

3DM2080



Key Features:

- ☐ The new 32-bit DSP technology
- ☐ Optically isolated differential inputs (26LS32)
- ☐ Extra-low noise and vibration
- ☐ The range is 2-128,2.5-50 microsteps
- ☐ Current settings can be arbitrarily choose between ratings
- ☐ current will automatically halved when stand still
- ☐ Pulse frequency response up to 200KHz
- ☐ Overvoltage, undervoltage, short circuit protection
- ☐ Alarm output function I / O ports
- ☐ Offline protection input ENA

Introduction

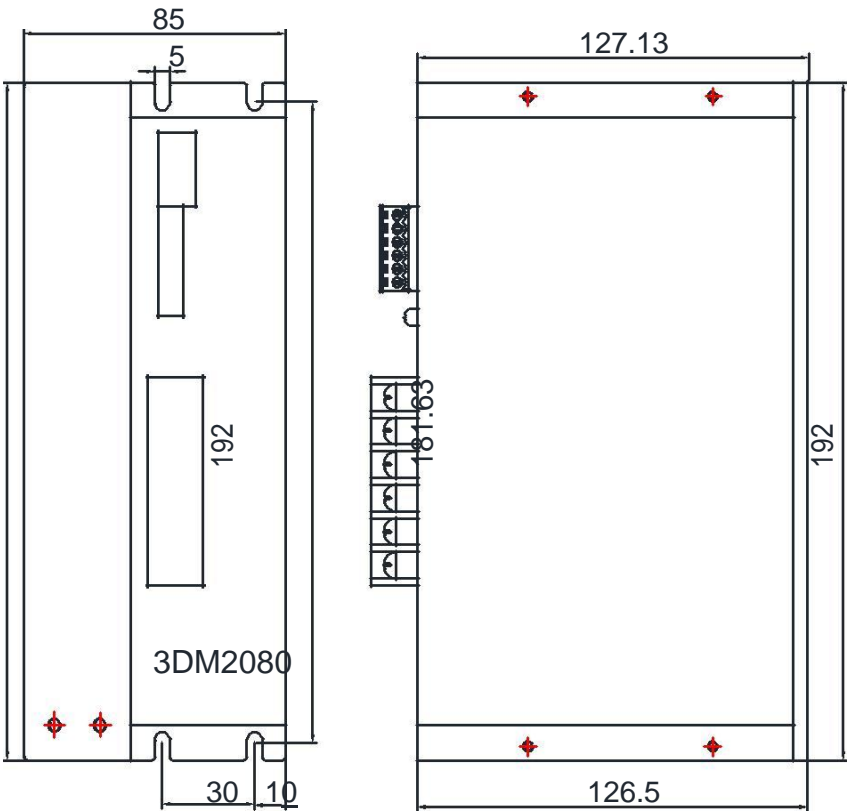
3DM2080 is newest digital stepper motor driver launched by Yuhai, using the latest 32-bit DSP control technology, the user can set any segment within 25600 and multi-range current value within rated current,with built-in micro technology,3DM2080 driver greatly improved stability and reduced noise under subdivision. Integrating automatic parameter tuning function inside.it also can adjust the optimal operation parameters automatically for different motors to maximize the performance of the motor.

Specifications

Parameters	Min	Typical	Max	Unit
Output Current (Peak)	2.2	-	8.2	Amps
Supply voltage	80	110	240	VAC
Logic Input Current	-	10	-	mA
Pulse input frequency	-	-	200	KHz
Low Level Time	2.5	-	-	μsec

Cooling	Natural Cooling or Forced Convection	
Environment	Space	Avoid dust, oil frost and corrosive gases
	Ambient Temperature	0°C – 65°C
	Humidity	<80%RH
	Vibration	5.9m/s ² Max
Storage Temp.	-10°C – 80°C	
Weight	Approx. 0.27 Kg	

Dimensions (mm)



Current Setting

Current Setting AVG(A)	Peak Value(A)	SW1	SW2	SW3
1.6	2.2	ON	OFF	OFF
2.3	3.2	OFF	ON	OFF
3.2	4.2	ON	ON	OFF
3.7	5.2	OFF	OFF	ON
4.4	6.3	ON	OFF	ON
5.2	7.2	OFF	ON	ON
5.9	8.2	ON	ON	ON

Microstep Setting

Step/Rev	SW1	SW2	SW3	SW4
400	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

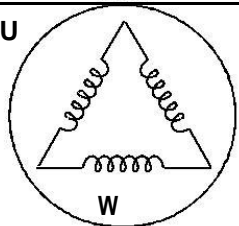
500	OFF	OFF	OFF	ON
1000	ON	ON	ON	OFF
1200	OFF	ON	ON	OFF
2000	ON	OFF	ON	OFF
4000	OFF	OFF	ON	OFF
5000	ON	ON	OFF	OFF
6000	OFF	ON	OFF	OFF
8000	ON	OFF	OFF	OFF
10000	OFF	OFF	OFF	OFF

