BOXER
Stepper Motor Drivers For Boxer Peristaltic Pumps
Model Series iD, A2 & A4

DESCRIPTION

MODEL SERIES ID

The Boxer digital stepper driver (iD) is a power and fully programmable controller designed specifically for use with the peristaltic pump series 25K, 15KS, 15QQ, 9K and 9QQ.

Features include:
› 3 Running modes (dispense, dose and analog)
› LCD display
› Calibration for volumetric dispense
› Automatic stall and open lid detection (for 25K series only)
› Push button or remote inputs
› Programmable settings include acceleration, deceleration, time interval and suck-back.

Dispense Mode:
In dispense mode the pump is switched on and off by the enter key. The display will show the dispense volume. During running or prior to starting the speed can be changed with the up and down keys. Programmable settings are: current, calibration, suck back, acceleration, deceleration, direction, stall and lid detections.

Dose Mode:
In dose mode the pump will run a predefined dosing cycle with paused interval. The display will show the dosed volume and count down during the pause interval. Prior to starting the dose volume is set. Programmable setting are: current, calibration, dose speed, dose interval, number of cycles, suck back, acceleration, deceleration, direction, stall and lid detection.

Analog Mode:
In analog mode the driver acts a pure analog driver. Inputs are: on/off, direction and speed. The display will show the running speed. Programmable settings are: current, acceleration, deceleration, speed range, stall and lid detection.
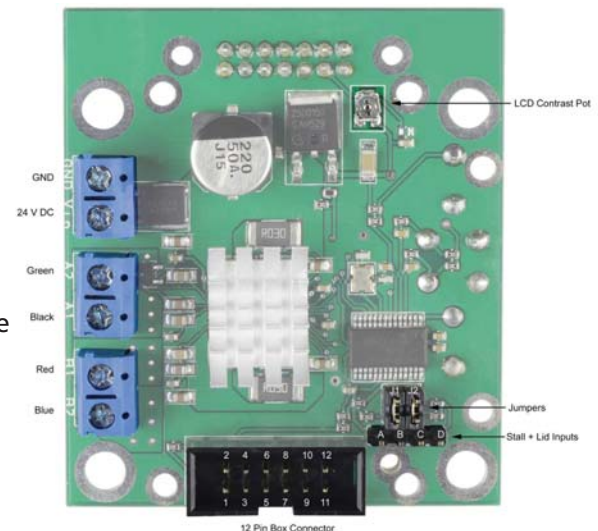
Wiring & Dimensions: See Manual

MODEL SERIES A2, A4 & A4P ANALOG DRIVERS - FOR EXTERNAL SPEED POT OR DIRECT VOLTAGE INPUT

A2, A4 & A4p stepper motor controllers are microprocessor embedded, voltage control, miniature stepper motor controllers. They are integrally designed to fit onto stepper motors, and simple to control. With models A2 & A4, the motor speed can be controlled by an analog voltage. It is simple, stable and low cost. A2 can provide 0 - 2A adjustable phase current through 10 ~ 30VDC input voltage. A4 can provide 0 - 4A adjustable phase current through 10 ~ 40VDC input voltage.

The microprocessor of the models is capable to ramp up the current speed to the desired speed. It is possible to jump to 1900 rpm in 0.3 seconds. This feature makes the sudden increase of the desired speed become possible. The motor speed can be controlled by an analog voltage in two optional ways:
1) an external 10K potentiometer (A4p) or,
2) an external voltage (A2 or A4).
The controllers can run the motor without user control device. At the same time, with the high-speed current compensation function, they can compensate the effects caused by counter electromotive force, which is produced in high-speed motor turning.

