

## Series PA/T

### *stack type actuator with outside threading*

#### **Concept:**

The series PA/T based on stack type actuators in multilayer design. They are mechanically preloaded to make them ideal for dynamic applications.

The series PA/T have an M14 outside threading that can be used to mount the actuator; it also helps to lock in the position precisely. The ball tip end plate allows movement of components without shear stress on the ceramic inside. Therefore these series of actuators are well suited for high precision mirror adjustment or for integration into optical systems to realize beam steering in real time.

#### **Specials:**

The series PA/T can handle loads up to 850 N. The housing of the actuator, in combination with built-in springs, allows a motion without mechanical play. Maximum motions up to 105  $\mu\text{m}$  are available depending on model.

To overcome the effect of drift and hysteresis, the actuator can be equipped with a high resolution strain gage feedback sensor. The typical accuracy is 0.5% of the used motion.

#### **Mounting / Installation:**

A Special feature is the outside threading of M14 to mount the actuator. It also helps to adjust the position precisely.

These actuators are mechanically preloaded to make them ideal for dynamic applications. The ball tip end plate allows movement of components without shear stress on the ceramic inside.

The given preload does not exceed while the actuator is used dynamical.



figure: series PA/T

#### *Product Highlights:*

- excellent dynamic behavior by integrated preload
- versatile use by outside threading
- ball tip end plate
- very small and compact design
- tensile forces up to 150 N
- motion up to 105  $\mu\text{m}$
- high stiffness up to 20 N/ $\mu\text{m}$

#### *Applications:*

- nanopositioning
- optical adjustment
- laser fine tuning
- mirror adjustment
- mirror positioning
- vibration generation and cancellation
- injection valve control

## Series PA/T

### Technical Data

series PA/T	unit	PA 35/T14	PA 50/T14	PA 80/T14	PA 100/T14	
<b>part no.</b>		P-354-00	P-355-00	P-357-00	P-358-00	
<b>motion (-10/+20)% *</b>	µm	42	63	84	105	
<b>capacitance (±20%) **</b>	µF	3.6	5.4	7.2	9.0	
<b>resolution ***</b>	nm	0.08	0.12	0.17	0.21	
<b>resonant frequency</b>	kHz	12	8	5	4	
<b>stiffness</b>	N/µm	20	13	10	8	
<b>blocking force</b>	N	850				
<b>pre-load</b>	N	150				
<b>operating voltage</b>	V	-20 ... +130				
<b>connector voltage</b>	-	LEMO 0S.302				
<b>cable length</b>	m	1				
<b>outside threading</b>	mm	M14x1				
<b>dimensions</b>	<b>length</b>	mm	53	71	89	107
	<b>diameter</b>	mm	14			

\* measured with NV40/3 (regulated NV 40/3 CLE)

\*\* typ. small-signal behavior

\*\*\* typ. values, measured at -20 V ... +130 V

### Options:

- vacuum version
- cryogenic version
- DMS sensor as full bridge
- further variations on request