



2MA2282 STEPPER MOTOR DRIVE

2MA2282 User manual

2 Phase digital stepper motor driver

2MA2282

■ Features

The 2MA2282 stepper motor subdivision driver is a cost-effective two-phase stepper motor driver that provides up to 8.2A current output. This driver uses sine wave current control technology, with features of high torque, low noise and low vibration. It is suitable for all types of 2 or 4phase hybrid stepper motors up to nema34, nema41, nema42.

Main application: Suitable for all kinds of small and medium-sized automation equipment and instruments, such as: dispensing machine, marking machine, cutting machine, laser machine, plotter, CNC machine tools, automatic assembly equipment, etc.

- Excellent high speed characteristics
- Low heat
- Impulse response frequency is up to 200KHz
- Output current setting is up to 8.2A
- Optically isolated differential signal input
- Overvoltage, over current, overheat protection

■ Electrical performance and environment indicators

● Electrical Specifications

Parameter	Min.	Typical	Max.	Unit
Power supply	80	220	240	VAC
Output Current	1.8	-	8.2	A
Step Frequency	1	-	200K	Hz
Step pulse width	250	-	5E+8	ns
Input Signal Voltage	3.3	5	24	VDC

● Environment Indicators

Heat Sinking Method	Natural cooling or fan-forced cooling
Atmosphere	Avoid dust, oily mist and corrosive air
Operating Temperature	0~40°C
Ambient Humidity	90% or less (non-condensing)
Storage Temperature	-10~70°C
Heat Sinking Method	5.9m/s ² maximum

■ Idle Current

SW4=ON Full current
SW4=OFF Half current

Half-current lock: When the external input pulse train stops and continues for 0.1S, the output current of the driver will automatically switch to half current lock to reduce heat and protect the motor from damage.

Pulse mode and impulse response mode settings:
Pulse mode factory setting: Pulse + direction
Impulse response default setting: Pulse is valid for rising edge

● Running current

The output current of the driver is set by the SW1, SW2 and SW3 switches and can be changed as necessary. There are 8 settings available according to the ON/OFF combination of the switches. Normally, customers set the current same with the motor rated current.

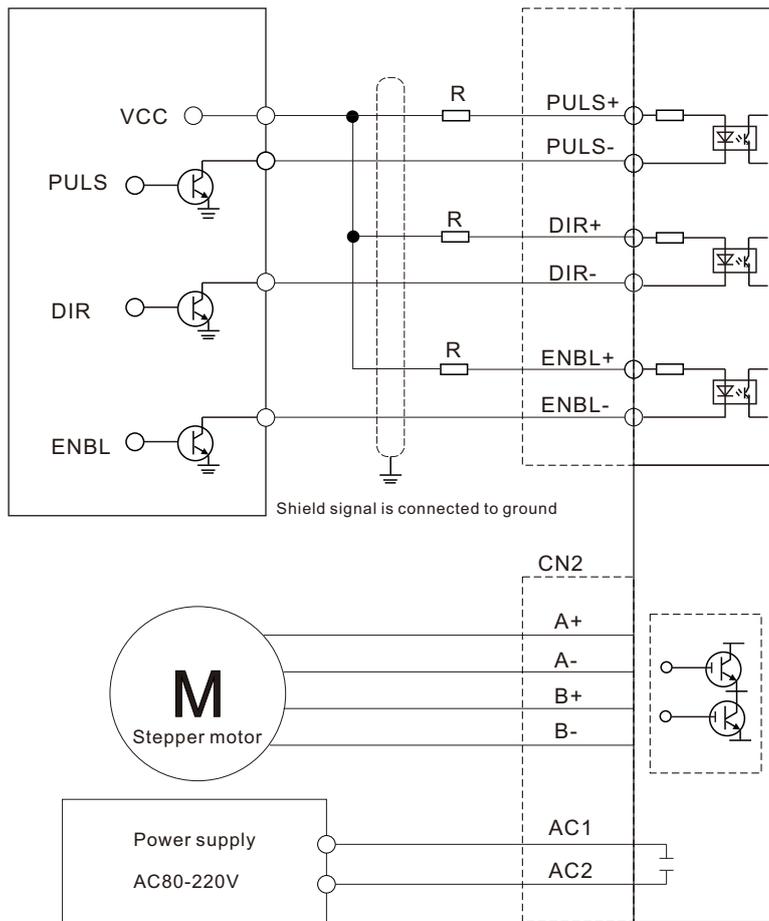
SW1	SW2	SW3	Peak running current
OFF	OFF	OFF	1.80A
ON	OFF	OFF	2.70A
OFF	ON	OFF	3.60A
ON	ON	OFF	4.60A
OFF	OFF	ON	5.50A
ON	OFF	ON	6.40A
OFF	ON	ON	7.30A
ON	ON	ON	8.20A

● Microstepping

The microstep resolution is set by the SW5, SW6, SW7 and SW8 switches. There are 16 settings.

