SERVO MOTOR DRIVE AUTOMATION1 XC6e

Automation1-XC6e panel-mount high-power servo motor drive with high-speed optical HyperWire® communication bus

Ultra-Smooth, Precise Motion for High-Power Application

The Automation1 XC6e single-axis PWM servo motor drive brings precision motion control to your high-power applications. It offers all the benefits of our XC4e drive but with more power to move the largest payloads. With the XC6e, you'll accelerate large, brushless servo motors faster and reach higher top speeds without sacrificing smooth motion. Plus, the Xc6e can be configured and programmed with Automation1's user-friendly Studio application and APIs.

Versatile and User Friendly

The Automation1 XC6e is compatible with brush, brushless, voice coil or stepper motors. It easily controls servo, galvo and piezo motors.

Automation1, the world's most user-friendly precision motion controller platform, includes software, a controller, drives and a fiber optic HyperWire bus. Designed to help users quickly solve the most challenging precision motion applications, Automation1 can, in many situations, help users reduce the set up time for complex projects from days to minutes.

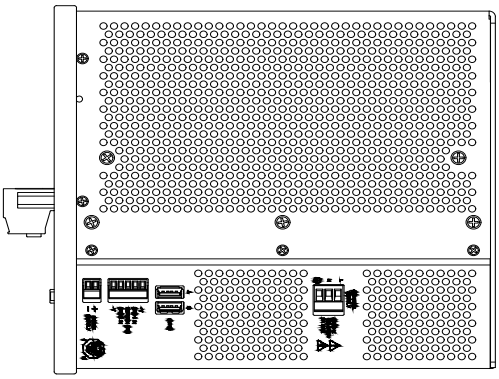
- *Connects through the HyperWire® fiber-optic bus (20x the bandwidth of 100BASE-T Ethernet buses)*
- *Provides up to 100 amps peak output*
- *Offers 240 VAC and 480 VAC voltage options*
- *Includes safe torque off (STO) safety circuit*
- *Features drive data array with more than 67 MB of memory*
- *Holds CE approval; follows the EU 2015/863 RoHS 3 directive. Pending NRTL safety certification*
- *Delivers many optional features, including:*
  - *Multi-axis Position Syncrhonized Output*
  - *I/O expansion board*
  - *65K encoder multiplier for amplified sine wave encoders up to 2 MHz*

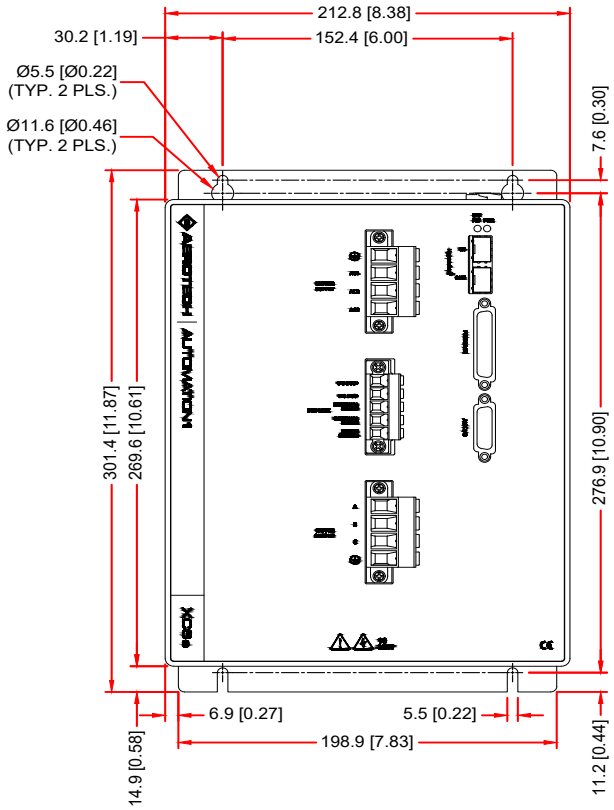
Category	Specification						
Motor Style	Brush, brushless, voice coil, stepper[1]						
Control Supply	100-240 VAC; 50/60 Hz						
Motor Supply	240 VAC (three-phase), 50/60 Hz		480 VAC (three-phase), 50/60 Hz				
Bus Voltage [2]	0-340 VDC		340-680 VDC				
PWM Frequency	20 kHz [3]						
Peak Output Current (1 sec)[4] [5]	50 A_{pk}	100 A_{pk}	10 A_{pk}	20 A_{pk}	30 A_{pk}	50 A_{pk}	100 A_{pk}
Continuous Output Current [4] [5]	25 A_{pk}	50 A_{pk}	5 A_{pk}	10 A_{pk}	15 A_{pk}	25 A_{pk}	30 A_{pk} @ 20 KHz 50 A_{pk} @ 10 KHz
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) Two-axis part-speed PSO only Three-axis part-speed PSO only						
25-Pin Motor Feedback Connector	High-speed differential inputs (encoder sin, cos and marker) CW and CCW limits Hall effect sensor inputs (A, B and C) Analog motor temperature input (accepts digital) Brake output						
26-Pin Auxiliary Feedback Connector	High-speed differential inputs (encoder sin, cos and marker)* 4x optically isolated digital inputs 4x optically isolated digital outputs 1x 16-bit differential ±10 V analog input 1x 16-bit single-ended ±10 V analog output 2x optically isolated high-speed inputs *This channel is bidirectional and can be used to echo out encoder signals.						
Multiplier Options	MX0 option: Primary encoder: 40 million counts per second square-wave input Auxiliary encoder: 40 million counts per second square-wave input MX2 option: Primary encoder: 2 MHz/450 kHz (bandwidth selectable) sine-wave input, encoder multiplier up to 65,536 Auxiliary encoder: 40 million counts per second square-wave input MX3 option: Primary encoder: 2 MHz/450 kHz (bandwidth selectable) sine-wave input, encoder multiplier up to 65,536 Auxiliary encoder: 450 kHz sine-wave input, encoder multiplier up to x16,384* *Encoders multiplied with this input cannot be echoed out.						

