Global Motion Technology Inc
www.motiontek.ca

D80 Micro-stepping Driver

Introduction

The D80 is a high performance micro stepping driver based on pure-sinusoidal current control technology. Owing to the above technology and the self-adjustment technology (self-adjust current control parameters) according to different motors, the driven motors can run with smaller noise, lower heating smoother movement and have better performances at higher speed. It is suitable for driving 2-phase and 4-phase hybrid stepping motors.

Features

- High performance, cost-effective
- Supply voltage up to +80VDC
- Output current up to 7.8A
- Self-adjustment technology
- Pure-sinusoidal current control technology
- Pulse input frequency up to 300 KHz
- TTL compatible and optically isolated input
- Automatic idle-current reduction
- 16 selectable resolutions in decimal and binary, up to 51,200 steps / rev
- Suitable for 2-phase and 4-phase motors
- Support PUL/DIR and CW/CCW modes
- Short-voltage, over-voltage, over-current and over temperature protection

Applications

Suitable for a wide range of stepping motors, from NEMA size 17 to 42
Applications XYZ tables, labeling machines, laser cutters, engraving machines, pick-place devices

Specifications

Output current	1.4 ~ 5.6 AMP
Supply voltage (DC)	Min 20, Typical 36 , max 50 VDC
Pulse input frequency	0 ~ 400 KHz
Isolation resistance	Min 500 MΩ
Cooling	Natural Cooling or Forced cooling
Operating Environment	Environment Avoid dust, oil fog and corrosive gases Ambient Temperature 0 □ — 50□ Humidity 40%RH — 90%RH Operating Temperature 70 Max □ Vibration 5.9m/s2 Max
Storage Temperature	20 □ — 65□
Weight	Approximate weight 570 g (20.10 oz)

Control Signal Connector P1 pins

Pin Function	Details
PUL+ (+5V)	Pulse signal: In single pulse (pulse/direction) mode, this input represents pulse signal, active at each rising or falling edge (set by inside jumper J1); 4-5V when PUL-HIGH, 0-0.5V when PUL-LOW. In double pulse mode (pulse/pulse) this input represents clockwise (CW) pulse active at high level or low level (set by inside jumper J1). For reliable response, pulse width should be longer than 1.5μs. Series connect resistors for current-limiting when +12V or +24V used.
PUL- (PUL)	
DIR+ (+5V)	DIR signal: In single-pulse mode, this signal has low/high voltage levels, representing two directions of motor rotation; in double-pulse mode (set by inside jumper J2), this signal is counter-clock (CCW) pulse active at high level or low level (set by inside jumper J1). For reliable motion response, DIR signal should be ahead of PUL signal by 5μs at least. 4-5V when DIR-HIGH, 0-0.5V when DIR-LOW. Please note that motion direction is also related to motor-driver wiring match. Exchanging the connection of two wires for a coil to the driver will reverse motion direction.
DIR- (DIR)	
ENA+ (+5V)	Enable signal: This signal is used for enabling/disabling the driver. High level (NPN control signal, PNP and Differential control signals are on the contrary, namely Low level for enabling.) for enabling the driver and low level for disabling the driver. Usually left **UNCONNECTED (ENABLED)**.
ENA- (ENA)	

Power connector P2 pins

Pin Function	Details
Gnd	DC power ground
+V	DC power supply, +24VDC ~ +80VDC, Including voltage fluctuation and EMF voltage.
Phase A	Motor coil A (leads A+ and A-)
Phase B	Motor coil B (leads B+ and B-)

Micro-step Division/Resolution Selection

Micro-step resolution set by SW5, SW6, SW7 & SW8 of the DIP switch

Step/Revolution 1.8º Motor	SW5	SW6	SW7	SW8
400	ON	ON	ON	ON
800	OFF	ON	ON	ON
1600	ON	OFF	ON	ON
3200	OFF	OFF	ON	ON
6400	ON	ON	OFF	ON
12800	OFF	ON	OFF	ON
25600	ON	OFF	OFF	ON
51200	OFF	OFF	OFF	ON
1000	ON	ON	ON	OFF
2000	OFF	ON	ON	OFF
4000	ON	OFF	ON	OFF
5000	OFF	OFF	ON	OFF
8000	ON	ON	OFF	OFF
10000	OFF	ON	OFF	OFF
20000	ON	OFF	OFF	OFF
40000	OFF	OFF	OFF	OFF

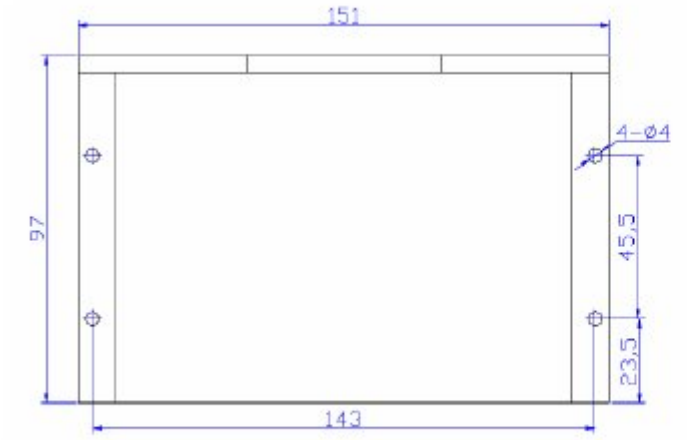
Current Settings

SW4 Standstill current set off to half current
Current set by SW1, SW2 & SW3 of the DIP switch

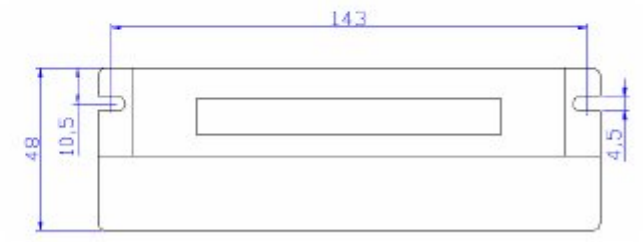
Peak Current (A)	RMS (A)	SW1	SW2	SW3
2.8	2.0	ON	ON	ON
3.5	2.5	OFF	ON	ON
4.2	3.0	ON	OFF	ON
4.9	3.5	OFF	OFF	ON
5.7	4.1	ON	ON	OFF
6.4	4.6	OFF	ON	OFF
7.0	5.0	ON	OFF	OFF
7.8	5.6	OFF	OFF	OFF

Mechanical Dimension

Measurement are in metric each inch = 25.4 mm



(a) Front view



(b) Side view

Typical Connection

A complete stepping system should include stepping motor, stepping driver, power supply and controller (pulse generator).

Connection diagram