

Piezoelectric Stepping Motor Stage - ZTT



Features

- Using piezoelectric stepping motor as motion actuators, high drive force, high holding force
- Multi-axis parallel control
- Millimeter-level large travel range
- Integrated high-precision encoder, nanometer resolution

Description

The Piezo Miniature Stepping drive principle enables nanometer precision and high drive force. Piezoelectric Stepping Motor is a new type of bionic piezoelectric actuator, which is driven by multiple groups of multi-dimensional piezoelectric actuator units according to the step-by-step multi-group action logic to realize the linear motion of the motor mover.

It features small size, high drive force, high holding force under static conditions, and no thermal power consumption. It can achieve high subdivision in a single step to achieve high resolution at nanometer level, and the step-by-step motion mode can achieve a large motion stroke at millimeter level.

Optional incremental encoder for high-precision positioning is available.

The non-contact encoder can directly detect the displacement of the moving face, which avoids the position error caused by indirect displacement detection to the greatest extent.

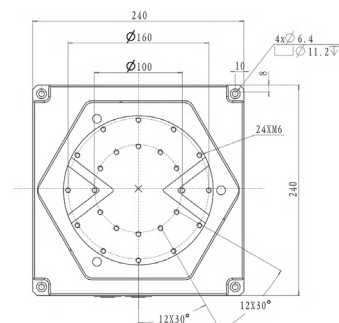
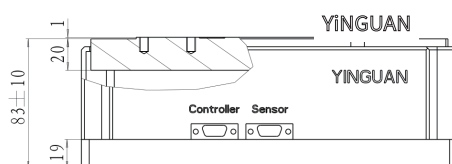
Suitable for applications in complex vacuum environments.

Vacuum version is optional. Its motor has no thermal power consumption under static condition and does not generate magnetic fields.

Applications

- Structural levelling, height adjustment
- Non-magnetic environment
- Vacuum without heating environment
- Precision semiconductor equipment
- Precision medical testing equipment

Interface Definition



Dimensions: mm

Technical Specifications

	PMNL-T23-ZT20A	Unit	Tolerance
Active axes	Z		
Motion and positioning			
Travel range in Z	±10	mm	
Travel range in rX	±1.1	deg	
Travel range in rY	±1	deg	
Sensor	Linear encoder		
Open loop resolution	1	nm	
Sensor resolution	5	nm	
Sensor signal	AqB		
Unidirectional repeatability in Z	±50	nm	Typical value
Unidirectional repeatability in rX	±1.2 μrad (0.25 arcsec)		Typical value
Unidirectional repeatability in rY	±1 μrad (0.21 arcsec)		Typical value
Bidirectional repeatability in Z	±100	nm	Typical value
Bidirectional repeatability in rX	±2.4 μrad (0.5 arcsec)		Typical value
Bidirectional repeatability in rY	±2 μrad (0.42 arcsec)		Typical value
Velocity*	1	mm/s	Max. value
Mechanical properties			
Vertical drive force	200	N	Typical value
Vertical holding force	300	N	Min. value
Drive properties			
Operating voltage	-250~250	V	
Miscellaneous			
Operating temperature range	0~50	°C	
Material	Aluminum alloy, stainless steel		
Cable length	1.5	m	±0.02 m
Motor interface	Sub-D25 male connector		
Sensor connection	HD-Sub44 male connector		
Dimensions			
Length	240	mm	
Width	240	mm	
Height	70~96	mm	

* Actual motion velocity depend on the power of the drive control circuit