2DM556

Key Features:

- ❑ The new 32-bit DSP technology
- ❑ Optically isolated differential inputs (26LS32)
- ❑ Extra-low noise and vibration
- ❑ The range of micro steps is 2-128
- ❑ Built in 500 times high frequency micro steps
- ❑ Driver 2 phase step motor with 4leads,6leads and 8leads
- ❑ Current settings is optional 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

Introduction

2DM556 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,2DM556 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.
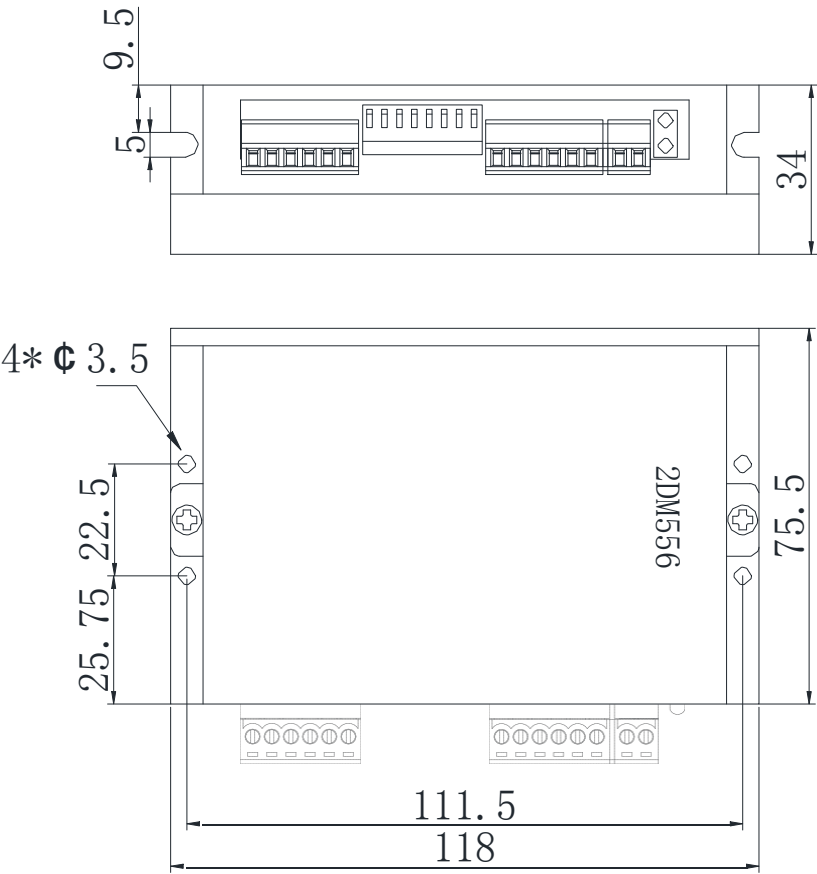
Specifications

Parameters	Min	Typical	Max	Unit
Output Current (Peak)	1.4	-	5.6	Amps
Supply voltage	24	36	60	VDC
Logic Input Current	7	10	-	mA
Pulse input frequency	-	-	250	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 ℃－65 ℃
	Humidity	<80%RH
	Vibration	5.9m/s ²Max
Storage Temp.		-10 ℃ －80 ℃
Weight		Approx. 0.26 Kg

Dimensions

Dimensions size in mm

Current Setting

Current Setting AVG(A)	Peak Value(A)	SW 1	SW2	SW3
1.0	1.4	OFF	OFF	OFF
1.5	2.1	ON	OFF	OFF
1.92	2.7	OFF	ON	OFF
2.28	3.2	ON	ON	OFF
2.71	3.8	OFF	OFF	ON
3.07	4.3	ON	OFF	ON
3.5	4.9	OFF	ON	ON
4.4	4.5	ON	ON	ON

Microstep Setting

Step/Rev	SW5	SW6	SW7	SW8
400	OFF	ON	ON	ON
800	ON	OFF	ON	OFF
1600	OFF	OFF	ON	ON
3200	ON	ON	OFF	ON
6400	OFF	ON	OFF	ON
12800	ON	OFF	OFF	ON
25600	OFF	OFF	OFF	ON
1000	ON	ON	ON	OFF
2000	OFF	ON	ON	OFF
4000	ON	OFF	ON	OFF
5000	OFF	OFF	ON	OFF
8000	ON	ON	OFF	OFF
10000	OFF	ON	OFF	OFF
20000	ON	OFF	OFF	OFF
25000	OFF	OFF	OFF	OFF

