



MC2280H 2 Phase Hybrid Stepper Driver

0-220VAC / 1.3-5.6A peak / Auto-configuration / Low Noise



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Descriptions

MC2280H adopts the technology of servo control principle, with motor parameter adaptive functions, which guarantees that machine playing the best performance. It's suitable for type 86-130 of various brands of two-phase hybrid stepping motors. This technology can greatly reduce the noise and vibration in the operation of the motor, making noise and stability to converge with the level of the servo motor when running. Compared with the most similar subdivided driving products on the market, the calorific value of stepper motor and drive fell to 15-30%.

Applications

It's suitable for all kinds of automation equipment and instruments in the field of motion control ,such as: electronic processing and detection, semiconductor packaging, laser cutting and welding, laser typesetting, packing machines, engraving machine, marking machine, cutting machine, apparel plotter, NC machine tools, automated assembly equipment, etc. It's the first choice for users that prefer low noise, high speed with superior performance and with a stronger price competition.

Product features

- Supply voltage up to +220 VAC
- Output current programmable, from 1.3A to 5.6A. It can also be set via DIP switches.
- Pulse input frequency up to 200 KHz
- TTL compatible and optically isolated input
- Automatic idle-current reduction
- Suitable for 2-phase and 4-phase motors
- Support PUL/DIR
- Over-voltage, Under-voltage, over-current
- Microstep resolutions programmable, from full-step to 12800. It can also be set via DIP switches.
- Multi-Stepping allows a low resolution step input to produce a higher microstep output, thus offers smoother motor movement
- Motor auto-identification and parameter auto-configuration technology, offers optimal responses with different motors

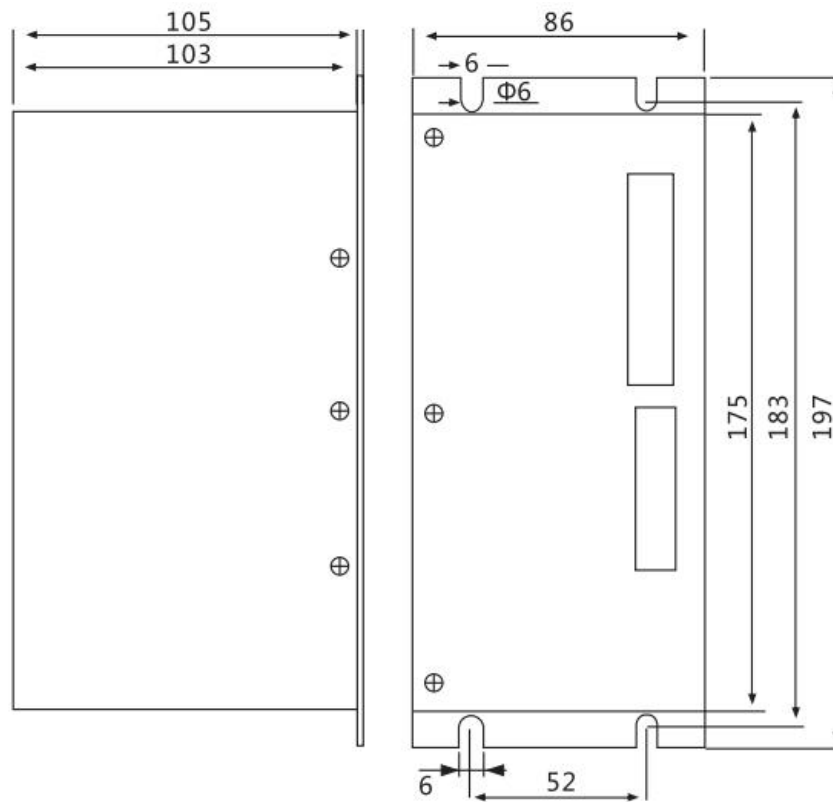
Specifications

Parameters	Min	Typical	Max
Output current	1.3A		5.6 A
Supply voltage	80VAC	220VAC	220VAC
Logic signal current	7mA	10 mA	16 mA
Pulse input frequency	0		200 kHz
Isolation resistance	500 MΩ		

Operating Environment

Environment	Avoid dust, oil fog and corrosive gases
Ambient Temperature	0°C — 50°C
Humidity	40%RH — 90%RH
Operating Temperature	70°C Max
Vibration	5.9m/s ² Max
Storage Temperature	-20°C — 65°C

Mechanical Specifications



Protection Indications

The green indicator turns on when power-up. When drive protection is activated, the red LED blinks periodically to indicate the error type.

