Changzhou ACT Motor Co., Ltd
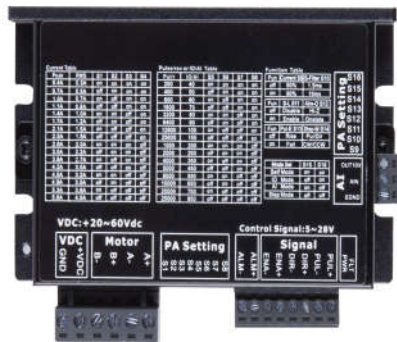
AM

Stepper Motor Driver
AM556-IO

Speed: 40~850 Subdivision: 200~25600   DC : 20~60V

Product Image

Overview

- Speed setting (within 40~850) subdivision setting: 200~25600
- Current setting (within 0.4~5.6A)
- IO constant speed control, analog control
- With overvoltage, undervoltage, overcurrent, and phase-to-phase short circuit protection func
- 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

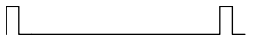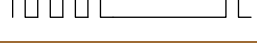|	
Input voltage	20~60VDC
Output current	0.4~5.6A （PEAK）
Subdivision setting	16 subdivision settings
weight	200g
Signal current	6~16mA
Use environment	-5~50℃，Avoid dust and corrosive gas
Storage environment	-20~+80℃，Avoid direct sunlight

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	/
VDC	20-60VDC	
GND		

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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Alarm instructions

Serial number	Number of flashes	Name	instruction
1	1		Over-current or phase-to-phase short circuit fault
2	2		Overpressure
3	3		Undefined
4	4		Open electrode or poor contact

Analog quantity control interface

Name	Features
OUT-10V	Provide 10V voltage, 50MA current
AIN	Analog 0~10V speed control interface
EGND	GND

switch setting

SW1	SW2	SW3	SW4	PEAK	RMS
OFF	OFF	OFF	OFF	0.4A	0.3A
ON	OFF	OFF	OFF	0.7A	0.5A
OFF	ON	OFF	OFF	1.0A	0.7A
ON	ON	OFF	OFF	1.0A	0.8A
OFF	OFF	ON	OFF	1.4A	1.0A
ON	OFF	ON	OFF	1.7A	1.2A
OFF	ON	ON	OFF	2.1A	1.5A
ON	ON	ON	OFF	2.5A	1.8A
OFF	OFF	OFF	ON	2.8A	2.0A
ON	OFF	OFF	ON	3.0A	2.2A
OFF	ON	OFF	ON	3.8A	2.7A
ON	ON	OFF	ON	4.2A	3.0A
OFF	OFF	ON	ON	4.5A	3.2A
ON	OFF	ON	ON	4.9A	3.5A
OFF	ON	ON	ON	5.3A	3.8A
ON	ON	ON	ON	5.6A	4.0A

Fine division setting

| IO/RPM	SW5	SW6	SW7	SW8	Pulse/rew
40	ON	ON	ON	ON	200
50	OFF	ON	ON	ON	400
60	ON	OFF	ON	ON	800
70	OFF	OFF	ON	ON	1600
80	ON	ON	OFF	ON	3200
90	OFF	ON	OFF	ON	6400
100	ON	OFF	OFF	ON	12800
150	OFF	OFF	OFF	ON	25600
200	ON	ON	ON	OFF	1000
250	OFF	ON	ON	OFF	2000
350	ON	OFF	ON	OFF	4000
450	OFF	OFF	ON	OFF	5000
550	ON	ON	OFF	OFF	8000
650	OFF	ON	OFF	OFF	10000
750	ON	OFF	OFF	OFF	20000
850	OFF	OFF	OFF	OFF	25000

