

Preloaded Piezo Actuators

For Very High Loads and Forces



P-844

- Outstanding lifetime due to PICMA® piezo actuators
- Travel range to 90 µm
- Push force capacity to 3000 N
- Pull force capacity to 700 N
- µs response time
- Subnanometer resolution
- Optional water-resistant housing; vacuum versions available on request

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-844.10	P-844.20	P-844.30	P-844.40	P-844.60
Active axes			Z	Z	Z	Z	Z
Travel range in Z, open loop, at 0 to 100 V	µm	±20%	15	30	45	60	90

Positioning	Unit	Tolerance	P-844.10	P-844.20	P-844.30	P-844.40	P-844.60
Resolution in Z, open loop	nm	Typ.	0.15	0.3	0.45	0.6	0.9

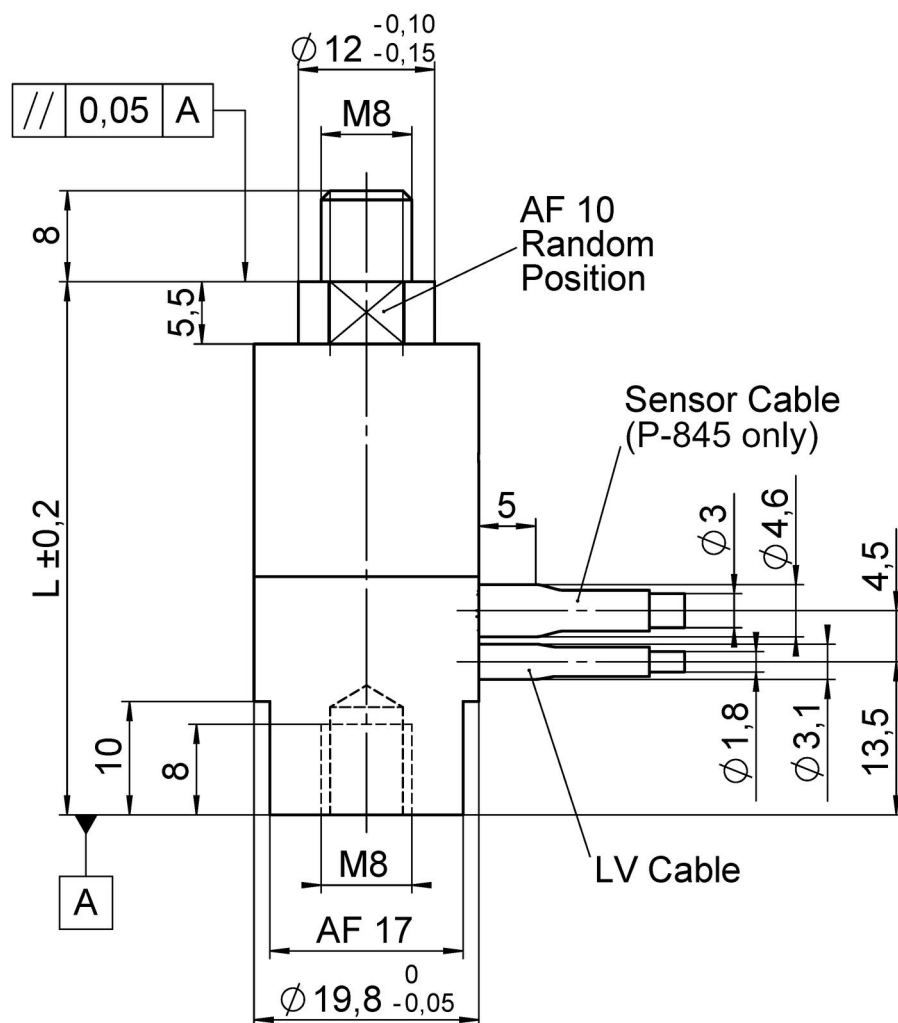
Drive Properties	Unit	Tolerance	P-844.10	P-844.20	P-844.30	P-844.40	P-844.60
Drive type			Piezo actuator/PIC-MA®	Piezo actuator/PIC-MA®	Piezo actuator/PIC-MA®	Piezo actuator/PIC-MA®	Piezo actuator/PIC-MA®
Electrical capacitance in Z	µF	±20%	6	12	18	24	36

Mechanical Properties	Unit	Tolerance	P-844.10	P-844.20	P-844.30	P-844.40	P-844.60
Stiffness in Z	N/µm	±20%	225	107	75	57	38
Resonant frequency in Z, unloaded	kHz	±20%	16	12	9	7.5	5.5
Permissible push force in Z	N	Max.	3000	3000	3000	3000	3000
Permissible pull force in Z	N	Max.	700	700	700	700	700
Permissible torque in θZ	N·m	Max.	1	1	1	1	1
Mass without cable	g	±5%	84	108	132	156	204
Material			Housing / tip: Stainless steel	Housing / tip: Stainless steel	Housing / tip: Stainless steel	Housing / tip: Stainless steel	Housing / tip: Stainless steel
Length	mm	±0,2 mm	47	65	83	101	137

Miscellaneous	Unit		P-844.10	P-844.20	P-844.30	P-844.40	P-844.60
Operating temperature range	°C		-40 to 80	-40 to 80	-40 to 80	-40 to 80	-40 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.



Model	Travel Range	L	Cable Length
P-844.10 / P-845.10	15 µm	47 mm	1 m
P-844.20 / P-845.20	30 µm	65 mm	1 m
P-844.30 / P-845.30	45 µm	83 mm	1 m
P-844.40 / P-845.40	60 µm	101 mm	1 m
P-844.60 / P-845.60	90 µm	137 mm	1 m

P-844 / P-845, dimensions in mm. Sensor included only with P-845.

Order Information

P-844.10

Preloaded piezo actuator; PICMA® piezo actuator drive; 15 µm travel range (open loop); 47 mm length; push force capacity 3000 N; pull force capacity 700 N; LEMO connector; 1 m cable length

P-844.20

Preloaded piezo actuator; PICMA® piezo actuator drive; 30 µm travel range (open loop); 65 mm length; push force capacity 3000 N; pull force capacity 700 N; LEMO connector; 1 m cable length

P-844.30

Preloaded piezo actuator; PICMA® piezo actuator drive; 45 µm travel range (open loop); 83 mm length; push force capacity 3000 N; pull force capacity 700 N; LEMO connector; 1 m cable length

P-844.40

Preloaded piezo actuator; PICMA® piezo actuator drive; 60 µm travel range (open loop); 101 mm length; push force capacity 3000 N; pull force capacity 700 N; LEMO connector; 1 m cable length

P-844.60

Preloaded piezo actuator; PICMA® piezo actuator drive; 90 µm travel range (open loop); 137 mm length; push force capacity 3000 N; pull force capacity 700 N; LEMO connector; 1 m cable length