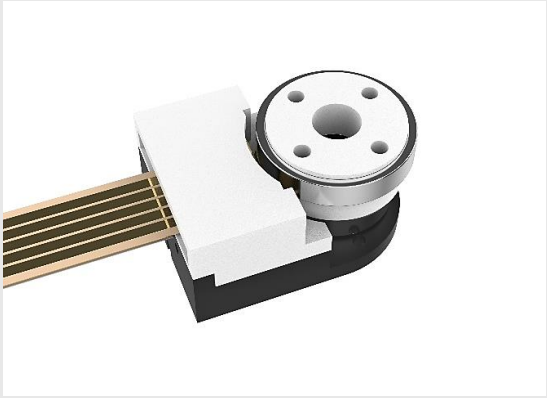
ROMO-E Series - Miniature Piezoelectric Rotary Actuators with Encoder

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.

Closed-Loop (Feed-Back Control) System with Python™ API

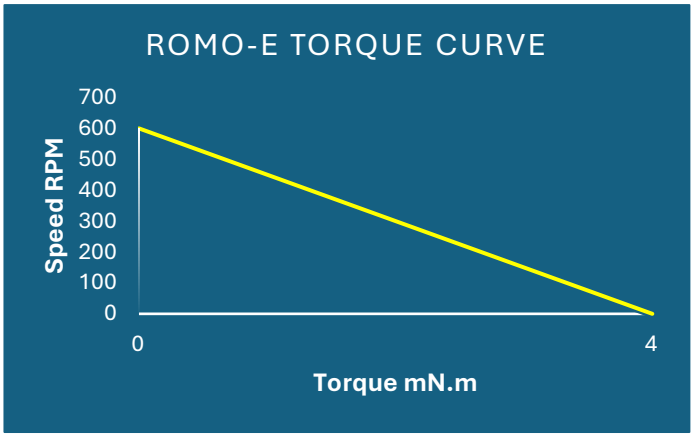
Key Advantages

- 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.



Python API Closed-Loop Control System

ROMO-E-CL comes complete and ready to use. Includes, motor/encoder, electronic driver PCB, USB to Micro USB adapter cable and Python API software. **Contact your sales representative for further details.**



Motion Control using Python API

The ROMO-E-CL is a closed system in which feedback control is achieved using a fully integrated proprietary Python API.

Key Features include:

- **Closed-Loop Feedback Control:** Utilizes encoder feedback for precision control. Run Python scripts for precise motion control.
- **High Performance:** Ultra-fast <30 µs Response Time, ≥ 4 mNm Stall Torque, Resolution 30 µRad, Max speeds > 600 rpm.
- **Low Voltage & Low Current:** 5 V DC, 30 mA to 300 mA (max)
- **Versatile Operation:** Supports stepping and continuous modes.
- **Easy Integration:** Connect driver PCB/Piezomotor to computer via USB.

Example Python API Commands:

- ***Home (direction)*** – Moves the motor to the zero position (Clockwise/Counterclockwise).
- ***getPosition()*** – Retrieves current motor position in encoder pulses.
- ***Velocity(value)*** – Sets motor speed (0.2 - 600 RPM).
- ***Move(action)*** – Moves motor Left/Right or Stops.
- ***Position(value)*** – Moves motor to a specific encoder pulses position (1024 pulses per revolution).
- ***setPWMsettings(duty_cycle_percent, frequency_Hz)*** – Configures velocity by PWM parameters.

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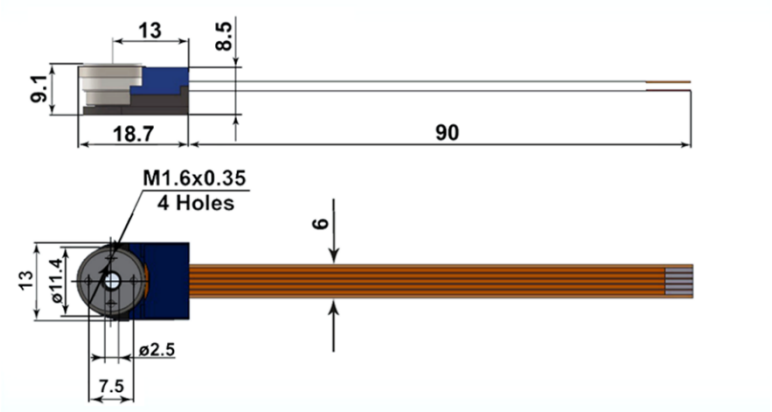
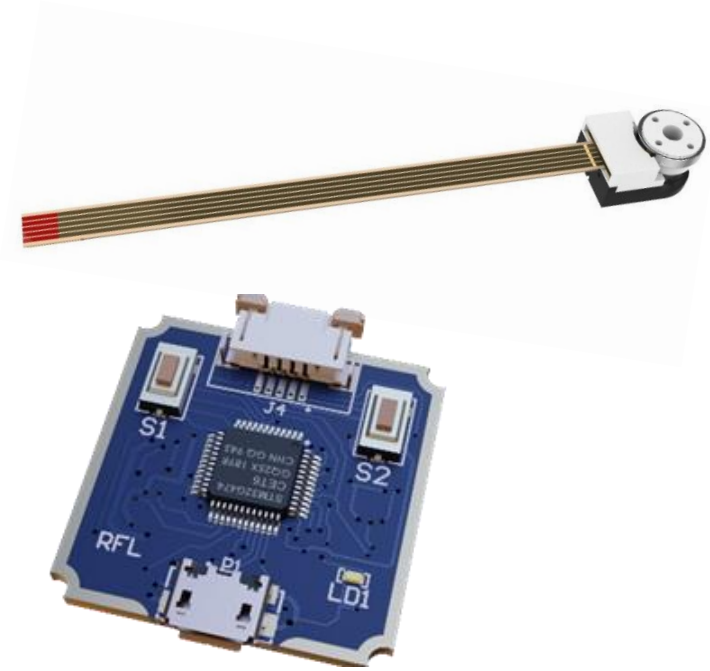
Technical Specifications

Power Supply Voltage	5.0 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^2
Max Current over velocity range	300 mA
Rotor Runout	≤50 µm
Actuator Weight	6.3 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	6.8 g

*Encoder Model (Model # ROMO-E)



ROMO-E with factory-fitted magnetic encoder Dimensions (mm)



ROMO-E-CL - Electronic Driver PCB

Ordering Information

Part Number	Description
ROMO-010-1371-CL	Rotary motor with encoder closed-loop System Evaluation Kit. Includes: motor/encoder, electronic driver PCB, Micro USB to USB adapter (5 V DC), cables and Python API software

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