Disk Translators

Bimorph Piezo Actuators with High Dynamics

P-286 · P-288 · P-289

- Travel range to 200 µm
- Sub-nm resolution
- Sub-ms response time
- Inexpensive
- Low profile

Fields of application
- Active vibration absorber
- Adaptive mechanics
- Precision mechanics / micromechanics
- Optics
- Measuring technology / interferometry
- Adaptive systems technology
- Switching
- Laser tuning
- Force generation / materials testing
- Nanotechnology
## Specifications

<table>
<thead>
<tr>
<th></th>
<th>P-286.2x</th>
<th>P-288.00</th>
<th>P-289.20</th>
<th>Unit</th>
<th>Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Travel range*</td>
<td>100</td>
<td>50</td>
<td>200</td>
<td>μm</td>
<td>±20 %</td>
</tr>
<tr>
<td>Resolution**</td>
<td>1.0</td>
<td>0.5</td>
<td>2.0</td>
<td>nm</td>
<td></td>
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<tr>
<td>Static large-signal stiffness***</td>
<td>0.3</td>
<td>0.2</td>
<td>0.15</td>
<td>N/μm</td>
<td>±20 %</td>
</tr>
<tr>
<td>Push/pull force capacity</td>
<td>20 / 10</td>
<td>10 / 5</td>
<td>20 / 10</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Max. torque limit (on tip)</td>
<td>0.003</td>
<td>0.003</td>
<td>0.003</td>
<td>Nm</td>
<td></td>
</tr>
<tr>
<td>Max. operating voltage</td>
<td>-1000</td>
<td>-750</td>
<td>-1000</td>
<td>V</td>
<td></td>
</tr>
<tr>
<td>Electrical capacitance</td>
<td>65</td>
<td>9</td>
<td>130</td>
<td>nF</td>
<td>±20 %</td>
</tr>
<tr>
<td>Resonant frequency f₀ (no load)</td>
<td>2.5</td>
<td>2</td>
<td>1.1</td>
<td>kHz</td>
<td>±20 %</td>
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<tr>
<td>Operating temperature range</td>
<td>-40 to +80</td>
<td>-40 to +80</td>
<td>-40 to +80</td>
<td>°C</td>
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<tr>
<td>Voltage connection</td>
<td>Bare stranded wires (PTFE-insulated)</td>
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<td>Bare stranded wires (PTFE-insulated)</td>
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<tr>
<td>Mass</td>
<td>42</td>
<td>8</td>
<td>56</td>
<td>g</td>
<td>±5 %</td>
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<tr>
<td>Housing/ tip material</td>
<td>Stainless steel</td>
<td>Brass</td>
<td>Stainless steel</td>
<td></td>
<td></td>
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<tr>
<td>Recommended electronics</td>
<td>E-508</td>
<td>E-508</td>
<td>E-508</td>
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</tr>
</tbody>
</table>

* Travel range at 0 to -750 V (P-288) or 0 to -1000 V (P-286, P-289).
** The resolution of the system is only limited by the noise of the amplifier and measuring technology because PI piezo actuators are free of friction.
*** Dynamic small-signal stiffness is approx. 50 % higher.
All specifications based on room temperature (22 °C ±3 °C).
Ask about customized versions.
Drawings / Images

P-286, dimensions in mm
P-288, dimensions in mm
Ordering Information

P-286.20
Disk translator, 100 µm, 300 mm PTFE-insulated stranded wires

P-286.23
Disk translator, 100 µm, without tip and silicone insulation, 300 mm PTFE-insulated stranded wires

P-288.00
Mini disk translator, 50 µm, 300 mm PTFE-insulated stranded wires

P-289.20
Double disk translator, 200 µm, 300 mm PTFE-insulated stranded wires