

Preloaded Piezo Actuators

For Very High Loads and Forces, with Position Sensor



P-845

- 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

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		P-845.10	P-845.20	P-845.30	P-845.40	P-845.60
Active axes			Z	Z	Z	Z	Z
Travel range in Z	µm		15	30	45	60	90

Positioning	Unit	Tolerance	P-845.10	P-845.20	P-845.30	P-845.40	P-845.60
Resolution in Z, open loop	nm	Typ.	0.15	0.3	0.45	0.6	0.9
Integrated sensor			SGS, direct position measuring	SGS, direct position measuring	SGS, direct position measuring	SGS, direct position measuring	SGS, direct position measuring
System resolution in Z	nm		0.3	0.6	0.9	1.2	1.8

Drive Properties	Unit	Tolerance	P-845.10	P-845.20	P-845.30	P-845.40	P-845.60
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-845.10	P-845.20	P-845.30	P-845.40	P-845.60
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

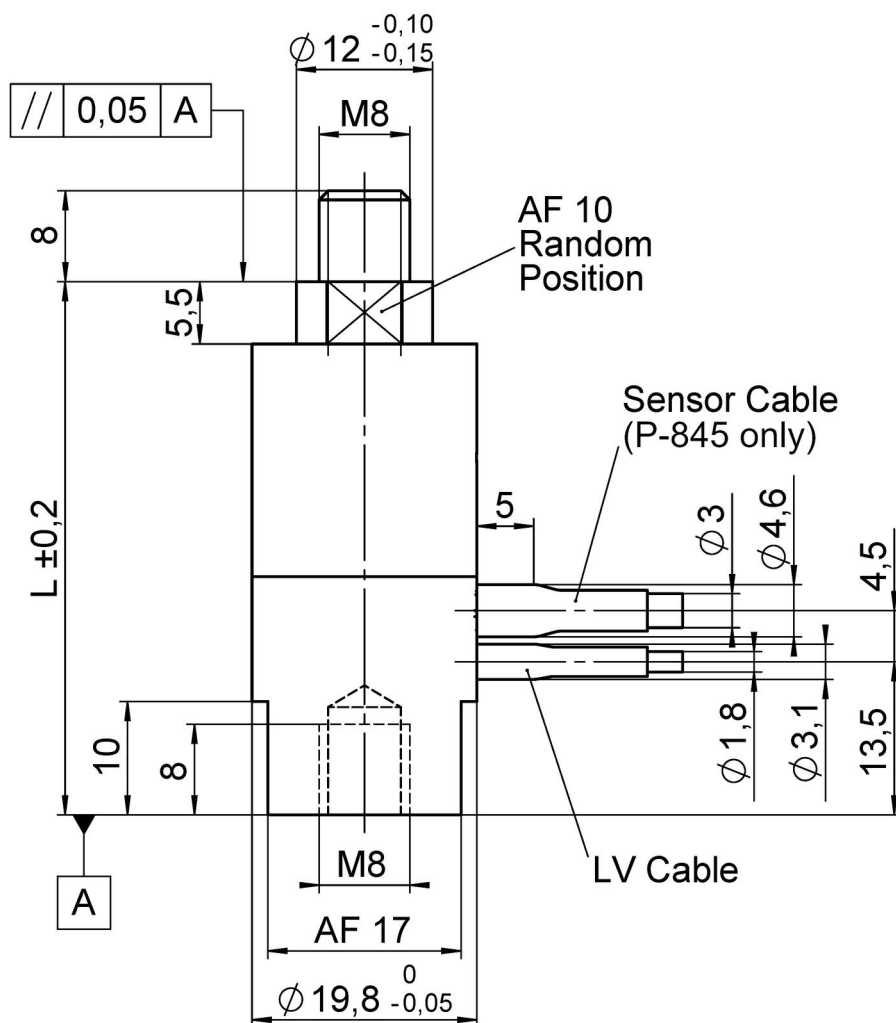
Miscellaneous	Unit		P-845.10	P-845.20	P-845.30	P-845.40	P-845.60
Operating temperature range	°C		-40 to 80	-40 to 80	-40 to 80	-40 to 80	-40 to 80
Connector			LEMO LVPZT	LEMO LVPZT	LEMO LVPZT	LEMO LVPZT	LEMO LVPZT
Cable length	m		1	1	1	1	1
Recommended controllers / drivers			E-503, E-505, E-610, E-621, E-625, E-663, E-665, E-709, E-831	E-503, E-505, E-610, E-621, E-625, E-663, E-665, E-709, E-831	E-503, E-505, E-610, E-621, E-625, E-663, E-665, E-709, E-831	E-503, E-505, E-610, E-621, E-625, E-663, E-665, E-709, E-831	E-503, E-505, E-610, E-621, E-625, E-663, E-665, E-709, E-831

Integrated sensor: Versions with SGS allow closed-loop linearity up to 0.15 % and are shipped with calibration log.

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



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

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

Order Information

P-845.10

Preloaded piezo actuator; PICMA® piezo actuator drive; 15 µm travel range; 47 mm length; push force capacity 3000 N; pull force capacity 700 N; SGS, direct position measuring; LEMO connectors; 1 m cable length

P-845.20

Preloaded piezo actuator; PICMA® piezo actuator drive; 30 µm travel range; 65 mm length; push force capacity 3000 N; pull force capacity 700 N; SGS, direct position measuring; LEMO connectors; 1 m cable length

P-845.30

Preloaded piezo actuator; PICMA® piezo actuator drive; 45 µm travel range; 83 mm length; push force capacity 3000 N; pull force capacity 700 N; SGS, direct position measuring; LEMO connectors; 1 m cable length

P-845.40

Preloaded piezo actuator; PICMA® piezo actuator drive; 60 µm travel range; 101 mm length; push force capacity 3000 N; pull force capacity 700 N; SGS, direct position measuring; LEMO connectors; 1 m cable length

P-845.60

Preloaded piezo actuator; PICMA® piezo actuator drive; 90 µm travel range; 137 mm length; push force capacity 3000 N; pull force capacity 700 N; SGS, direct position measuring; LEMO connectors; 1 m cable length