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## Motion Control Communication Bus **Automation1 HyperWire**

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### **Flexible, Reliable Performance at Light Speed**

The fiber-optic, light-based HyperWire® motion control bus is the fastest, highest-throughput communication bus in motion control. It enables 20 times the throughput that was possible with a 100BASE-T Ethernet.

With HyperWire, you can count on reliable communication that is immune to electromagnetic interference (EMI) and nearly free of jitter. Plus, the HyperWire protocol operates at 100 kHz—five times the speed of competing solutions—enabling efficient, multi-input, multi-output (MIMO) control algorithms you won't find anywhere else. Because HyperWire is flexible, servo motor and galvo scan head drives can be added to a HyperWire network simultaneously.

### **Automation1**

The HyperWire Motion Control Communication Bus 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:**

- ◆ Controls **UP TO 32 AXES** with no performance loss
- ◆ **20X THE THROUGHPUT** of 100BASE-T Ethernet
- ◆ **ZERO-JITTER** technology (patented)
- ◆ 100 kHz cycle time for **LOW-LATENCY, DRIVE-TO-DRIVE DISTRIBUTIVE CONTROL**
- ◆ Uses standard glass optical fiber cables with **SMALL FORM-FACTOR PLUGGABLE (SFP) CONNECTORS**
- ◆ Immune to EMI noise

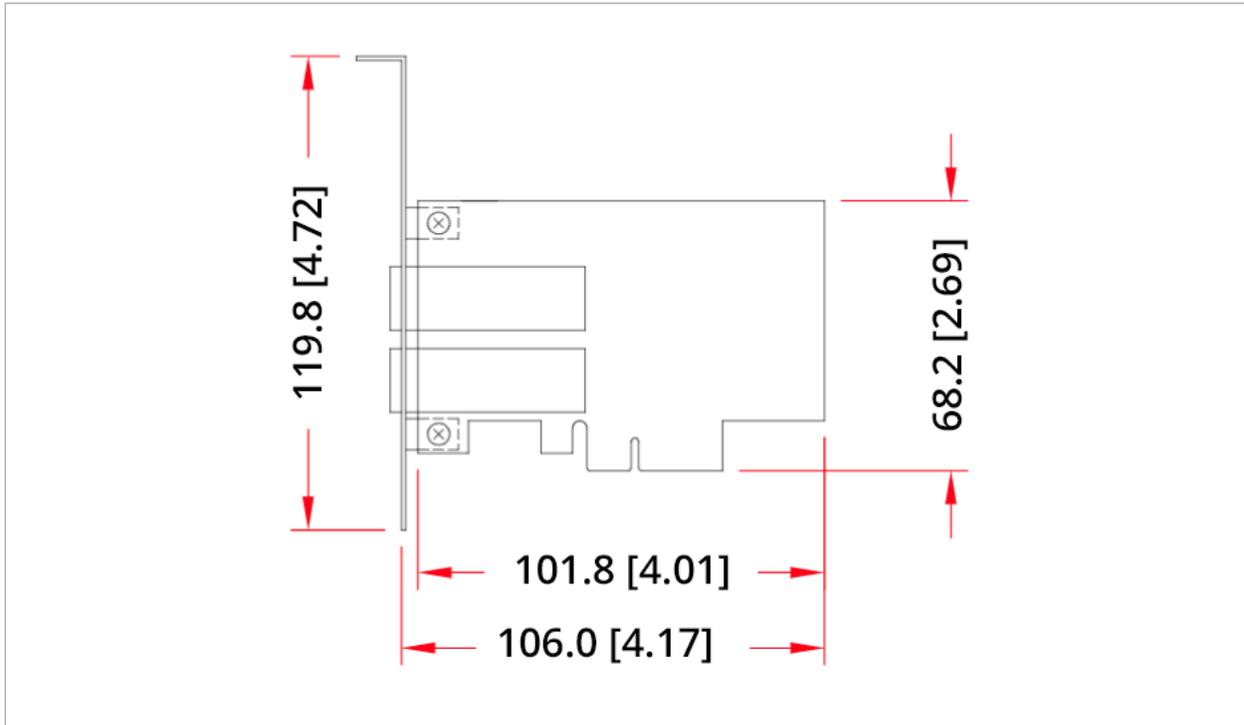
## AUTOMATION1 HYPERWIRE SPECIFICATIONS

SPECIFICATION	DESCRIPTION
Communication Rate	2 Gbps
Jitter	< 1 nanosecond achievable (after 16 axes)
Network Rate (Up to 32 Axes)	100 kHz
Connected Axes of Motion	32
Trajectory Point Data Types	64-bit double-precision floating point values
Servo Motor Drive Trajectory Rate	20 kHz
Galvo Scan Head Drive Trajectory Rate	100 kHz
Physical Connectors	SFP (small form-factor pluggable)
Cable Type	Glass optical fiber
Drive-to-drive MIMO Communication	Within a single 20kHz servo-cycle