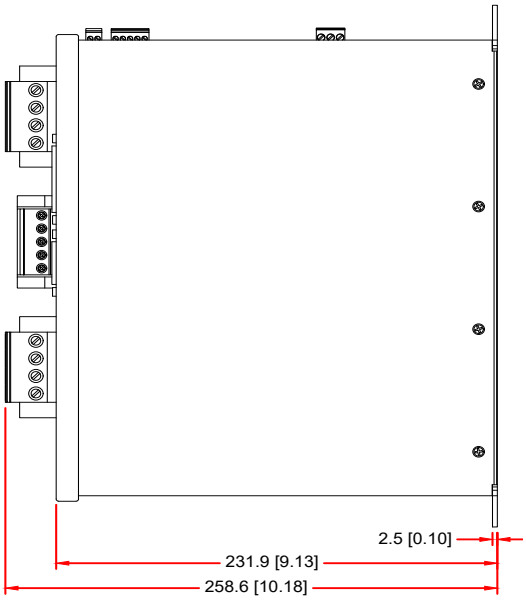
Category	Specification
I/O Expansion Board (-EB1)	1x additional PSO connection point • 1x PSO synchronization input 16x digital inputs, optically isolated 16x digital outputs, optically isolated 3x analog inputs, 16-bit, differential, ±10 V 3x analog outputs, 16-bit, single-ended, ±10 V
Drive Array Memory	67.1 MB (16,777,216 32-bit elements)
High Speed Data Capture	Yes (50 ns latency)
Safe Torque Off (STO)	Yes, SIL3/PLe/Cat 4
HyperWire Connections	2x HyperWire small form-factor pluggable (SFP) ports
Automatic Brake Control	Standard; 24 V at 1 A
Absolute Encoder	BiSS C Unidirectional; EnDat 2.1; EnDat 2.2
Current Loop Update Rate	20 kHz
Servo Loop Update Rate	20 kHz
Power Amplifier Bandwidth	Selectable through software (85-95% efficiency)
Minimum Load Inductance	0.1 mH
Operating Temperature	0 to 40 °C
Storage Temperature	-30 to 85 °C
Weight	6.30 kg (13.89 lb)
Compliance	CE approved EU 2015/863 RoHS 3 directive, Pending NRTL safety certification

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. Output voltage dependent upon input voltage.
3. The specifications on this table are for 20kHz operation unless noted. All versions of this drive can be changed to 10kHz if motor heating caused by the environment or the operation of the drive becomes an issue.
4. Peak value of the sine wave; rms current for AC motors is 0.707 * Apk.
5. Rated at 25°C ambient temperature.

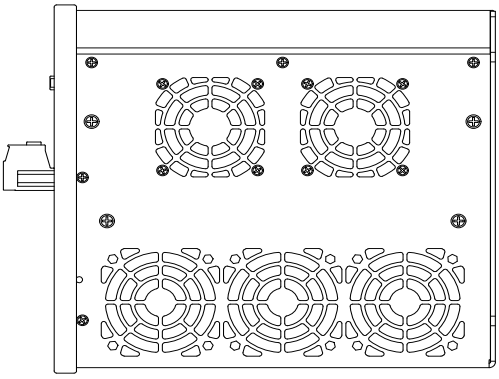
Automation1-XC6e with -EBO (No Expansion Board) option





