piezosystemjena
incredibly precise

compact 1-axis translation stages

PX 38

- **compact piezo-translation stage**
- **motion range up to 39µm**
- **solid state hinges without mechanical play**
- **optional feedback sensor**
- **easily combined with other piezo systems (especially XY and tilting systems)**
- **precision pin holes for accurate adjustment**

applications:
- fiber positioning, laser optics
- scanning systems
- micro manipulation

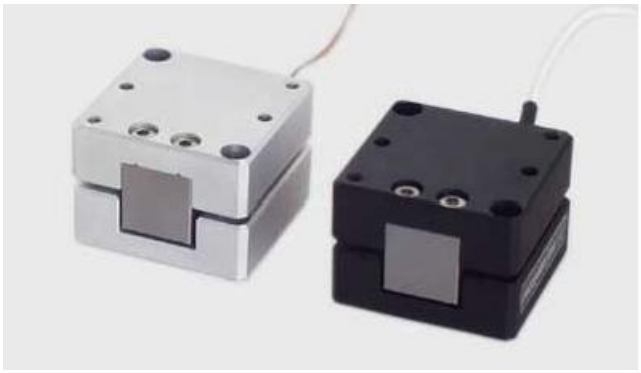

fig.: PX 38 V (vacuum option)

PX 38

Concept

The systems of the series PX are single-axis positioning stages with a motion range up to 38 microns. Due to the nature of the solid state flexure and parallelogram construction, these stages are free of mechanical play. Based on their compact size, the can be easily integrated into customer sized setups. The high performance of the piezo electrical stack type actuator is the basic feature for stage accuracy.
They are ideally suited to nm-precise positioning of optic components such as mirrors and laser diodes, adjustment and mounting in semiconductor technologies and electronics, and applications in measurement technologies and quality assurance as well as microbiology.

Specials

As an option they may come equipped with strain gage to achieve very accurate repeatability and long term position stability.
The systems of this series are available in vacuum configuration.
Other configuration for cryogenic temperature or non-magnetic applications, are available upon request.
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Mounting/Installation

The elements of the series PX are actuators integrated with an inner lever transmission in housing. Since the lever mechanism works in both directions, excessive pressure on the top plate must be avoided. The integrated pre-load allows using the system in a dynamic application. The max pull forces needs to be lower than the given values for this stage
The stage can be mounted on a 25mm pattern by using the bore-holes. Components can be mounted on the top plate by using the 25mm pattern with two threaded diagonal M2 holes. In addition, by using the precise pin holes, the components can be affixed accurately.

technical data:

series PX	unit	PX 38
part no.	-	T-101-00
axes	-	x
motion open loop (±10%)*	µm	39
capacitance (±20%)**	µF	0.6
resolution*** open loop	nm	0.07
resonant frequency	Hz	760
stiffness	N/µm	0.8
max. push force	N	30
max. pull force	N	3
voltage range	V	-20…+130
connector voltage	-	LEMO 0S.302
cable length	m	1
min. bend radius of cable	mm	>15
material	-	stainless steel; top and bottom plate made of anodized Al
dimensions (l x w x h)	mm	25x25x18
weight	g	40
series PX with integrated measurement system		**PX 38 SG**
part no.		T-101-01
motion closed loop (±0,2%)*	µm	32
integrated measurement system		strain gage
resolution***closed loop	nm	0.7
typ. repeatability	nm	10
non-linearity	%	0.1
max. push force	N	30
max. pull force	N	3
connector sensor		LEMO 0S.304
cable length	m	1.2
dimensions (l x w x h)	mm	40x40x25
weight	g	77

* typical value measured with NV 40/3 amplifier (closed loop: NV 40/3 CLE amplifier)
** typical value for small electrical field strength
*** The resolution is only limited by the noise of the power amplifier and metrology.

additional variation of the series PX 38

Variation	Description	Specials	Part. No.
PX 38 SG **D**igital	Version for digital controller series d-Drive and the analogue controller of the series NV 40/3CLE in combination with additional functionalities: Interchange ability, ASI, ASC	Connector Sub-D 15	T-101-01**D**
PX 38 SG **E**xtern	Version with sensor pre-amplifier for the use of additional functionalities: Interchange ability, ASI	Connector sensor ODU 4pin	T-101-01**E**
PX 38 Vacuum	Compatible for vacuum application down to 10^-7hPa	60cm cable length vacuum side; 2m cable length air side	T-101-02

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