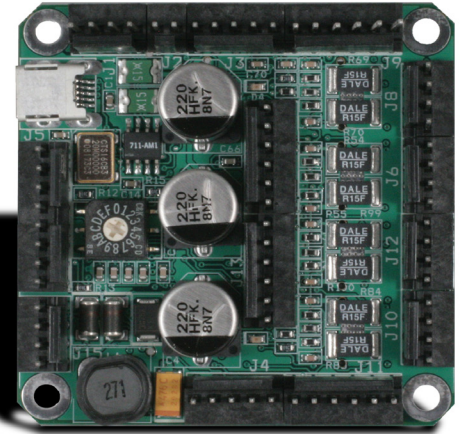


General Specifications

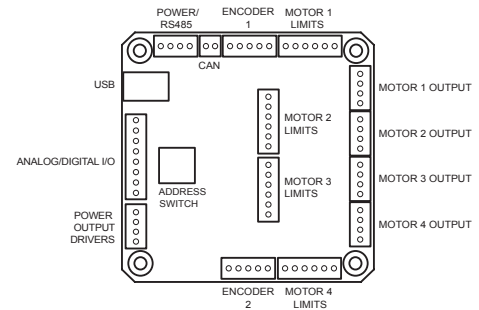
- Supply Input..... 9–32V 4A *Examples:* Digikey part 102-1337-ND or 62-1047-ND (enclosed)
- Dimensions..... 2.25" X 2.25" (57mm X 57mm) square, .6" (15mm) thick
- Step Resolution/speed 1/16 microstep; 59000 microsteps/second
- Operating Modes PC controlled or standalone
- PC Control..... Up to 16 controllers 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 EZ4AXIS23WV 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) +9–32V
2	GROUND
3	RS485 B
4	RS485 A

MOTOR OUTPUT CONNECTORS (4)

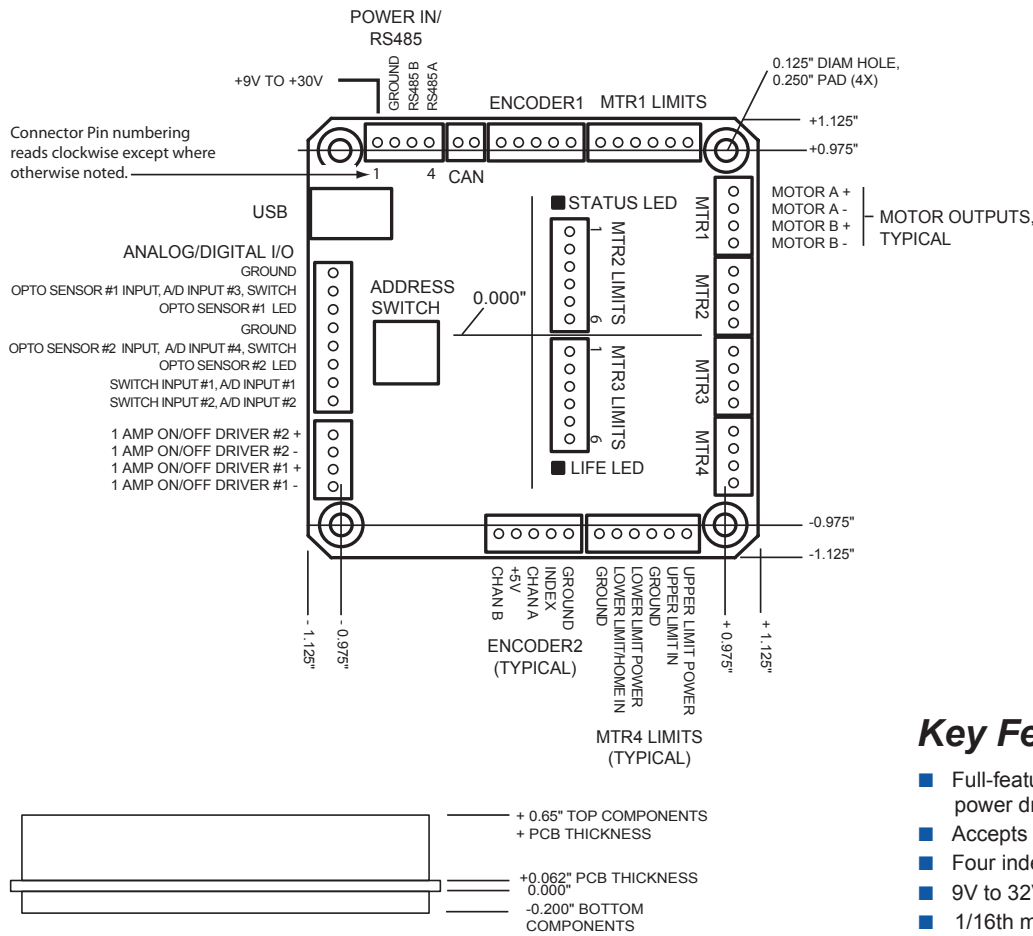
Mating connector: AMP MTA 100 Series 4 pin, 22 GA, part 3-643813-4 Digikey part A31108-ND

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

Intelligent 4-axis Controller/Driver with Dual Encoder Feedback
Mechanical Specifications

Key Features

- Full-featured 4-axis position controller with power drivers
- Accepts dual encoders
- Four independent 2A chopper (PWM) drives
- 9V to 32V 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 EZ4AXIS23WV wiring diagram (on website) and/or user guide for application details.

Ordering Information

Name	Order Number
EZ4AXIS23WV Stepper Controller/Driver	EZ4AXIS23WV
RS232 to RS485 Converter (option).....	RS485
Heatsink (option)	EZ4AXIS SINK
RoHs-compliant	