

PIglide Motion Controllers



A-81x Series

- 1, 2, & 4 Axes of Motion
- Fully Integrated Closed Loop Servo Control, Drives, and Power Supplies
- For Voice Coils, DC Motors, and 3-phase Brushless Motors
- Quiet PWM Drives
- Encoder inputs support Incremental and Absolute BiSS-C
- 2U 19-inch Rack Mount Design
- 5A Continuous / 10A Peak Output Current per Axis

Overview

The A-81x series of motion controllers from PI offers a completely integrated electronics solution, with controller, drives, and power supplies packaged together in a compact 2U, 19-inch rack-mount enclosure. These controllers are designed and optimized to work with the PIglide line of air bearing stages which feature direct drive linear and rotary servo motors and high resolution encoders. Standard options include inputs for incremental sine encoders and absolute encoders using the BiSS-C serial data protocol. Sine encoder support includes integrated encoder multiplication up to 16,384x. All controllers feature on-board flash memory for stored motion programs and parameters. The A-81x controllers can run in standalone mode running stored programs, or controlled via an external PC. A PC is required for programming and setup. All software is included with the controller.

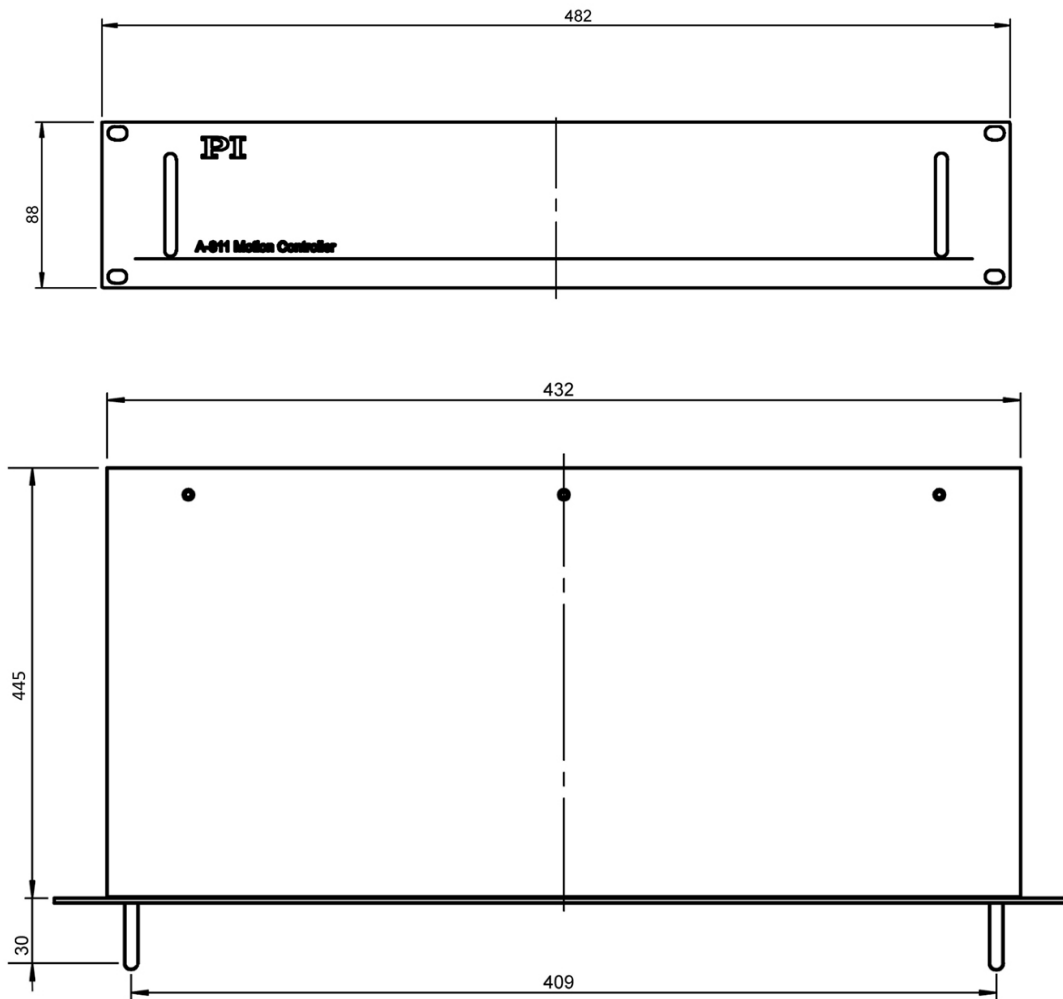
When purchased along with a PIglide air bearing stage or motion system, PI will perform all servo tuning, controller setup, and error calibrations and deliver a complete motion system that is ready-to-use.

