

# EMX-100

## Ethernet-based 4-axis Motion Controllers

### Features

- Libraries and utilities for Windows 7/10
- Expansion deployment up to 100 meters via Ethernet
- Support for standard C++, C#, VB.NET
- 2-axis position Compare and Trigger output
- Includes MotionCreator Pro 2 Windows-based application
- 16 axes of step and direction pulse output for controlling
- Digital input and output signals 3750Vrms isolated
- Supports up to 4 units (16-axis) per system
- Plug and play provides easy setup and maintainance



### Motion Control

- REL / ABS position control
- Velocity control
- Trapezoidal and S-curve velocity profile
- Various home modes via ORG, EL, and EZ signals
- 2-axis linear interpolation (1<sup>st</sup> and 2<sup>nd</sup> -axis)
- Jog mode
- Dedicated motion DO: Servo ON/OFF, Alarm reset, Deviation counter clear, Emergency stop
- Dedicated motion DI: Servo alarm, In position, Servo ready, Home, Positive limit signal, Negative limit signal

### Software Support

- **OS Information**  
Supports 32/64 bit Windows® 7/10
- **Software Compatibility**  
VB.NET / VC++ / C#
- **Software Recommendations**  
MotionCreator Pro 2
- **Provides over 40 dedicated API libraries for motion control**
- **Supports NI LabVIEW with NI import DLL**

### Ordering Information

- **EMX-100**  
Ethernet-based 4-axis motion controller

### Accessories

- **HSL-4XMO-DM Cable**  
For Mitsubishi MR-J2S-A servo amplifier, available for 1 M, 2 M, and 3 M
- **4XMO-DM-J3 Cable**  
For Mitsubishi MR-J3 servo amplifiers, available for 2 M
- **HSL-4XMO-DP Cable**  
For Panasonic MINAS A4/A5 servo amplifiers, available for 1 M, 1.5 M, and 2 M
- **HSL-4XMO-DY Cable**  
For Yaskawa Sigma V servo amplifier, available for 1 M, 2 M, and 3 M
- **4XMO-DA Cable**  
For Delta A2 servo, available for 3 M
- **4XMO-Open Cable**  
Controller to amplifier bus (26-pin SCSI to open wire), available for 1 M and 2 M

## Specifications

Network	
Physical level	Ethernet 10M / 100M
Communication level	Standard TCP/IP, Intranet communication only
Approximate level	Uses APS library provided by ADLINK
Support topology	Based on star topology through switch or hub
Position Control	
Number of Channels	4CH
Positioning Range	-2,147,483,648 to +2,147,483,647 pulses
Pulse Output Rate	4Mpps (Max.)
Drive Pulse Out Type	OUT/DIR, CW/CCW and AB phase
Support motor type	Supports whole servo or step motor drive by pulse wave I/O
Encoder Input Channels	
Number of Channels	4CH
Max. Encoder Input Frequency	4M (Under 4 x AB Phase) @ 1M cable
Motion Features	
Motion Profile	T Curve / S Curve
Point-to-Point	Any Axis
Linear Interpolation	1 set of 2 axes (max. one set)
JOG Operation	Arbitrary axis
Constant Speed Control	Arbitrary axis
Home Return Mode	Single instruction auto-completion, with origin ORG, limit EL and encoder EZ signal
Dedicated Motion I/O	
Digital Input	Servo ON / Alarm Reset / Deviation Counter Clear / Emergency Stop
Digital Output	Servo Alarm / In Position / Servo Ready / Home / Negative and Positive End Limit Signals
General Digital Input Signal	
DI Channel Number	32
DI Type	W/ optical isolation Sink & Source with DICOM
DI Voltage Input	24 VDC $\pm$ 10%
General Digital Output Signal	
DO Channel Number	14
DO Type	Dry contact with optical isolation and flywheel diode protection
Max. DO Current	40mA

Location Compare and Triggering	
Support Type	Single or continuous trigger, with the encoder of the first two axes
Channel	2 (Axis-1 & Axis-2)
Trigger Pulse Width	64us/256us/1000us
Continuous trigger mode	Equal pulse interval
Continuous trigger max. frequency	500Hz
Software	
Operating software	ADLINK MotionCreator Pro 2
Support library	APS library DLL form
OS	Windows 7/Windows 10 32/64-bit
API function response	Class function minimum parameter command 2ms, feedback function less than 1ms, state update is 2ms
General Information	
Dimensions	L 215mm x W 164mm x H 39mm
Weight	1030 ±10g
Module Power Supply Input (I24V, IGND)	24 VDC ±10%
Power Consumption	11.48W
General Purpose Isolated I/O	
Over voltage protection	≥ 28V
Over current protection	≥ 1.25A
IP Protection	IP00
Operating Temperature	0°C to 70°C
Storage Temperature	-20°C to 70°C
Humidity	80% RH or less
Cooling Method	Natural air cooling