

Changzhou ACT Motor Co., Ltd

DM

Stepper Motor Driver

DM860H-IO

Speed: 10~600 Subdivision: 200~51200 DC : 24~110V AC :20~80V

Product Image



Overview

- Speed setting (within 10~600) subdivision setting: 200~51200
- Current setting (within 2~8.4A)
- Can drive 4-wire, 6-wire and 8-wire motors
- With overvoltage, undervoltage, overcurrent, and phase-to-phase short circuit protection function
- Signal input: single-ended pulse/direction
- Variable current control greatly reduces motor heating
- Photoelectric isolation, differential signal input
- With rising edge, falling edge, single and double pulse selection
- High response/high speed and low vibration, self-test function

Characteristics

Input voltage	24~110VDC,20~80VAC
Output current	2~8.4A (PEAK)
Subdivision setting	16 subdivision settings
weight	200g
Signal current	6~16mA
Use environment	-5~50°C , Avoid dust and corrosive gas
Storage environment	-20~+80°C , Avoid direct sunlight

Motor and power input

symbol	definition	Remark
B-	Stepping motor B-phase winding interface	/
B+	Stepping motor B+phase winding interface	/
A-	Stepping motor A-phase winding interface	/
A+	Stepping motor A+phase winding interface	/
AC	DC AC common source, : DC 24-110VDC, AC 20-80Vac	
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When the offline enable signal is valid, the drive fault is reset, any valid pulse is prohibited, the output power element of the drive is turned off, and the motor has no holding torque.

Control signal input terminal

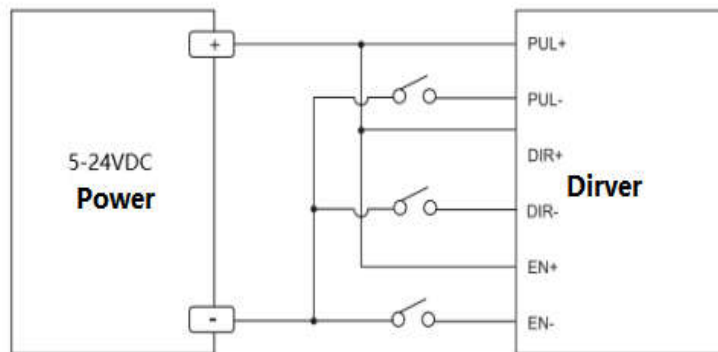
symbol	definition	Remark
ENBL-	Enable negative input	Compatible 5V - 24V level signal
ENBL+	Enable Positive Input	
DIR-	Directional negative input	
DIR+	Directional Positive Input	
PUL-	Pulse negative input	
PUL+	Pulse Positive Input	
ALM-	Negative output of alarm signal	5V
ALM+	Positive output of alarm signal	

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Dial switch setting				
SW1	SW2	SW3	PEAK	RMS
OFF	OFF	OFF	Default (2A)	
ON	OFF	OFF	3.6A	2.57A
OFF	ON	OFF	4.4A	3.14A
ON	ON	OFF	5.2A	3.71A
OFF	OFF	ON	6.0A	4.28A
ON	OFF	ON	6.8A	4.86A
OFF	ON	ON	7.6A	5.34A
ON	ON	ON	8.4A	6A

SW4: The quiescent current can be set with the SW4 dip switch, OFF means that the quiescent current is set to half of the dynamic current, and ON means that the quiescent current is the same as the dynamic current. In general use, SW4 should be set to ON, so that the heating of the motor and the driver is reduced, and the reliability is improved. About 400ms after the pulsetrain stops, the left and right currents are automatically reduced to about half (60% of the actual value), and the calorific value is reduced to 30% in theory.