Typical Customizations

- Alternate packaging for OEM designs
- I/O configurations
- Emulated encoder outputs
- Advanced control algorithms
- Dual-feedback control loops
- Additional axes
- Higher power output
- Linear servo drives and power supplies

Specifications

Model	A-811.23x00	A-812.21x00	A-814.21x00
# Axes	1	2	4
Controller	Closed loop servo (PID) with on-the fly parameter change capability		
Position Loop Update Rate	10 kHz		
Current Loop Update Rate	20 kHz		
Trajectory Profiles	Point-to-point, jog	Point-to-point, jog, S-curve, Interpolated coordinated multi-axis	
Cooling	Fan, always on, constant speed, side inlet/outlet		
Drive Type	Digital PWM		
Feedback Options (Factory Configured)	Incremental Sine Encoder (1 Vp-p) or Incremental RS-422 Digital Encoder (2 & 4 Axis only) or Absolute BiSS-C		
Encoder Multiplication (Sine Encoder Option)	Set in software from 4x to 16,384x		
Motor Output Voltage	60 VDC		
Motor Types	Voice-coil DC Brush 3-phase Brushless Servo with Encoder-based Sine Commutation		
Output Current (per Axis)	5A continuous, 10A peak		
Input Power	120 - 240 VAC, 1-phase, 50-60 Hz (Factory Configured) 500 W		
User I/O (Does not include limits)	4x DIN 24VDC Sink 4x DOUT 24VDC Sink 1x AIN Differential, 12-bit	2x DIN 24VDC Sink 2x DOUT 24VDC Source 1x AIN Differential, 12-bit 1x AOUT Differential, 10-bit 2x PEG RS-422 Triggers	4x DIN 24VDC Sink 4x DOUT 24VDC Source 2x AIN Differential, 12-bit 2x AOUT Differential, 10-bit 4x PEG RS-422 Triggers
Communications	USB 2.0 or Ethernet TCP/IP	Ethernet TCP/IP	
Interlock / E-stop Inputs	1x 24VDC		
Connector Interface	Rear panel connectors D-sub for motor and signal connections IEC 60320 Type C14 for power input		
Weight (approximate)	7.3 kg	8.5 kg	9.3 kg



Model A-81x, in mm

Ordering Information

Single Axis Configurations

- A-811.23A00 Motion Controller,1-Axis, USB, Sine Encoder
- A-811.23A01 Motion Controller,1-Axis, Ethernet, Sine Encoder
- A-811.23B00 Motion Controller,1-Axis, USB, Absolute Encoder
- A-811.23B01 Motion Controller,1-Axis, Ethernet, Absolute Encoder

Two Axis Configurations

- A-812.21A00 Motion Controller,2-Axis, Ethernet, Sine Encoder
- A-812.21B00 Motion Controller,2-Axis, Ethernet, Absolute Encoder
- A-812.21C00 Motion Controller,2-Axis, Ethernet, RS-422 Encoder

Four Axis Configurations

- A-814.21A00 Motion Controller,4-Axis, Ethernet, Sine Encoder
- A-814.21B00 Motion Controller,4-Axis, Ethernet, Absolute Encoder
- A-814.21C00 Motion Controller,4-Axis, Ethernet, RS-422 Encoder