

XYZ axis | P13.XYZ40S/K

Piezo Nanopositioning Stage



Introduction

P13.XYZ40S/K is an XYZ piezo nanopositioning stage. It adopts parallel kinematic mechanism with built-in high-performance piezo actuator with displacement of 48 μ m/axis. Open loop or closed loop version is available.

Characteristics >>

- Move in X,Y, Z
- Travel to 48 μ m/axis
- Small size
- Millisecond response time

Applications >>

- 3D scanning
- Optical path adjustment
- Semiconductor
- Micromanipulation
- AFM
- Nanopositioning



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Technical Data >>

Type	S-Closed loop K-Open loop	P13.XYZ40S	P13.XYZ40K	Units
Active axes		X, Y, Z	X, Y, Z	
Travel range(0~120V)		38.4/axis	38.4/axis	$\mu\text{m}\pm 20\%$
Travel range(0~150V)		48/axis	48/axis	$\mu\text{m}\pm 20\%$
Integrated sensor		SGS	-	
Resolution		5	3	nm
Linearity		0.2	-	%F.S.
Repeatability		0.1	-	%F.S.
Pitch/yaw/roll		<50	<50	μrad
Push/pull force capacity		10/3	10/3	N
Stiffness		XY0.5	XY0.5	$\text{N}/\mu\text{m}\pm 20\%$
Unloaded resonant frequency		0.6	0.6	$\text{kHz}\pm 20\%$
Unloaded step time		20	3	$\text{ms}\pm 20\%$
Load capacity		0.2	0.2	kg
El. capacitance		0.2/axis	0.2/axis	$\mu\text{F}\pm 20\%$
Operating temperature ^[1]		-20~80	-20~80	$^{\circ}\text{C}$
Material		Steel, Aluminum	Steel, Aluminum	
Size (L×W×H)		26×26×26	26×26×26	mm
Mass		55(with no cable)	55(with no cable)	$\text{g}\pm 5\%$
Cable length ^[2]		1.5	1.5	$\text{m}\pm 10\text{mm}$

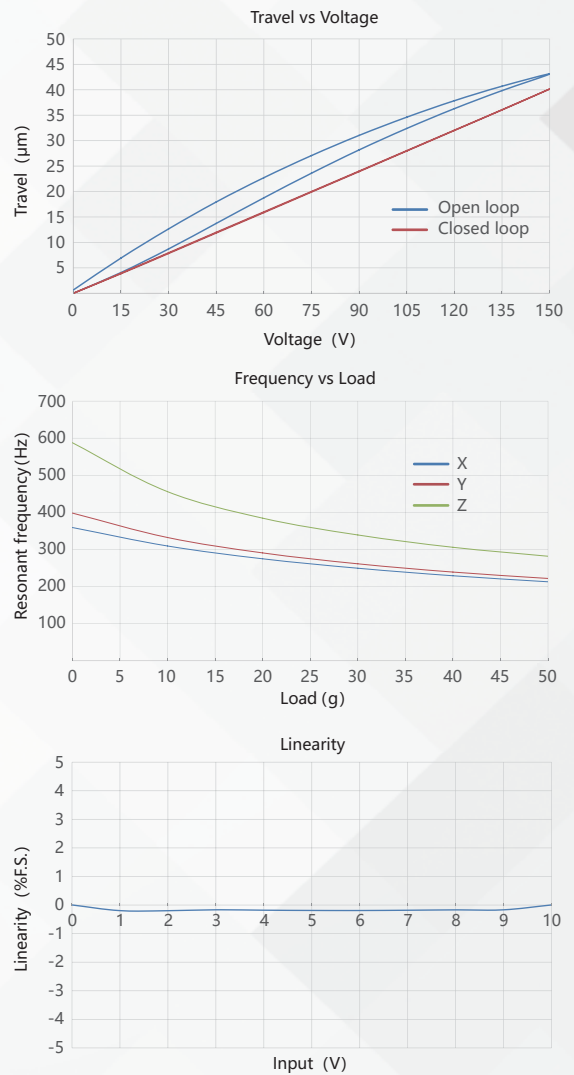
Note: Max driving voltage could be -20V~150V, 0~120V is recommended for long-term and high-reliable operation. Unless otherwise specified, the above parameters are measured at room temperature about 25°C.

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

[2] Custom cable length and connector is available.

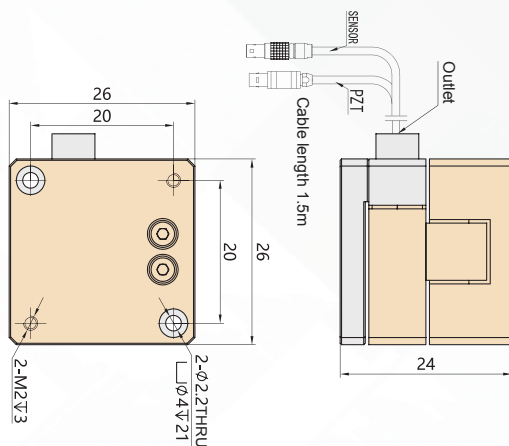
Note: The parallelism of the moving platform is about 20 μm , and the roughness is about 1.6 to 3.2. Please contact the sales engineer for confirmation before purchase.

Curves >>



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

Drawing >>



Recommended Controllers >>



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



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



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