



Direct Advanced Operations, Inc.

Precision Metrology Instruments

DAO JOYSTICK CONTROLLER

USAGE:

- XYZ stage platforms
- Robotics
- Quality inspection systems
- Measurement systems
- IC fabrication clean-room or medical purpose



KEY FEATURES:

- 1, 2, or 3 axes joystick / motion controller / drivers / power supplies all in one unit. Optional 4 axes available.
- Single compact desktop unit with footprint of 8.5"x11". Less than 3" in height.
- Simultaneous control of all axes.
- 3 selectable joystick speeds.
- Ergonomic joystick designed for left and right-handed operator. Sunken joystick to minimize wrist fatigue.
- Full blown stand-alone motion controller with RS-232C or Ethernet computer interface.
- Open loop with scale encoder inputs, home inputs, and travel limit sensors.
- Joystick mode available during PC control mode.



Typical application

The DAO Joystick Controller is a high precision, integrated joystick, motion controller, drivers, and power supplies all in one compact desktop unit. It allows you to drive any motorized XYZ stage equipped with stepper motors. The DAO Joystick Controller is a dual-purpose motion controller; it can be used as a stand-alone joystick and/or a stand-alone motion controller with computer interface. Programming is simple with two-letter intuitive commands. Its physical shape is ergonomically designed for long operating hours.

The DAO Joystick Controller is designed for extremely cost-sensitive and space-sensitive applications. This controller is typically half-the-price and, in many cases, ¼ the size of a comparable stand-alone motion controller even without its joystick units. With both joystick and motion controller integrated into one small desktop unit, we eliminate wiring between joystick and motion controller.

General Specifications

Axes	1, 2, or 3 (4th axis is available at special request)
Joystick	X (Left-Right), Y (Up-Down), Z (CW-CWV Rotating Knob)
Motion Control	Full blown for OEM (Command sets documents provided)
Built-in Stepper Motor Amplifier	Full step/half step mode. Up to 3 bipolar two-phase stepper motors.
Built-in Micro Stepper Motor Amplifier (Optional)	Up to 3 bipolar two-phase stepper motors at 1/64 resolution
Stepper Drive Current	1.4 Amps/Phase (2.8Amps for two-phase steppers)
Micro Stepper Drive Current (Optional)	3 Amps per axis
Output Motor Power	Regulated 30 VDC at 8 Amps
Processing Speed	<ul style="list-style-type: none"> Encoder frequencies up to 12MHz 3MHz outputs pulse for steppers
Joystick Control Method	Pre-installed DAO Joystick firmware
Joystick Travel Speed	Selectable speed (Low, Medium, and High)
Scale Encoder Inputs	<ul style="list-style-type: none"> Open loop with encoder inputs for PC (square waves). Optional sinusoidal interpolation of Sin/Cos encoders (up to 12bit).
Home Bit Inputs	User define home positions for accurate repeatability
Travel Limit Inputs	User define travel limits, 2 per axis
Motion	Linear and circular interpolation, contouring, electronic gearing and ECAM
Computer Interface	19.2kb RS-232C or Ethernet 10Base-T
Power Requirements	120-220 VAC 50/60Hz
Physical Dimension	8.5" x 11", 3" Height (joystick base)
Weight	8.5lbs
Temperature Control	Self cooling via two brushless fans
Usage Environment	<ul style="list-style-type: none"> Compatible with all levels of clean room. Temperature: 32 to 104°F (0 to 40°C) Humidity: 0 to 85% No corrosive gases, dust, water or oil



Standard Accessories:

- OEM applications software package. Windows® 2000/XP compatible. Setup utilities, OCX, DLL, etc.
- OEM sample programs (MS Visual C/C++, MS VB, Borland Delphi).
- Software Commands manual (on CD). No paper manual for preserving nature.
- Motors connectors.
- Encoders/Homes/Limits connectors.
- 24/7 phone technical support.
- 1 Year limited warranty.

Optional Accessories:

- 4 axes DAO joystick controller (special order)
- Ethernet cable
- RS-232C cable
- RS-232C gender changer
- Field integration/installation
- Stepper motors
- Scale encoders
- Limit switches

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