

Product Datasheet - Technical Specifications



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MXA-21



The MXA-21 is the first model of the MXA family of 19" rack-mount 2U enclosed motion controllers. The MXA-21 is an 8-axis motion controller based on OMS's motion technology where the design of the MXA-21 was defined in part with input from Argonne National Labs, including the type of connectors and the connector pinouts. Each axis supports encoder feedback (incremental & absolute). Much of the functionality of the legacy MAXv and MAXnet family of controllers is supported. The power input is 120VAC for convenience with all logic power internal to the enclosure.

OVERVIEW

- 8-axis motion controller for Step & Direction motor control (stepper motors)
- 2U 19" rack mount enclosure, communications and status on front panel, motion control signals and power on back panel
- Each axis control signals are on a RJ45 connector, for simple cabling
- Step & Direction signals are differential for better noise immunity
- Limit + & - for each axis as well as Home inputs
- Individual 9-pin D-sub connector for the encoder for each axis (incremental, SSI or BiSS). Pinout compatible to popular industry encoders
- Built-in logic power supply (120VAC) with power On/Off switch on back
- Start/Stop button on front panel with LED status
- 1G Ethernet TCP/IP or USB interfaces on the front panel for communications
- Command functionality compatible to the legacy MAX family controllers
- Status LEDs on front panel indicate status and health of the controller
- All new motion control design for advanced capability and longevity of design



MXA-21

SPECIFICATIONS

Velocity

0 to 4,194,176 pulses per second

Acceleration

0 to 8,000,000 pulses per second

Position range

140,737,488,355,328 pulses (+/- 70,368,744,177,664)

Accuracy

Position accuracy and repeatability ± 0 counts for point-to-point moves

Environmental

Operating temperature range: 0 to 50 C° (32° to 122°F)

Storage temperature range: -20 to 85 C° (-4° to 185°F)

Humidity: 0 to 90% (non-condensing)

Power Input requirements

120VAC, 1.5Amp, 50/60Hz

(Third-party internal power supply includes safety & EMI/EMC registrations: TUV, CE & others)

Dimensions (overall)

19" x 10.43" x 3.47" (482mm x 265mm x 88mm)

Limit switch inputs

TTL input levels. (SN75C189A)

Active low or high selectable by command input for each axis. (active low is default)

Connector

8 DB9 connectors for Encoders, 8 RJ45 connectors for axis control for each axis located on the back panel

Home switch inputs

TTL input levels. (SN75C189A)

Input sense (low or high true) selectable by command input for each axis. Accurate to 1 encoder count.

Step pulse output

50% duty cycle. 5V CMOS level differential signal. (DS26C31TM)

Direction output

5V CMOS level differential signal. (DS26C31TM)

Encoder Feedback

Maximum 16 MCnts/s after 4x quadrature detection differential or single-ended signals.

60-bit Absolute (SSI or BiSS) encoder channels aliased to the position range.

Ethernet

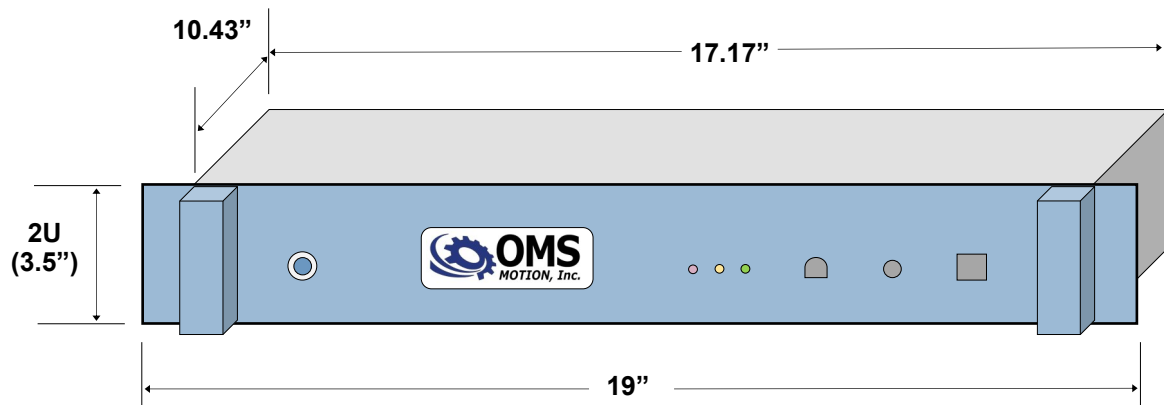
10/100/1000Mb, TCP/IP, Standard RJ45 connector on front panel

USB 2.0

Type B connector on front panel



DIMENSIONS



CONTROL SIGNAL CONNECTORS

Axis Control (RJ-45)	
Pin	Function
1	Step +
2	Step -
3	Direction +
4	Positive Limit
5	Negative Limit
6	Direction -
7	Home
8	Ground

Incremental Encoder (DB9)	
Pin	Function
1	Index +
2	Phase A+
3	Phase B+
4	+5VDC
5	Home
6	Index -
7	Phase A-
8	Phase B-
9	Ground

Absolute Encoder (DB9)	
Pin	Function
1	Clock +
2	Data +
3	NC
4	+5VDC
5	Home
6	Clock -
7	Data -
8	NC
9	Ground

ORDERING INFORMATION	
MODEL #	DESCRIPTION
MXA-21	8-Axis Motion Controller, 2U x 19" enclosed
PWRCBL	AC Power Cord (included)

