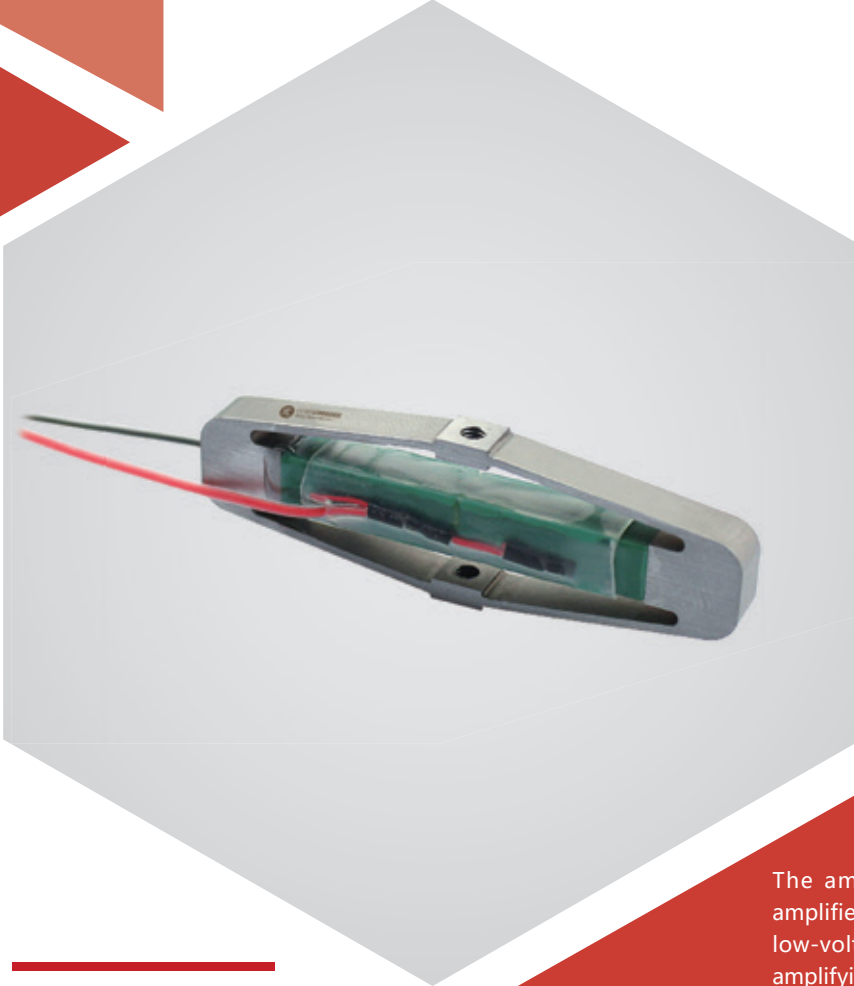


# X axis | 400A7

## Amplified Piezo Actuators



### Characteristics >>

- X Contraction
- Displacement to 400 $\mu$ m
- Blocking force to 16N
- Unloaded resonant frequency to 300Hz
- Nanoscale resolution

### Applications >>

- Probe scanning
- Fiber stretching
- Micro-scanning
- Flow measurement technology
- Optical mirrors positioning
- Diamond turning
- laser cavity tuning
- Inkjet technology

## Introduction

The amplified piezo actuator is an actuator that amplifies and outputs the displacement generated by low-voltage piezo stacks preloaded by a mechanical amplifying structure.

The amplified structure is a mechanical shell, and its material is generally steel. In addition to providing optimized pre-tightening force for piezo stacks, it also protects piezo stacks from tensile forces that can cause irreversible or even fatal damage to piezo stacks.



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## Technical Data >>

| Type                                 | 400A7     | Units                          |
|--------------------------------------|-----------|--------------------------------|
| Active axes                          | X         |                                |
| Travel range                         | 400       | $\mu\text{m}\pm 20\%$          |
| Blocking force                       | 16        | N                              |
| Unloaded resonant frequency          | 300       | $\text{Hz}\pm 20\%$            |
| Stiffness                            | 0.04      | $\text{N}/\mu\text{m}\pm 20\%$ |
| El. capacitance                      | 10.8      | $\mu\text{F}\pm 20\%$          |
| Operating temperature <sup>[1]</sup> | -20~80    | °C                             |
| Material                             | Steel     |                                |
| Sensor                               | optional  |                                |
| Cable length <sup>[2]</sup>          | 0.15      | $\text{m}\pm 10\text{mm}$      |
| Voltage connector <sup>[2]</sup>     | Bare wire |                                |

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.

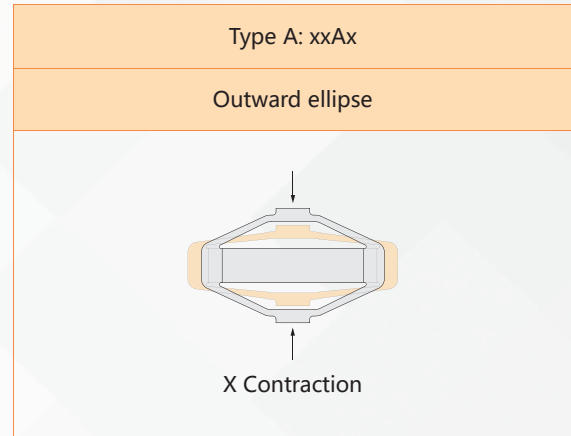
[1] Custom ultralow temperature and ultrahigh vacuum versions are available.

[2] Custom cable length and connector is available.

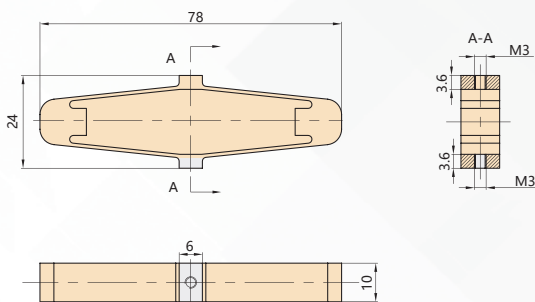
Note: The parameters mentioned above are related to the test environment and test equipment.

## Principle >>

Piezo stacks produce deformation and displacement along the main axis, that is, the long axis direction, and the elliptical mechanical structure amplifies and outputs the displacement along the short axis direction.



## Drawing >>



## Recommended Controllers >>



**E01.C1**  
 LCD, membrane button, up to 625mA  
 RS-232/RS-422/USB interface  
 Software secondary development



**E53.C**  
 Small size, 60mA  
 RS-232/RS-422/USB interface  
 Software secondary development



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