

# AEROTECH AUTOMATION1

## Servo Controller **Automation1 XI4**

### Control Any Amplifier

The Automation1 XI4 servo controller brings precision Automation1 servo control to any analog transconductance amplifier. Each XI4 axis of control generates an analog voltage command -- required by analog amplifiers to control the output current to a servo motor -- and receives encoder and axis feedback signals. The XI4 comes in both 2- and 4- axis configurations, each with an independent 20 kHz servo control loop. For added flexibility, each axis on the XI4 can be configured to output clock and direction control signals.

### Automation1

The XI4 is a part of the user-friendly Automation1 motion control platform, which includes the following:

- ◆ **Development Software**
- ◆ **Controls**
- ◆ **Motor Drives**
- ◆ **Fiber-Optic HyperWire® Communication Bus**



### KEY FEATURES:

- ◆ Supports **SINGLE CONNECTOR** axis interface including analog control output, encoder feedback, 2x EOT limit inputs, marker input, amplifier enable & fault, plus optional absolute encoder support
- ◆ Features up to 4 axes of 20 kHz **CLOSED-LOOP SERVO** control
- ◆ Features one **ANALOG CURRENT COMMAND** per axis
- ◆ Includes **ONE-AXIS PSO** standard with multi-axis options
- ◆ Include **8/8 DIGITAL I/O** (optically isolated), 1x high speed input & dedicated PSO output

## AUTOMATION1 XI4 SPECIFICATIONS

CATEGORY	SPECIFICATION
<b>HyperWire Communication</b>	2x HyperWire small form-factor pluggable (SFP) ports
<b>Control Output<sup>(1)</sup></b>	Supports two or four axes of stepper current command ( $\pm 10$ V) or clock & direction control
<b>Control Supply</b>	Voltage: 24 VDC Current, 2 Axis Unit: 2 A max, 0.45 A typical Current, 4 Axis Unit 2 A max, 0.6 A typical
<b>User Power Supply Output</b>	5 VDC
<b>Modes of Operation</b>	Open loop Closed loop
<b>Protective Features</b>	Output short circuit Control power supply undervoltage
<b>Position Synchronized Output (PSO)</b>	Standard: One-axis PSO (includes one-axis part-speed PSO)  Optional: Two-axis PSO (includes two-axis part-speed PSO) Three-axis PSO (includes three-axis part-speed PSO) Three-axis part-speed PSO only
<b>25-Pin Axis Connector</b>	Servo current commands / stepper clock & direction output High-speed differential inputs (encoder sin, cos & marker) Absolute encoder interface (support optional) CW & CCW limits 5 VDC power supply Amplifier enable & fault
<b>Encoder Input Options</b>	40 million counts per second square-wave input
<b>Digital I/O Connector</b>	8x optically isolated digital inputs (externally powered, 5-24 VDC) 8x optically isolated digital outputs (externally powered, 5-24 VDC) 1x optically isolated high-speed inputs 1x PSO TTL output 1x 5 VDC power supply
<b>Drive Array Memory</b>	67.1 MB (16,777,216 32-bit elements)
<b>High Speed Data Capture</b>	Yes (50 ns latency)
<b>Automatic Brake Control</b>	Assignable digital output
<b>E-Stop Sense Input</b>	Assignable digital input
<b>Absolute Encoder (Optional)</b>	BiSS C Unidirectional; EnDat 2.1; EnDat 2.2
<b>Position Command Update Rate</b>	20 kHz
<b>Operating Temperature</b>	0 to 40 °C
<b>Storage Temperature</b>	-30 to 85 °C
<b>Weight</b>	0.59 kg (1.30 lb)
<b>Compliance</b>	CE approved; follows EU 2015/863 RoHS 3 directive

1. Single or two-phase current command output signals are available.

## AUTOMATION1 XI4 ORDERING OPTIONS

### Configuration

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<b>2P1</b>	2 Axes of Control, Standard Packaging
<b>2P2</b>	2 Axes of Control, OEM Packaging
<b>4P1</b>	4 Axes of Control, Standard Packaging
<b>4P2</b>	4 Axes of Control, OEM Packaging

### Absolute Encoder

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<b>A0</b>	No Absolute Encoder Support (default)
<b>A1</b>	Absolute Encoder Support

