Motion & Servo Controller

Automation1 iXI4

Phenomenal Control Power

Take full control of your machine or motion system with the Automation1-iXI4 motion and servo controller. The iXI4 can run the complete Automation1-iSMC motion controller and control up to four analog transconductance amplifiers or clock and direction devices. Each axis of control includes encoder and axis feedback signals and an independent 20 kHz servo control loop.

The iXI4 connects to other Automation1 drives over HyperWire and connects to other automation devices over EtherCAT, Modbus TCP/IP or a TCP Socket interface. Multi-axis PSO enables precision control of your industrial laser or process tool synchronized with your motion trajectory.

Automation1

The iXI4 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:

- Unlocks the full **MOTION CONTROL** power of our Automation1-iSMC intelligent software-based motion controller
- Features **COMPLETE CONFIGURATION & PERFORMANCE** capability of the XI4 servo controller
- **CONNECT TO THE CONTROLLER** using EtherCAT, Modbus or a Socket interface
- Enables up to **12 AXES OF CONTROL** when more Automation1 drives are connected over the HyperWire fiber-optic bus
- Includes up to four **SINGLE CONNECTOR** axis interface connectors
- Features up to four axes of **20 kHz CLOSED-LOOP SERVO** control

AUTOMATION1 iXI4 GENERAL SPECIFICATIONS

CATEGORY	SPECIFICATION
Motion Controller[1]	Aerotech's Automation1-iSMC Intelligent Software-Based Motion Controller (version 2.2 and above)
HyperWire Communication	1x HyperWire small form-factor pluggable (SFP) ports
Control Output[2]	Supports two or four axes of current command (±10 V) or clock & direction control
Control Supply	Voltage: 24 VDC Current, one-axis unit: 2 A max, 0.45 A typical Current, four-axis unit 2 A max, 0.6 A typical
User Power Supply Output	5 VDC
Modes of Operation	Open loop Closed loop
Protective Features	Output short circuit Control power supply undervoltage
Position Synchronized Output (PSO)	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
25-Pin Axis Connector	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
Multiplier Options	MX0 Option: Primary Encoder: 40 million counts-per-second square-wave input Auxiliary Encoder: 40 million counts-per-second square-wave input MX1 Option: Primary Encoder: 450 kHz sine-wave input, encoder multiplier up to x4,096* Auxiliary Encoder: 40 million counts per second square-wave input *Encoders multiplied with this input cannot be echoed out
Analog I/O	4x 16-bit differential, ±10 V analog input 4x 16-bit single-ended, ±10 V analog output
Digital I/O Connector	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 input 1x PSO TTL output 1x 5 VDC power supply
Drive Array Memory	67.1 MB (16,777,216 32-bit elements)
High Speed Data Capture	Yes (50 ns latency)
Automatic Brake Control	Assignable digital output
E-Stop Sense Input	Assignable digital input
Absolute Encoder (Optional)	BiSS C unidirectional; EnDat 2.1; EnDat 2.2
Position Command Update Rate	20 kHz
Operating Temperature	0 to 40 °C
Storage Temperature	-30 to 85 °C
Weight	0.59 kg (1.30 lb)
Compliance	CE approved, follows EU 2015/863 RoHS 3 directive

