

For current pricing, please see our website.

CHAPTERS

Manual Stages

Motorized Stages

Multi-Axis Platforms

Actuators

Controllers

SECTIONS

Adjustment Screws

Micrometers

Piezoelectric Actuators

Motorized Actuators

Tutorials

## DC Servo Motorized Actuators



### Specifications

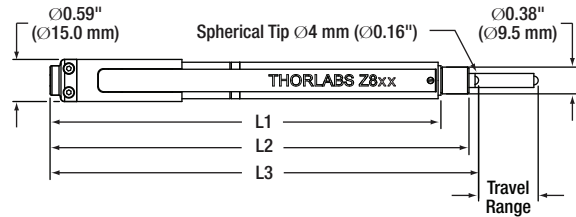
- **Travel Range**
  - **Z806:** 0.24" (6 mm)
  - **Z812:** 0.47" (12 mm)
  - **Z825:** 0.98" (25 mm)
- **Recommended Controller:** TDC001
- **Max Velocity:** 3 mm/s
- **Bidirectional Repeatability:** <1.5 μm
- **Backlash (with Preload):** <8 μm
- **Min Incremental Movement:** 0.05 μm
- **Max On-Axis Load Capacity (Vertical):** 10 lbs (4.5 kg)
- **Max On-Axis Load Capacity (Horizontal):** 20 lbs (9 kg)
- **Home Location Accuracy:** <2 μm
- **Leadscrew Pitch:** 1 mm
- **Encoder Lines:** 512
- **Planetary Gear Head Ratio:** 67:1

Our Z8 series of motorized actuators are engineered for use with optical positioning devices. The high-resolution design, which is incorporated into a compact, lightweight package, makes these actuators ideal for demanding optical laboratory automation applications. Additional features include an optical rotary encoder for closed-loop operation as well as improved commercial built-in limit switches that provide overdrive protection and precise homing accuracy.

The units are shipped with 1.6' (0.5 m) of cable. An 8' (2.5 m) extension cable (PAA632, see page 437) is available separately.

### Features

- Compact 12 VDC Servo Actuator
- New High-Speed Design
- High Resolution via Precision Rotary Encoder
- Planetary Reduction Gearbox for High Loads
- Compatible with Thorlabs' Range of Positioning Stages
- Limit Switches for Zero Position and Actuator Protection
- Compatible with Thorlabs' TDC001 T-Cube Controller
- High-Precision Rotary Encoder (512 Encoder counts/rev and 67:1 Gear Head Yields 34,304 Encoder counts/rev of the Leadscrew)

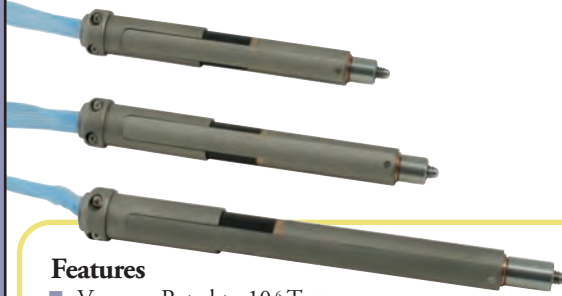


Note: It is recommended that the leadscrews of the Z8 motors be lubricated every 50,000 cycles or 6 months. The GKZ8 Greasing Kit is suitable for both standard and vacuum compatible Z8 actuators. See page 448 for more details.

ITEM #	\$	£	€	RMB	L1 inch (mm)	L2 inch (mm)	L3 inch (mm)	DESCRIPTION
Z806	\$ 475.00	£ 342.00	€ 413.25	¥ 3,785.75	4.05 (103.0)	4.40 (112.0)	4.48 (114.0)	6 mm Motorized Actuator with 1/4"-80 Threaded Barrel
Z812	\$ 485.00	£ 349.20	€ 421.95	¥ 3,865.45	4.48 (113.9)	4.83 (122.9)	5.03 (127.9)	12 mm Motorized Actuator with 1/4"-80 Threaded Barrel
Z812B	\$ 485.00	£ 349.20	€ 421.95	¥ 3,865.45	4.48 (113.9)	4.83 (122.9)	5.03 (127.9)	12 mm Motorized Actuator with Ø3/8" Barrel
Z825B	\$ 495.00	£ 356.40	€ 430.65	¥ 3,945.15	5.48 (139.3)	6.07 (154.3)	6.19 (157.3)	25 mm Motorized Actuator with Ø3/8" Barrel
GKZ8	\$ 14.00	£ 10.08	€ 12.18	¥ 111.58	N/A	N/A	N/A	Grease Kit for Z8 and ZST Series Actuators

NEW

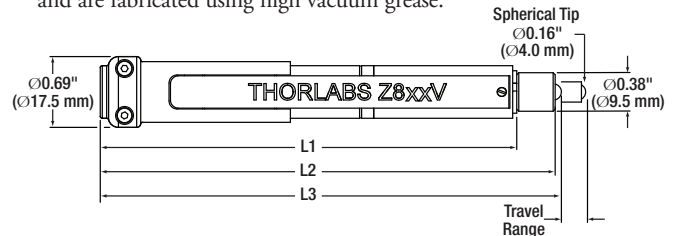
## Vacuum-Rated DC Servo Motorized Actuators



### Features

- Vacuum Rated to 10<sup>-6</sup> Torr
- Ø3/8" or 1/4"-80 Mounting Barrel
- Same Specifications as the Z8 Series Above

Our vacuum-compatible, motorized actuators offer the same great functionality as our standard Z8 Series actuators. The only difference is that they are equipped with vacuum-rated servo motors, have a phosphorus bronze internal coupling mechanism, and are fabricated using high vacuum grease.



Please refer to our website for complete models and drawings.

ITEM #	\$	£	€	RMB	L1 inch (mm)	L2 inch (mm)	L3 inch (mm)	DESCRIPTION
Z806V	\$ 675.00	£ 486.00	€ 587.25	¥ 5,379.75	4.05 (103.0)	4.40 (112.0)	4.48 (114.0)	6 mm Vacuum-Rated Actuator w/ 1/4"-80 Threaded Barrel
Z812V	\$ 685.00	£ 493.20	€ 595.95	¥ 5,459.45	4.48 (113.9)	4.83 (122.9)	5.03 (127.9)	12 mm Vacuum-Rated Actuator w/ 1/4"-80 Threaded Barrel
Z812BV	\$ 685.00	£ 493.20	€ 595.95	¥ 5,459.45	4.48 (113.9)	4.83 (122.9)	5.03 (127.9)	12 mm Vacuum-Rated Actuator w/ Ø3/8" Barrel
Z825BV	\$ 695.00	£ 500.40	€ 604.65	¥ 5,539.15	5.48 (139.3)	6.07 (154.3)	6.19 (157.3)	25 mm Vacuum-Rated Actuator w/ Ø3/8" Barrel
GKZ8	\$ 14.00	£ 10.08	€ 12.18	¥ 111.58	N/A	N/A	N/A	Grease Kit for Z8 and ZST Series Actuators