

## General Specifications

Supply Input...... 10-40V 5A Example: Digikey part 1776-1143-ND Maximum Speed......>10,000,000 usteps/second (256 micro steps)

Operating Modes ...... PC controlled or standalone

PC Control ...... Up to 16 controllers can be daisy-chained together.

Communications Protocol..... USB, RS232, RS485, and CAN BUS. Direct USB, RS485, and CAN BUS connections built in. USB connector type is USB

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.

smaller (size 23 or smaller). Outputs can regulate to any motor

voltage via software commands, E.g., 3V motor on 24V supply.

Mating Connectors ...... For power and motor, AMP MTA 100 series. Recommended

tools: Digikey A9982; or (better) A1998 + A2031. (See Application Note 131021 for non-standard connector options.) For signal connections, HIROSE DF11 series.

Digital/Analog Interface ....... Accepts 8 opto-electronic or 16 mechanical switch inputs, or 16 ADC inputs. ADC inputs accurate to 7 bits; can be

modified to 10 bit (contact AllMotion for details).

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 ............... 600mA total (power is available for encoders and sensors)

Encoder Interface ...... Max. freq. 4 MHz, 5V signals (3.3V upon request)

Operating Temperature...... -20 to 85°C PCB copper temperature

Relative Humidity...... 10% to 90% non condensing (operating and storage)

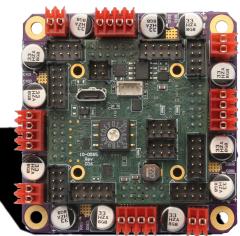
ANALOG/DIGITAL I/O CONNECTORS (4) Mating connector: HIROSE DF11 Series 10 pin DF11-10DS-2C				
Pin	Function	Notes		
1	Switch 2 in / Digital 2^0 / Analog CH2	$10k \Omega$ pullup to 3.3V. Switch closure is to ground.		
2	Switch 1 in / Digital 2^1 / Analog CH2	$10k\ \Omega$ pullup to 3.3V. Switch closure is to ground.		
3	Opto 1 LED Drive / Drive 1 (TTL)	See Note 1.		
4	Opto 1 in/ Home / Lower Limit / Digital in 2^2 / Analog CH3	10k $\Omega$ pullup to 3.3V. Switch closure is to ground.		
5	Opto 2 in/ Upper Limit / Digital in 2 <sup>3</sup> / Analog CH4	10k $\Omega$ pullup to 3.3V. Switch closure is to ground.		
6	Ground	Common input ground		
7	Ground	Common input ground		
8	Opto 1 LED Drive / Drive 1 (TTL)	See Note 1.		
9	Driver 3 (open drain) 0.5A	For solenoids, etc.		
10	Driver 4 (open drain) 0.5A	For solenoids, etc.		

ENCODER CONNECTORS (6) Mating connector: HIROSE DF11 Series 8 pin DF11-8DS-2C				
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 / SPI_MISO	Input from encoder. See comment for Pin 2.		
6	SPI_MOSI	Slave input from master (master output)		
7	SPI_CLK	Serial clock from master		
8	SPI_CS2	Chip select		

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

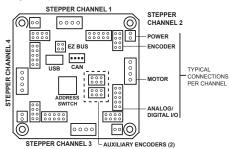


Intelligent 4-axis Stepper Controller/Driver with Quad Encoder feedback



EZQUAD HR STEPPER approx. actual size

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



Matin	MOTOR POWER CONNECTORS (4) Mating connector: AMP MTA 100 Series 4 pin, 22 GA, part 3-643813-2 Digikey part A31363-ND		
Pin	Function		
1	V+ (external supply) +10-40V		
2	GROUND		

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	Phase A+		
2	Phase A-		
3	Phase B+		
4	Phase B-		

RS485 CONNECTOR (EZ BUS) Mating connector: HIROSE series 4 pin 22-30 GA, part DF11-4DS-2C		
Pin	Function	
1	Ground	
2	V+ (external supply) +10 to 40V	
3	RS485A	
4	RS485B	

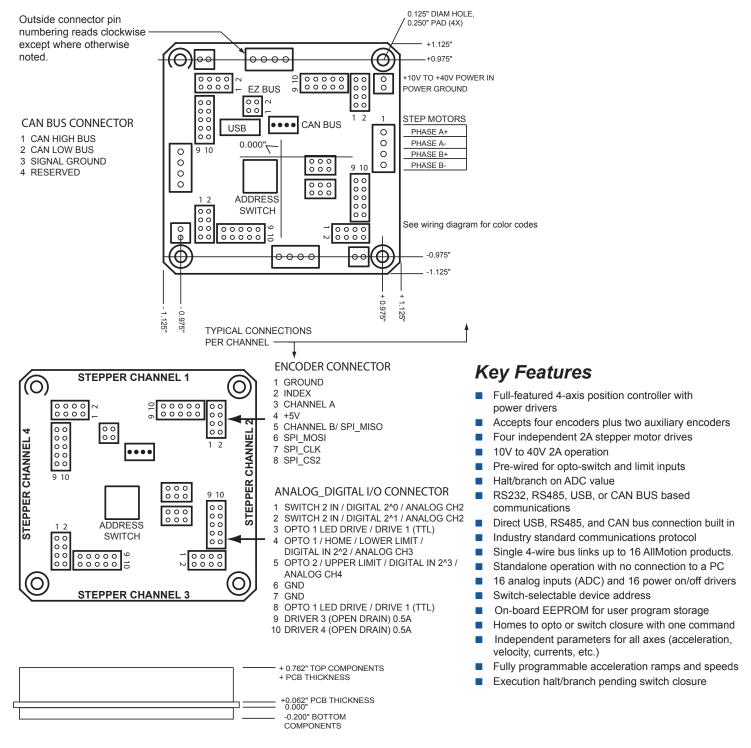
Note 2: The USB connector type is USB micro. Note 3: For CAN BUS connections, see other side.





Intelligent 4-axis Stepper Controller/Driver with Quad Encoder feedback

## **Mechanical Specifications**



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

## **Ordering Information**

Name Order Number

EZQUAD 4-Axis HR Stepper Controller/Driver EZQUADHRSTEPPER
RS232 to RS485 Converter (option).....RS485

RoHs-compliant