

# 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 ±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 (124V, 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 |