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TECHNOLOGY GROUP

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Find the *Aerotech Soloist MP 10* at our website: ***Click HERE***

Soloist MP Controller and PWM Digital Drive



Description **Specifications** **Dimensions** **Ordering Information**

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Design Features

- Single-axis digital servo controller with amplifier
- Advanced software architecture shortens customer development time; use C#, VB.Net, C, and LabVIEW combined with our full IDE and multitasking operating system
- Host-mode operation allows you to send commands with your PC via Ethernet or USB for immediate execution
- Ethernet or USB permits networked Soloists for remote access
- Ideal for simple applications with minimal setup or complex applications that use the full flexibility and scalability
- Positioning control for brushless, DC brushtype, or stepping motors
- CE approved and NRTL safety certification; follows the 2011/65/EU RoHS 2 Directive
- Available in models up to 10 A peak current
- Allen-Bradley EtherNet/IP interface provides full integration with the Soloist; program the Soloist directly from RSLogix 5000

Introduction

Aerotech's Soloist® PWM series are single-axis servo controllers that combine a power supply, amplifier, and position controller in a single package. The Soloist can control up to five tasks simultaneously, as well as handle variables and manage I/O, making it well-suited for demanding production applications. The Soloist has high-speed position latch inputs and advanced data logging capabilities, making it ideal for laboratory, test instrument, and industrial applications. The advanced software architecture shortens customer development time, while including support for C#, VB.Net, C, and LabVIEW®, combined with our full IDE and multitasking operating system. Host-mode operation allows you to send commands with your PC via Ethernet or USB for immediate execution.

The Soloist MP offers the same advanced software as the CP but in a smaller package designed for OEMs that can supply bus power from existing power supplies.

The Soloist HPe can be used for larger systems requiring up to 150 A peak current.

Motion Composer, the common integrated development environment for all Aerotech controllers, provides users with Windows®-based software with powerful diagnostic, debug, and analysis tools for OEMs and end users alike.

Allen-Bradley Interface

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Combine proven PLC with proven motion control for easier integration, startup, and maintenance of medium- and highend automation projects. The Aerotech EtherNet/IP™ interface enables AB PLCs (MicroLogix, CompactLogix™, or ControlLogix) to be integrated directly with the Soloist. Motion can be directly programmed in the RSLogix 5000 environment or separate programs can be written on the controller and triggered from the AB PLC. Aerotech has two interfaces: ASCII and Register. Choose the PLC, motion controller, and interface that best fits your application needs.

Total Solution

The controllers are fully tested and ready to run right out of the box. Aerotech can integrate the Soloist into a complete motion system, removing the burden of parameter setup and axis tuning.

Practical Power

Each series is capable of driving a wide range of motors including brushless, DC servo, and steppers. Brushless motors are sinusoidally commutated to minimize torque ripple.
Using a digital servo loop with feedforward, the Soloist tightly tracks velocity and position trajectories with virtually zero error. On-board autotuning and built-in calculators make servo tuning simple.

Variables, Math and More

With variables and math capability, one program can be used to produce a variety of parts by simply prompting the user for new application data.

Application Versatility

The Soloist has other built-in features such as axis calibration and backlash compensation, so you can maximize your machine’s accuracy and precision. The “user units” feature makes it easy to customize the Soloist to your specific machine, allowing custom units for both linear and rotary applications. The controller is equipped with dual encoder inputs, so you can tackle master-slave applications or achieve higher accuracies with dual-loop control. Precise registration-based moves are also possible because of the fast 0.1 microsecond acknowledge time of the Soloist. The Soloist easily handles complex functions such as output-on-the-fly and velocity profiling.

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Soloist MP Specifications

Soloist MP	Units	
Motor Style		Brush, Brushless, Stepper(1)
Motor Supply	VDC	10-80
Control Supply(2)	VDC	24-80
Bus Voltage(3)	VDC	10-80
Peak Output Current (1 sec)(4)	Apk	10
Continuous Output Current(4)	Apk	5
Digital Inputs		N/A
Digital Outputs		N/A
Analog Inputs		One 16-bit Differential; ±10 V
Analog Outputs		N/A
Dedicated Axis I/O on Feedback Connector		Three Limit Inputs (CW, CCW, Home); Three Hall Effect Inputs (A, B, C); Three High-Speed Differential Inputs (sin, cos, mkr for encoder); Motor Over-Temperature Input
Dedicated I/O on Auxiliary Feedback Connector		N/A
I/O Expansion Board(5)		8/8 Digital Opto-Isolated; 1 Analog In (±10 V, 12-bit Differential); 1 Analog Out (±5 V, 16-bit); sin, cos, mkr for Aux Enc; Aux Enc can be used for PSO Output
High Speed Data Capture		Yes (50 ns Latency)
Automatic Brake Control		Optional(6)
Emergency Stop Sense Input (ESTOP)(6)		Standard; 24 V Opto-Isolated
Position Synchronized Output (PSO)		Optional(5)
Can Output Multiplied Encoder		No
Can Output Square Wave Encoder		No
Primary Encoder Input Frequency		200 kHz Amplified Sine Wave Standard (for onboard multiplier); 40 MHz TTL Square Wave
Secondary Encoder Input Frequency		32 MHz Square Wave

