

# SINGLE-PHASE SERVO DRIVES **AUTOMATION1-XL4s**



*The XL4s is optimized to control voice coil axes.*

Aerotech's XL4s network digital drive is a high-performance linear amplifier designed to drive single-phase motors and eliminate the non-linearities common with PWM amplifiers. The drive provides deterministic behavior, auto-identification, and easy software setup. The XL4s' multi-core, double-precision floating point DSP controls the digital PID. System configuration is performed using all software-settable parameters including control-loop gains and system safety functions.

The XL4s has an encoder interpolation feature, dedicated analog and digital I/O, and separate power connections for motor and control supply voltages.

The XL4s is optimized to control single-phase motors or voice-coil axes like Aerotech's TLG-4000 fast tool servo. With the XL4s, you can achieve industry-leading settling times, long-term thermal stability, and sub-micron-level tracking accuracy with advanced features such as full state feed-forward, 192 kHz servo rates, and look-ahead-based velocity control.

Unlike other fast tool servo controllers, the XL4s packaging allows it to be panel-mounted in a machine enclosure, resulting in a smaller machine footprint and requiring less overall floor space.

The XL4s exceeds other single-phase motor controllers due to an industry-leading servo rate of 192 kHz. This directly correlates to better tracking errors and part quality at high-speeds in applications such as fast-tool servos, high-dynamic optical focusing axes, and high-speed pick-and-place machines.

## — PRODUCT HIGHLIGHTS —

Closed-loop servo control of voice-coil and single-phase motors

Single-phase motor drive (should be the 2nd bullet)

HyperWire® fiber optic interface

192 kHz servo loop update rate

Designed for high-performance applications

Customizable current loop configurations available to meet your application requirement

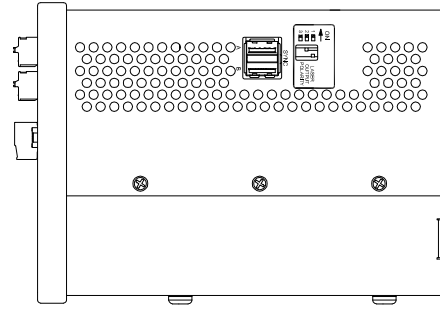
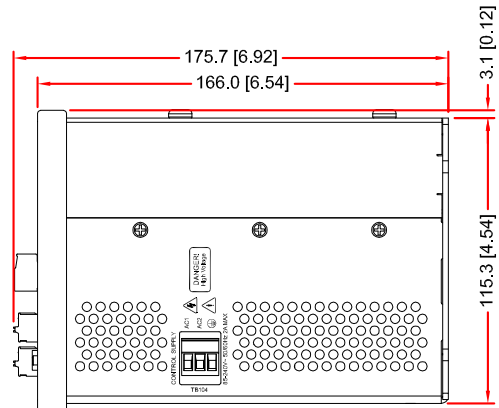
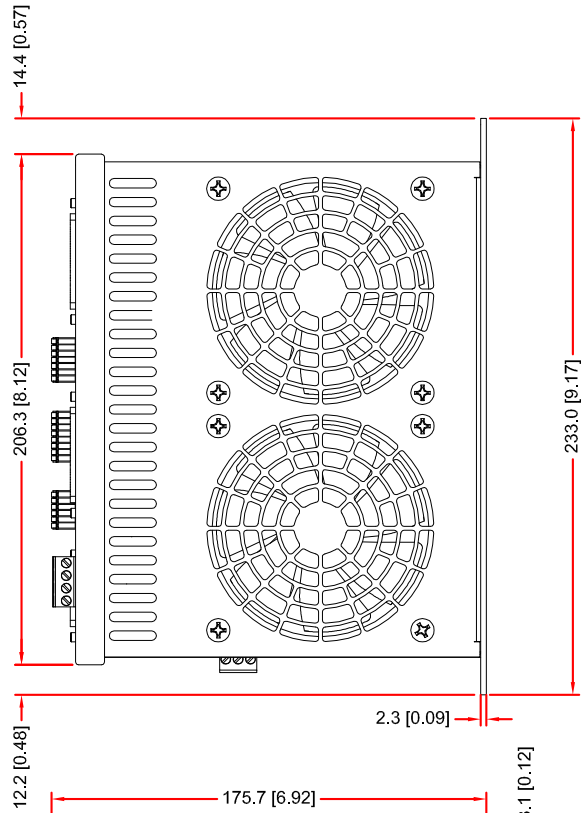
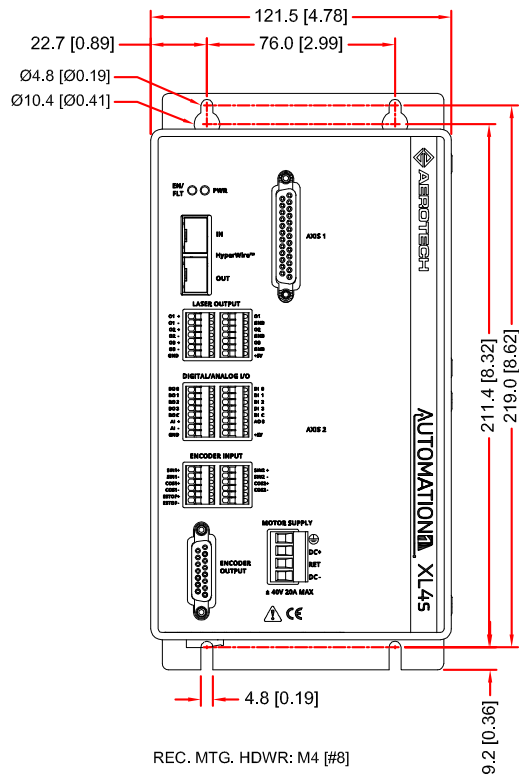
Part-Speed Position Synchronized Output (PSO) included

Follows the 2011/65/EU RoHS 2 Directive

Automation1-XL4s **Specifications**

Specifications	
Motor Style	±40 VDC max
Control Supply	85-240 VAC; 50-60 Hz
Digital Inputs	Four optically isolated
Digital Outputs	Four optically isolated
Analog Inputs	One 16-bit differential; ±10 V
Analog Outputs	Two 16-bit single-ended; ±10 V
Emergency Stop Sense Input (ESTOP)	Standard; 24 V opto-isolated
Position Synchronized Output (PSO)	Standard: Two-axis PSO, Three-axis Part-Speed PSO
Interpolated Feedback Output	Yes
Communication Bus	HyperWire fiber-optic interface
Operating Temperature	0 to 50°C
Storage Temperature	-30 to 85°C
Weight	2.9 kg
Standards	CE approved; NRTL safety certification; 2011/65/EU RoHS 2 directive

# Automation1-XL4s Dimensions



## Automation1-XL4s **Ordering Information**

### XL4s Series (Required)

---

XL4s                      Single-phase linear amplifier

### Current (Required)

---

-20                      20 A peak; 5 A continuous