Flicker frequency	The cause of the problem
1	Over-current Protection
2	Over-voltage Protection
3	Low-voltage Protection

Note: flashing cycle for 3 s.

Function Description of Drivers

Drive function	Operating instructions
Working current setting	The driver output current is set by three dip switches SW1 - SW3, its output current has eight floors in all. About specific output current Settings, please refer to the drive panel.
Automatic half flow function	Users can set drive to automatic half flow function through SW4. OFF shows the static current is set to be half of the dynamic current, ON shows the static current is the same as dynamic current. SW4 should be set to OFF in general use in order to reduce the heating of the motor and driver, also to improve the reliability. The current will reduce to 50% automatically 0.4 seconds approximately after the pulse train stop (60% actual value), calorific value reduced by 36% in theory.
Micro step Subdivision setting	The driver micro step subdivision is set by four dip switches SW5 -SW8, there are 15 files of micro step subdivisions in all. When users are setting segmentation, the driver should be stopped first. About the setting of micro step subdivision, please refer to the drive panel.
Signal interface	<p>Pulse Signal: In single pulse (pulse/direction) mode, this input represents pulse signal, each rising or falling edge active; 4-5V when PUL-HIGH, 0-0.5V when PUL-LOW. For reliable response, pulse width should be longer than 2.5μs. Series connect resistors for current-limiting when +12V or +24V used. The same as DIR and ENA signal.</p> <p>Direction Signal: In single-pulse mode, this signal has low/high voltage levels, representing two directions of motor rotation. 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 rotation 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. The direction signal's polarity is software configurable.</p>
Motor interface	A + and A - connecting the plus and minus side of step motor A phase winding. B + B and B -connecting the plus and minus side of step motor B phase winding. When A, B two phase winding exchanges, can make the motor to reverse direction.
Power port	Using the dc power to supply, operating voltage range is suggested to be 80V-220VAC.

DIP Switch Settings

Dynamic Current

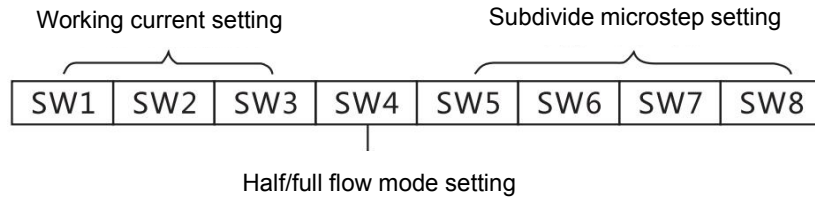
Output average current	SW1	SW2	SW3
1.3A	off	off	off
1.8A	on	off	off
2.5A	off	on	off
3.1A	on	on	off
3.7A	off	off	on
4.3A	on	off	on
5.0A	off	on	on
5.6A	on	on	on

Note: Due to motor inductance, the actual current in the coil may be smaller than the dynamic current setting, particularly under high speed condition.

Microstep Resolution

Steps/roll	SW5	SW6	SW7	SW8
200	off	off	off	off
400	on	off	off	off
500	off	on	off	off
800	on	on	off	off
1000	off	off	on	off
1250	on	off	on	off
1600	off	on	on	off
2000	on	on	on	off
2500	off	off	off	on
3200	on	off	off	on
4000	off	on	off	on
5000	on	on	off	on
6400	off	off	on	on
8000	on	off	on	on
10000	off	on	on	on
12800	on	on	on	on

MC2280H driver uses eight dip switches to set the segmentation accuracy, dynamic current and half/full flow, detailed description as below:



Typical Connections

NPN Control Signal