Control signal connection



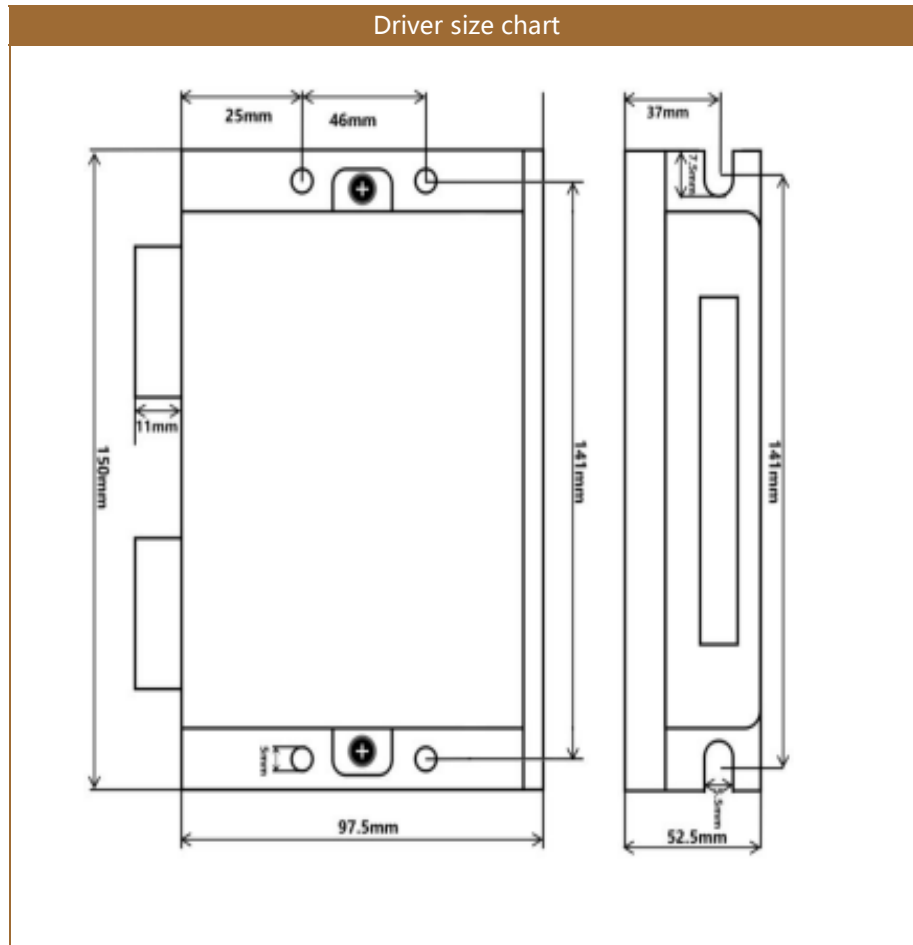
Fine division setting					
IO/RPM	SW5	SW6	SW7	SW8	Pulse/rew
10	ON	ON	ON	ON	Default[400]
20	OFF	ON	ON	ON	800
30	ON	OFF	ON	ON	1600
40	OFF	OFF	ON	ON	3200
50	ON	ON	OFF	ON	6400
60	OFF	ON	OFF	ON	12800
80	ON	OFF	OFF	ON	25600
100	OFF	OFF	OFF	ON	51200
120	ON	ON	ON	OFF	1000
150	OFF	ON	ON	OFF	2000
200	ON	OFF	ON	OFF	4000
250	OFF	OFF	ON	OFF	5000
300	ON	ON	OFF	OFF	8000
350	OFF	ON	OFF	OFF	10000
450	ON	OFF	OFF	OFF	20000
600	OFF	OFF	OFF	OFF	40000

Function setting

SW9:off=Falling Edge is valid;on=Rising Edge is valid
 SW10:off=4ms (High response) ;on=10ms (Low vibration)

Mode setting

mode sel	SW11	SW12
IO internal spontaneous pulse	ON	ON
Self-test	ON	OFF
Double pulse	OFF	ON
Pulse + direction	OFF	OFF

