

PICA Power Piezo Actuator

PRELOADED PIEZO ACTUATORS (HVPZT) WITH SENSOR OPTION

P-212

- + Travel range to 180 µm
- + Push forces to up to 4500 N
- + Pull forces to up to 500 N
- + Sub- ms response time
- + Sub- nanometer resolution
- + Options: Vacuum, high- and low- temperature



Specifications

	P-212.10	P-212.20	P-212.40	P-212.80	Unit	Tolerance
Operating voltage	0 to 1000	0 to 1000	0 to 1000	0 to 1000	V	
Motion and positioning						
Closed- loop travel*	15	30	60	120	µm	
Closed- loop resolution* / **	0.3	0.6	1.2	2.4	nm	
Open- loop resolution**	0.15	0.3	0.6	1.2	nm	typ.
Linearity error*	0.2	0.2	0.2	0.2	%	typ.
Mechanical properties						
Static large- signal stiffness in motion direction***	90	60	34	18	N/ µm	±20 %
Unloaded resonant frequency	17	12	7	4.5	kHz	±20 %
Push / pull force capacity in motion direction	2000 / 300	2000 / 300	2000 / 300	2000 / 300	N	max.
Shear load	15	10	10	10	N	max.
Torque on tip	0.5	0.5	0.5	0.5	Nm	max.
Drive properties						
Electrical capacitance	47	90	180	370	nF	±20 %
Dynamic operating current coefficient	5	5	5	5	µA/ (Hz × µm)	±20 %
Miscellaneous						
Mass with cable	110	120	150	210	g	±5 %

Piezo ceramic: PICA Power.

Temperature range: -40 to 80 °C.

The operating voltage should not exceed 750 V in continuous operation.

* Requires integrated strain gauge sensor. These versions are shipped with a performance report.

** The position resolution of piezo actuators is not limited by stiction or friction.

*** Dynamic small- signal stiffness is approx. 50 % higher.

Order Information

Actuators without sensor

P-212.10

Preloaded Piezo Actuator, 15 μm , 1000 V, 2000 N

P-212.20

Preloaded Piezo Actuator, 30 μm , 1000 V, 2000 N

P-212.40

Preloaded Piezo Actuator, 60 μm , 1000 V, 2000 N

P-212.80

Preloaded Piezo Actuator, 120 μm , 1000 V, 2000 N

Actuators without sensor, low- temperature range

P-212.10T

Preloaded Piezo Actuator, 15 μm , 1000 V, 2000 N, Low Temperature

P-212.20T

Preloaded Piezo Actuator, 30 μm , 1000 V, 2000 N, Low Temperature

P-212.40T

Preloaded Piezo Actuator, 60 μm , 1000 V, 2000 N, Low Temperature

P-212.80T

Preloaded Piezo Actuator, 120 μm , 1000 V, 2000 N, Low Temperature

Piezo actuators without sensor, high- temperature range and high vacuum

P-212.10V

Preloaded Piezo Actuator, 15 μm , 1000 V, 2000 N, High Temperature / Vacuum

P-212.20V

Preloaded Piezo Actuator, 30 μm , 1000 V, 2000 N, High Temperature / Vacuum

P-212.40V

Preloaded Piezo Actuator, 60 μm , 1000 V, 2000 N, High Temperature / Vacuum

P-212.80V

Preloaded Piezo Actuator, 120 μm , 1000 V, 2000 N, High Temperature / Vacuum

Actuators with sensor

P-212.1S

Preloaded Piezo Actuator, 15 μm , 1000 V, 2000 N, SGS

P-212.2S

Preloaded Piezo Actuator, 30 μm , 1000 V, 2000 N, SGS

P-212.4S

Preloaded Piezo Actuator, 60 μm , 1000 V, 2000 N, SGS

P-212.8S

Preloaded Piezo Actuator, 120 μm , 1000 V, 2000 N, SGS

Actuators with sensor, low- temperature range

P-212.1ST

Preloaded Piezo Actuator, 15 μm , 1000 V, 2000 N, SGS, Low Temperature

P-212.2ST

Preloaded Piezo Actuator, 30 μm , 1000 V, 2000 N, SGS, Low Temperature

P-212.4ST

Preloaded Piezo Actuator, 60 μm , 1000 V, 2000 N, SGS, Low Temperature

P-212.8ST

Preloaded Piezo Actuator, 120 μm , 1000 V, 2000 N, SGS, Low Temperature

Piezo actuators with sensor, high- temperature range and high vacuum

P-212.1SV

Preloaded Piezo Actuator, 15 μm , 1000 V, 2000 N, SGS, High Temperature / Vacuum

P-212.2SV

Preloaded Piezo Actuator, 30 μm , 1000 V, 2000 N, SGS, High Temperature / Vacuum

P-212.4SV

Preloaded Piezo Actuator, 60 μm , 1000 V, 2000 N, SGS, High Temperature / Vacuum

P-212.8SV

Preloaded Piezo Actuator, 120 μm , 1000 V, 2000 N, SGS, High Temperature / Vacuum

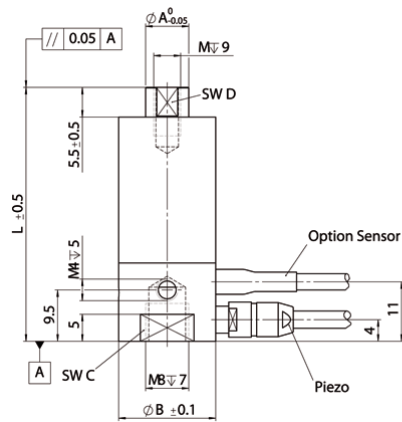
Controllers / Drivers / Amplifiers

[E-482 PICA High- Power Piezo Driver / Servo Controller](#)

Technology

[Herstellung von Piezoelementen in Presstechnologie | Für Piezoaktoren in gestapelter Bauweise wird Piezokeramikpulver zu Formkörpern gepresst und anschließend zu Piezostapeln weiterverarbeitet. Weiterlesen ...](#)

Drawings / Images



	L [mm]	∅A [mm]	∅B [mm]	C	D	M
P-212.1x	47	8	18	15	7	5
P-212.2x	60	8	18	15	7	5
P-212.4x	86	8	18	15	7	5
P-212.8x	139	8	18	15	7	5
P-216.1x	47	10	25	22	8	6
P-216.2x	60	10	25	22	8	6
P-216.4x	86	10	25	22	8	6
P-216.8x	139	10	25	22	8	6
P-216.9x	191	10	25	22	8	6