

DuraAct Power Patch Transducer

High Efficiency and Robust



P-878

- Useable as actuator, sensor or energy generator
- Low voltages to 120 V
- Compact design
- Individual solutions

Patch transducer

Functionality as actuator and sensor component. Nominal operating voltages of -20 to 120 V. Power generation for self-sufficient systems possible up to the milliwatt range. Can also be applied to curved surfaces.

In longitudinal direction, the DuraAct Power uses the high-efficiency d_{33} effect.

Robust, inexpensive design

Laminated structure consisting of PICMA® multilayer piezo element, 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
- Variable design of the electrical connections
- Combined actuator/sensor applications, even with several active piezoceramic layers
- Arrays

Fields of application

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

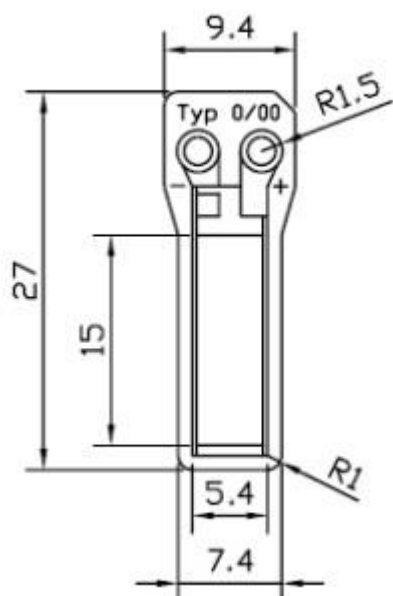
	P-878.A1	Unit
Operating voltage range	-20 to 120 V	
Motion and positioning		
Min. axial strain	1200	μm/m
Rel. axial strain	10	μm/V
Min. lateral contraction	250	μm/m
Rel. lateral contraction	1.2	μm/V
Mechanical properties		
Blocking force	44	N
Min. bending radius	24	mm
Drive properties		
Electrical capacitance	100	nF
Piezo ceramic	PIC252	
Active element	15 mm × 5.4 mm	
Miscellaneous		
Voltage connector	Soldering points	
Dimensions	27 mm × 9.4 mm × 0.6 mm	
Recommended electronics	E-503, E-504, E-505, E-506, E-610, E-617, E-618, E-663, E-821, E-831, E-836	

Electrical capacitance: Measured at 1 V_{pp}, 1 kHz, RT, tolerance ±20 %.

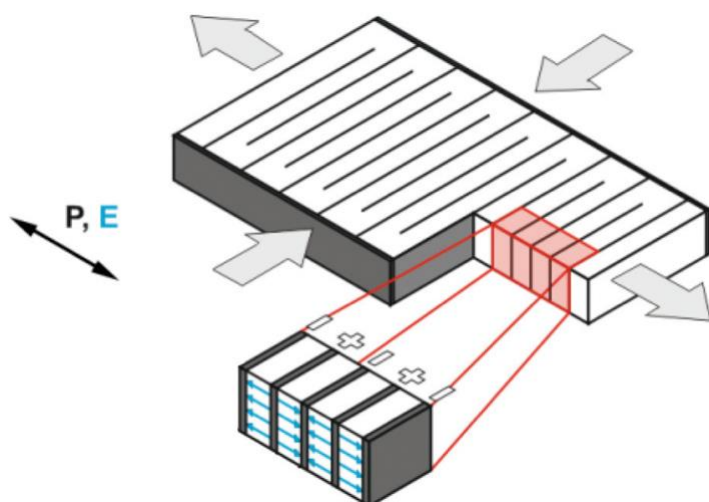
Operating temperature range: -20 to 150 °C.

Custom designs or different specifications on request.

Drawings / Images



P-878.A1, dimensions in mm



The DuraAct Power multilayer patch transducers use the longitudinal or d_{33} effect, which describes an elongation parallel to the electric field E and the polarization direction P of the piezo actuator. The d_{33} piezoelectric charge coefficients for longitudinal displacement are considerably higher than the d_{31} coefficients for transversal displacement, used by all-ceramic patch transducers (Source: Wierach, DLR).

Ordering Information

P-878.A1

DuraAct Power patch transducer, 27 mm × 9.4 mm × 0.6 mm