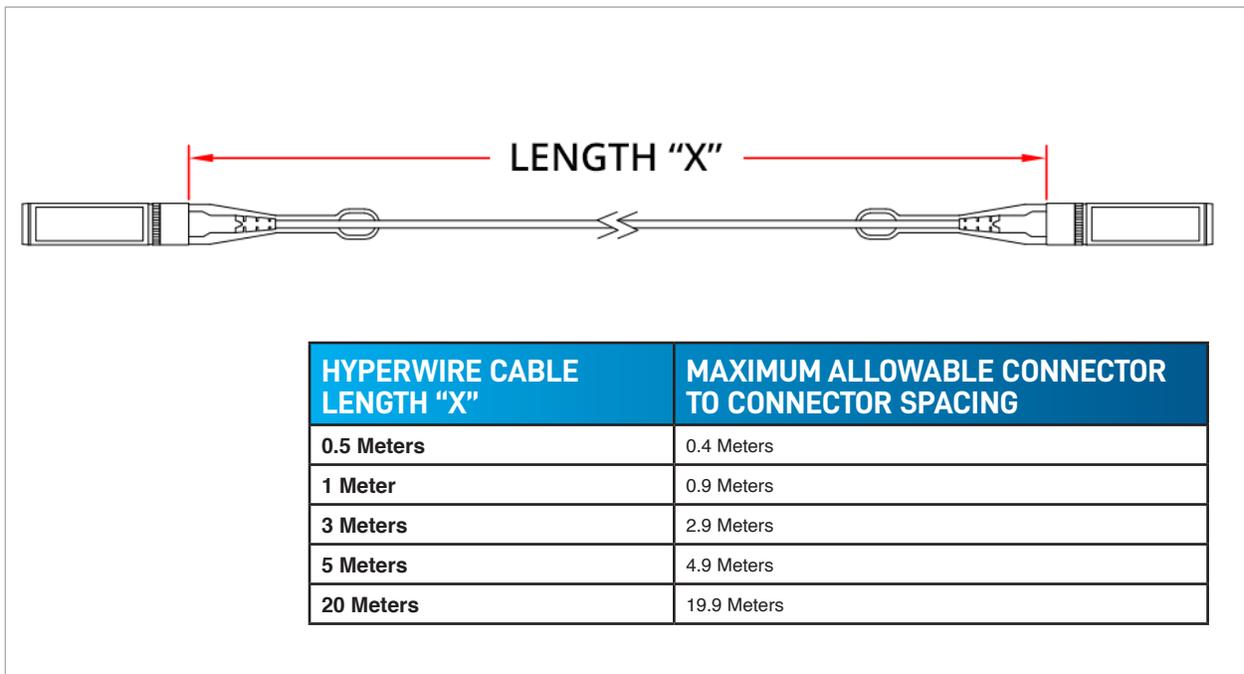


## AUTOMATION1 HYPERWIRE DIMENSIONS

### AUTOMATION1 HYPERWIRE PCIe CARD



### AUTOMATION1 HYPERWIRE CABLES



## AUTOMATION1 ComAcc: HYPERWIRE COMMUNICATION PCIe CARD

ORDERING OPTIONS	OPTIONS
Example Selections	HyperWire Selections
HyperWire PCIe	HyperWire PCIe HyperWire Interface Card, PCIe Bus

**Note:**

Example Configuration: HyperWire PCIe

## CABLE COMMUNICATION: AEROTECH COMMUNICATION CABLES

ORDERING OPTIONS	EXAMPLE SELECTIONS	HYPERWIRE SELECTIONS
Cable*	HyperWire AO10-5	HyperWire AO10-5 HyperWire Active Optical Cable, 0.5 meters HyperWire AO10-10 HyperWire Active Optical Cable, 1.0 meters HyperWire AO10-30 HyperWire Active Optical Cable, 3.0 meters HyperWire AO10-50 HyperWire Active Optical Cable, 5.0 meters HyperWire AO10-200 HyperWire Active Optical Cable, 20.0 meters

**Note:**

*\*Special lengths available*

