ALLMOTION

EZStepper® Model EZHR23ENHC

High-current intelligent Stepper Motor Controller/Driver with Encoder Feedback

General Specifications

Supply Input ..... 15V to 40V 7A; optional 12V model available.
Examples: Digikey part 285-1820 or 1470-1015

Dimensions ..... 2.25" X 2.25" (57mm X 57mm) square

Step Resolution ..... 1/2 to 1/256 step

Operating Modes ..... PC controlled or standalone

PC Control..... Can control up to 16 drives daisychained together.

Communications protocol..... RS485. Can convert to RS232/USB with appropriate converters.

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 commands.

Motor compatibility..... Accommodates most size 43 (5") and smaller stepper motors, including bipolar or unipolar-wound motors. Best performance is with motor rated at about ¼ of supply voltage.

Mating Connectors..... AMP MTA 100 series (except high-current motor connector). Recommended tool: Digikey part A9982, or better Digikey parts A2031 + A1998. (See Application Note 131021 for non-standard connector options.)

I/O Interface..... Accepts 2 opto-electronic and two mechanical switch inputs, or 4 mechanical switch inputs. Also ADC and encoder inputs.

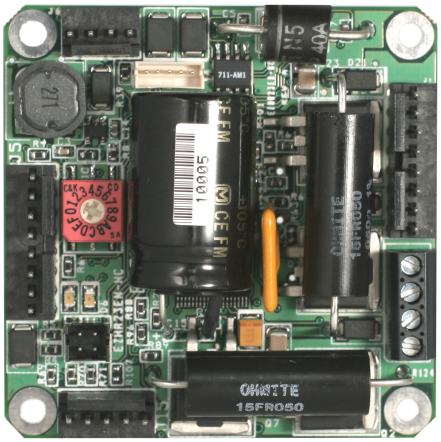
Signal Levels: <0.8V Vlow; >2V Vhigh (TTL compatible)

Optical switch specifications: Transistor optical switch with IC> 1 mA @ IF=20mA. *Examples*: OPTEK part OPB841W55 or Digikey part 365-1103-ND (prewired); Honeywell HO1A870-33 (prewired)

Encoder Interface.....Primary and secondary quadrature encoder, max. freq. 4 MHz

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

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



Model EZHR23ENHC actual size

I/O CONNECTOR
Mating Connector: AMP MTA 100 series 8 pin, 26 GA, part 3-643815-8 Digikey part A31030-ND

Pin	Name	Notes
1	A/D in #2, secondary encoder Chan B, or Direct input	Includes 10k Ω pullup to 3.3V.
2	A/D in #1, secondary encoder Chan A, or Step input	Includes 10k Ω pullup to 3.3V.
3	LED Drive #2	Includes series 200 Ω resistor to 5V.
4	A/D in #4, secondary encoder Index, or Upper Limit Input	Includes 10k Ω pullup to 3.3V.
5	Ground	Common input ground
6	LED Drive #1	Includes series 200 Ω resistor to 5V.
7	A/D in #3 or Home/Lower Limit input	Includes 10k Ω pullup to 3.3V.
8	Ground	Common input ground

ENCODER CONNECTOR
Mating Connector: AMP MTA 100 series 5 pin, 26 GA, part 3-643815-5 Digikey part A31027-ND

Pin	Name	Notes
1	Ground	Ground for encoder
2	Index	Input from encoder
3	Chan A	Input from encoder
4	+5V (V+)	Power to encoder
5	Chan B	Input from encoder

HIGH-CURRENT MOTOR CONNECTOR
Screw terminal alternative motor drive outputs. Use for motors requiring 4A or more current.

