

# 2DM860



## Key Features:

- The new 32-bit DSP technology
- Optically isolated differential inputs (26LS32)
- Ultra-low noise and vibration
- Built 500 high octave segments (segments selected value)
- 4,6,8 lines can drive two-phase stepper motor
- Current settings can be arbitrarily choose between ratings
- Stationary current is automatically halved
- Pulse frequency response up to 250KHz
- Overvoltage, undervoltage, short circuit protection
- Alarm output function I / O ports
- Alarm clear input ENA

## Introduction

2DM860 is newest digital stepper motor driver launched by YH, 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, 2DM860 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.

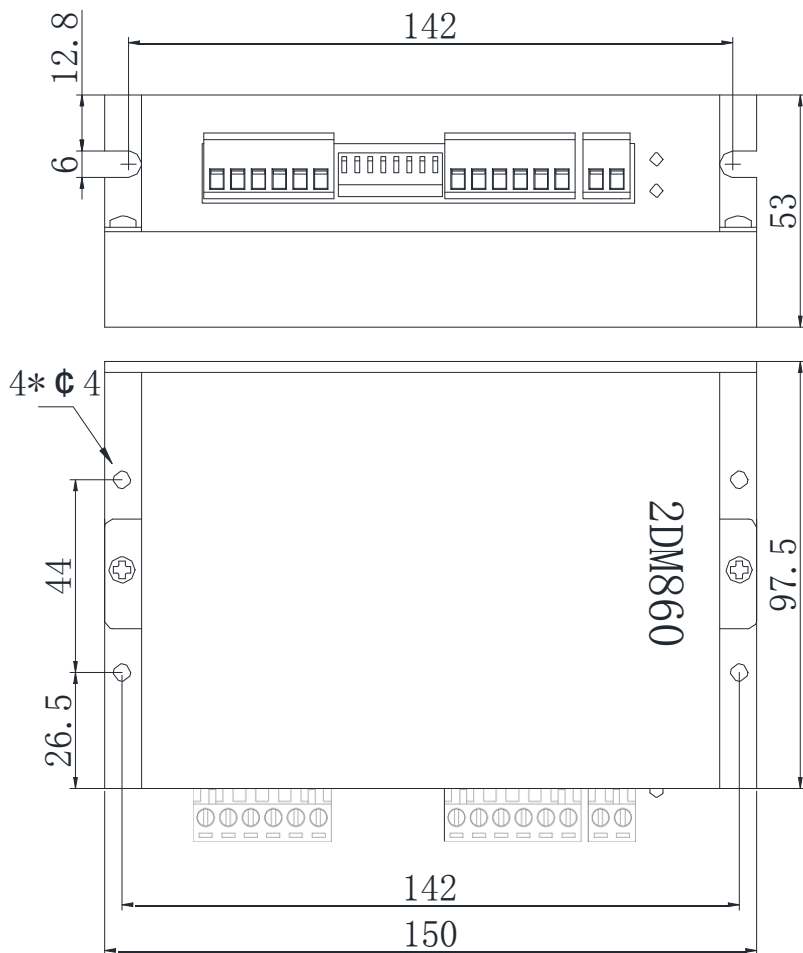
## Specifications

Parameters	Min	Typical	Max	Unit
<b>Output Current (Peak)</b>	2.1	-	8.4	Amps
<b>Supply voltage</b>	30VAC (DC40V)	60VAC (DC80V)	80VAC( DC110V)	VAC
<b>Logic Input Current</b>	-	10	-	mA
<b>Pulse input frequency</b>	-	-	250	KHz
<b>Low Level Time</b>	2.5	-	-	µsec

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

<b>Weight</b>	Approx. 0.58Kg
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**Dimensions (mm)**



**Current Setting:**

Current Setting AVG(A)	Peak Value(A)	SW1	SW2	SW3
1.5	2.1	OFF	OFF	OFF
2.25	3.15	ON	OFF	OFF
2.88	4.03	OFF	ON	OFF
3.42	4.78	ON	OFF	ON
4.06	5.69	OFF	OFF	ON
4.60	6.44	ON	OFF	ON
5.25	7.35	OFF	ON	ON
6.0	8.4	ON	ON	ON

### Microstep Setting:

Step/Rev	SW5	SW6	SW7	SW8
400	ON	ON	ON	ON
800	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	ON	ON	OFF
51200	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
40000	OFF	OFF	OFF	OFF

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

Semi-flow function means that no step pulse 200ms, the current driver outputs automatically reduced to 70% of rated output current, to prevent motor heat.