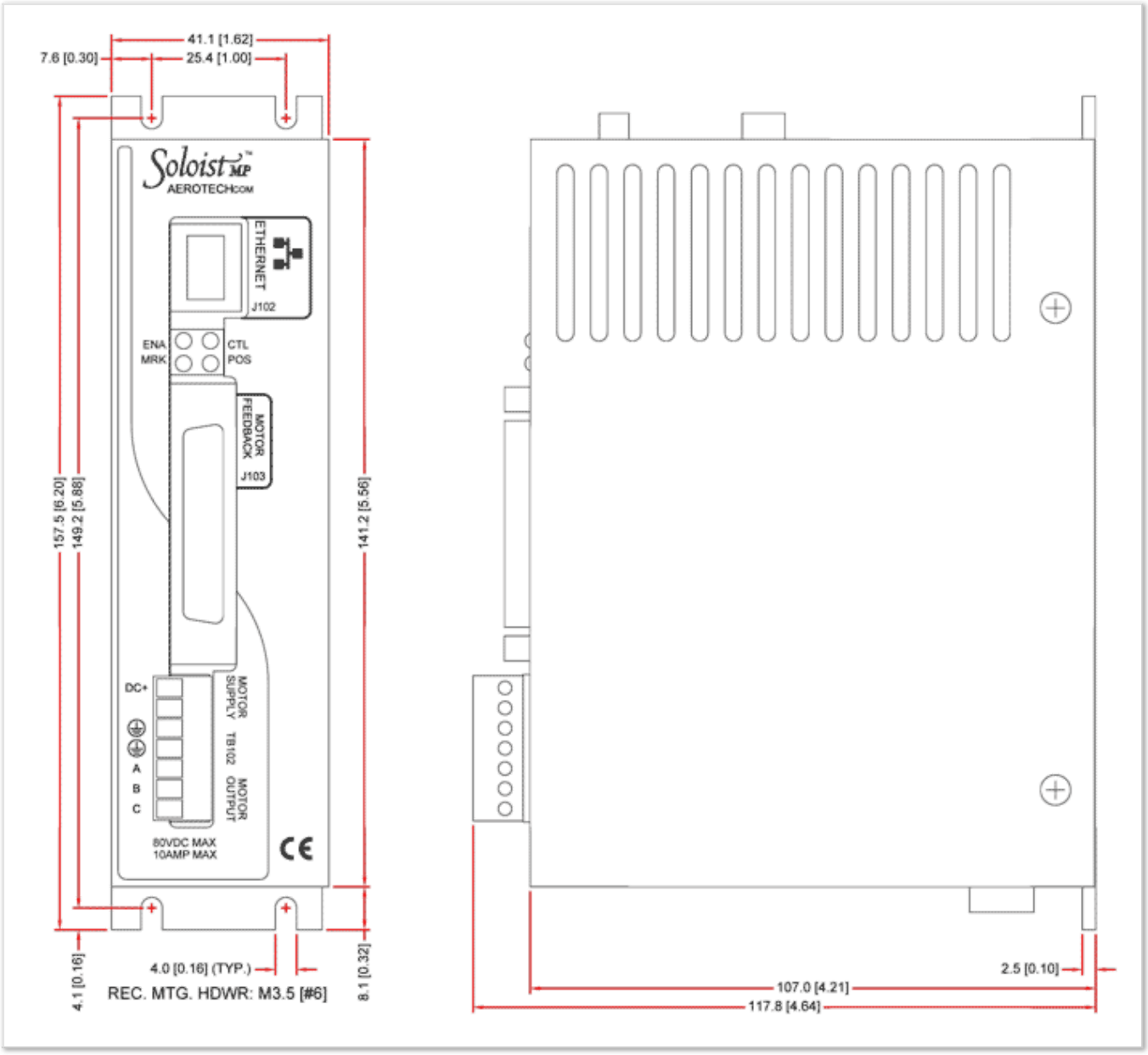
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Soloist MP	Units	
Encoder Multiplication		Up to x4096 (MXU)
Resolver Interface		N/A
Internal Shunt Resistor		N/A
External Shunt		N/A
Ethernet		Yes
USB		No
RS-232		Yes
FireWire		No
Fieldbus		Modbus TCP; Ethernet/IP
Current Loop Update Rate	kHz	20
Servo Loop Update Rate	kHz	1 to 20
Power Amplifier Bandwidth	kHz	Selectable Through Software
Minimum Load Inductance	mH	0.1 @ 80 VDC
Operating Temperature	°C	0 to 50
Storage Temperature	°C	-30 to 85
Weight	kg (lb)	0.45 (1.0)
Standards		CE approved, NRTL safety certification, 2011/65/EU RoHS 2 Directive

