

Preloaded Piezo Actuators

For Medium Loads and Forces



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
- µs response time, sub-nm resolution
- Variants with spherical tip

Application fields

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

Outstanding lifetime thanks to PICMA® piezo actuators

The 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.

Motion	Unit	Tolerance	P-820.10	P-820.1B	P-820.20	P-820.30	P-820.3B
Active axes			Z	Z	Z	Z	Z
Travel range in Z, open loop, at 0 to 100 V	µm	±20%	15	15	30	45	45

Positioning	Unit	Tolerance	P-820.10	P-820.1B	P-820.20	P-820.30	P-820.3B
Resolution in Z, open loop	nm	Typ.	0.15	0.15	0.3	0.45	0.45

Drive Properties	Unit	Tolerance	P-820.10	P-820.1B	P-820.20	P-820.30	P-820.3B
Drive type			Piezo actuator/PICMA®	Piezo actuator/PICMA®	Piezo actuator/PICMA®	Piezo actuator/PICMA®	Piezo actuator/PICMA®
Electrical capacitance in Z	µF	±20%	0.3	0.3	0.7	1	1

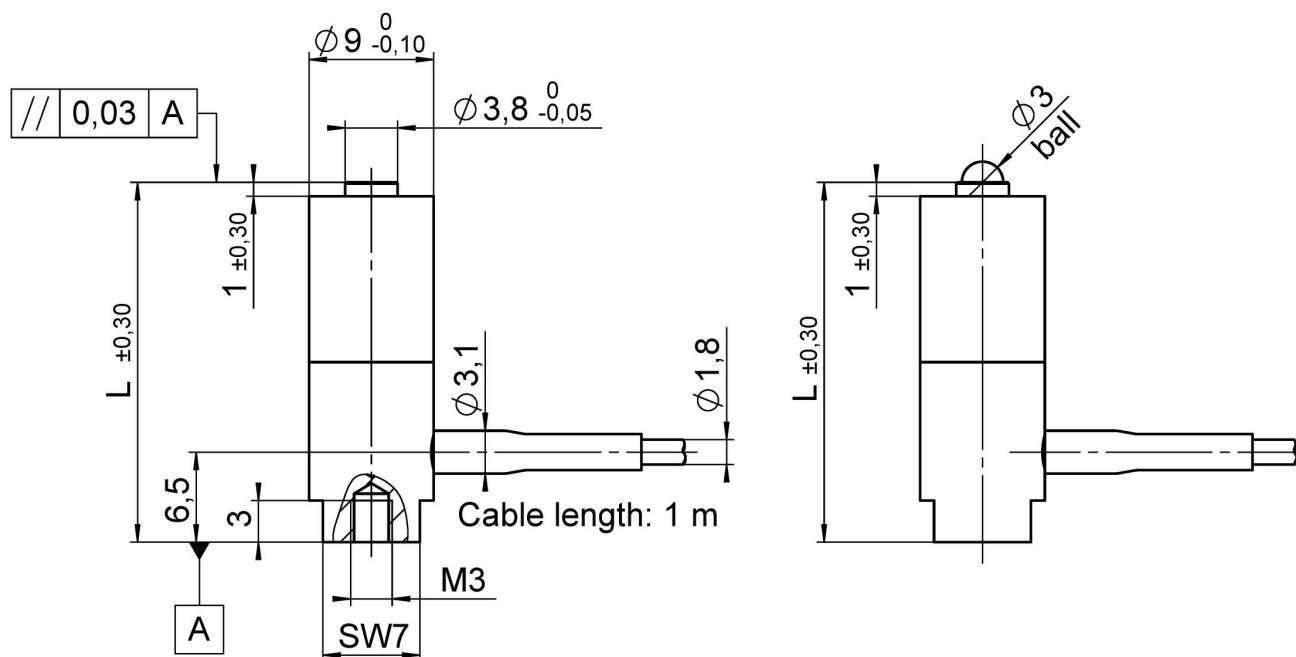
Mechanical Properties	Unit	Tolerance	P-820.10	P-820.1B	P-820.20	P-820.30	P-820.3B
Stiffness in Z	N/μm	±20%	13	13	7	4	4
Resonant frequency in Z, unloaded	kHz	±20%	22	22	15	12	12
Permissible push force in Z	N	Max.	50	50	50	50	50
Permissible pull force in Z	N	Max.	10	10	10	10	10
Overall mass	g	±5%	8	8	11	14	14
Material			Housing / tip material: Stainless steel.	Housing / tip material: Stainless steel.	Housing / tip material: Stainless steel.	Housing / tip material: Stainless steel.	Housing / tip material: Stainless steel.
Length	mm	±0,3 mm	26	26	44	62	62
Mechanical interface				Spherical tip			Spherical tip

Miscellaneous	Unit		P-820.10	P-820.1B	P-820.20	P-820.30	P-820.3B
Operating temperature range	°C		-20 to 80	-20 to 80	-20 to 80	-20 to 80	-20 to 80
Connector			LEMO FFA.00.250	LEMO FFA.00.250	LEMO FFA.00.250	LEMO FFA.00.250	LEMO FFA.00.250
Cable length	m		1	1	1	1	1
Recommended controllers / drivers			E-503, E-505, E-610, E-617, E-621, E-625, E-663, E-665, E-709, E-831	E-503, E-505, E-610, E-617, E-621, E-625, E-663, E-665, E-709, E-831	E-503, E-505, E-610, E-617, E-621, E-625, E-663, E-665, E-709, E-831	E-503, E-505, E-610, E-617, E-621, E-625, E-663, E-665, E-709, E-831	E-503, E-505, E-610, E-617, E-621, E-625, E-663, E-665, E-709, E-831

Stiffness in Z: Static large-signal stiffness; dynamic small-signal stiffness is approx. 30 % higher.

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.

Drawings / Images



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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. Note that a comma is used in the drawings instead of a decimal point.

Order Information

P-820.10

Preloaded piezo actuator; PICMA® piezo actuator drive; 15 µm travel range (open loop); 26 mm length; push force capacity 50 N; pull force capacity 10 N; LEMO connector; 1 m cable length

P-820.1B

Preloaded piezo actuator; PICMA® piezo actuator drive; 15 µm travel range (open loop); 26 mm length; push force capacity 50 N; pull force capacity 10 N; spherical tip; LEMO connector; 1 m cable length

P-820.20

Preloaded piezo actuator; PICMA® piezo actuator drive; 30 µm travel range (open loop); 44 mm length; push force capacity 50 N; pull force capacity 10 N; LEMO connector; 1 m cable length

Order Information

P-820.30

Preloaded piezo actuator; PICMA® piezo actuator drive; 45 µm travel range (open loop); 62 mm length; push force capacity 50 N; pull force capacity 10 N; LEMO connector; 1 m cable length

P-820.3B

Preloaded piezo actuator; PICMA® piezo actuator drive; 45 µm travel range (open loop); 62 mm length; push force capacity 50 N; pull force capacity 10 N; spherical tip; LEMO connector; 1 m cable length