

stack type actuators

series PA/T

- excellent dynamic behavior by integrated pre-load
- versatile use by outside threading
- ball tip end plate
- very small and compact design
- tensile forces up to 150 N
- motion up to 105 μm
- high stiffness up to 20 N/ μm

applications:

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



fig.: series PA/T

Concept

The series PA/T based on stack type actuators in multilayer design. They are mechanically pre-loaded 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 μm are available depending on model.

To overcome the effect of drift and hysteresis, the actuator can be equipped with a high resolution strain gage feed back 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 pre-load does not exceed while the actuator is used dynamical.

technical data:

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

* typical value measured with NV 40/3

** typical value for small electrical field strength

*** please see piezoline

options:

- vacuum version
- cryogenic temperature version
- full bridge strain gage sensors
- other options available upon request

Please pay attention to our “notes for mounting”, which are available as download on our homepage.