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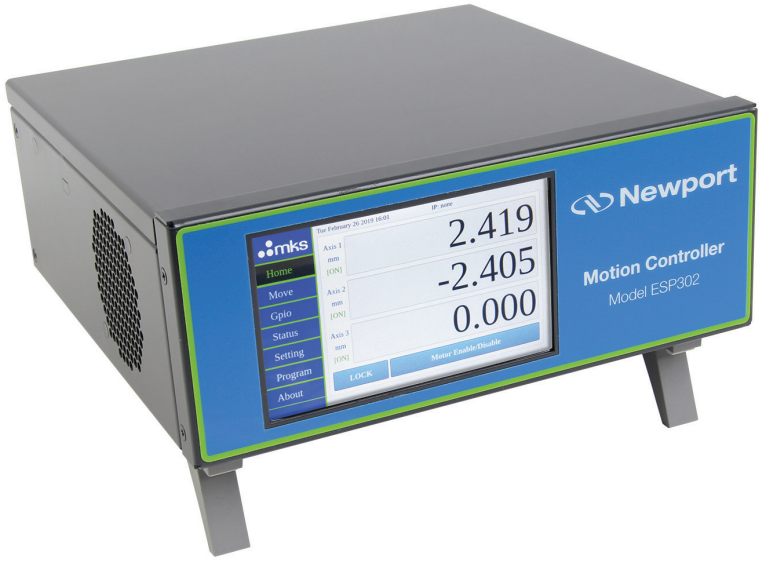
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ESP302

3-Axis Motion Controller and Driver

The ESP302 1 to 3 Axis Motion Controller and Driver is the successor to the popular ESP301 motion controller. The ESP302 provides the same functionality as the ESP301, but with added Ethernet interface, web based GUI, and enhanced front panel functions through an LCD touch screen on the front panel. For maximum backward compatibility, the ESP302 features the same motion commands and control algorithms as the ESP301. The ESP302 drives and controls one, two or three axes of motion using DC or 2-phase stepper motors up to 3A. This capability enables driving a large selection of Newport stages and actuators. Utilizing the full feature LCD touch front panel interface and Newport's unique ESP stage auto-detection and auto-configuration, the ESP302 provides easy operation and excellent functionality at an affordable price. The ESP302 uses a 64-bit, floating point, DSP processor for high precision synchronized control. A digital PID-FF (feed-forward) servo loop ensures precise velocity profile tracking and accurate positioning. A 1000x programmable micro-step resolution provides ultra-smooth low-speed stepper positioning capability, and 18-bit DC motor command output ensures improved stability for precision applications.



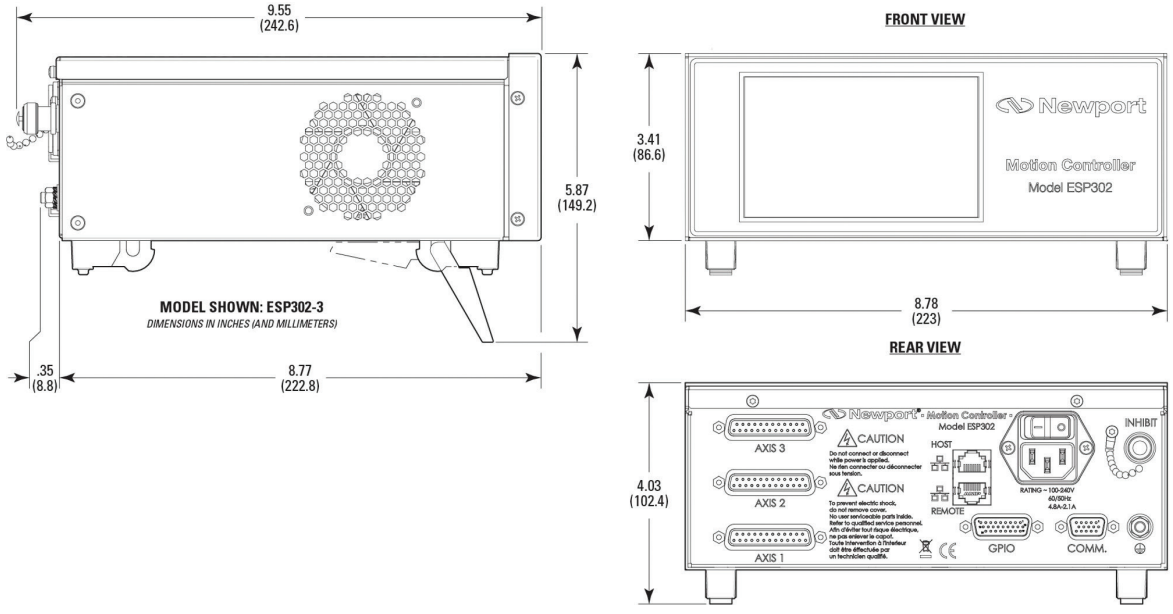
Product Features

- Up to 3 axis motion control
- LCD touch screen front panel user interface
- Ethernet or serial communication
- Web-based GUI w/ multi user capabilities
- Universal driver card
- AquadB encoder support
- Smaller form factor and light weight
- External GPIB interface – through serial port
- Command set backwards compatibility with ESP301

