

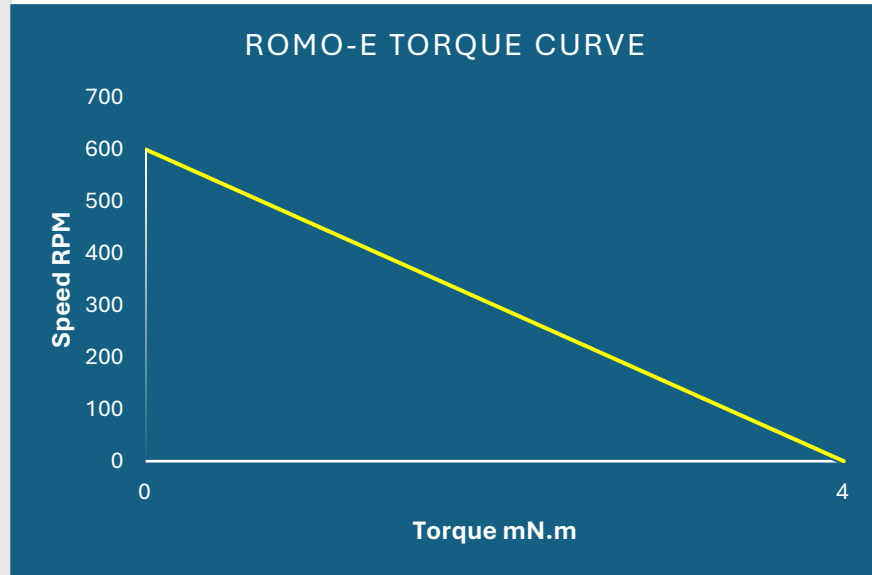
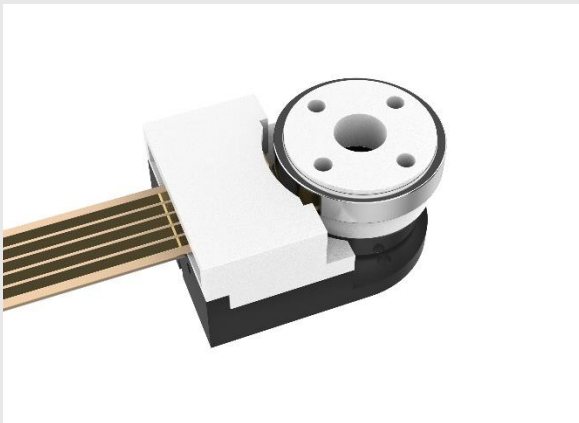


# ROMO-E Series - Miniature Piezoelectric Rotary Actuators with Encoder

Introducing our new range of compact, lightweight rotary piezoelectric actuators with factory-fitted encoder, designed to deliver superior precision and expanded functionality for advanced applications.

## Key Advantages

- New patent-pending design.
- Superior stability of velocity control.
- Flexible pcb electrical connection facilitates system integration.
- Economical construction using thermoplastics for reliability and affordability.
- Unmatched precision and resolution.
- Ultra-fast response times and exceptional start-stop capabilities.
- High torque relative to size, optimized for direct-drive applications.
- Stepping and continuous modes of operation.
- Silent operation and low voltage.



## Key Features

Torque: >4.0 mN.m

Resolution: > 200,000 steps per rotation

Magnetic Encoder Resolution: 1,024 ppr (6.1 mrad)

Max Speed: >600 RPM

Fast Response Time:  $\approx 30 \mu\text{s}$

Low Voltage: 7.5 V DC

Low Current: 300 mA (max)

Energy efficient: Zero power consumption in hold mode

## Technical Specifications

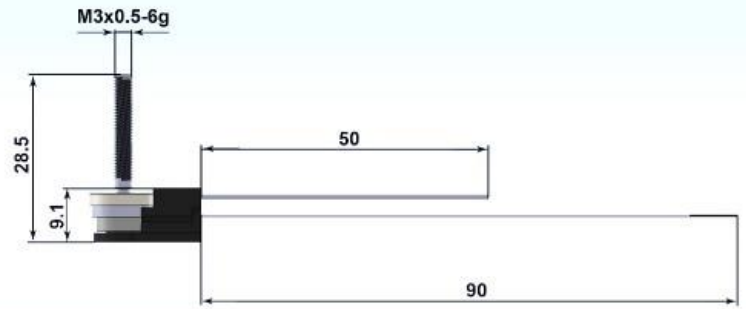
Power Supply Voltage	7.5 V DC
Stall Torque	≥ 4 mNm
Self-Braking Torque	≥ 5 mNm
Actuator Response Time	≈30 μs
Max Speed	> 600 rpm
Minimum Angular Step	≈30 μrad
Encoder Resolution (after quadrature) *	1,024 ppr
Minimum Controlled Angular Step*	6.1 mrad
Uni-directional Repeatability*	6.1 mrad
Angular Backlash	30 μrad
Angular Hysteresis	30 μrad
Frequency Response	4 kHz
Operating Temperature	-20 °C to 80 °C
Maximum Axial Load	200 g
Maximum Radial Load	200 g
Moment of Inertia	29.2 g·mm <sup>2</sup>
Max Current over velocity range	300 mA
Rotor Runout	≤50 μm
Actuator Weight	6.3 g
Actuator Dimensions (no shaft)	13 x 19 x 9.1 mm
Driver PCB Dimensions	28 X 31 X 9.6 mm
Driver PCB Weight	6.8 g

\*Encoder Model (Model # ROMO-E)

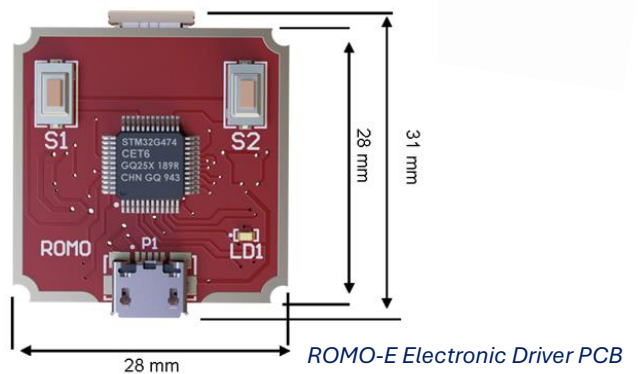
## Principle of Operation

The ROMO rotary piezo actuator operates based on a patent-pending technology. Electrical excitation of its piezoceramic body, or resonator, induces simultaneously two independent longitudinal and bending ultrasonic standing waves in two perpendicular directions. This action generates elliptical vibrations at the resonator's center, resulting in the rotary motion of the rotor, which is passively in contact with the resonator body.

The electronic driver is designed to offer an economical interface for user control. Each driver PCB is pre-programmed for the specific motor model and allows for software configurability, optimizing drive signals and integrating controls. Motor operation can be finely regulated through closed-loop control using an optional encoder factory installed on the actuator.



Schematic drawing of ROMO with factory installed encoder) and custom leadscrew shaft. Dimensions (mm)



ROMO-E Electronic Driver PCB

## Ordering Information

Part Number	Description
ROMO-010-0370	Rotary motor without encoder
ROMO-010-0371	Rotary motor evaluation kit*
ROMO-010-1370	Rotary motor with encoder
ROMO-010-1371	Rotary motor with encoder evaluation kit*
ROLR-PCB	Electronic Driver Board (5.0 – 7.5 VDC) for use with ROMO & LROM motors

\*Evaluation kit includes ROMO motor, Electronic Driver PCB, cables, 120/240 VAC to 7.5 VDC wall power adapter