

# 2DM2280

2 phase Digital Stepper Motor Driver

240VAC 8A

The 2DM2280 is a two phase digital stepper driver based on DSP. Its Micro step resolutions and output current are programmable. And it has advanced control algorithm, which can brings a unique level of system smoothness, provides optimum torque and mid-range instability. The control algorithm of Multi-Stepping can make stepper motor has smooth system performance. The control algorithm of torque compensation can improve the torque of motor in the high speed. The control algorithm of motor self-test and parameter auto-setup technology offers optimum responses with different motors and easy-to-use. The control algorithm of smoothness can enhance the acceleration and deceleration of motor. Its unique features make the 2DM2280 to be an ideal solution for applications.

## Features

- Parameter auto-setup and motor self-test
- Multi-Stepping inside
- Small noise, low heating, smooth movement
- Torque compensation in high speed
- Variable current control technology, High current efficiency
- Accelerate and decelerate control inside, Great improvement in smoothness of starting or stopping the motor
- Support PUL/DIR and CW/CCW modes
- Storage the position of motor
- Optically isolated input and compatible with 5V or 24V
- User-defined micro steps (via RS232)
- Microstep resolutions and Output current programmable
- Over current, over voltage and low voltage protection
- Green light means running while red light means protection or off line

## Control Signal Input Ports

- DIR- / DIR+ Direction signal, Compatible with 5V...24V
- PLS- / DIR+ Pulse signal, Compatible with 5V...24V
- ENA- / ENA+ Enable (Free) signal, Compatible with 5V...24V
- ALM- / ALM+ Alarm output, “+”collector, “-”emitter

## Power Interface Ports

- A+ / A- Motor phase A
- B+ / B- Motor phase B
- AC1 / AC2 Power input AC80V-240V

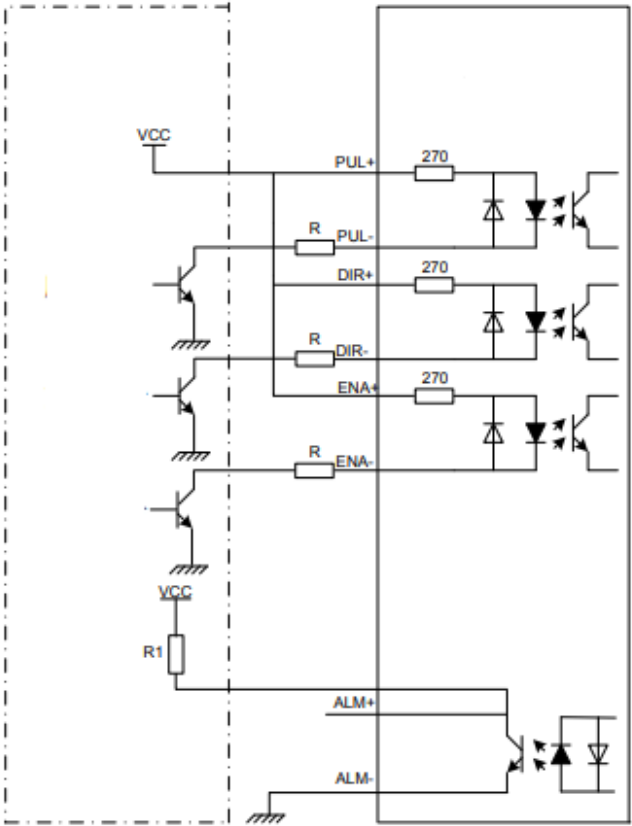
## Technological Index

- Input Voltage 80~240VAC
- Output Current 8A
- Pulse Frequency max 200K
- Communication rate 57.6Kbps
- Protection:
- Over current peak value 15A±10%
  - Over voltage value 350V
  - The over position error range can be
  - set through the HISU