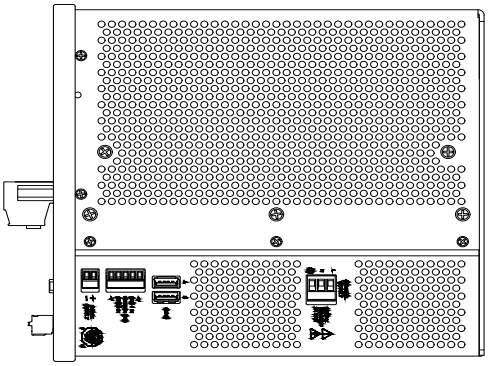


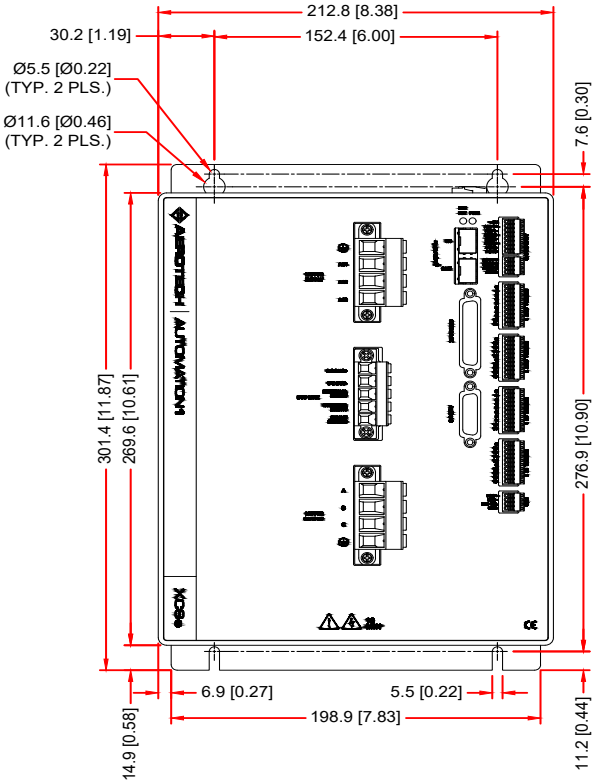
REC. MTG. HDWR: M5 [#10]



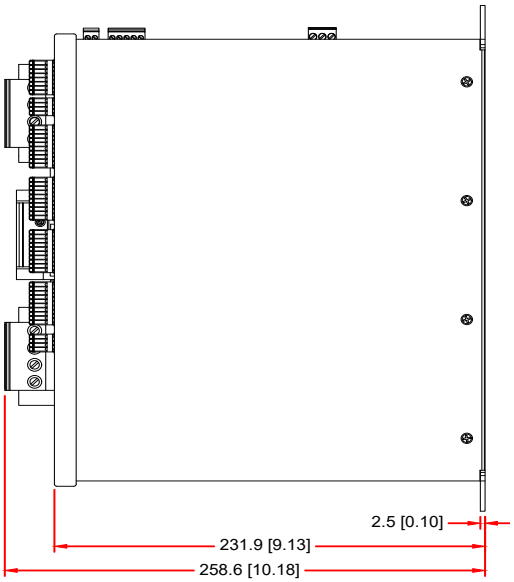
AUTOMATION1-XC6e

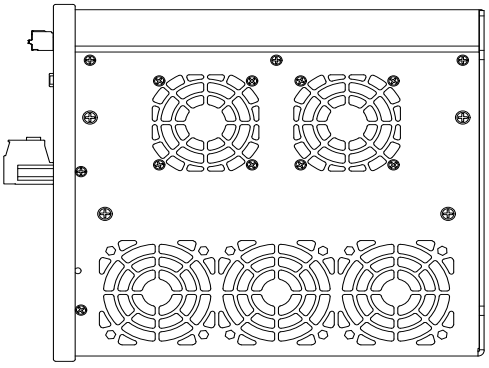
Automation1-XC6e with -EB1 (Expansion Board) option





REC. MTG. HDWR: M5 [#10]





Automation1-XC6e

Automation1-XC6e	Automation1-XC6e High-Powered PWM Digital Drive

Peak Current

-10*	10 A Peak, 5 A Cont. Current (480V input only)
-20*	20 A Peak, 10 A Cont. Current (480V input only)
-30*	30 A Peak, 15 A Cont. Current (480V input only)
-50	50 A Peak, 25 A Cont. Current
-100	100 A Peak, 50 A Cont. Current

*Only available with 480 rated motor supply voltage

Rated Motor Supply Voltage

-240	240 VAC input (600 W Power Supply)
-480	480 VAC input (600 W Power Supply)

Expansion Board

-EB0	No Expansion Board (Default)
-EB1	IO Expansion Board

Multiplier

-MX0	No Encoder Multiplier (Default)
-MX2	2 MHz / 450 kHz x65536 Multiplier (Primary), No Multiplier (Auxiliary)
-MX3	2 MHz / 450 kHz x65536 Multiplier (Primary), 160 kHz x16384 Multiplier (Auxiliary)

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)
-PSO5	Two-Axis Part-Speed PSO
-PSO6	Three-Axis Part-Speed PSO