### 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.

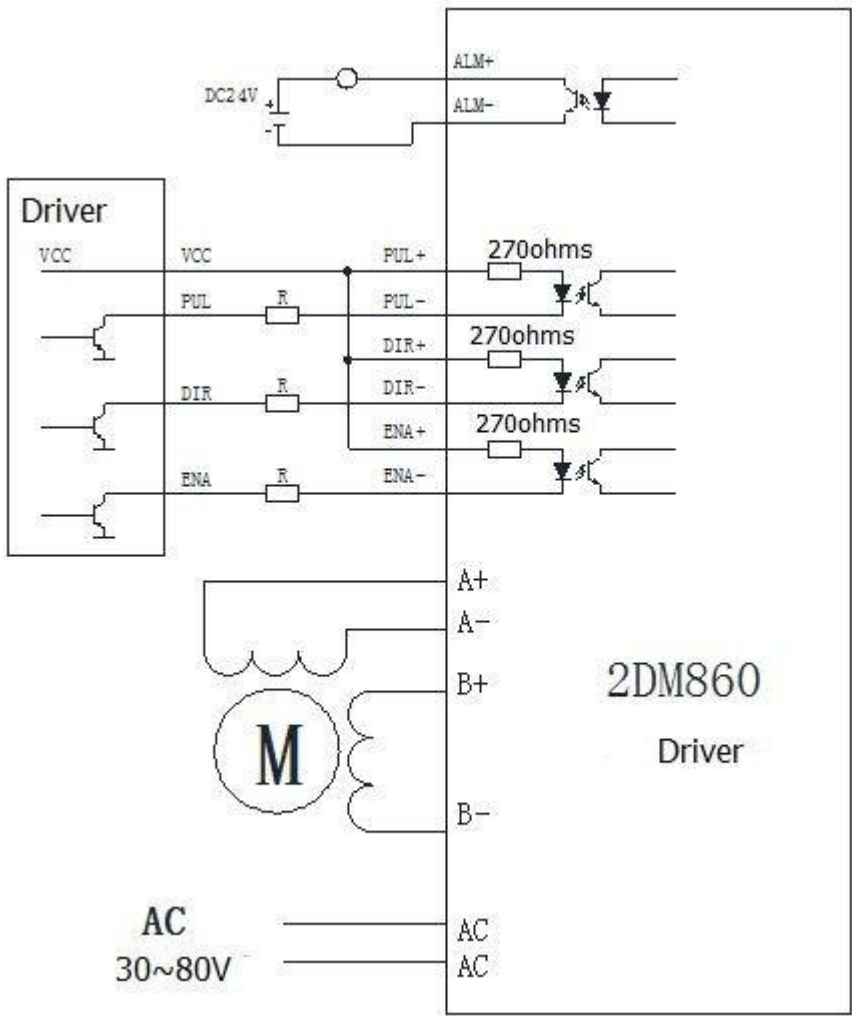
ENA-	Motor release signal	Off active (low) when power motor current, the drive stops working, the motor is in a free state.
ALM+	Alarm output positive	Open collector output
ALM-	Alarm output negative	Open collector output

## P2 Pin Assignment

The P2 I/o high voltage interface description

Name	Function	Instructions
A+、A- B+、B-	Electrical wiring	<p>The diagram shows four motor wiring configurations:</p> <ul style="list-style-type: none"> <li><b>4Leads:</b> Motor terminals +A and -A are connected to a common point. Terminals -B and +B are connected to a common point.</li> <li><b>6Leads:</b> Motor terminals +A, an empty terminal (空), and -A are connected to a common point. Terminals -B and +B are connected to a common point.</li> <li><b>8Leads Apply to low speed:</b> Motor terminals +A and -A are connected to a common point. Terminals -B and +B are connected to a common point.</li> <li><b>8Leads Apply to high speed:</b> Motor terminals +A and -A are connected to a common point. Terminals -B and +B are connected to a common point.</li> </ul>
AC1 AC2	voltage input	Between AC30~80V, refer to motor specs

## Wiring



Signal waveform and timing

