

PICA Power Piezo Actuators

FOR HIGH-DYNAMICS APPLICATIONS



P-010.xxP – P-056.xxP

- Operating temperature up to 150°C
- High operating frequencies
- High load capacity
- Force generation up to 70 kN
- Microsecond response
- Sub-nanometer resolution
- Large choice of designs

Stacked piezo linear actuator

Operating voltage 0 to 1000 V. Long lifetime without performance loss. Large displacement, low electrical capacitance. Integrated temperature sensor to prevent damage from overheating. Extreme reliability: $>10^9$ cycles

Available options

- Bipolar control
- SGS sensors for positional stability
- PZT ceramic material
- Operating voltage range, displacement, layer thickness
- Load capacity, force generation
- Geometric shapes: Rectangular, inner hole
- Mechanical interfaces: Flat, metal, ceramic, glass, sapphire, etc.
- Integrated piezoelectric detector layers
- Operating temperature of up to 200°C
- UHV-compatible to 10^{-9} hPa
- Non-magnetic versions
- Extra-tight length tolerances

Fields of application

Research and industry. For active damping of oscillations, precision mechanics / -machining, active structures (adaptive systems technology)

Suitable drivers

E-481 PICA High-performance Piezo Driver / Controller
E-470 • E-472 • E-421 PICA Controller
E-464 PICA Piezo Driver

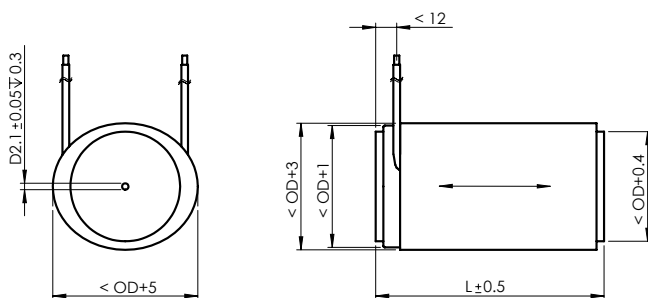
Order number	Displacement [μm] (0–1000 V) -10/+20%	Diameter OD [mm]	Length L [mm] ± 0.5	Blocking force (0–1000 V) [N]	Stiffness [N/ μm]	Capacitance [nF] $\pm 20\%$	Resonant frequency [kHz]
P-010.00P	5	10	9	1200	240	17	129
P-010.10P	15	10	18	1800	120	46	64
P-010.20P	30	10	31	2100	68	90	37
P-010.40P	60	10	58	2200	37	180	20
P-010.80P	120	10	111	2300	19	370	10
P-016.10P	15	16	18	4500	300	130	64
P-016.20P	30	16	31	5400	180	250	37
P-016.40P	60	16	58	5600	94	510	20
P-016.80P	120	16	111	5900	49	1000	10
P-016.90P	180	16	163	6000	33	1600	7
P-025.10P	15	25	20	9900	660	320	58
P-025.20P	30	25	33	12000	400	630	35
P-025.40P	60	25	60	13000	220	1300	19
P-025.80P	120	25	113	14000	120	2600	10
P-025.90P	180	25	165	14000	80	4000	7
P-035.10P	15	35	21	18000	1200	530	55
P-035.20P	30	35	34	23000	760	1200	34
P-035.40P	60	35	61	26000	430	2500	19
P-035.80P	120	35	114	28000	230	5200	10
P-035.90P	180	35	166	29000	160	7800	7
P-045.20P	30	45	36	36000	1200	2100	32
P-045.40P	60	45	63	41000	680	4300	18
P-045.80P	120	45	116	44000	370	8800	10
P-045.90P	180	45	169	45000	250	13000	7
P-056.20P	30	56	36	54000	1800	3300	32
P-056.40P	60	56	63	66000	1100	6700	18
P-056.80P	120	56	116	68000	570	14000	10
P-056.90P	180	56	169	70000	390	21000	7

Piezo ceramic type: PIC 255.
Standard electrical interfaces: PTFE-insulated wire leads, 100 mm, AWG 24 (\varnothing 1.15 mm). PT1000 temperature sensor.
Recommended preload for dynamic operation: 15 MPa.

Maximum preload for constant force: 30 MPa.
Resonant frequency at $1 V_{pp}$, unloaded. The value is halved for unilateral clamping.
Capacitance at $1 V_{pp}$, 1 kHz, RT.

Operating voltage: 0 to 1000 V.
Operating temperature range: -20 to 150°C. Standard mechanical interfaces: Steel plates, 0.5 to 2 mm thick (depends on model).
Outer surfaces: FEP, transparent shrink

sleeving (outside); epoxy resin (inside).
Custom designs or different specifications on request.



PICA Power, dimensions in mm. L, OD see data table