**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


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 OPB303W11 (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)

### ANALOG/DIGITAL I/O CONNECTOR

<table>
<thead>
<tr>
<th>Pin</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Switch input #2, A/D input #2</td>
</tr>
<tr>
<td>2</td>
<td>Switch input #1, A/D input #1</td>
</tr>
<tr>
<td>3</td>
<td>Opto sensor #2 LED</td>
</tr>
<tr>
<td>4</td>
<td>Opto sensor #2 input, A/D input #4, switch</td>
</tr>
<tr>
<td>5</td>
<td>Opto sensor #2 ground</td>
</tr>
<tr>
<td>6</td>
<td>Opto sensor #1 LED</td>
</tr>
<tr>
<td>7</td>
<td>Opto Sensor #1 input, A/D Input #3, switch</td>
</tr>
<tr>
<td>8</td>
<td>Opto sensor #1 ground</td>
</tr>
</tbody>
</table>

### ENCODER CONNECTORS (2)

<table>
<thead>
<tr>
<th>Pin</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ground</td>
</tr>
<tr>
<td>2</td>
<td>Index</td>
</tr>
<tr>
<td>3</td>
<td>Chan A</td>
</tr>
<tr>
<td>4</td>
<td>+5V (+)</td>
</tr>
<tr>
<td>5</td>
<td>Chan B</td>
</tr>
</tbody>
</table>

### POWER AND RS485 COMMUNICATION

<table>
<thead>
<tr>
<th>Pin</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>V+ (external supply)</td>
</tr>
<tr>
<td>2</td>
<td>GROUND</td>
</tr>
<tr>
<td>3</td>
<td>RS485 B</td>
</tr>
<tr>
<td>4</td>
<td>RS485 A</td>
</tr>
</tbody>
</table>

### MOTOR OUTPUT CONNECTORS (4)

<table>
<thead>
<tr>
<th>Pin</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Motor A+</td>
</tr>
<tr>
<td>2</td>
<td>Motor A-</td>
</tr>
<tr>
<td>3</td>
<td>Motor B+</td>
</tr>
<tr>
<td>4</td>
<td>Motor B-</td>
</tr>
</tbody>
</table>

### MOTOR LIMIT/HOME CONNECTORS (4)

<table>
<thead>
<tr>
<th>Pin</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Upper Limit Power</td>
</tr>
<tr>
<td>2</td>
<td>Upper Limit Input</td>
</tr>
<tr>
<td>3</td>
<td>GROUND</td>
</tr>
<tr>
<td>4</td>
<td>Lower Limit Power</td>
</tr>
<tr>
<td>5</td>
<td>Lower Limit Input</td>
</tr>
<tr>
<td>6</td>
<td>GROUND</td>
</tr>
</tbody>
</table>

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.
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

Ordering Information

<table>
<thead>
<tr>
<th>Name</th>
<th>Order Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>EZ4AXIS Stepper Controller/Driver</td>
<td>EZ4AXIS</td>
</tr>
<tr>
<td>RS232 to RS485 Converter (option)</td>
<td>RS485</td>
</tr>
<tr>
<td>Heatsink (option)</td>
<td></td>
</tr>
</tbody>
</table>

RoHs-compliant available on special order

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