



ROMO Series - Miniature Piezoelectric Rotary Actuators

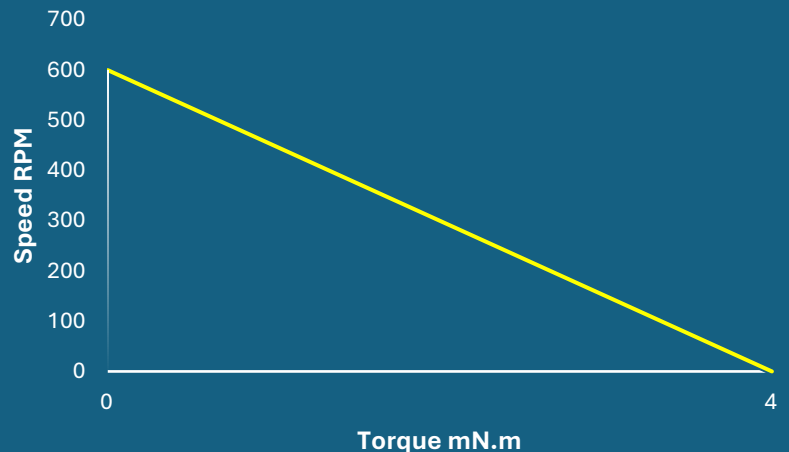
Introducing our new range of compact, lightweight rotary piezoelectric actuators, designed to deliver superior precision and expanded functionality for advanced applications.

Key Advantages

- New US patented 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.



ROMO TORQUE CURVE



Key Features

- Torque: >4.0 mN.m
- Resolution: > 30 μ Rad = 200,000 steps per rotation
- Max Speed: >600 RPM
- Fast Response Time: $\approx$ 30 μ s
- Low Voltage: 5.0 to 7.5 V DC
- Low Current: 30 mA to 300 mA (max)
- Energy efficient: Zero power consumption in hold

Principle of Operation

The ROMO rotary piezo actuator operates based on a US patented 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 linear motion of the motor, which is passively in contact with the resonator body.

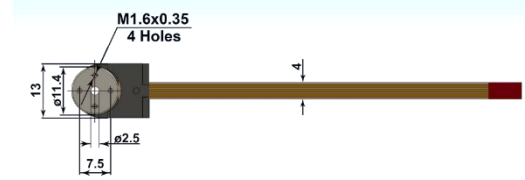
Electronic Driver Board Interface Supports UART & I2C

The electronic driver is designed to offer an economical interface for user control. Motion of the motor is achieved via PWM (Pulse Width Modulation) control signals via the J1 connector on the driver. The driver PCB also supports UART and I2C interfaces. 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.

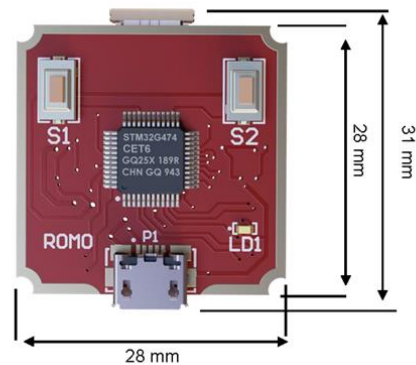
Technical Specifications

Part No. (Non-Encoder Version)	ROMO-010-0370
Power Supply Voltage*	5.0 to 7.5 V DC
Stall Torque	≥ 4 mNm
Self-Braking Torque	≥ 5 mNm
Actuator Response Time	≈ 30 μ s
Max Speed	> 600 rpm
Minimum Angular Step	≈ 30 μ rad
Angular Backlash	30 μ rad
Angular Hysteresis	30 μ rad
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 ²
Max Current over velocity range	30 mA to 300 mA
Rotor Runout	≤ 50 μ m
Actuator Weight	3.5 g
Actuator Dimensions (no shaft)	13 x 18.7 x 9.1 mm
Driver PCB Dimensions	28 X 31 X 9.6 mm
Driver PCB Weight	4.3 g

*At 5 V DC power - specifications for torque and speed will be approximately 25% lower compared to 7.5 V DC.



Schematic drawing of standard ROMO (without factory installed encoder). Dimensions (mm)



ROMO Electronic Driver PCB

Ordering Information

Part Number	Description
ROMO-011-0370	Rotary motor without encoder
ROMO-011-0371	Rotary motor evaluation kit*
ROMO-011-1370	Rotary motor with encoder
ROMO-011-1371	Rotary motor with encoder evaluation kit*
ROLR-PCB	Electronic Driver Board (5.0 – 7.5 VDC) for use with ROMO & LRMO motors

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