

General Specifications

Supply Input.....	USB or 5V external
Total current available.....	0.5A through USB port
Dimensions.....	1.0" X 2.0" X 0.5" thick (25.4mm X 50.8 mm X 12.7mm)
Step Resolution	1, 1/2, 1/4, 1/8 step
Operating Modes	PC controlled or standalone
Communications protocol.....	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 commands.
Motor compatibility.....	Accommodates bipolar stepper motors requiring 0.5A or less. Best performance is with motor rated at 12V or less.
Mating Connectors	(Supplied) HIROSE DF11 series. Recommended tool: Digikey H9924-ND. Pins are HIROSE DF11-2428sc; Digikey H2139. (For pre-crimped wires, search H3BXT on www.digikey.com.)
I/O Interface.....	Accepts 2 opto-electronic and two mechanical switch inputs, or 4 mechanical switch inputs, or 4 A/D inputs. Signal Levels: <0.8V Vlow; >2V Vhigh (TTL compatible) Optical switch specifications: Transistor optical switch with IC> 1 mA @ IF=20mA. Examples: Digikey OPB830W55 or H21A1 or OPB830W11 or QVA11134; Honeywell HOA1887-012 or HOA1870-33 (prewired);
Encoder Interface	Quadrature encoder, maximum frequency 4 MHz
Operating Temperature.....	-20 to 85 °C PCB copper temperature
MTBF	5000 hr @ 85° C PCB copper temperature. Doubles each 10° C below 85° C copper temperature.
Relative Humidity.....	10% to 90% non condensing (operating and storage)

Fully intelligent stepper motor controller/driver with encoder feedback



STEPPERSTICK™ actual size

MOTOR CONNECTOR		
Mating connector: HIROSE DF11 8 pin, 24 GA, part DF11-8DS-2C Digikey part H2022-ND		
Pin	Function	Notes
1	ON/OFF driver #1 (V+)	+15V fixed
2	ON/OFF driver #1 (V-)	100mA max.* @ +15V, open collector
3,4	Stepper winding B	0.5A bipolar chopper*
5,6	Stepper winding A	0.5A bipolar chopper*
7	ON/OFF driver #2 (V+)	+15V fixed
8	ON/OFF driver #2 (V-)	100mA max.* @ +15V, open collector

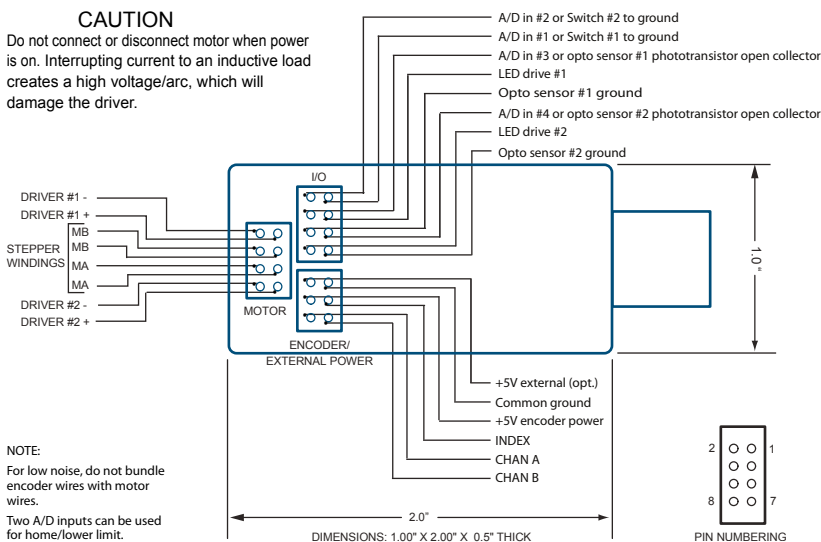
*Subtracts from total current available through USB port.

ENCODER AND ALTERNATE POWER		
Mating connector: HIROSE DF11 6 pin, 24 GA, part DF11-6DS-2C Digikey part H2021-ND		
Pin	Function	Notes ¹
1	0V	Power and encoder ground
2	Optional external +5V	Standalone power input
3	Index	Input from encoder
4	Encoder +5V input	Power to encoder
5	Encoder Channel B	Input from encoder
6	Encoder Channel A	Input from encoder

¹ Some encoders may require external pullups to 5V. Inputs from encoders must have min. 4V high level.

I/O CONNECTOR		
Mating connector: HIROSE DF11 Series 8 pin, 24 GA, part DF11-8DS-2C Digikey part H2022-ND		
Pin	Function	Notes
1	A/D in #1 or Switch #1 to ground	Includes equivalent 6.8k Ω pullup to 3.3V.
2	A/D in #2 or Switch #2 to ground	Includes equivalent 6.8k Ω pullup to 3.3V.
3	LED drive #1	Includes series 200 Ω current source resistor to 5V.
4	A/D in #3 or opto sensor #1 phototransistor open collector	Includes equivalent 6.8k Ω pullup to 3.3V.
5	A/D in #4 or opto sensor #2 phototransistor open collector	Includes equivalent 6.8k Ω pullup to 3.3V.
6	Ground	Common ground
7	Ground	Common ground
8	LED drive #2	Includes series 200 Ω current source resistor to 5V.

Mechanical/Connection Specifications



Key Features

- 0.5A chopper (PWM) stepper drivers
- Operates from 5V USB or external 5V source
- Standalone operation with no connection to a PC
- Full, half, quarter, and eighth-step bipolar control
- Industry-standard communications protocol
- Cavro DT or OEM protocol compatible
- Pre-wired for optoswitch inputs
- Four digital I/O and two general-purpose 0.5A power ON/OFF drivers
- Optional ADC inputs
- Optional encoder feedback
- Homes to opto or switch closure with single command
- Fully programmable ramps and speeds
- Software-settable Move and Hold currents
- Execution Halt pending switch closure
- Hold current auto selected upon move completion

Ordering Information

Name: StepperStick™ Controller/Driver..... Order Number: STEPPERSTICK-CD