A2 Driver: 2 amp, recommended for 9K, 9QQ, 15KS with Nema 17 motor and 15QQ with Nema 17 motor
A4 Driver: 4 amp, recommended for 15KS with Nema 23 motor, 15QQ with Nema 23 motor, 25K, 6K
and 6KP

Miniature Integral Design
42.3 mm x 42.3 mm x 16.5 mm (L x W x H)
Integrally designed to fit onto motors seamlessly as well as work standalone
Die-cast aluminum enclosure, improved heat dissipation & durability

Motor Driver Features
10 ～ 30VDC input voltage, Max. 2A ～4A adjustable phase current
Dual full H-bridge with PWM constant current control
16th micro-stepping

Control Features
Embedded microcontroller
Self pulse generation, automatic run on power-up
Speed control through wired 10K pot or 0 - 5V voltage input, 0.15 to 1900 RPM
Switch control run/stop,direction, enable/shutdown
Automatic current reduction/power saving
Environment Requirement
Cooling: Free Air
Environment: Avoid dust,oil mist and corrosive gases
Temperature: -40 ℃ ～+ 85 ℃
Humidity: <80%RH，no condensation no frosting
Vibration: 3Gax

Wiring to motor:

A+ = black
A- = green
B- = red
B+ = blue
Pin 8 (SPD, speed control) can be varied between 0 to 5 V DC.
High speed mode: 0 to 5 V DC = 0 to1900 rpm
Low speed mode: 0 to 5 V DC = 0 to 150 rpm
Pins 3, 4, 5 and 6 are internally pulled up (with no connection to ground the driver enabled, on and in high speed mode).
Always start at low rpm and increase to find max speed (stall point of motor).
To avoid high motor surface temperatures at slow speed operation the current should be limited.
Please inquire for additional information.
Do not connect Vr to GND!

Speed Range: To preserve the accuracy of the measurement of the speed control voltage, the user should select the proper speed range. Since the voltage measurement accuracy is 8bit, the speed adjusting is not continuous, but has an incremental of 1/255 of the max speed. Selecting the proper speed range can improve the accuracy of the speed.
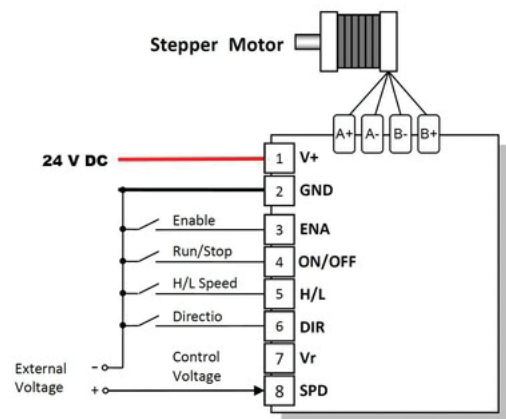
Speed Range Selected with jumpers, (see operating manual):
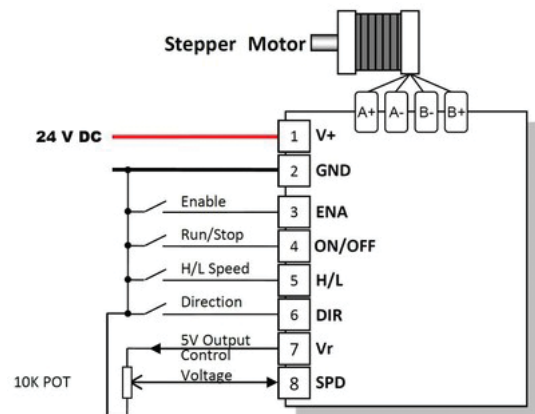Low Speed Range: 0.15 to 153 RPM
High Speed Range: 1.875 to 1912 RPM

A2 & A4 With External Control Voltage

A2 & A4 With 10K Potentiometer

ORDERING INFORMATION

Model	Part Number	Description
iD	6900.011	Stepper Motor Driver
A2	6900.003	Stepper Motor Driver, 2 Amp, external 0-5 V DC speed control
A4	6900.007	Stepper Motor, 4 Amp, external 0-5 V DC speed control
A4p	6900.113	Stepper Motor Driver, 4 Amp, 10K Pot for speed control