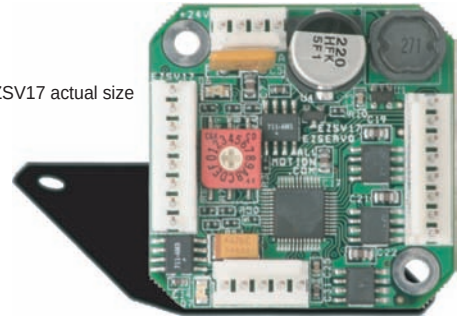
Model EZSV17

Fully intelligent Servo Motor Controller + Driver with Encoder Feedback

Model EZSV17 actual size



Electrical Specifications

Supply Input ..... 20V to 40V 2A
Examples: Digikey part 271-1112 or Digikey part Z1158
Dimensions ..... 1.6" x 1.6" (40mm x 40mm) square, 0.6" (15.24mm) thick
Operating Modes ..... PC controlled or standalone. Position, velocity, and torque.
PC Control..... Can control up to 16 stepper motors 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 EZStepper® Windows application or serial terminal program such as HyperTerminal to issue commands.
Motor compatibility..... Accommodates most 2" and smaller DC brush or brushless servo motors without tuning. Best performance is with motor rated at about 1/2 of supply voltage. Outputs short protected.
Mating Connectors..... AMP MTA 100 series. Recommended tool: Digikey part A9982
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 HOA1870-33 (prewired)
Encoder interface..... Primary and secondary quadrature encoders, max. freq. 4 MHz
Operating Temperature ..... 0 to 45° C standard, -20 to 50° C upon special request
Relative Humidity..... 10% to 90% non condensing (operating and storage)

I/O CONNECTOR

Mating Connector: AMP MTA 100 series 8 pin, 26 GA, part 63814-8 Digikey part A23799

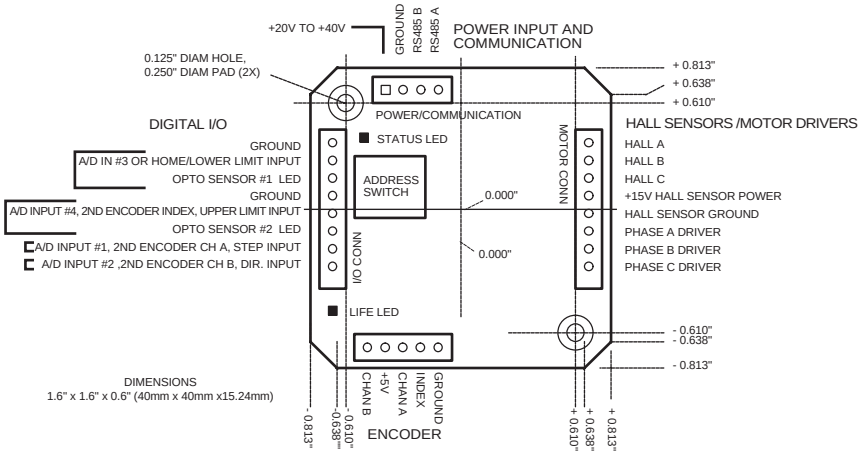
Pin	Name	Notes
8	Ground	Common input ground
7	A/D in #3 or Home/Lower Limit input	Includes 10k Ω pullup to 3.3V.
6	LED Drive #1	Includes series 200 Ω resistor to 5V.
5	Ground	Common input ground
4	A/D in #4, secondary encoder Index, or Upper Limit input	Includes 10k Ω pullup to 3.3V.
3	LED Drive #2	Includes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

ENCODER CONNECTOR

Mating Connector: AMP MTA 100 series 5 pin, 26 GA, part 643815-5 Digikey part A23796

Pin	Name	Notes	Pin	Name	Notes
1	Ground	Ground for primary encoder	4	+5V (V+)	Power to encoder; also use for Hall sensors requiring +5V
2	Index	Input from primary encoder	5	Chan B	Input from primary encoder
3	Chan A	Input from primary encoder			

Mechanical Specifications



HALL SENSOR & MOTOR CONNECTOR

Mating Connector: AMP MTA 100 series 8 pin, 22 GA, part 643813-8 Digikey part A23841

Pin	Name	Notes
1	Hall sensor A	AllMotion will provide assistance determining correct hookup
2	Hall sensor B	
3	Hall sensor C	
4	+15V Hall sensor power	If +5V needed, use encoder power.
5	Ground	Ground for Hall sensors
6	Phase A driver (BLDC) Motor+ (brush DC)	2A peak PWM
7	Phase B driver (BLDC) Not used (brush DC)	2A peak PWM
8	Phase C driver (BLDC) Motor– (brush DC)	2A peak PWM

POWER AND COMMUNICATION CONNECTOR

Mating connector: AMP MTA 100 series 4 pin, 22GA, part 643813-4 Digikey part A23838

Pin	Function
1	V+ (external supply) +20V to 40V
2	GROUND
3	RS485 B
4	RS485 A

Key Features

- Single 4-wire bus linking up to 16 servo motors
- 2A BLDC or DC brush motor drivers, short protected
- Operates from 20V to 40V.
- RS232, RS485 or USB based control communications
- Optional standalone operation with no connection to PC
- On-board EEPROM for user program storage
- Homes to opto or encoder index with single command.
- Execution halt/branch pending switch closure
- ADC inputs, halt/branch to ADC value
- Position, velocity, and torque modes. Velocity mode possible with only Hall sensor feedback.
- Quadrature encoder-based feedback for position mode
- Step & Direction mode, 4MHz step frequency
- Secondary encoder mode
- 4MHz max encoder frequency
- Prewired for optoswitch inputs
- Cavro DT or OEM protocol compatible
- Fully programmable ramps and speeds
- Switch-selectable device address
- Software-settable maximum currents

Ordering Information

Name	Order Number
EZSV17 Servo Drive	EZSV17
RS232 to 485 Converter (option)	RS485
USB to 485 Converter (option)	USB485