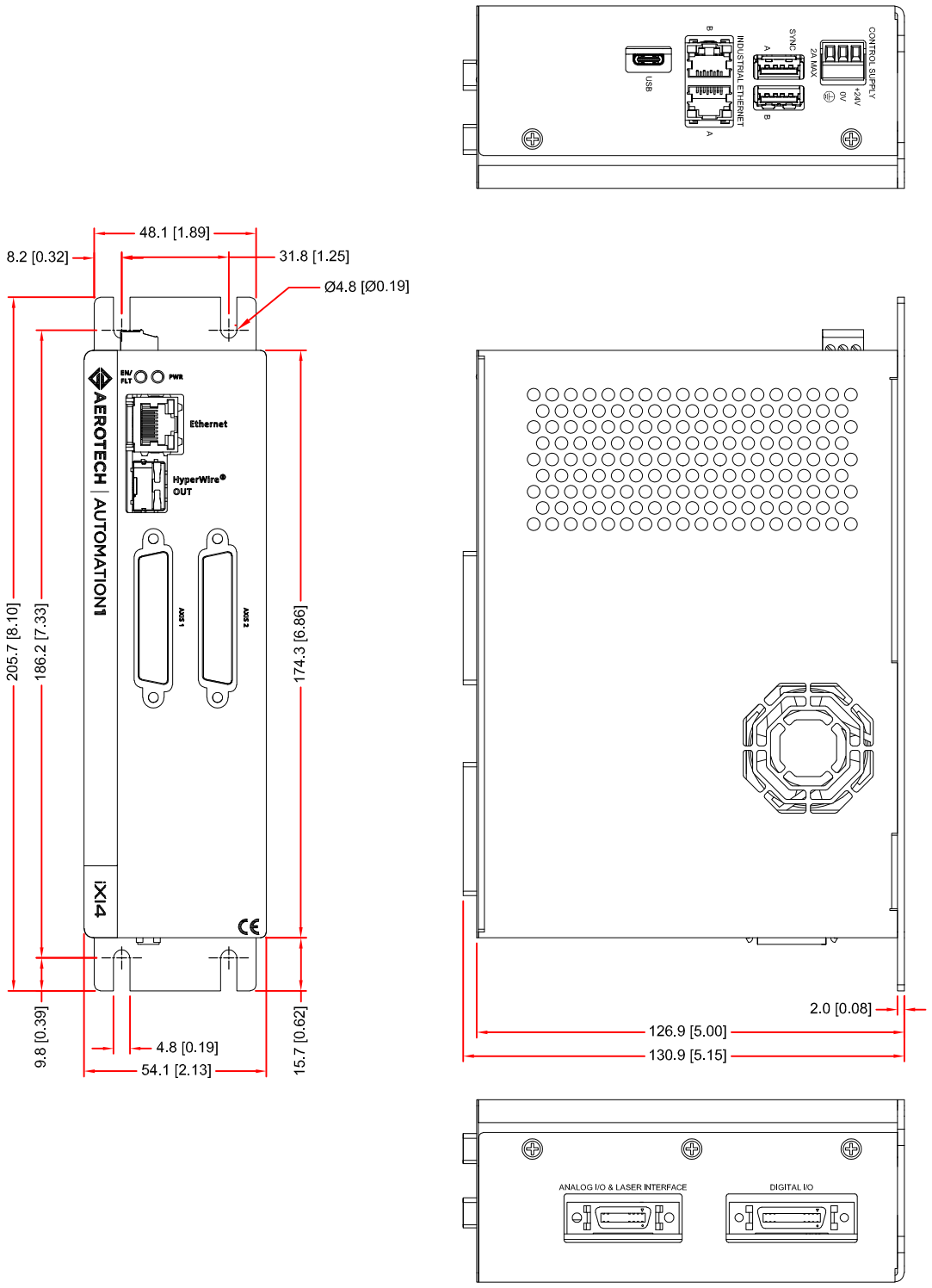
1. See the Automation1-iSMC controller page for more information.
2. Single or two-phase current command output signals are available.

AUTOMATION1 iXI4 ORDERING OPTIONS

Automation1-iXI4	
Automation1-iXI4	Automation1-iXI4 Motion and Servo Controller
Configuration	
-2P1	Two axes of control, standard packaging
-2P2	Two axes of control, OEM packaging
-4P1	Four axes of control, standard packaging
-4P2	Four axes of control, OEM packaging
Multiplier	
-MX0	No Encoder Multiplier (default)
-MX1	x4096 Multiplier (Primary), No Multiplier (Auxiliary)
Absolute Encoder	
-A0	No absolute encoder support (default)
-A1	Absolute encoder support
PSO	
-PSO1	One-axis PSO (includes one-axis part-speed PSO) (default)
-PSO2	Two-axis PSO (includes two-axis part-speed PSO)
-PSO3	Three-axis PSO (includes three-axis part-speed PSO)
-PSO6	Three-axis part-speed PSO