Overall Dimensions (mm) 192×127×85

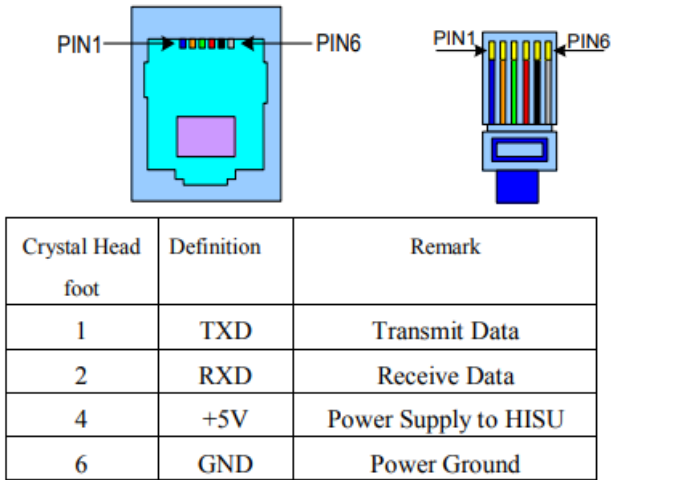
Weight Approximate 1500g

## Connections to Control Signal



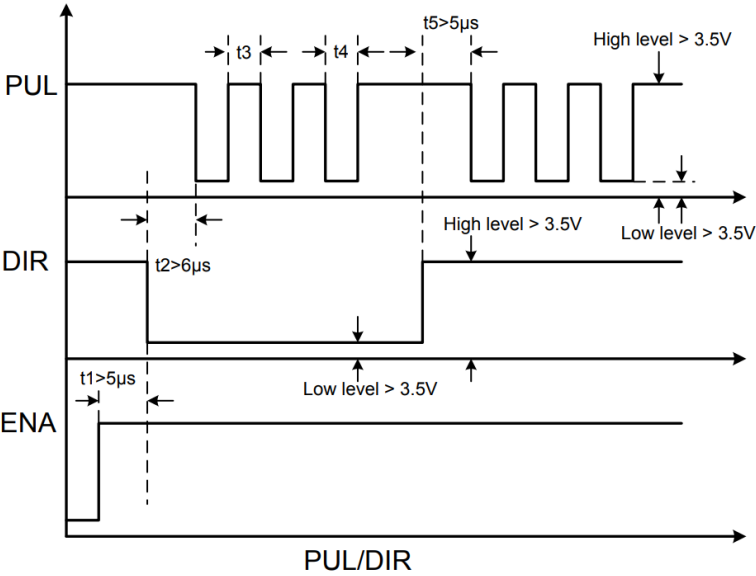
VCC is compatible with 5V or 24V;  
R(3~5K) must be connected to control signal terminal.

Connections to 232 Serial Communication Interface



Sequence Chart of Control Signals

In order to avoid some fault operations and deviations, PUL, DIR and ENA should abide by some rules, shown as following diagram:



Remark:

- t1: ENA must be ahead of DIR by at least 5μs. Usually, ENA+ and ENA- are NC (not connected).
- t2: DIR must be ahead of PUL active edge by 6μs to ensure correct direction;
- t3: Pulse width not less than 2.5μs;
- t4: Low level width not less than 2.5μs.

Current Setting

Dial switch	SW1	SW2	SW3
Current			
Default	0	0	0
2. 2A	1	0	0
3. 2A	0	1	0
4. 5A	1	1	0
5. 2A	0	0	1
6. 3A	1	0	1
7. 2A	0	1	1
8. 2A	1	1	1

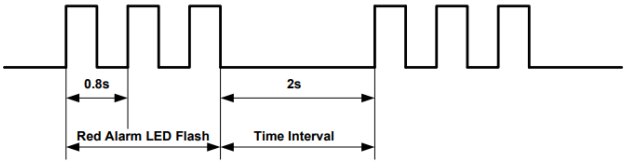
Standstill current Setting

SW4 is used for setting the standstill current , “off” means the standstill current is set to be half of the selected dynamic current or other current, which can be set by the HISU, the details can be seen in the tenth sections. while “on” means the standstill current is set to be the same as the selected dynamic current

Micro steps Setting

Dial switch Micro steps	SW5	SW6	SW7	SW8
Default	1	1	1	1
400	0	1	1	1
800	1	0	1	1
1600	0	0	1	1
3200	1	1	0	1
6400	0	1	0	1
12800	1	0	0	1
25600	0	0	0	1
1000	1	1	1	0
2000	0	1	1	0
4000	1	0	1	0
5000	0	0	1	0
8000	1	1	0	0
10000	0	1	0	0
20000	1	0	0	0
25000	0	0	0	0

Faults alarm and LED flicker frequency



Flicker Frequency	Description to the Faults
1	Error occurs when the motor coil current exceeds the drive's current limit.
2	Voltage reference error in the drive
3	Parameters upload error in the drive
4	Error occurs when the input voltage exceeds the drive's voltage limit.

Appearance and Installation Dimensions

