

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 |

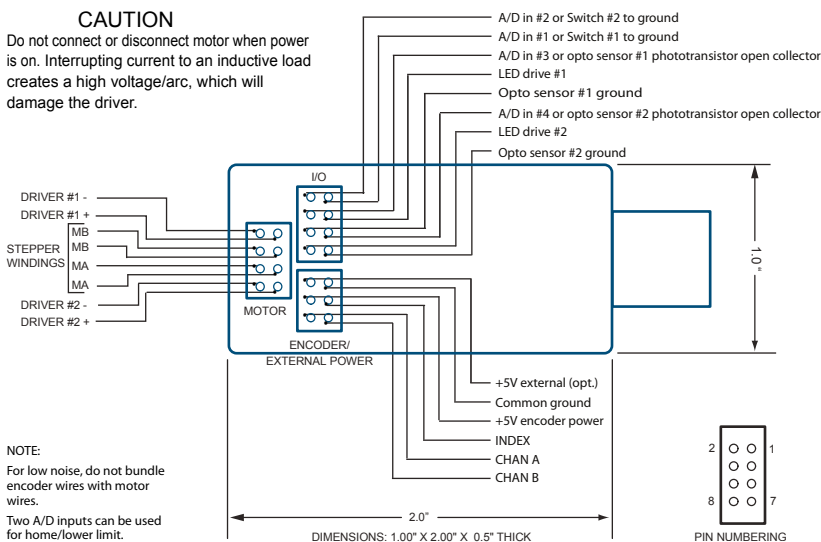
*Subtracts from total current available through USB port.

| 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