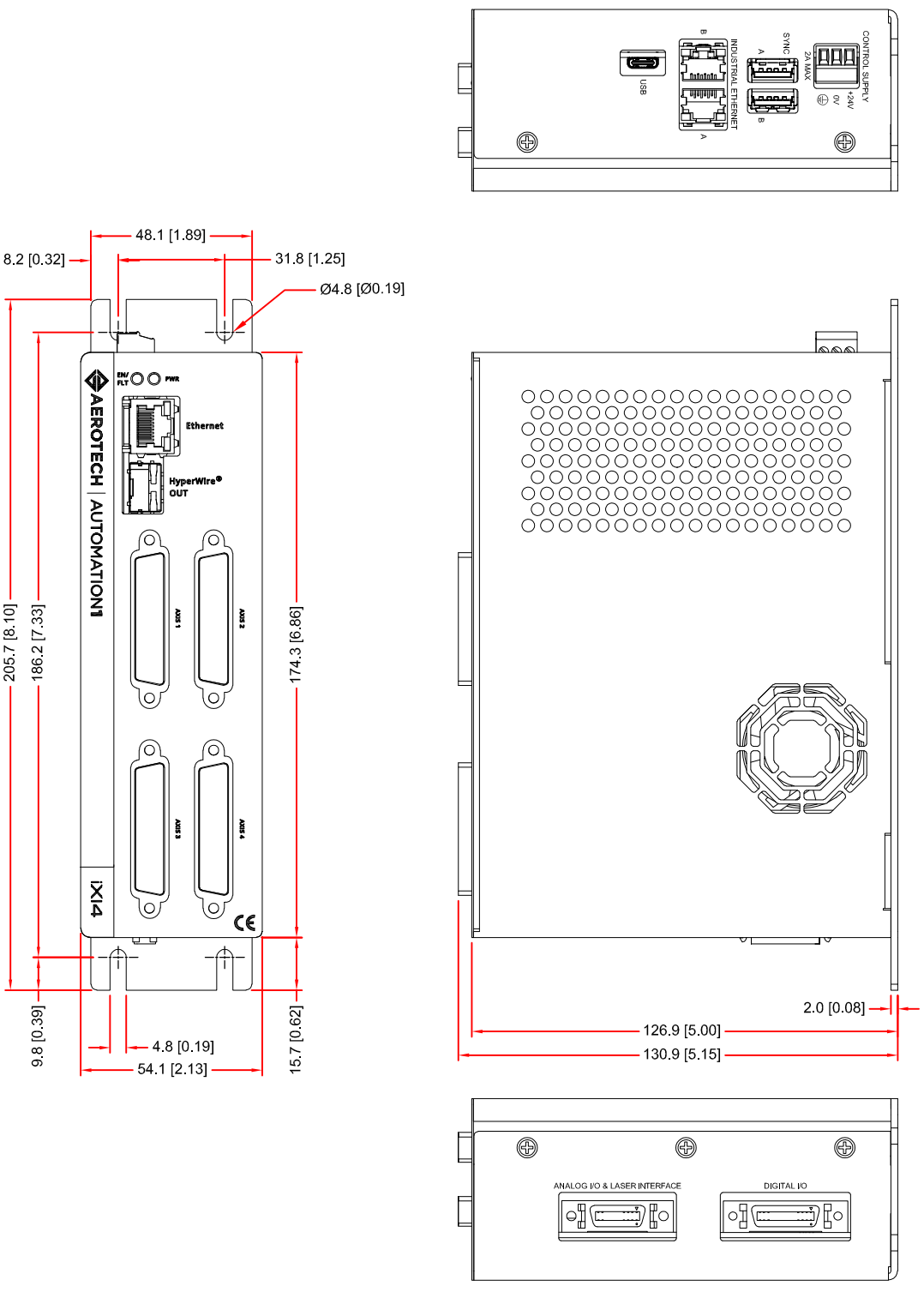
AUTOMATION1 iXI4 DIMENSIONS

AUTOMATION1-iXI4-2P1



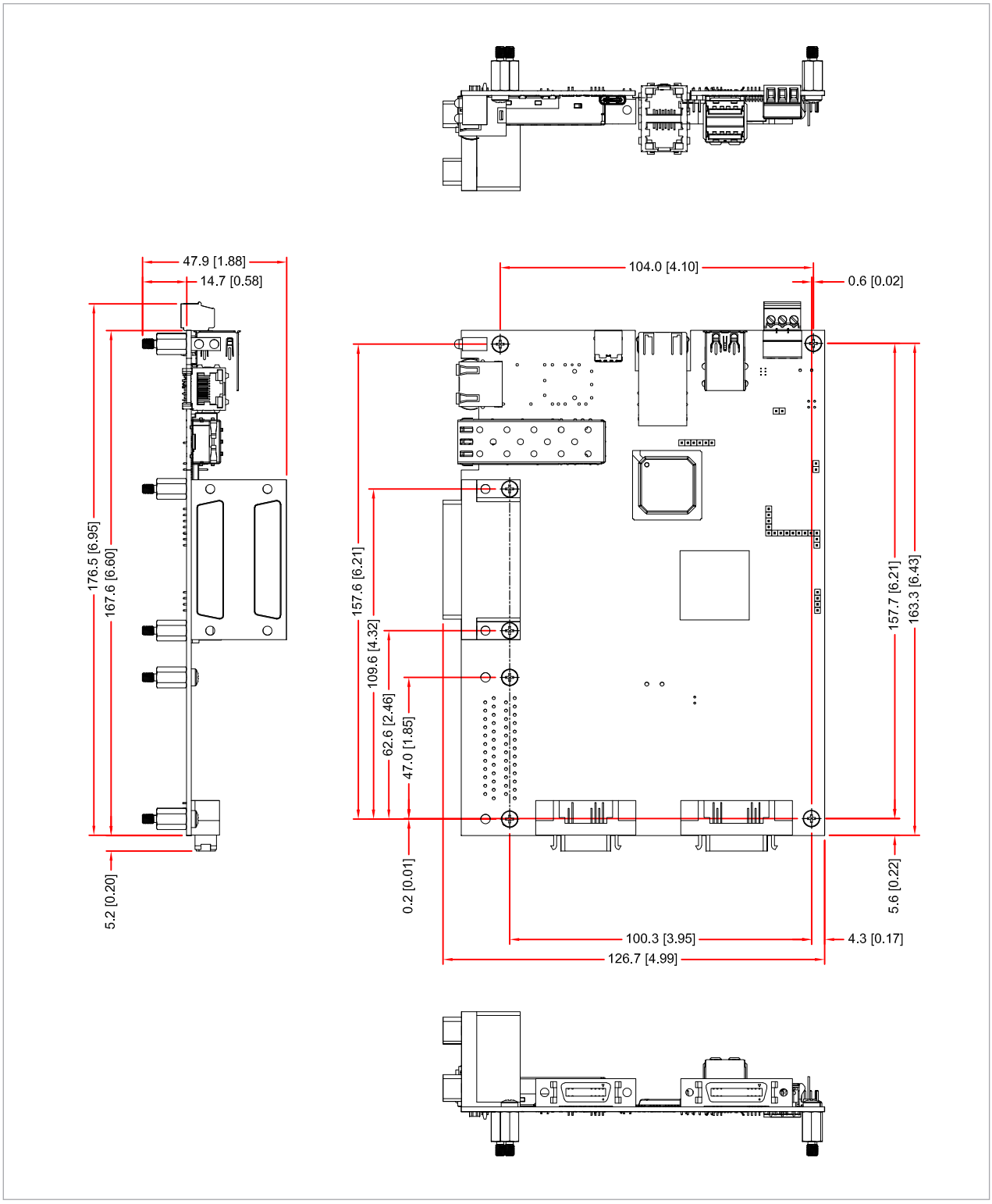
AUTOMATION1 iXI4 DIMENSIONS

AUTOMATION1-iXI4-4P1



AUTOMATION1 iXI4 DIMENSIONS

AUTOMATION1-iXI4-2P2



AUTOMATION1 iXI4 DIMENSIONS

AUTOMATION1-iXI4-4P2