* SW4: ON=Full current, SW4 : OFF=Half current

P1 Pin Assignment

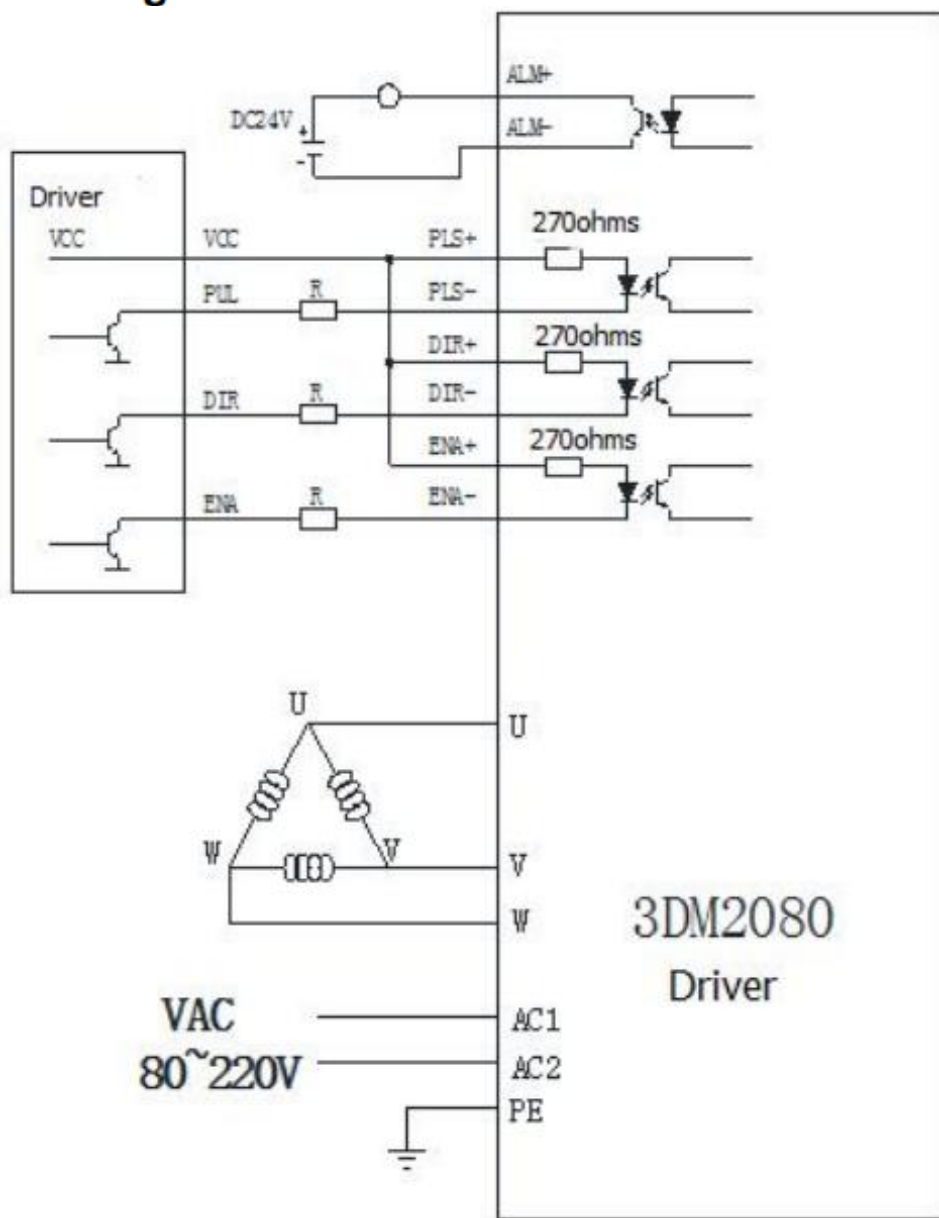
Signal	Function	Descriptions
PLS+	Input signal positive end	Connected to + 5V power supply, + 5V ~ + 24V can be driven, above 5V need current limiting resistor.
PLS-	Pulse signal	Falling edge, pulse from high to low whenever the motor step. Input resistance 220Ω, requirements; low 0-0.5V, high 4-5V, pulse width <2.5uS.
DIR+	Input signal positive end	Connected to + 5V power supply, + 5V ~ + 24V can be driven, above 5V need current limiting resistor.
DIR-	Direction control signal	Used to change the direction, input resistance 220Ω, requirements; low 0-0.5V, high 4-5V, pulse width <2.5uS.
ENA+	Input signal positive end	Connected to + 5V power supply, + 5V ~ + 24V can be driven, above 5V need current limiting resistor.
ENA-	Motor release signal	Off active (low) when power motor current, the drive stops working, the motor is in a free state.
ALM+	Alarm output positive	Open collector output
ALM-	Alarm output negative	Open collector output

P2 Pin Assignment

Name	Function	Instructions
U V W	Electrical wiring	

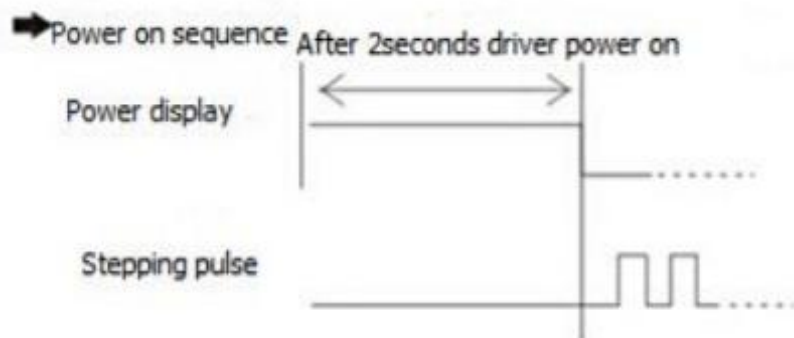
AC1 AC2	Input DC voltage	Between AC80~240V, More details Please refer to motor specs
PG	Ground end	With function of leakage protection and enhancement anti-interference

Wiring



- * When VCC is 5V, R short circuit;
- When VCC is 12V, R for 1K, more than 0.125W resistance;
- When VCC is 24V, R is 2K, greater than 0.125W resistance;

Signal waveform and timing



Note: Driver power-up time depends on the applied AC driver voltage
Under AC 110V power-up time need 2 seconds typically

