PX 500 and PX 1500

1-axis –Large Travel Range Translation Stage

Concept:

The piezo positioners from the PX 500 and PX 1500 series are made for highly precise positioning over a long range of motion. The positioners are ideally suited for micro positioning of optic components, such as mirrors and laser diodes, or for opening and closing micro fluid valves. They have been also used several times as a beam shutter with past success.

The PX 500 piezo flexure stage is especially suited for system integration due to its small dimension. The PX 1500 piezo flexure stage is equipped with a 1500 micron travel range that allows high precision movement of small parts and optical components across a motion range that is normally only attainable with motorized stages.

Image: PX 1500

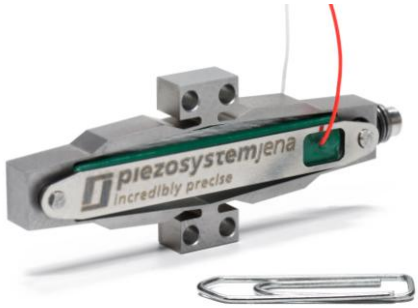

Image: PX 500

Specials:

The lever transmission principle is based on solid state hinges with integrated preload. Additionally, it is possible to achieve highly dynamic movement that is free of mechanical play.
The systems of this series are available in vacuum and cryogenic temperature configurations.

Interfaces:

The piezo positioning elements of the PX 500 and PX 1500 series are actuators integrated with an inner lever transmission. Since the lever mechanism works in both directions, pulling forces need to be avoided, as they could damage the stage.
The element can be mounted to a fixture using one of the holes (diameter 2.2 mm); the remaining hole then moves in relation to the one being used.

Product highlights:

- long range of motion, up to 1500 microns
- vacuum and cryogenic configurations available
- easy system integration
- control signal within -20 …130 V
- high dynamic range

Applications:

- beam shutter
- optic alignment
- valve control system in micro fluid technology
- micro manipulation

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Technical data:

linear positioning stage		unit	PX 500	PX 1500
part no.			S-605-89	S-622-00
axes		-	X	X
motion (±10%)*		µm	500	1500
capacitance (±20%)**		µF	3.6	7.2
resolution (open loop)***		nm	1.2	3
integrated measurement system		-	-	-
resonant frequency *	**unloaded**	Hz	450	180
	load 12g	Hz	200	150
max. push forces		N	35	60
max. pull forces		N	3	6
stiffness		N/µm	0.06	0.04
voltage range		V	-20 … 130	
connector		-	sloped bare wires	
temperature range		°C	-20 … +80 (-4°F … 176°F)	
material		-	aluminum/stainless steel	
dimensions (LxWxH)		mm	52x20x8 (2”x0.8”x0,3”)	87x34x13 (3.4”x1.3”x0.5”)
weight		g	14 (0.5 oz)	98 (3.5 oz)

* typical value measured with NV 40/3 amplifier

** typical value for small electrical field strength

*** the resolution is only limited by the noise of the power amplifier and metrology

Specifications subject to change without notice

PX 500 und PX 1500

Drawing PX 500

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