Function setting

SW9: Quiescent current setting off=50% ;on=90%

SW10: Filter time setting   off=1.5ms; on=10ms

SW11: Enable axis lock state off=disable; on=enable

SW12:Alarm output status   off=HI-Z; on=onstate

SW13: Pulse acceptance state   off=Rise; on=

SW14: Drive control mode off=Pul+Dir; on=CW+CCW

Drive mode setting

mode sel	SW15	SW16
Self Mode	ON	ON
IO Mode	OFF	ON
AI Mode	ON	OFF
PUL+DIR	OFF	OFF

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Driver size chart	Control signal sequence diagram
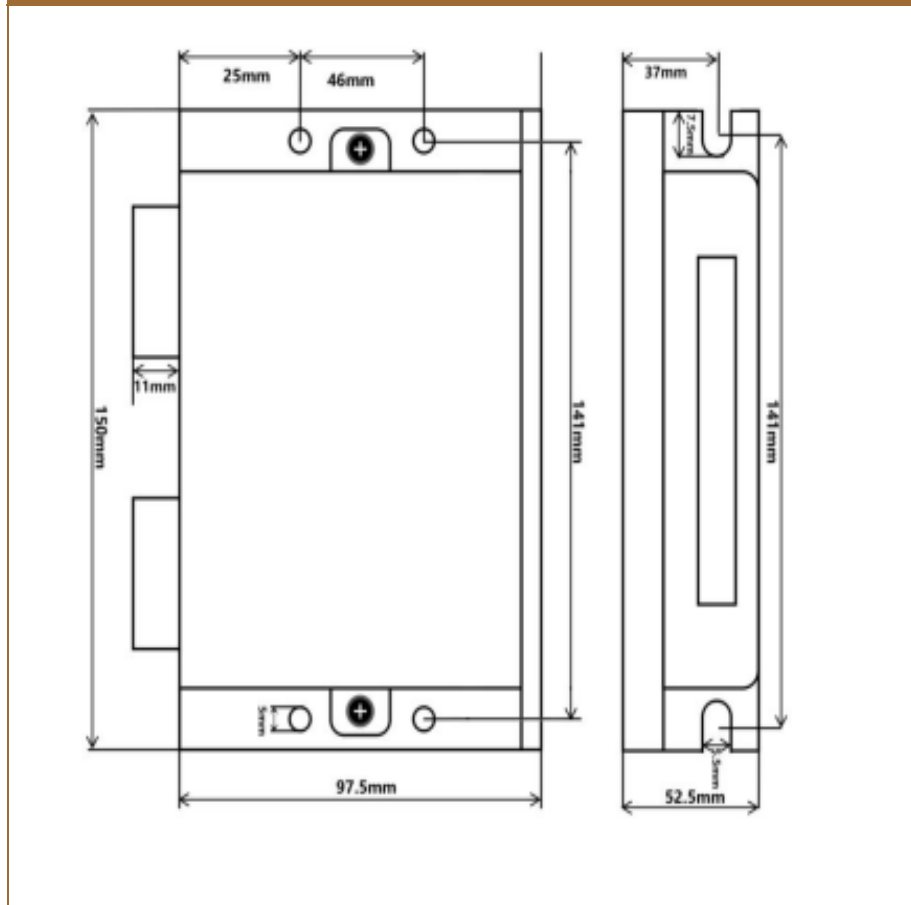
Control signal sequence diagram
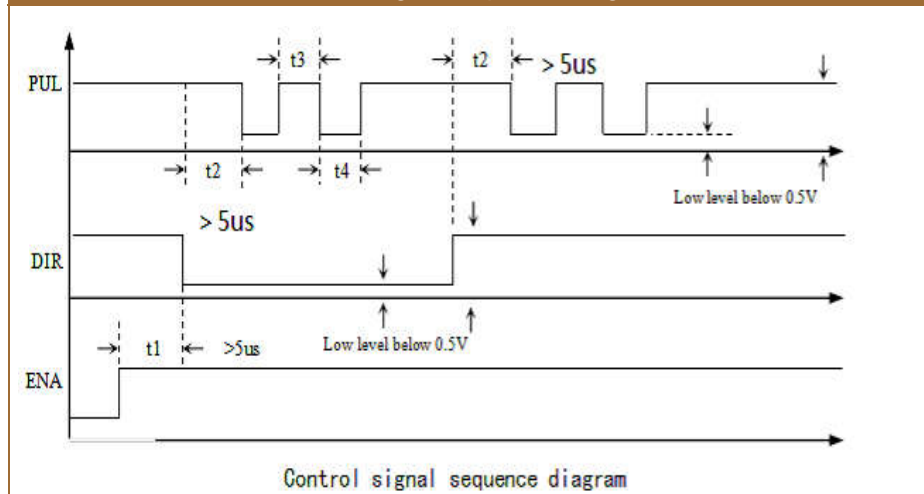
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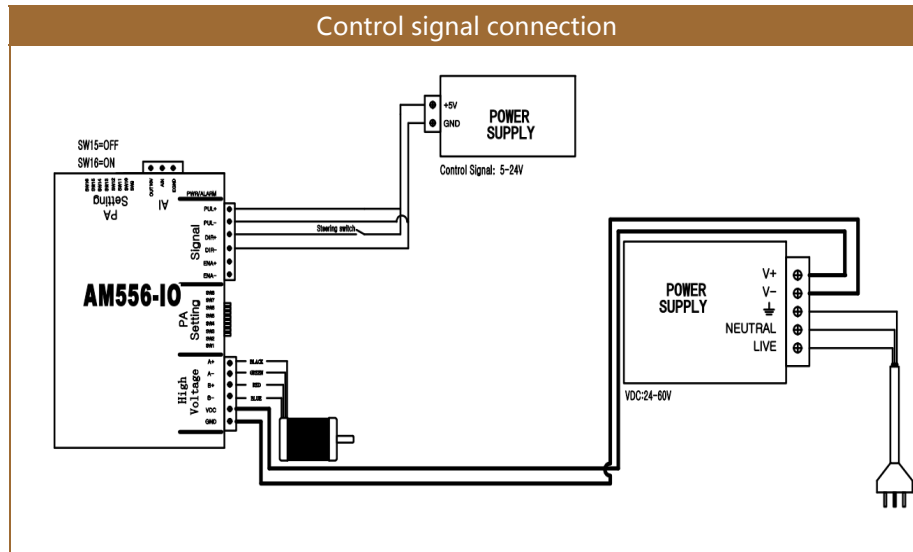| |
|---|
| T1: ENA (enable signal) should be determined to be high by a DIR of at least 5 μs.In general, it is recommended that ENA+ and ENA- be left floating. |
| T2: DIR determines its state high or low at least 1μs along the PUL falling edge. |
| T3: The pulse width is at least not less than 1.5 μs. |
| T4: The low level width is not less than 1.5μs. |

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.

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Control signal connection

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 theexchange 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

Title row: **Problems and handle the law**

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