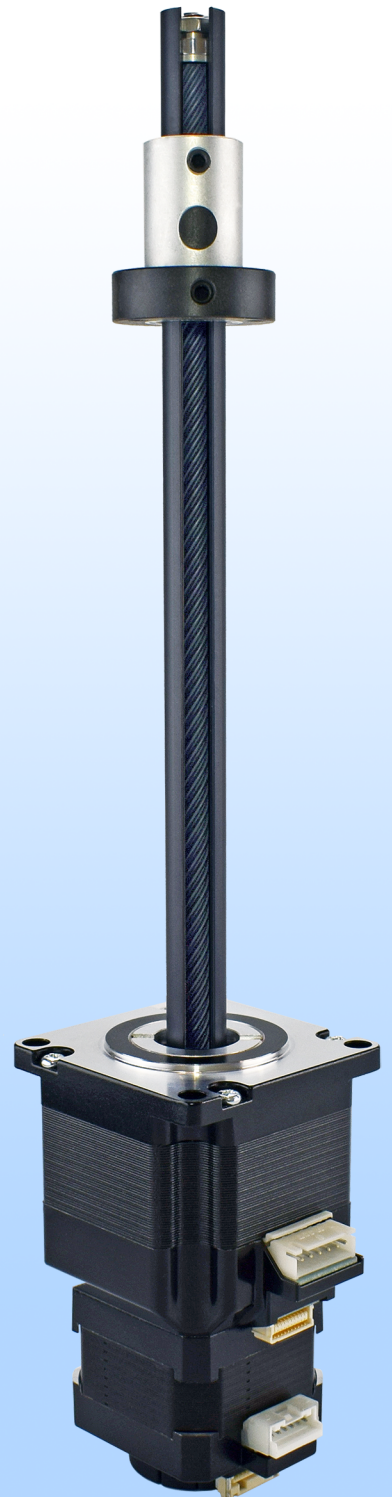


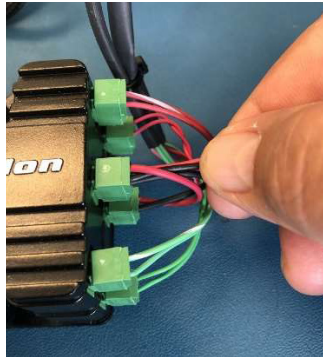
Quick Start Guide

Z-Theta Dual-Motion Actuator

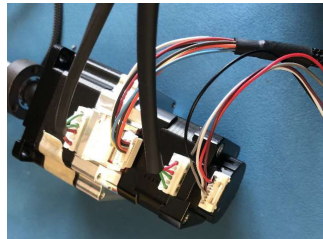


Hardware Setup / Connections

1. Connect the two power supply cable plugs into the connectors located in the center of the dual-axis drive unit. Wire the power cable red lead wire to the positive terminal of the DC power supply. Then, wire the power cable black lead wire to the ground or negative terminal of the DC power supply rated for 5Amp current. Drive input voltage range is between 12VDC and 60 VDC.



2. Connect the encoder and motor phase lead cables emanating from the dual-axis drive unit to the Z-Theta actuator assembly. Cable plugs are unique for each connector type.



3. Plug the USB / RS-485 converter into a PC USB port.



4. Connect the RS-485 communications cable to the unit.



5. Copy the Z-Theta program onto the PC. Apply DC supply voltage to the unit and double-click the icon to launch the dual-axis motion control interface program.



Set-Up / Configuration Procedure

1. Enter the lead of the linear screw in units of inches traveled per revolution of the screw.
2. Select the desired units of display for linear and angular position.
3. Enable **End-of-Move** position correction if desired. End-of-Move position correction uses encoder feedback to correct for final position error at the end of the move.

Homing Procedure (If Desired)

1. Enable homing by clicking **Homing** button.
2. Command a slow move with minimum motor current to run into a physical stop.
3. After the move completes, command a new move from the physical stop to the desired position of origin.
4. Zero the origin position by clicking **Set Origin Position** button.

