Piezoelectric Stepping Motor

Features

- High drive force
- Nano precision
- High static holding force
- Large travel range
- High resolution
- Suitable for high vacuum environments

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.

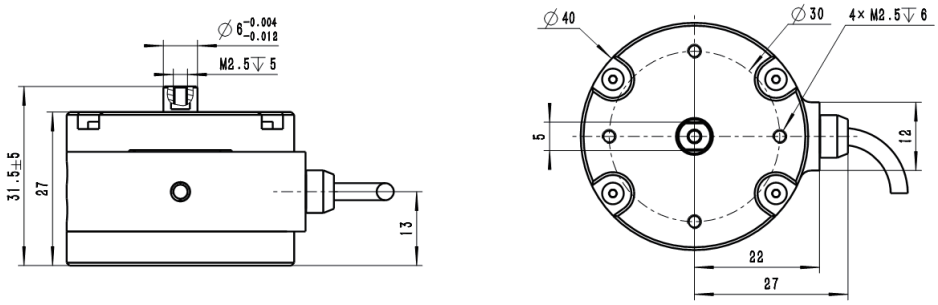
Suitable for applications in complex vacuum environments.

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

Applications

- Lens precision adjustment
- Precision electron microscope adjustment
- Non-magnetic environment
- Vacuum without heating environment
- Precision semiconductor equipment
- Precision medical testing equipment

Interface Definition



Technical Specifications

	PMNL-C05-10N	PMNL-C10-10N	Unit	Tolerance
Active Axes	X	X		
Motion and positioning				
Travel range	10	10	mm	
Travel range (analog mode)	±2	±2	µm	
Sensor	-	-		
Open loop resolution	1	1	nm	Typical value
Closed loop resolution	-	-	nm	
Velocity	1	1	mm/s	Max. value
Max. drive frequency	250	250	Hz	±20%
Mechanical Properties				
Drive force	50	100	N	Max. value
Holding force	70	130	N	Min. value
Drive Properties				
Operating voltage	-250~+250	-250~+250	V	
Miscellaneous				
Operating temperature range	0~55	0~55	°C	
Material	Aluminum, stainless steel, titanium			
Mass	115	160	g	±5%
Cable length	2	2	m	±0.05 m
Motor interface	Sub-D15 male connector			