

XY axes | P11.XY100S/K

Piezo Nanopositioning Stages



Characteristics >>

- X, Y motion
- Stroke to 100 μ m/axis
- Small size
- Fast response time
- Vacuum version available

Applications >>

- Laser interference
- Nano-measurement
- Nano imprint
- Scanning microscope
- Quality assurance test
- Micromachining / precision control
- Biotechnology
- Nanopositioning

Introduction

P11.XY100 is a small-volume 2 axes piezo nanopositioning stage. It adopts a nofriction flexible hinge guiding mechanism and amplified-drive mechanism to ensure 100 μ m/axis displacement. Closed-loop version could achieve positioning accuracy up to nano-scale. It has excellent control precision, the resolution and stability could reach nanometer level, stabilization time is only milliseconds, the stage is non-magnetic material, and is not affected by the magnetic field in operating.



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Technical Data >>

Type	S-Closed loop K-Open loop	P11.XY100S	P11.XY100K	Units
Active axes		X, Y	X, Y	
Travel range(0~120V)		80/axis	80/axis	$\mu\text{m}\pm 10\%$
Travel range(0~150V)		100/axis	100/axis	$\mu\text{m}\pm 10\%$
Sensor		SGS	-	
Closed/open loop resolution		3	1	nm
Linearity		0.1	-	%F.S.
Repeatability		0.03	-	%F.S.
Pitch/yaw/roll		<10	<10	μrad
Push/pull force		25/10	25/10	N
Stiffness		X0.25/Y0.3	X0.25/Y0.3	$\text{N}/\mu\text{m}\pm 20\%$
Unloaded resonant frequency		X0.2/Y0.3	X0.2/Y0.3	$\text{kHz}\pm 20\%$
Closed/open-loop unloaded step time		15	0.8	$\text{ms}\pm 20\%$
Closed-loop operating frequency (-3dB)		50(unloaded)		$\text{Hz}\pm 20\%$
Load capacity		0.7	0.7	kg
El. capacitance		1.8/axis	1.8/axis	$\mu\text{F}\pm 20\%$
Operating temperature ^[1]		-20~80	-20~80	$^{\circ}\text{C}$
Material		Steel, Al	Steel, Al	
Size(L×W×H)		40×40×36.5	40×40×36.5	mm
Mass		170	170	$\text{g}\pm 5\%$
Cable length ^[2]		1.5	1.5	$\text{m}\pm 10\text{mm}$
Connector ^[2]		-	-	

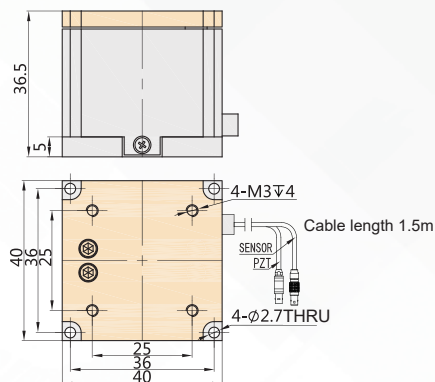
Note: Max driving voltage could be -20V~150V, 0~120V is recommended for long-term and high-reliable operation. Unless otherwise specified, the above parameters are measured at room temperature about 25°C.

[1] Custom ultralow temperature and ultrahigh vacuum versions are available.

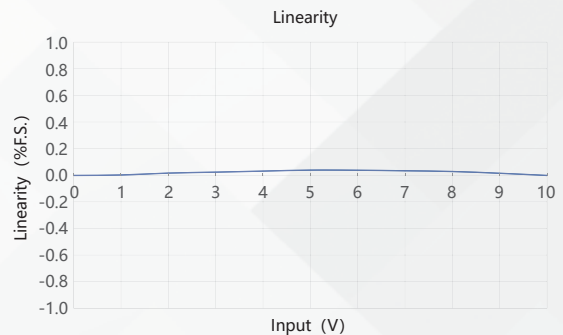
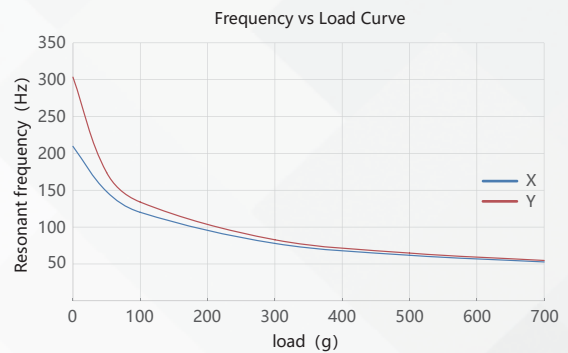
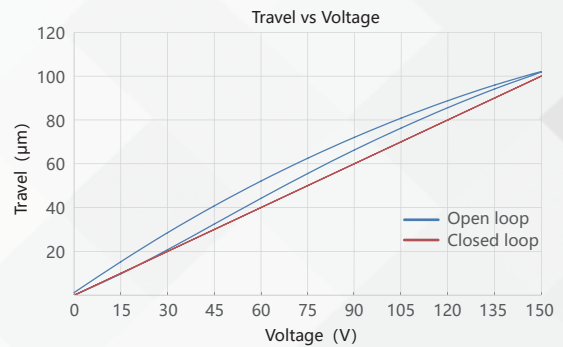
[2] Custom cable length and connector is available.

Note: The parallelism of the moving platform is about 20 μm , and the roughness is about 1.6 to 3.2. Please contact the sales engineer for confirmation before purchase.

Drawing >>



Curves >>



Disclaimer: The data here are typical, only for reference. Some variations will occur for different batch.

Recommended Controllers >>



E01.D3
LCD, membrane button, up to 625mA
RS-232/RS-422/USB interface
Software secondary development



E70
Small size, 70mA/channel
RS-232/RS-422/USB interface
Software secondary development



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