

# AEROTECH AUTOMATION1



## Laser Scan Head Controller **Automation1 GI4**

### Simple, Powerful Laser Scan Head Control

Now with XY3-100 support! Control two- or three-axis laser scan heads with the Automation GI4 laser scan head controller. The GI4 commands industrial scan heads using the XY2-100 protocol or the higher resolution XY3-100 protocol, and it connects inline with an Automation1 controller and drives over HyperWire—enabling powerful performance and simple synchronization with other axes of motion.

The GI4 adds power to your system by unlocking features like our infinite field of view (IFOV), marking on the fly (MOTF) and position synchronized output (PSO) technology alongside the Automation1 platform's standard laser control functionality.

### Automation1

The GI4 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:

- ◆ **LASER SCAN HEAD CONTROL** for two- & three-axis XY2-100 and XY3-100 scanners
- ◆ Increases system performance with **INFINITE FIELD OF VIEW (IFOV)**, enabling optimized machine throughput & eliminating stitching errors while maintaining effective pixel resolution
- ◆ **MINIMIZES SPOT DISTORTION** by using the central region of your focusing objective (enabled by IFOV)
- ◆ Offers **MARKING ON THE FLY** for line-follower and other dynamic applications
- ◆ Manages laser spot placement with precision using **PART-SPEED PSO (POSITION SYNCHRONIZED OUTPUT)**
- ◆ Features **LASER CONTROL INTERFACE** with YAG, CO2 & general purpose operating modes

## AUTOMATION1 GI4 GENERAL SPECIFICATIONS

CATEGORY	SPECIFICATION
<b>HyperWire Communication</b>	2x HyperWire small form-factor pluggable (SFP) ports
<b>Control Output</b>	Supports two- or three-axis XY2-100 galvo laser scan heads
<b>Control Supply Voltage</b>	24 VDC
<b>User Power Supply Output</b>	5 VDC
<b>Modes of Operation</b>	2 axes, XY2-100 or XY3-100 3 axes, XY2-100 or XY3-100
<b>Protective Features</b>	Output short circuit Control power supply undervoltage
<b>Position Synchronized Output (PSO)</b>	Standard: None.  Optional: Two-axis Part-Speed PSO Three-axis Part-Speed PSO
<b>25-Pin Axis Connector</b>	Channel 1, 2 and 3 scan head interfaces Status, Sync, and Clock signals 5 VDC power supply
<b>25-Pin Aux Encoder Inputs</b>	2x 40 million counts per second square-wave inputs
<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 input 1x 5 VDC power supply
<b>Analog I/O and Laser Interface Connector</b>	Laser Outputs 1,2, and 3 (work with controller Galvo Functions) 1x PSO output. 1x PSO external sync input 2x 16-bit single-ended $\pm 10$ V analog output 4x 16-bit differential $\pm 10$ V analog inputs
<b>Sync Ports</b>	2x a bi-directional high-speed proprietary interface ports for transmitting encoder signals between drives, used for infinite field of view (IFOV) applications.
<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>Position Command Update Rate</b>	100 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

## AUTOMATION1 G14 ORDERING OPTIONS

### Packaging

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- P1 Standard Packaging
- P2 OEM Packaging

### PSO

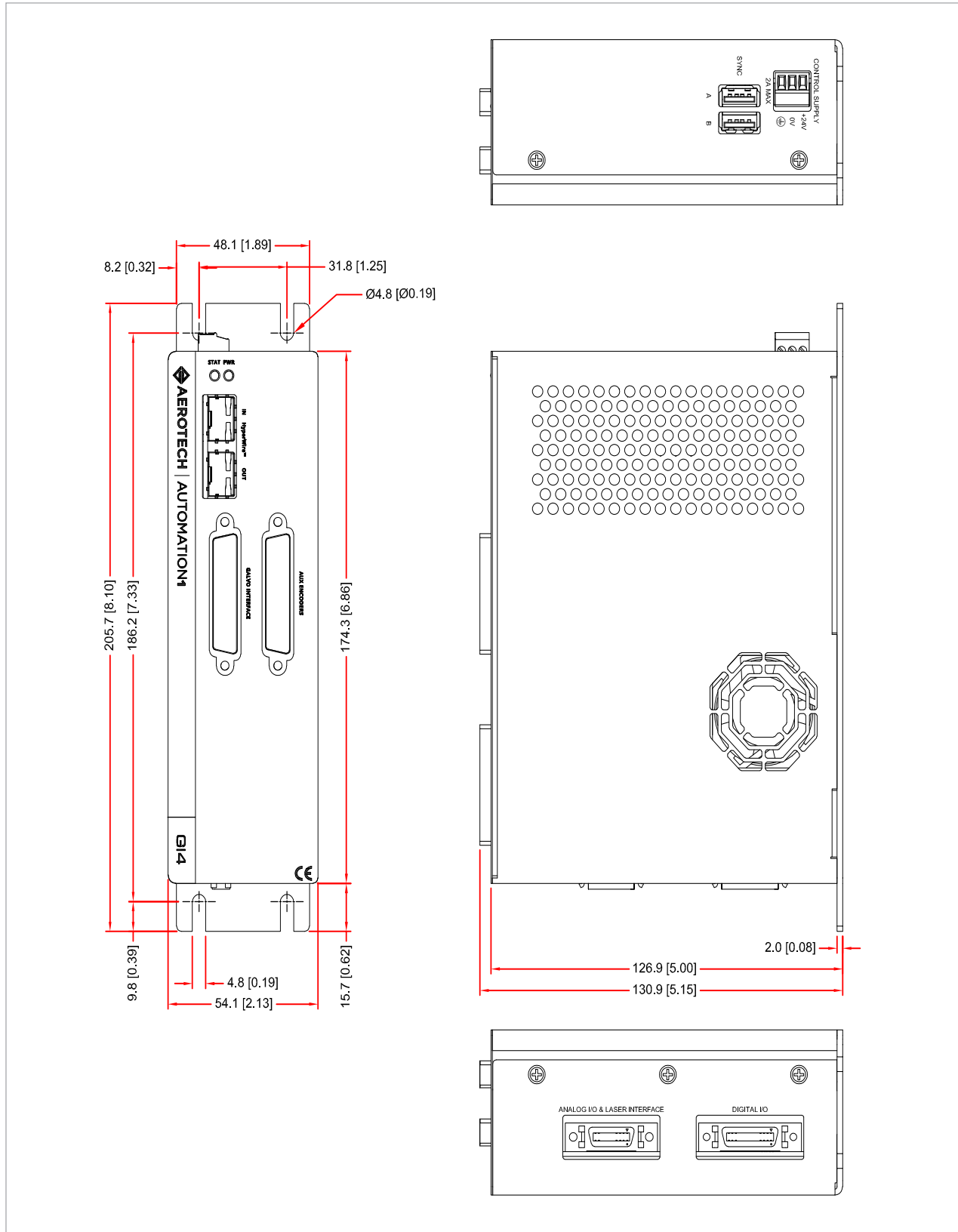
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- PSO0 No PSO firing (default)
- PSO5 Two-axis Part-Speed PSO
- PSO6 Three-axis Part-Speed PSO



# AUTOMATION1 GI4 DIMENSIONS

## AUTOMATION1-GI4-P1



# AUTOMATION1 GI4 DIMENSIONS

## AUTOMATION1-GI4-P2