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

P1 Pin Assignment

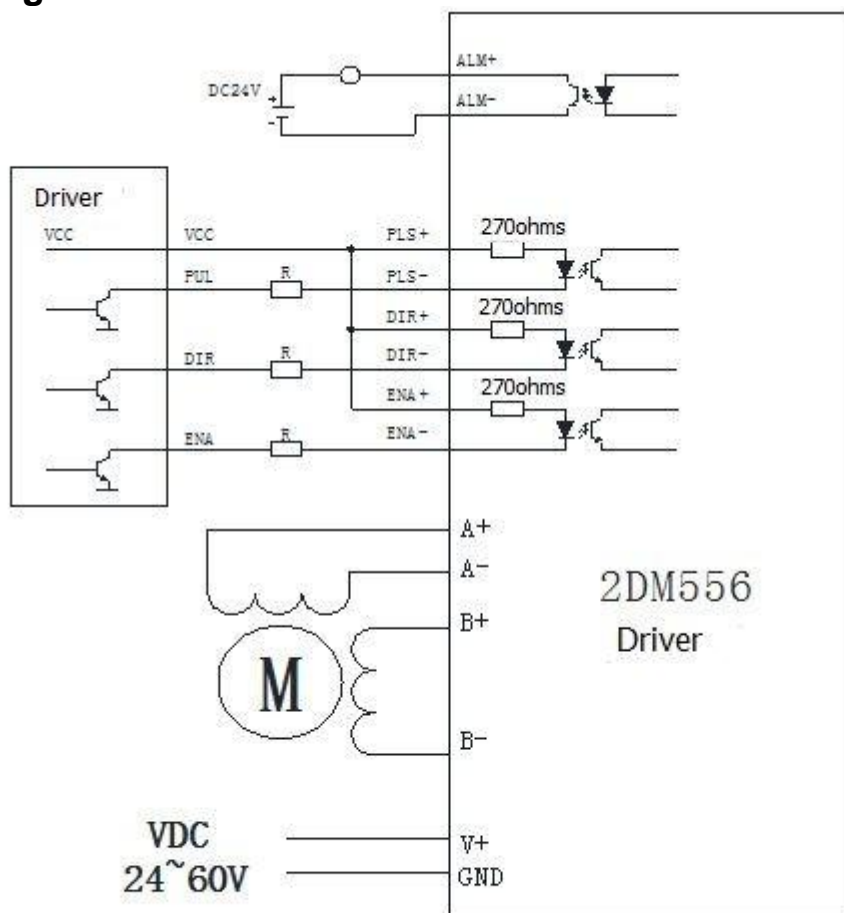| Signal	Function	Descriptions
PLS+	Input signal positive end	Connected to + 5V power supply, + 5V ~ + 24V can be driven
PLS-	Pulse signal	Falling edge, pulse from high to low whenever the motor step. Input resistance 220Ω, requirements; low 0-0.5V, high 4-5V, pulse width <2.5uS.
DIR+	Input signal positive 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
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

The P2 I/o high voltage interface description

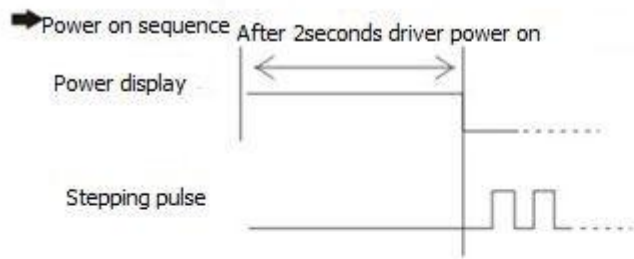| Name	Function	Instructions
A+、A- B+、B-	Electrical wiring	
+V GND	DC voltage input	Between DC24~60V，More details please refer to motor specs

Wiring

Remark:* VCC = 5V, R short circuit;

VCC = 12V, R for 1K, more than 0.125W resistance;

VCC = 24V, R is 2K, greater than 0.125W resistance;

Signal waveform and timing

Power on sequence After 2seconds driver power on

Power display

Note:Driver power-up time depends on the applied AC driver voltage magnitude,under 36V power-up time need 2 seconds typically.

Stepping pulse

Input signal waveform and timing

>2us

PLS Stepping pulse

<1us

<1us

>5us

<1us

>5us

<1us

DIR Direction signal

ENA Offline Signal

>10us