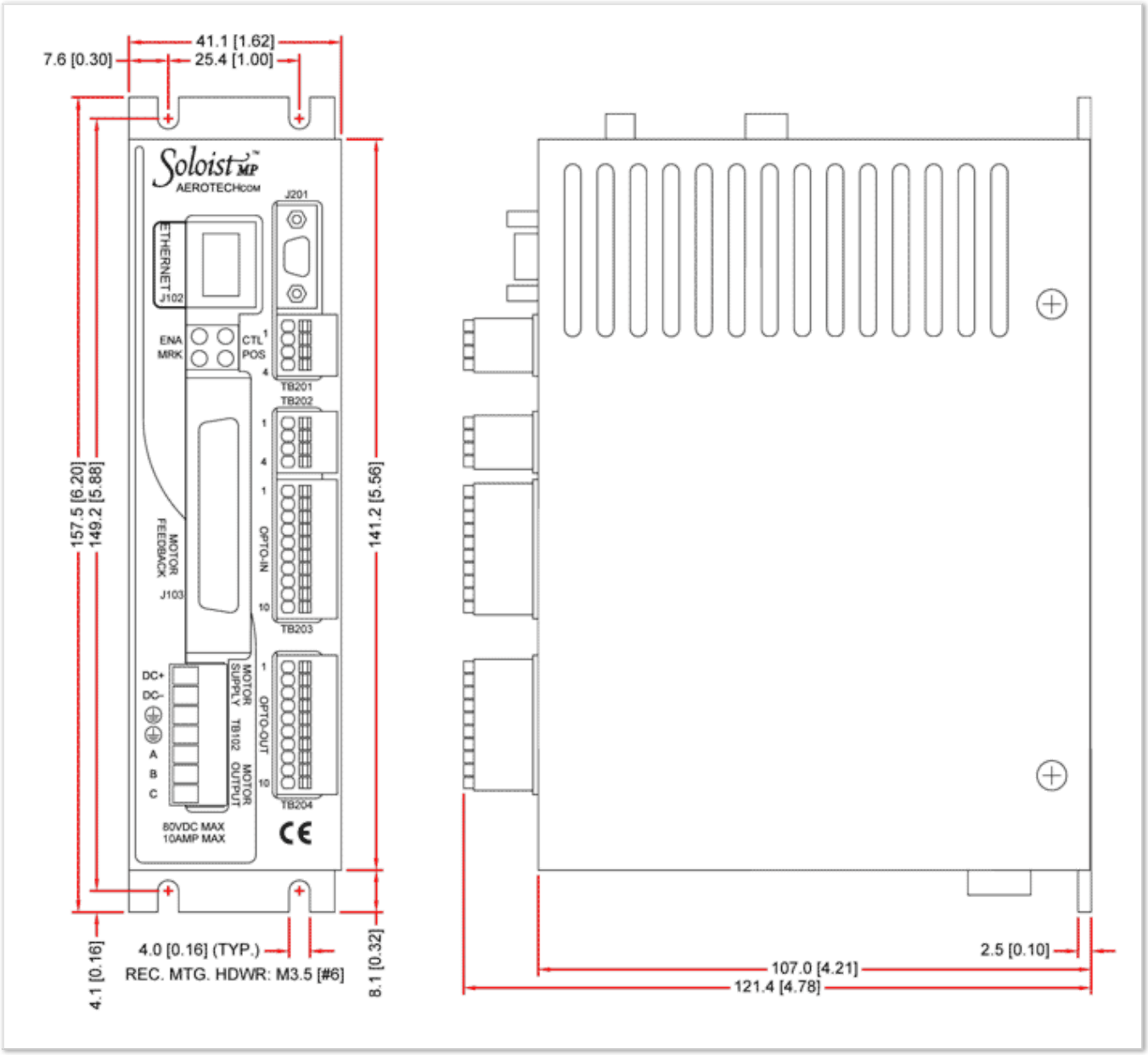
1. For stepper motors only, one-half of bus voltage is applied across the motor (e.g., 80 VDC supply results in 40 VDC across stepper motor).
2. "Keep Alive" supply.
3. Output voltage dependent upon input voltage.
4. Peak value of the sine wave; rms current for AC motors is 0.707 * Apk.
5. Requires I/O option.
6. Requires external relay to remove motor supply power.

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Soloist MP


41.1 [1.62]
7.6 [0.30]
25.4 [1.00]
Soloist MP
AEROTECH.COM
ETHERNET
J102
ENA
MRK
CTL
POS
MOTOR FEEDBACK
J103
157.5 [6.20]
149.2 [5.88]
141.2 [5.56]
DC+
A
B
C
MOTOR SUPPLY
TB102
MOTOR OUTPUT
80VDC MAX
10AMP MAX
4.1 [0.16]
4.0 [0.16] (TYP.)
REC. MTG. HDWR: M3.5 [#6]
8.1 [0.32]
2.5 [0.10]
107.0 [4.21]
117.8 [4.64]

Soloist MP with additional I/O



Please go here for ordering information.

Print

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