3DM2280A

Stepper Motor Driver Specification

Overview

The 3DM2280A is a high-performance stepper motor driver which applies a brand new digital sine microstep technology. It is suitable for 2-phase and 4-phase hybrid stepper motor below 8A, such as 110, 130 and so on. Due to the adoption of the advanced anti-noise sound control method, it can significantly reduce the noise and vibration during operation. It uses full current PWM control method, and shows stable operation, low noise, low vibration and low temperature rise of motor. Its weight is 1.32kg. There are 28 kinds of microstep of 3DM2280A. The maximum step number of 3DM2280A is 51200 steps/rev (microstep is 1/256). Its current range4.5A-8.0A, and its output current has 8 stalls, and the current resolution ratio is about 0.5A. 3DM2280A has automatic semi-flow, over-voltage, under voltage and over-current protection function. The driver is the AC power supply, the operating voltage range should be 110VAC-220VAC.

Current selection

REF	Peak	SW8	SW9	SW10
3.2A	4.5A	ON	ON	ON
3.5A	5.0A	OFF	ON	ON
3.9A	5.5A	ON	OFF	ON
4.2A	6.0A	OFF	OFF	ON
4.6A	6.5A	ON	ON	OFF
4.9A	7.0A	OFF	ON	OFF
5.3A	7.5A	ON	OFF	OFF
5.7A	8.0A	OFF	OFF	OFF

Microstep selection

Pulse/REV	SW1	SW2	SW3	SW4	SW5
200	ON	ON	ON	ON	ON
400	ON	ON	ON	ON	OFF
500	ON	ON	ON	OFF	ON
600	ON	ON	ON	OFF	OFF
800	ON	ON	OFF	ON	ON
1000	ON	ON	OFF	ON	OFF
1200	ON	ON	OFF	OFF	ON
1600	ON	ON	OFF	OFF	OFF
2000	ON	OFF	ON	ON	ON
2400	ON	OFF	ON	ON	OFF
2500	ON	OFF	ON	OFF	ON

3000	ON	OFF	ON	OFF	OFF
3200	ON	OFF	OFF	ON	ON
3600	ON	OFF	OFF	ON	OFF
4000	ON	OFF	OFF	OFF	ON
5000	ON	OFF	OFF	OFF	OFF
6000	OFF	ON	ON	ON	ON
6400	OFF	ON	ON	ON	OFF
7200	OFF	ON	ON	OFF	ON
8000	OFF	ON	ON	OFF	OFF
10000	OFF	ON	OFF	ON	ON
12000	OFF	ON	OFF	ON	OFF
12800	OFF	ON	OFF	OFF	ON
20000	OFF	ON	OFF	OFF	OFF
24000	OFF	OFF	ON	ON	ON
30000	OFF	OFF	ON	ON	OFF
40000	OFF	OFF	ON	OFF	ON
60000	OFF	OFF	ON	OFF	OFF
TEST	OFF	OFF	OFF	OFF	OFF

Applications

It can be applied in a variety of small scale automation equipment and instruments, such as labeling machine, cutting machine, packing machine, drawing machine, engraving machine, CNC machine and so on. It always performs well when it is used in equipment which requires for low-vibration, low-noise, high-precision and high-velocity.

Driver functions descriptions

Driver function	Operating instructions
Output current setting	Users can set the driver output current by SW8-SW10 three switches. The setting of the specific output current, please refer to the instructions of the driver panel figure.
Microstep setting	Users can set the driver Microstep by the SW1-SW5 five switches. The setting of the specific Microstep subdivision, please refer to the instructions of the driver panel figure.
Single/double Pulse setting	SW7 sets pulse mode, setting “on” as double pulse mode, setting “off” as pulse + direction mode.
Self-test setting	When SW1-SW5 five switches are all on “off”, the driver will test the motor normal or not according to the inner 1KHZ pulse.

Automatic half current function	Users can set the driver half flow function by SW6. "OFF" indicates the quiescent current is set to half of the dynamic current, that is to say, 0.5 seconds after the cessation of the pulse, current reduce to about half automatically. "ON" indicates the quiescent current and the dynamic current are the same. User can set SW6 to "OFF", in order to reduce motor and driver heating and improve reliability.
Signal interfaces	PUL+ and PUL- are the positive and negative side of control pulse signal; DIR+ and DIR- are the positive and negative side of direction signal; ENA+ and ENA- are the positive and negative side of enable signal.
Motor interfaces	A+ and A- are connected to a phase winding of motor; B+ and B- are connected to another phase winding of motor. If you need to backward, one of the phase windings can be reversed.
Power interfaces	It uses AC power supply. Recommended operating voltage is 110VAC-220VAC, and power consumption should be greater than 500W.
Indicator lights	There are two indicator lights. Power indicator is green. When the driver power on, the green light will always be lit. Fault indicator is red, when there is over-voltage or over-current fault, the red light will always be lit; after the driver fault is cleared, if re-power the red light will be off.
Installation instructions	Driver dimensions:198 × 76 × 130mm, please refer to dimensions diagram. Please leave 10CM space for heat dissipation. During installation, it should be close to the metal cabinet for heat dissipation.