Executing Motion

1. Motions commanded are in units of relative distance from the current resting position.
2. Linear or rotary moves must be commanded independently:
 - Enter a zero for distance in rotary column when commanding a linear move.
 - Enter a zero for distance in linear column when commanding a rotary move.
3. Enter the desired motion command profile parameters.
4. Click the **Run** button to execute the motion.
5. Click the **Stop** button to immediately stop motion and hold the instantaneous position.
6. Click the **Abort** button to de-energize the motor.

GUI Dual-Axis Command Interface Descriptions

Configuration / Set-Up Parameter

Homing Command Parameter

Motion Command Parameter

The screenshot shows the GUI for the Z-Theta Dual Axis Motion actuator, divided into two main sections: Z-Axis and Theta-Axis. The interface includes configuration, homing, and motion command sections for both axes. Callouts provide detailed descriptions for various parameters and buttons.

Z-Axis Configuration:

- Configuration:** Lead In/Rev: 1.0 (in), Position Correction (checked), Homing, Set Origin Position.
- Motion Command:** Distance: 0.0 in, Velocity: 1.0 in/sec, Accel Rate: 1.0 in/sec², Decel Rate: 1.0 in/sec², Run Current: 1.0 Arms, Accel Current: 1.0 Arms, Decel Current: 1.0 Arms, Hold Current: 1.0 Arms.
- Motion Feedback:** Distance Command: 0.000 in, Distance Measured: 0.001 in, Distance Error: -0.001 in, Velocity Command: 0.000 in/sec, Velocity Measured: 0.000 in/sec, Velocity Error: 0.000 in/sec, Supply Volt: 23.730 Volt, Motor Phase Volt: -0.005 Volt, Motor Amp: 0.495 Arms, Status: Normal.

Theta-Axis Configuration:

- Configuration:** Lead In/Rev: 1.0 (rev), Position Correction (checked), Homing, Set Origin Position.
- Motion Command:** Distance: 0.0 rev, Velocity: 1.0 rev/sec, Accel Rate: 1.0 rev/sec², Decel Rate: 1.0 rev/sec², Run Current: 1.0 Arms, Accel Current: 1.0 Arms, Decel Current: 1.0 Arms, Hold Current: 1.0 Arms.
- Motion Feedback:** Distance Command: 0.000 rev, Distance Measured: 0.000 rev, Distance Error: 0.000 rev, Velocity Command: 0.000 rev/sec, Velocity Measured: 0.000 rev/sec, Velocity Error: 0.000 rev/sec, Supply Volt: 23.502 Volt, Motor Phase Volt: -0.064 Volt, Motor Amp: 0.502 Arms, Status: Normal.

Callouts and Descriptions:

- Configuration / Set-Up Parameters (Blue boxes):**
 - Select desired linear distance units (points to 'in' dropdown).
 - Enable End-of-Move linear position correction (points to 'Position Correction' checkbox).
 - Enter lead screw inches per revolution (points to 'Lead In/Rev' input).
 - Select desired angular distance units (points to 'rev' dropdown).
 - DO NOT MODIFY (points to 'Lead In/Rev' input).
 - Enable End-of-Move rotary position correction (points to 'Position Correction' checkbox).
- Homing Command Parameters (Red boxes):**
 - Automatically abort linear movement if physical stop (points to 'Homing' button).
 - Set linear position origin (points to 'Set Origin Position' button).
 - Automatically abort rotary movement if physical stop (points to 'Homing' button).
 - Set angular position origin (points to 'Set Origin Position' button).
- Motion Command Parameters (Green boxes):**
 - Commanded linear motion profile parameters (points to 'Motion Command' section).
 - Measured linear motion parameters (points to 'Motion Feedback' section).
 - Commanded rotary motion profile parameters (points to 'Motion Command' section).
 - Measured rotary motion parameters (points to 'Motion Feedback' section).

Buttons: Run (green), Stop (red), Abort (red).