

## Preloaded Piezo Actuators

For Light and Medium Loads



### P-820

- Outstanding lifetime due to PICMA® piezo actuators
- Travel range to 45 µm
- Push force capacity to 50 N
- Pull force capacity to 10 N
- Microsecond response, sub-nm resolution
- Variants with ball tip

#### Fields of application

- Static and dynamic precision positioning
- Fiber positioning
- Laser tuning
- Nanotechnology

#### Outstanding lifetime thanks to PICMA® piezo actuators

The patented PICMA® piezo actuators are all-ceramic insulated. This protects them against humidity and failure resulting from an increase in leakage current. PICMA® actuators offer an up to ten times longer lifetime than conventional polymer-insulated actuators. 100 billion cycles without a single failure are proven.

## Specifications

	P-820.10 / P-820.1B	P-820.20 / P-820.2B	P-820.30 / P-820.3B	Unit	Tolerance
Travel range at 0 to 100 V	15	30	45	μm	±20 %
Resolution*	0.15	0.3	0.45	nm	
Static large-signal stiffness**	13	7	4	N/μm	±20 %
Push force capacity	50	50	50	N	
Pull force capacity	10	10	10	N	
Torque on tip	0.08	0.08	0.08	Nm	max.
Electrical capacitance	0.3	0.7	1.0	μF	±20 %
Resonant frequency $f_0$ (no load)	22	15	12	kHz	±20 %
Operating temperature range	-20 to +80	-20 to +80	-20 to +80	°C	
Mass	8	11	14	g	±5 %
Length L	26	44	62	mm	±0.3
Recommended electronics	E-503, E-505, E-610, E-617, E-621, E-625, E-663, E-709, E-831	E-503, E-505, E-610, E-617, E-621, E-625, E-663, E-709, E-831	E-503, E-505, E-610, E-617, E-621, E-625, E-663, E-709, E-831		

\* The resolution of the system is only limited by the noise of the amplifier and measuring technology because PI piezo actuators are free of friction.

\*\* Dynamic small-signal stiffness is approx. 30 % higher.

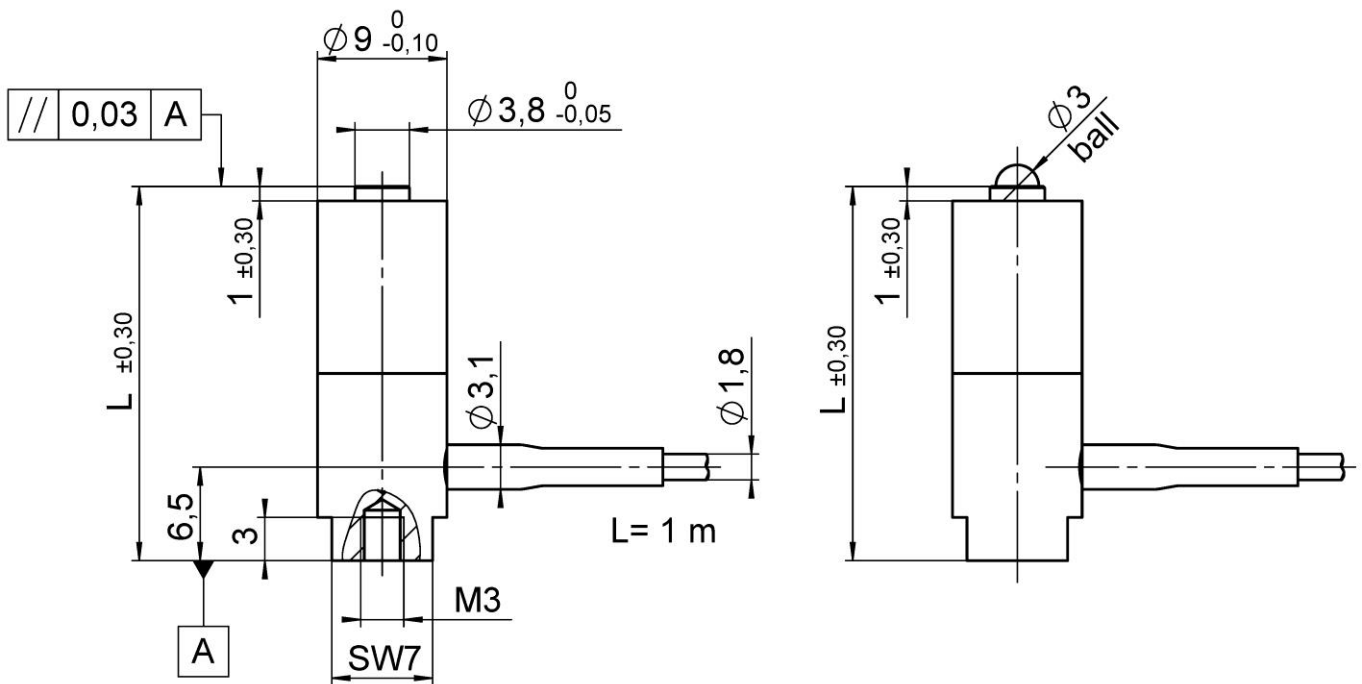
Voltage connection: LEMO FFA.00.250. Coaxial cable RG 178, 1 m.

Housing / tip material: Stainless steel.

All specifications based on room temperature (22 °C ±3 °C).

Ask about customized versions.

## Drawings / Images



	L
P-820.10 / P-820.1B	26
P-820.20 / P-820.2B	44
P-820.30 / P-820.3B	62

*P-820, dimensions in mm*

## Ordering Information

### P-820.10

Preloaded piezo actuator, 15  $\mu\text{m}$  travel range, 50 N / 10 N

### P-820.1B

Preloaded piezo actuator, 15  $\mu\text{m}$  travel range, 50 N / 10 N, ball tip

### P-820.20

Preloaded piezo actuator, 30  $\mu\text{m}$  travel range, 50 N / 10 N

### P-820.2B

Preloaded piezo actuator, 30  $\mu\text{m}$  travel range, 50 N / 10 N, ball tip

### P-820.30

Preloaded piezo actuator, 45  $\mu\text{m}$  travel range, 50 N / 10 N

### P-820.3B

Preloaded piezo actuator, 45  $\mu\text{m}$  travel range, 50 N / 10 N, ball tip