3-Axis Motion Controller and Driver

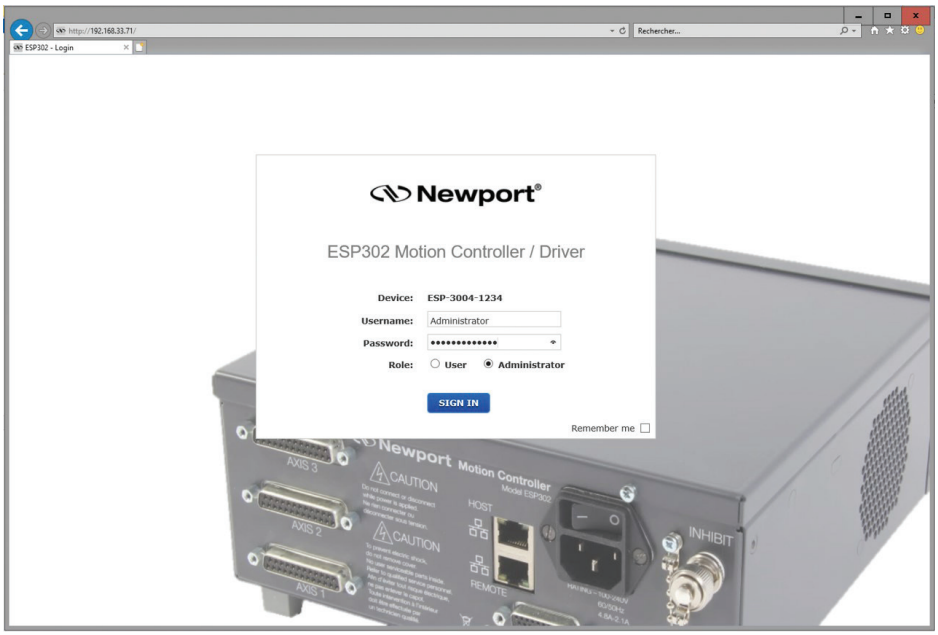
Specifications

FEATURE	Description
Number of Axis	1, 2 or 3
Control Interfaces	• Front panel touchscreen • Serial COM port • Ethernet TCP/IP (10/100/1000 Base-T)
Firmware Features	• Native user defined units (no need to work with encoder counts • Real Time execution of custom tasks using program mode – 300 MB of user storage for programs and data • Mutli user capability (same as XPS-D) • Process sockets for parallel processing • Data gathering at rates up to 10 kHz
Motion	• S-curve velocity profile. • Jogging mode, including on-th-fly changes of speed and acceleration • Line and Arc modes for two axis trajectory motion • Master/slave, including single master/multiple slaves and custom gear ration • Grouping for coordinated motion of multiple axes
Compensation	• Backlash • Linear error • All corrections are taken into account in the servo loop
Servo rate	Fixed at 10 kHz
I/O	16 TTL, 5 V Configurable as inputs or outputs
Control loop	• Open loop – PI position – PID w/ FF velocity – PID w/ Dual FF voltage • Integration limit and integration time • Derivative cut-off filter
Trigger Input	I/O configurable to start/stop inhibit motion, jog or execute program
Drive Capacity	• Voltage, velocity (for DC brush motor control). • Position (for stepper motor control) • 3A RMS @ 48V per axis • 150 W (above 110 VAC) maximum available power for all axes



