DuraAct Patch Transducer

Bendable and Robust

P-876

- Useable as actuator, sensor or energy generator
- Inexpensive
- Min. bending radii of down to 12 mm
- Compact design
- Individual solutions

Patch transducer

Functionality as actuator and sensor component. Nominal operating voltage from 100 up to 1000 V, depending on the active layer height. Power generation for self-sufficient systems possible up to the milliwatt range. Can also be applied to curved surfaces.

Robust, inexpensive design

Laminated structure consisting of a piezoceramic plate, electrodes and polymer materials. Manufactured with bubble-free injection method. The polymer coating simultaneously serves as electrical insulation and as mechanical preload, which makes the DuraAct bendable.

Customized versions and other specifications on request

- Flexible choice of size
- Flexible choice of thickness and therefore bending ability
- Flexible choice of piezoceramic material
- Variable design of the electrical connections
- Combined actuator/sensor applications, even with several piezoceramic layers
- Multilayer piezo elements
- Arrays

Application fields

Industry and research. Can also be applied to curved surfaces or used for integration in structures. For adaptive systems, energy harvesting, structural health monitoring.
## Specifications

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<th>P-876.A11</th>
<th>P-876.A12</th>
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<th>P-876.SP1</th>
<th>Unit</th>
<th>Tolerance</th>
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<tr>
<td>Operating voltage range</td>
<td>-50 to 200</td>
<td>-100 to 400</td>
<td>-250 to 1000</td>
<td>-100 to 400</td>
<td>V</td>
<td></td>
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<td><strong>Motion and positioning</strong></td>
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<tr>
<td>Min. lateral contraction</td>
<td>400</td>
<td>650</td>
<td>800</td>
<td>650</td>
<td>µm/m</td>
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<td>Rel. lateral contraction</td>
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<td>0.64</td>
<td>1.3</td>
<td>µm/V</td>
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<td><strong>Mechanical properties</strong></td>
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<tr>
<td>Blocking force</td>
<td>90</td>
<td>265</td>
<td>775</td>
<td>280</td>
<td>N</td>
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<tr>
<td>Min. bending radius</td>
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<td>20</td>
<td>70</td>
<td>–</td>
<td>mm</td>
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<td><strong>Drive properties</strong></td>
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<tr>
<td>Electrical capacitance</td>
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<td>90</td>
<td>45</td>
<td>8</td>
<td>nF</td>
<td>±20 %</td>
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<td>Piezo ceramic</td>
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<td>PIC255</td>
<td>PIC255</td>
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<tr>
<td>Piezoceramic height</td>
<td>100</td>
<td>200</td>
<td>500</td>
<td>200</td>
<td>µm</td>
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<td><strong>Miscellaneous</strong></td>
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<tr>
<td>Voltage connector</td>
<td>Soldering points</td>
<td>Soldering points</td>
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<tr>
<td>Dimensions</td>
<td>61 mm × 35 mm × 0.4 mm</td>
<td>61 mm × 35 mm × 0.5 mm</td>
<td>61 mm × 35 mm × 0.8 mm</td>
<td>16 mm × 13 mm × 0.5 mm</td>
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<td>Recommended electronics</td>
<td>E-413, E-821, E-835</td>
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Operating temperature range: -20 to 150 °C.
Custom designs or different specifications on request.

## Drawings / Images

![Image of drawing and dimensions](image-url)

*P-876.A1x, dimensions in mm. P-876.A11: TH = 0.4 mm. P-876.A12: TH = 0.5 mm. P-876.A15: TH = 0.8 mm.*
When a voltage is applied, the DuraAct patch transducer contracts laterally.

When arranged in an array, DuraAct patch transducers allow, for example, the reliable monitoring of larger areas.
DuraAct transducer design principle

DuraAct patch transducers can be manufactured in various shapes.

Electronic modules for sensor data processing, controlling the DuraAct actuator or harvesting energy can be connected close to the transducer.
Ordering Information

P-876.A11
DuraAct patch transducer, 61 mm × 35 mm × 0.4 mm

P-876.A12
DuraAct patch transducer, 61 mm × 35 mm × 0.5 mm

P-876.A15
DuraAct patch transducer, 61 mm × 35 mm × 0.8 mm

P-876.SP1
DuraAct patch transducer, 16 mm × 13 mm × 0.5 mm