Piezo Tubes

High-Dynamics Operation with Low Loads

PT120 – PT140

- Radial and axial displacement
- Subnanometer resolution
- Ideal for OEM applications
- Large choice of designs
- Short lead times

Piezo actuator / scanner tube
Operating voltage to 1000 V. Axial and diameter contraction, monolithic piezoceramic actuator with minimal geometric tolerances.

Custom designs with modified specifications
- Materials
- Operating voltage range, displacement
- Tolerances
- Applied sensors
- Special high / low temperature versions
- Segmentation of the electrodes, wrap-around electrodes, circumferential insulating borders
- Non-magnetic

Possible dimensions
- Length L max. 70 mm
- Outer diameter OD 2 to 80 mm
- Inner diameter ID 0.8 to 74 mm
- Min. wall thickness 0.30 mm

Fields of application
Industry and research. For microdosing and micromanipulation.

Motion	Unit		PT120.00	PT130.90	PT130.10	PT130.20	PT130.50	PT140.70
Max. axial contraction	µm		5	9	9	9	9	15
Max. diameter contraction	µm		0.7	0.9	1.8	3	6	12

Drive Properties	Unit	Tolerance	PT120.00	PT130.90	PT130.10	PT130.20	PT130.50	PT140.70
Actuator type			Piezo scanner tube	Piezo scanner tube	Piezo scanner tube	Piezo scanner tube	Piezo scanner tube	Piezo scanner tube
Operating voltage	V	Max.	500	500	500	500	1000	1000
Electrical capacitance	nF	±20%	3	12	18	36	35	70

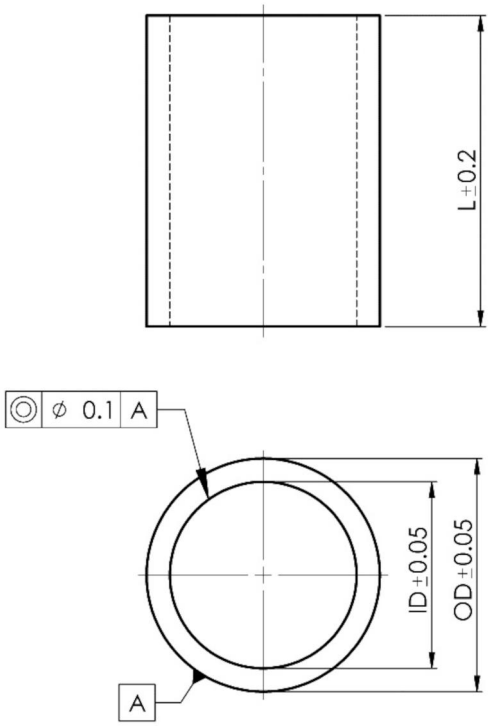
Mechanical Properties	Unit	Tolerance	PT120.00	PT130.90	PT130.10	PT130.20	PT130.50	PT140.70
Cross section			annular	annular	annular	annular	annular	annular
Piezo material			PIC151	PIC151	PIC151	PIC151	PIC151	PIC151
Length	mm	±0,2 mm	20	30	30	30	30	40
Outer diameter	mm	±0.05 mm	2.2	3.2	6.35	10	20	40
Inner diameter	mm	±0.05 mm	1	2.2	5.35	9	18	38

Miscellaneous			PT120.00	PT130.90	PT130.10	PT130.20	PT130.50	PT140.70
Recommended controllers / drivers			E-413.2 - E-413.6	E-413.2 - E-413.6	E-413.2 - E-413.6	E-413.2 - E-413.6	E-413.2 - E-413.6	E-413.2 - E-413.6

Electrical capacitance: Measured at 1 V_{pp}, 1 kHz, RT.
Maximum contraction at maximum operating voltage.
Inner electrode on positive potential.
Fired silver-plated electrodes inside and outside as standard.
Option: Outer electrode thin film (CuNi, Au).
Ask about custom designs!

At PI, technical data is specified at 22 ±3 °C. Unless otherwise stated, the values are for unloaded conditions. Some properties are interdependent. The designation "typ." indicates a statistical average for a property; it does not indicate a guaranteed value for every product supplied. During the final inspection of a product, only selected properties are analyzed, not all. Please note that some product characteristics may deteriorate with increasing operating time.

Drawings / Images



PT piezo tube actuators, dimensions in mm. Length L, outer diameter OD, and inner diameter ID see data table.

Order Information

PT120.00
Piezo scanner tube; piezo actuator drive; L 20 mm × OD 2.2 mm × ID 1 mm; 5 µm axial contraction; 0.7 µm diameter contraction

PT130.90
Piezo scanner tube; piezo actuator drive; L 30 mm × OD 3.2 mm × ID 2.2 mm; 9 µm axial contraction; 0.9 µm diameter contraction

PT130.10
Piezo scanner tube; piezo actuator drive; L 30 mm × OD 6.35 mm × ID 5.35 mm; 9 µm axial contraction; 1.8 µm diameter contraction

PT130.20
Piezo scanner tube; piezo actuator drive; L 30 mm × OD 10 mm × ID 9 mm; 9 µm axial contraction; 3 µm diameter contraction

PT130.50
Piezo scanner tube; piezo actuator drive; L 30 mm × OD 20 mm × ID 18 mm; 9 µm axial contraction; 6 µm diameter contraction

PT140.70
Piezo scanner tube; piezo actuator drive; L 40 mm × OD 40 mm × ID 38 mm; 15 µm axial contraction; 12 µm diameter contraction