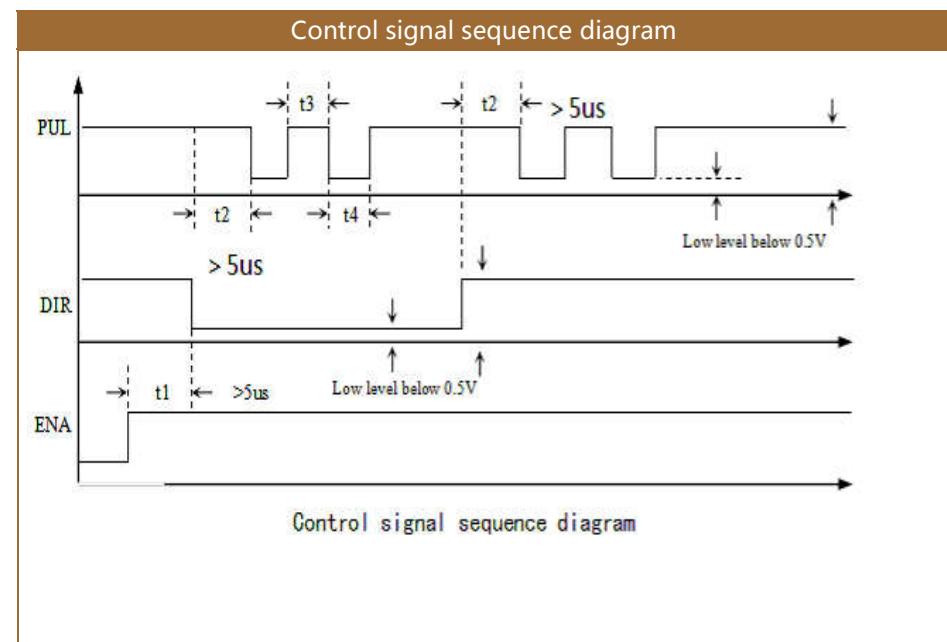


Notice:

There should be a space of 20mm around, and it should not be placed next to other heating equipment. Avoid dust, oil mist, corrosive gas, excessive humidity and strong vibration.

Alarm instructions

Serial number	Number of flashes	Name	illustrate
1	1		Overcurrent or phase-to-phase short circuit fault
2	2		Overpressure
3	3		\
4	4		Open electrode or poor contact



Note:

T1: ENA (enable signal) should be determined to be high by a DIR of at least 5 μs. In general, it is recommended that ENA+ and ENA- be left floating.

T2: DIR determines its state high or low at least 1μs along the PUL falling edge.

T3: The pulse width is at least not less than 1.5 μs.

T4: The low level width is not less than 1.5μs.

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Problems and handle the law		
phenomenon	reason	solution
The motor does not run	Power light is not lit	Check the power supply circuit, normal power supply
	Motor shaft is powerful	The pulse signal is weak and the signal current is increased to 7-16mA.
	Subdivision is too small	Selective segmentation
	Current setting is too small	Selective current
	Drive is protected	Power on again
	Enable signal is low	This signal is pulled high or not
	Does not respond to control signals	No power
Motor steering error	Motor line is wrong	Any two wires of the same phase of the exchange motor (A+ A-exchange position)
	The motor line has an open circuit	Check and pick up
Alarm indicator is on	Motor line is wrong	Check wiring
	Voltage is too high or too low	Check the power supply
	Motor or drive damage	Replace the motor or drive
Inaccurate location	Signal interference	Eliminate interference
	The shield is not connected or not connected	Reliable grounding
	The motor line has an open circuit	Check and pick up
	Subdivision error	Set the subdivision
	Small current	Increase current
Stall when the motor accelerates	Acceleration time is too short	Accelerated acceleration time
	Motor torque is too small	Select a large torque motor
	Low voltage or too small current	Appropriately increase the voltage or current