### PSO

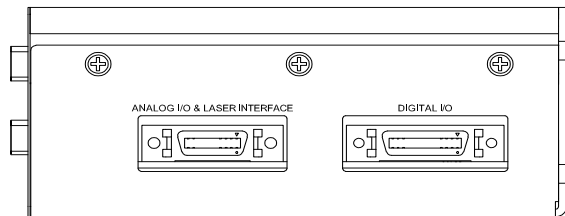
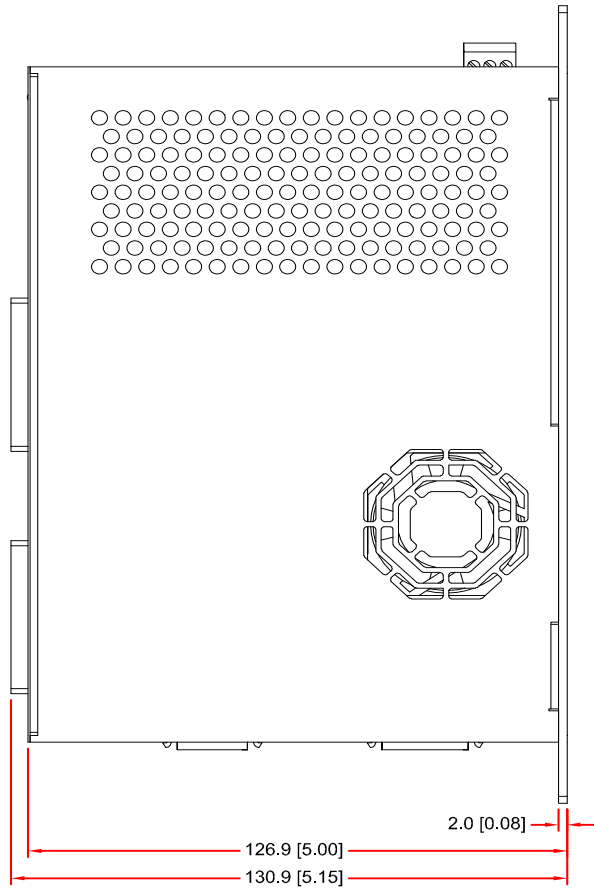
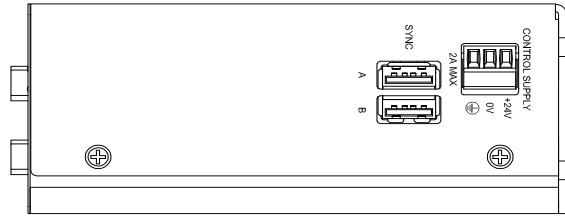
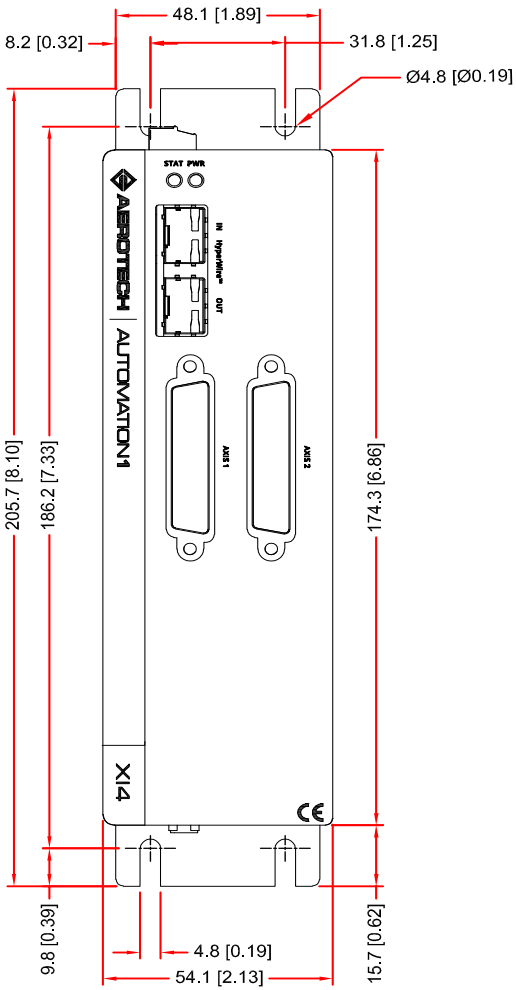
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<b>PSO1</b>	One-axis PSO (includes one-axis part-speed PSO) (default)
<b>PSO2</b>	Two-axis PSO (includes two-axis part-speed PSO)
<b>PSO3</b>	Three-axis PSO (includes three-axis part-speed PSO)
<b>PSO6</b>	Three-axis part-speed PSO