Pin	Function	Notes
1,2	Stepper winding A	7A bipolar chopper
3,4	Stepper winding B	7A bipolar chopper

MOTOR CONNECTOR
Mating Connector: AMP MTA 100 series 8 pin, 22 GA, part 3-643813-8 Digikey part A31111-ND

Pin	Function	Notes
1	ON/OFF driver #1 (V+)	2A peak; 1A continuous
2	ON/OFF driver #1 (V-)	Open collector
3,4	Stepper winding A	7A bipolar chopper
5,6	Stepper winding B	7A bipolar chopper
7	ON/OFF driver #2 (V+)	2A peak; 1A continuous
8	ON/OFF driver #2 (V-)	Open collector

POWER AND COMMUNICATION CONNECTOR
Mating connector: AMP MTA 100 series 4 pin, 22GA, part 3-643813-4 Digikey part A31108-ND

Pin	Function
1	V+ (external supply) +12V to 40V
2	GROUND
3	RS485 B
4	RS485 A

Key Features

- Single 4-wire bus linking up to 16 drives
- 7A chopper (PWM) stepper driver
- Operates from 15V to 40V, optional 12V
- RS232, RS485 or USB based control communications
- On-board EEPROM for user program storage
- Optional standalone operation with no connection to PC
- ADC inputs, branch halt on ADC value
- Execution halt/branch pending switch closure
- Prewired for optoswitch inputs
- 1/2 to 1/256 step bipolar control
- Up to 16 million microsteps/second
- Cavro DT or OEM protocol compatible
- Homes to an optical or mechanical switch closure with a single command
- Hold current auto selected upon move completion
- Step & Direction mode, 4 MHz step frequency
- Secondary encoder mode
- Fully programmable ramps and speeds
- Four digital I/O; and two 1A power On/Off drivers for driving relay, dc motors, solenoids, etc. included
- Switch-selectable device address
- Software-settable "Move" and "Hold" currents

For connector locations, see reverse side.

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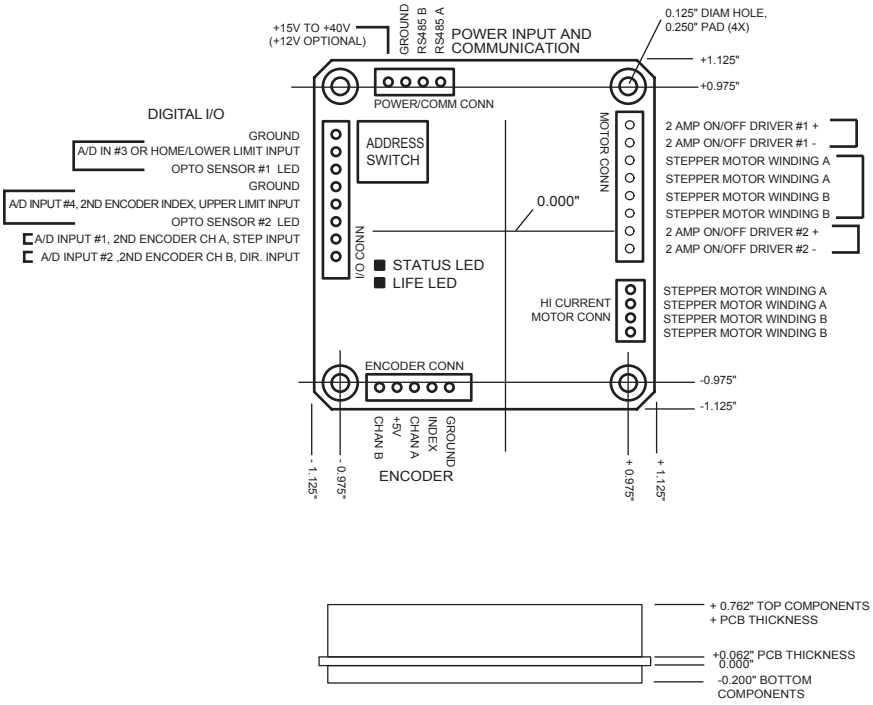
Mechanical Specifications



Ordering Information

Name	Order Number
EZHR23ENHC Stepper Drive	EZHR23ENHC
RS232 to 485 Converter (option)	RS485
USB to 485 Converter (option)	USB485