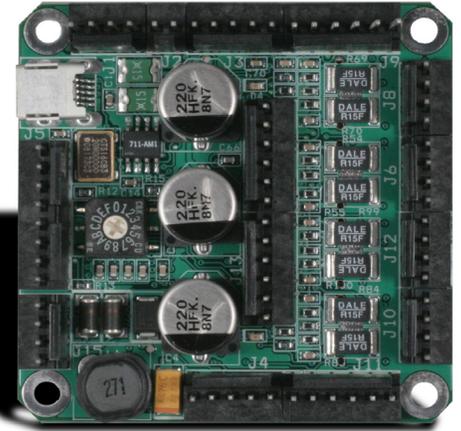


## General Specifications

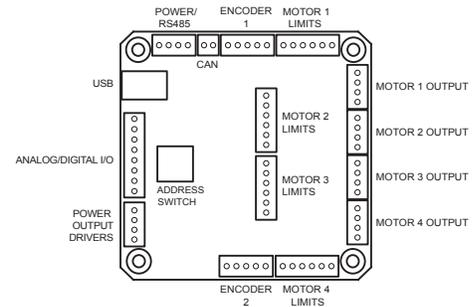
Supply Input.....	9–30V 4A Examples: Digikey part 102-1337-ND or 62-1047-ND (enclosed)
Dimensions.....	2.25" X 2.25" (57mm X 57mm) square, .6" (15mm) thick
Step Resolution/speed .....	1/16 microstep; 59000 microsteps/second
Operating Modes .....	PC controlled or standalone
PC Control.....	Up to 16 controllers can be daisy-chained together.
Communications Protocol.....	USB and RS485. Direct USB and RS485 connections built in. Provision built in for future addition of CAN protocol.
Control Protocol.....	Compatible with devices that use the Cavro DT or OEM protocol. Can use EZCommander™ Windows application or serial terminal program such as HyperTerminal to issue ASCII text-based commands.
Motor Compatibility.....	Typically compatible with any stepper motor that is 3" or smaller (size 23 or smaller). Outputs can regulate to any motor voltage via software commands.
Mating Connectors .....	AMP MTA 100 series. Recommended tools: Digikey A9982; or (better) A1998 + A2031. (See Application Note 131021 for non-standard connector options.)
Digital/Analog Interface .....	Accepts 10 opto-electronic or 12 mechanical switch inputs, or 4 mechanical switch inputs. Also 12 ADC inputs. ADC inputs accurate to 7 bits; can be modified to 10 bit (contact factory) Signal Levels: <0.8V Vlow; >2V Vhigh (TTL compatible). Threshold set at 1.23V; can be changed via programming Optical switch specifications: Transistor optical switch with IC> 1 mA @ IF=20mA. Examples: Digikey QVA11134 or H21A1; Honeywell HOA1887-012 or HOA1870-33 (prewired); OPTEK OPB830W11 (prewired).
5V Output Current .....	<200mA (power available for encoders and sensors)
Encoder Interface .....	Max. freq. 4 MHz, 5V signals (3.3V upon special request)
Operating Temperature.....	-20 to 85 °C PCB copper temperature
Relative Humidity.....	10% to 90% non condensing (operating and storage)

## Intelligent 4-axis Controller/Driver with Dual Encoder Feedback



Model EZ4AXIS actual size

For rapid implementation of multi-axis stepper motor solutions in products requiring automation. Controls four fully independent stepper motors.



### ANALOG/DIGITAL I/O CONNECTOR

Mating connector: AMP MTA 100 Series 8 pin, 26 GA, part 3-643815-8 Digikey part A31030-ND

Pin	Function	Notes
1	Switch input #2, A/D input #2	10k Ω pullup to 3.3V. Switch closure is to ground.
2	Switch input #1, A/D input #1	10k Ω pullup to 3.3V. Switch closure is to ground.
3	Opto sensor #2 LED	See Note 1.
4	Opto sensor #2 input, A/D input #4, switch	10k Ω pullup to 3.3V. Switch closure is to ground.
5	Opto sensor #2 ground	Common input ground
6	Opto Sensor #1 LED	See Note 1.
7	Opto Sensor #1 input, A/D Input #3, switch	10k Ω pullup to 3.3V. Switch closure is to ground.
8	Opto sensor #1 ground	Common input ground

### ENCODER CONNECTORS (2)

Mating connector: AMP MTA 100 Series 5 pin, 26 GA, part 3-643815-5 Digikey part A31027-ND

Pin	Function	Notes
1	Ground	Ground for encoder
2	Index	Input from encoder. High level must be >4.5V (external pullups may be required).
3	Chan A	Input from encoder. See comment for Pin 2.
4	+5V (V+)	Power to encoder
5	Chan B	Input from encoder. See comment for Pin 2.

### POWER OUTPUT DRIVERS CONNECTOR (FOR SOLENOIDS, ETC.)

Mating connector: AMP MTA 100 Series 4 pin, 22GA, part 3-643813-4 Digikey part A31108-ND

Pin	Function	Notes
1	ON/OFF Driver #1 (V-)	Open collector
2	ON/OFF Driver #1 (V+)	2A peak; 1A continuous
3	ON/OFF Driver #2 (V-)	Open collector
4	ON/OFF Driver #2 (V+)	2A peak; 1A continuous

**Note 1:** Each LED sensor input includes a series 200 Ω resistor to 5V. Resistor can be removed for sensors needing direct access to 5V. Max current draw is <200mA.