3-Axis Motion Controller and Driver

New GUI through Web Browser

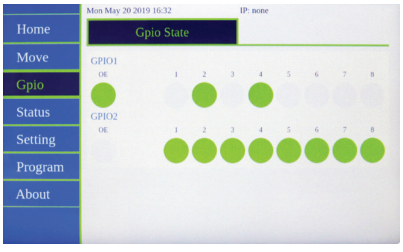


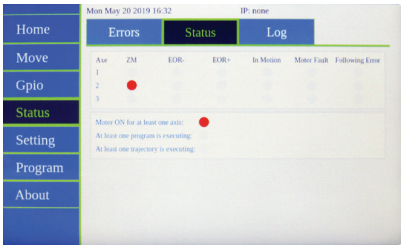
Touch Screen GUI - Examples

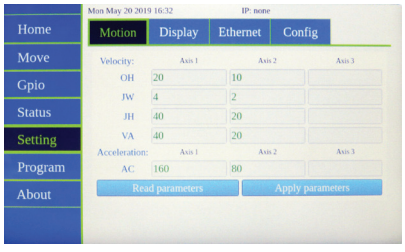


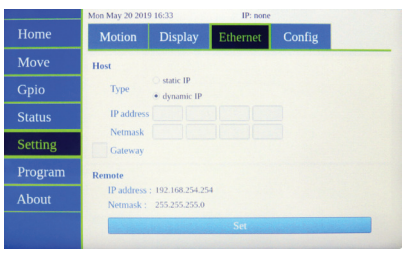


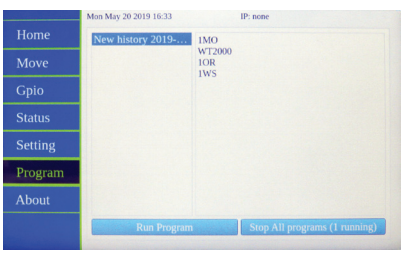


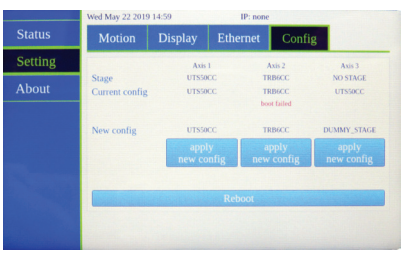






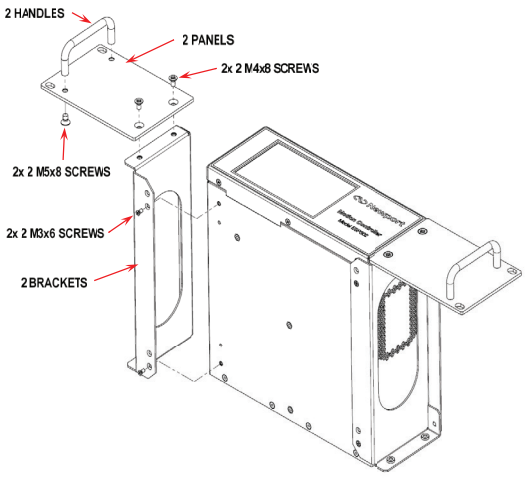


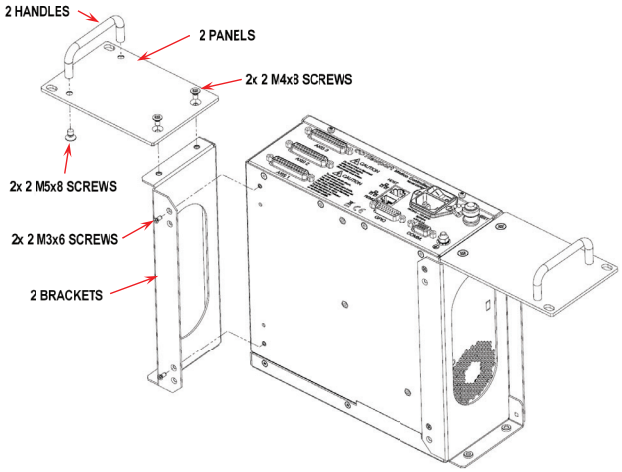




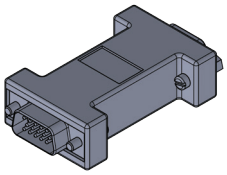
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ESP302 Accessories

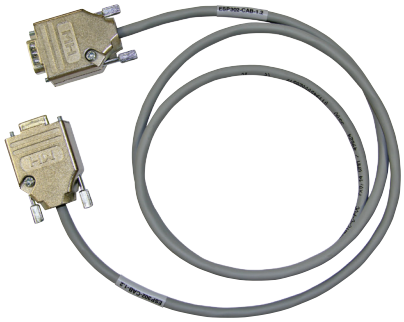




ESP302-R - Rack Mounting Kit
Front or rear mounting



ESP302-RS232 - Serial port adapter
15-pin D-SUB-HD to 9-pin D-SUB



ESP302-CAB-1.2 - Serial port cable
15-pin D-SUB-HD to 9-pin D-SUB – 3 ft.

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