SW5	SW6	SW7	SW8	Subdivision (Step/r)	step angle
ON	ON	ON	ON	400	0.900°
OFF	ON	ON	ON	500	0.720°
ON	OFF	ON	ON	600	0.600°
OFF	OFF	ON	ON	800	0.450°
ON	ON	OFF	ON	1000	0.360°
OFF	ON	OFF	ON	1200	0.300°
ON	OFF	OFF	ON	1600	0.225°
OFF	OFF	OFF	ON	2000	0.180°
ON	ON	ON	OFF	2400	0.150°
OFF	ON	ON	OFF	3200	0.1125°
ON	OFF	ON	OFF	4000	0.090°
OFF	OFF	ON	OFF	5000	0.072°
ON	ON	OFF	OFF	6000	0.060°
OFF	ON	OFF	OFF	6400	0.05625°
ON	OFF	OFF	OFF	8000	0.045°
OFF	OFF	OFF	OFF	10000	0.036°

● Control signal input



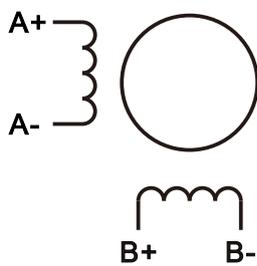
Step pulse signal is PUL, direction signal is DIR, offline signal is ENA. If the power supply is 5V, it can be directly connected. If the external system uses a PLC or other control voltage exceeds 5V, it needs to be outside. Add a current limiting resistor.

Signal voltage	External resistance
DC5V input	No external resistance is needed
DC12V input	1K
DC24V input	2K

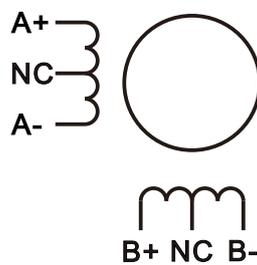
● Connector

Connector	Function description
AC1	Power supply (VAC80-240V)
AC2	Power supply (VAC80-240V)
A+, A- B+, B-	Motor phase
ENA-	Enable signal input-. The motor will be free if low voltage is input
ENA+	External power supply input, 5-24V. If the voltage exceeds 5V, it needs to be outside Add a current limiting resistor.
PUL-	Pulse input-
PUL+	Pulse input+
DIR-	Direction signal input-; If SW2=ON, it is a reverse pulse signal input.
DIR+	External power supply input, 5-24V. If the voltage exceeds 5V, it needs to be outside Add a current limiting resistor.
PWR	Power indicator
ERROR	Fault indicator, light is on when there is a problem with the external circuit or the driver

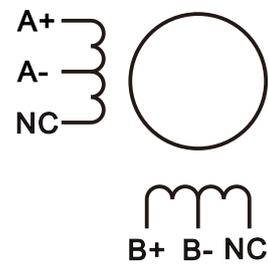
■ Motor connection



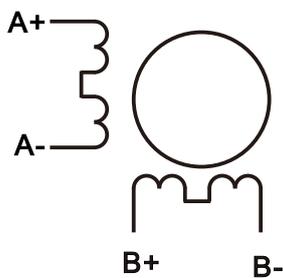
Common 4lines stepper motor



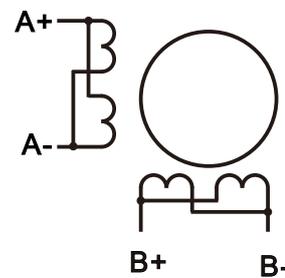
6lines stepper motor, high torque output



6lines stepper motor, high speed output



8lines stepper motor, in series (High torque output)



8lines stepper motor, in parallel (High speed output)

After sale service

Warranty period

Dongguan ICAN Technology provides warranty for 1 year from the date of shipping.

Maintenance process

- 1) Get the maintenance permission
 - 2) Ship the package to the following address: 4/F, Block B, RuiLian Zhenxing Industrial Park, Wanjiang District, Dongguan City, Guangdong Province
- Tel: 86-0769-22327568

Return policy

1. After use or man-made damage condition (etc, wrong wiring), no return
2. ICAN Technology guarantees the product quality, but product incompatibility is not in the return or maintain condition.
3. Customers don't use the products under the specified electrical performance and environment indicators, no maintain condition



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