### POWER AND RS485 COMMUNICATION

Mating connector: AMP MTA 100 Series 4 pin, 22 GA, part 3-643813-4 Digikey part A31108-ND

Pin	Function
1	V+ (external supply) +9–30V
2	GROUND
3	RS485 B
4	RS485 A

### MOTOR OUTPUT CONNECTORS (4)

Mating connector: AMP MTA 100 Series 4 pin, 22 GA, part 3-643813-4 Digikey part A31108-ND

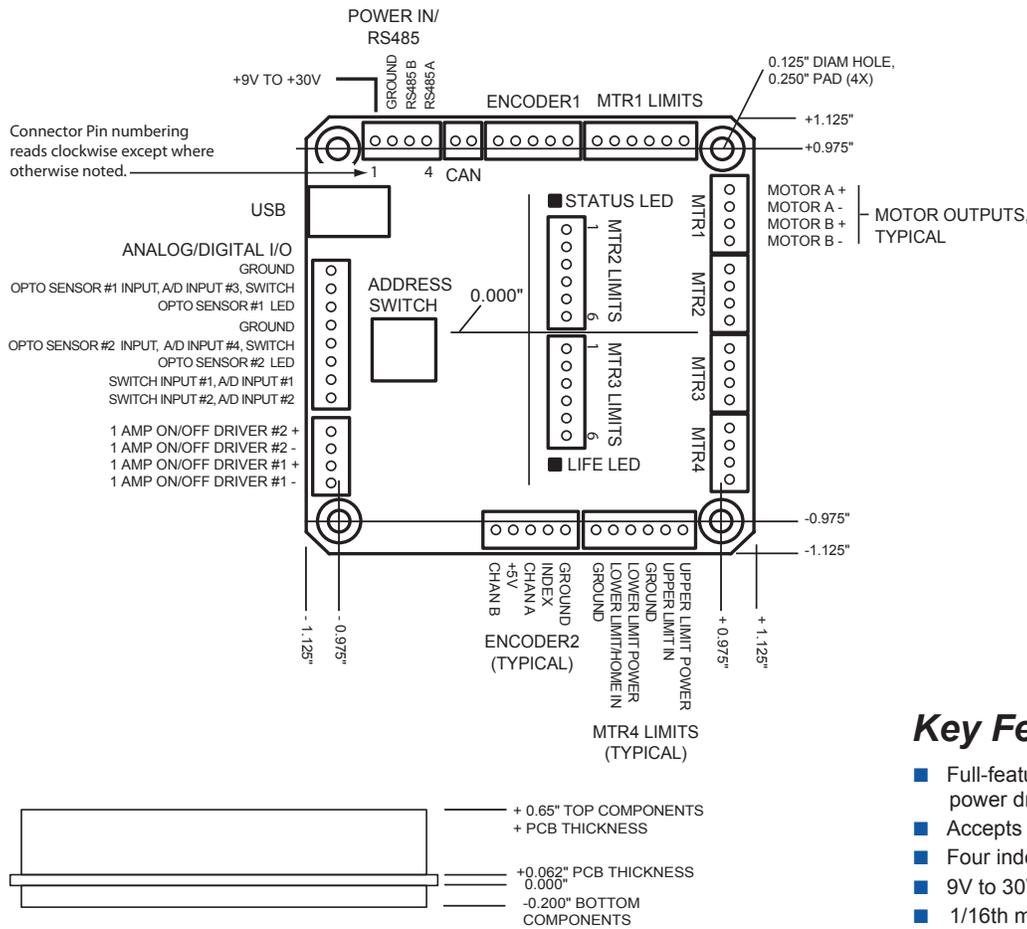
Pin	Function
1	Motor A+
2	Motor A-
3	Motor B+
4	Motor B-

### MOTOR LIMIT/HOME CONNECTORS (4)

Mating connector: AMP MTA 100 Series 6 pin, 26 GA, part 3-643815-6 Digikey part A31028-ND

Pin	Function	Notes
1	Upper Limit Power	Typically optical sensor LED. See Note 1.
2	Upper Limit In	Optical sensor/switch to ground
3	GROUND	Ground
4	Lower Limit Power	Typically optical sensor LED. See Note 1.
5	Lower Limit/Home In	Optical sensor/switch to ground
6	GROUND	Ground

## Mechanical Specifications



## Key Features

- Full-featured 4-axis position controller with power drivers
- Accepts dual encoders
- Four independent 1A chopper (PWM) drives
- 9V to 30V 4A operation
- 1/16th microstep resolution
- Up to 59000 microsteps/second
- Pre-wired for opto-switch and Limit inputs
- 12 ADC inputs. Halt/branch on ADC value
- RS232, RS485, or USB-based communications
- Direct USB and RS485 connection built in
- Industry standard communications protocol
- Single 4-wire bus links up to 16 AllMotion products.
- Standalone operation with no connection to a PC
- 12 digital in and two 1A power on/off drivers
- Switch-selectable device address
- Software-selectable max. currents
- On-board EEPROM for user program storage
- Hold current automatically selected upon move completion
- Homes to opto or switch closure with one command
- Independent parameters for all axes (acceleration, velocity, currents, etc.)
- Fully programmable acceleration ramps and speeds

See EZ4AXIS wiring diagram (on website) and/or user guide for application details.

## Ordering Information

Name	Order Number
EZ4AXIS Stepper Controller/Driver.....	EZ4AXIS
RS232 to RS485 Converter (option).....	RS485
Heatsink (option) .....	EZ4AXIS SINK
RoHs-compliant available on special order	