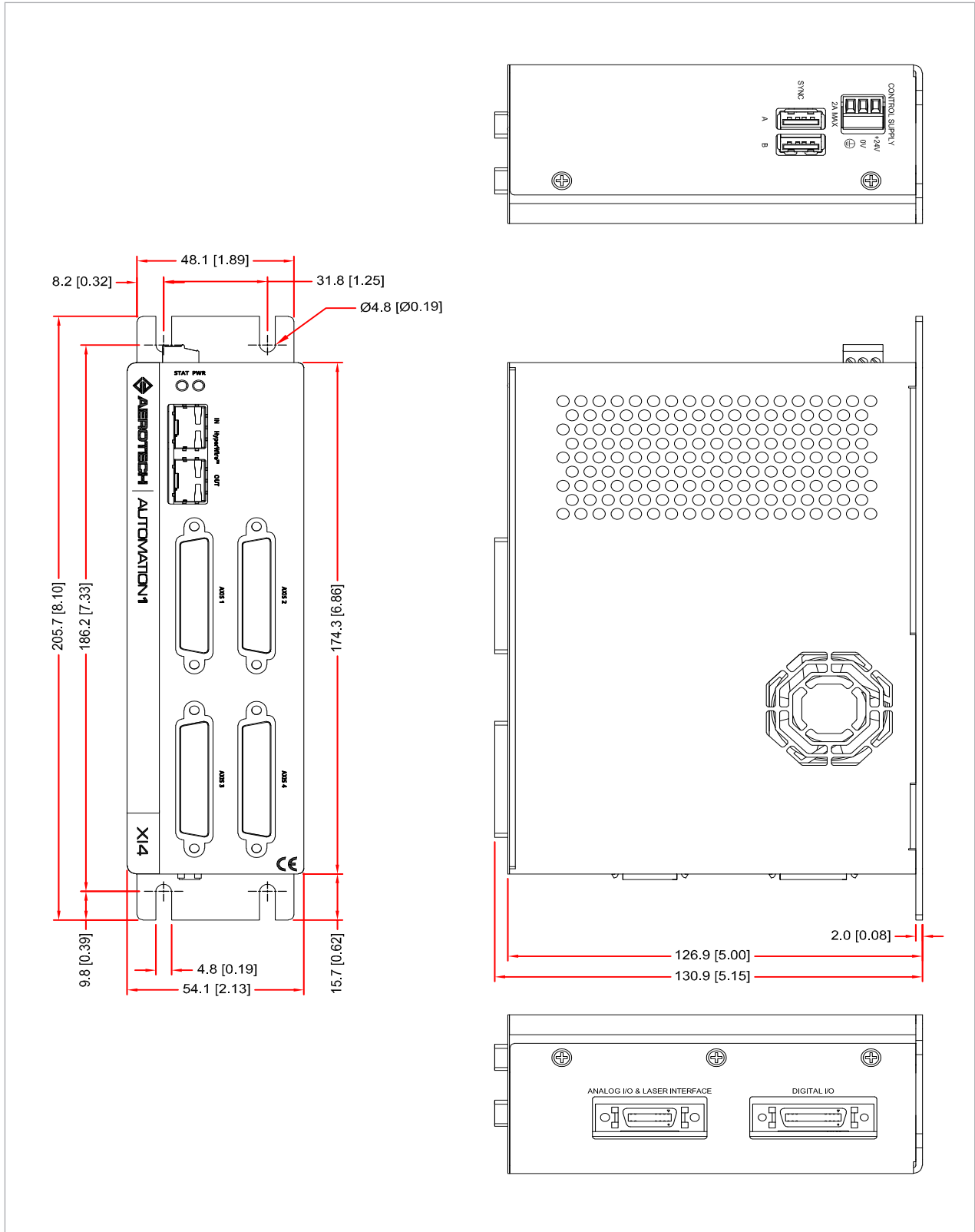
# AUTOMATION1 XI4 DIMENSIONS

## AUTOMATION1-XI4-2P1



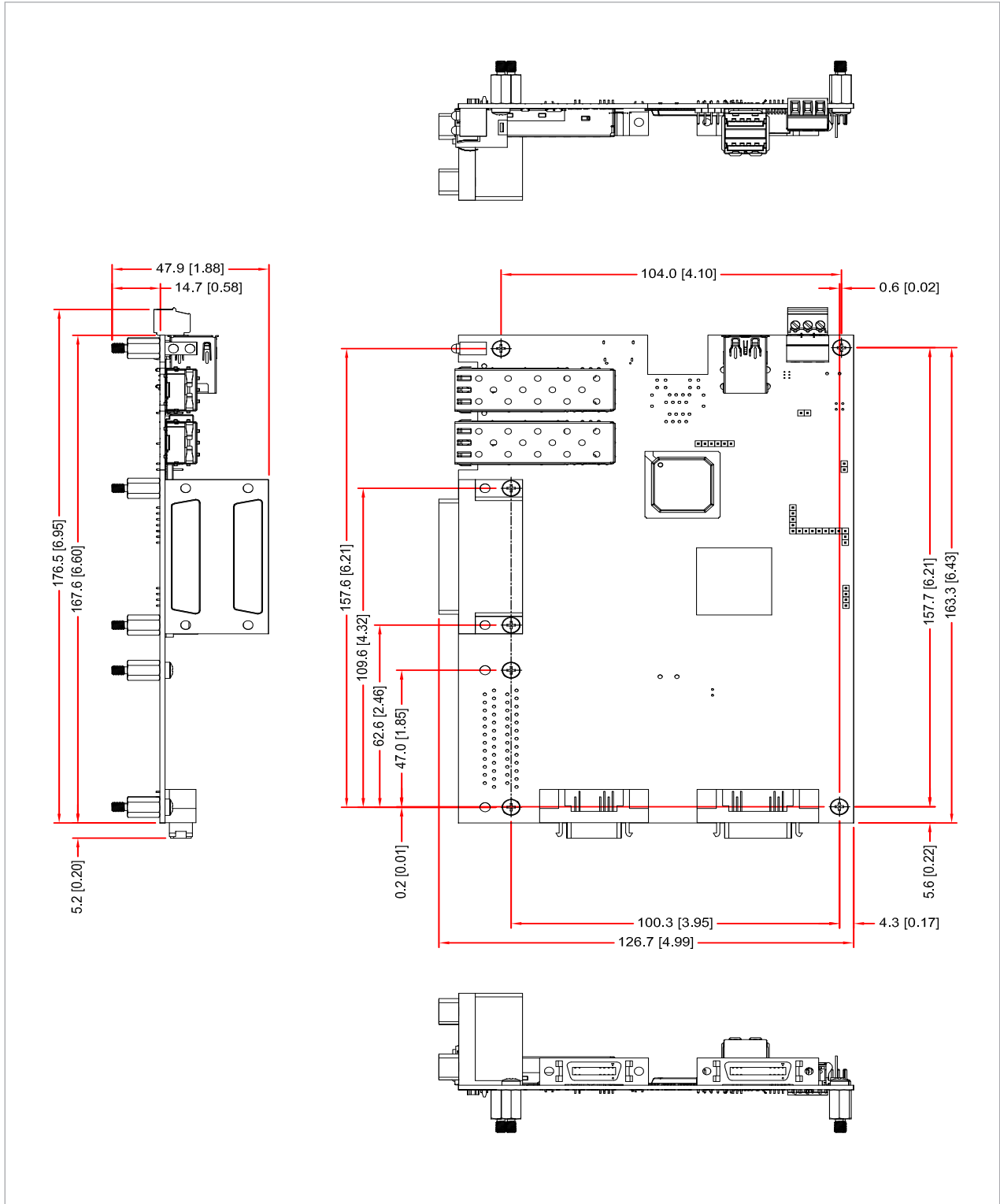
# AUTOMATION1 XI4 DIMENSIONS

## AUTOMATION1-XI4-4P1



# AUTOMATION1 XI4 DIMENSIONS

## AUTOMATION1-XI4-2P2



# AUTOMATION1 XI4 DIMENSIONS

## AUTOMATION1-XI4-4P2

