
</tr>
<tr>
<td>Fixings</td>
<td>optional accessories, longitudinally adjustable clamps</td>
</tr>
<tr>
<td>Actuating rod</td>
<td>optional accessories, stainless steel, rotatable</td>
</tr>
<tr>
<td>Coupling</td>
<td>optional follower pin DIN1473-2x6</td>
</tr>
<tr>
<td>Resistance element</td>
<td>conductive plastic</td>
</tr>
<tr>
<td>Wiper assembly</td>
<td>precious metal multi-finger wiper</td>
</tr>
<tr>
<td>Electrical connections</td>
<td>Soldering pads Cu/Ni/Au on FR4, cable and lead wires optional on request</td>
</tr>
</tbody>
</table>
Fixing clamps optional
Type designations PTP
0010 0025 0050 0075 0100 0125* 0150 0175* 0200 0250 0300

Electrical Data
- Defined electrical range: 10, 25, 50, 75, 100, 125, 150, 175, 200, 250, 300 mm
- Electrical stroke (dimension C): 12, 27, 52, 77, 102, 130, 155, 180, 205, 255, 305 ±0,1 mm
- Nominal resistance: 1, 1, 2, 3, 4, 5, 6, 7, 8, 10, 12 kΩ
- Resistance tolerance: ±%
- Independent linearity: 0.25, 0.2, 0.1, 0.1, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05, ±%
- 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 5 ppm/K
- Insulation resistance (500 VDC) ≥ 10 MΩ
- Dielectric strength (500 VAC, 50Hz) ≤ 100 µA

Mechanical Data
- Body length (dimension A)
  - PTP_xxxx_1xx_002_001: 35.8, 50.8, 75.8, 100.8, 125.8, 153.8, 178.8, 203.8, 228.8, 278.8, 328.8 ±0.5 mm
  - PTP_xxxx_4xx_002_001: 60.5, 75.5, 100.5, 125.5, 150.5, 178.5, 203.5, 228.5, 253.5, 303.5, 353.5 ±0.5 mm
- Mechanical stroke (dimension B): 13.5, 28.5, 53.5, 78.5, 103.5, 131.5, 156.5, 181.5, 206.5, 256.5, 306.5 ±1 mm
- Hole separation (dimension D)
  - PTP_xxxx_4xxx_002_001: 50.5, 65.5, 90.5, 115.5, 140.5, 165.5, 193.5, 218.5, 243.5, 293.5, 343.5 ±0.2 mm
- Weight: g
- Operating force horizontal ≤ 0.5 N

Environmental Data
- Temperature range: -40 ... +100 °C
- Operating humidity range: 0...95 (no condensation) % R.H.
- Vibration: 5...2000 Hz
  - A_{max} = 0.75
  - A_{mean} = 20
- Shock: 50 g
- Life: >50 x 10^6 typical movements
- Operating speed: 10 m/s max.
- Protection class: no

*) on request
Ordering specifications

**Mechanical design profil element**
1. Aluminum profil length = resistance element length
2. Aluminum profil short with single-sided element overlap
3. Aluminum profil long with bore, therefore longer as element

**Mechanical design wiper assembly**
1. TEX wiper assembly without modification
2. TEX wiper assembly with additional follower pin

**Mechanical design others**
1. model NT standard drawing
2. TEX wiper assembly without modification
3. mechanical end stop (single-sided mechanic 1xx; twin-sided mechanic 4xx)

**Electrical design**
002: Independent linearity ±0.05 % up to ±0.25%

**Electrical connection**
001: soldering pads Cu/Ni/Au on FR4

**Defined electr. range**
Various standard lengths from 0010 up to 0300 mm;

**Schematic**

Optional accessories: actuating rods

Connection actuating rods

**Typ** Z-PTP-801-xxxx

<table>
<thead>
<tr>
<th>Dimension E</th>
<th>55</th>
<th>70</th>
<th>95</th>
<th>120</th>
<th>145</th>
<th>185</th>
<th>208</th>
<th>233</th>
<th>258</th>
<th>308</th>
<th>358</th>
</tr>
</thead>
<tbody>
<tr>
<td>±1 mm</td>
<td></td>
<td></td>
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</tbody>
</table>

Further actuating rods on request

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**Recommended accessories**
Fixing clamps Z-PTP-B01, Art.No. 056034, VE50
(4 clamps Z1-11 with 4 screws M3x8);
Various actuating rods on request.

**Included in delivery**
PTP without fixing material and without actuating rod.
These has to be ordered separately if required.

**Mounting instruction**
Sensor has to be mounted in dry and clean environment.

**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 ($I_0 \leq 1 \mu A$).