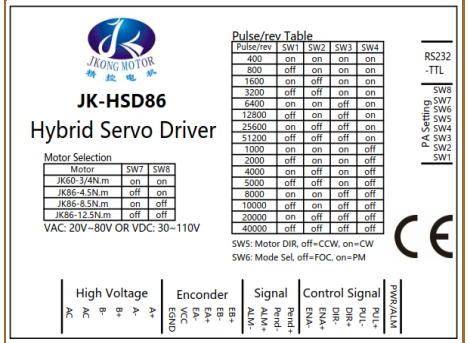
Changzhou JkongmotoCo., Ltd

HSD Hybrid Step Servo Motor Driver

HSD86

MicroSteps Setting:400~51200 AC：20~80V DC:30~110V

Products Image



Overview

- Adopt the latest DSP digital processing chip
- Advanced variable current frequency conversion control algorithm technology
- Compact, compact and space saving
- Impulse response frequency up to 500KHz
- Better vibration and low heat technology
- With overcurrent, overvoltage, undervoltage protection
- Subdivision Settings (within 400~ 51200)

Features

Input voltage	20~80VAC/30~110VDC
Output current	0.5~13A
Pulse frequency	0~500KHz
MicroSteps	16 MicroSteps
Signal current	7~20mA
Using environment	-5 ~ 45 ℃, avoid dust and corrosive gas
Storage environment	-20~+65℃， avoid direct sunlight
Heavy volume	

If the power input is DC voltage, the input range is 24~110V.

LED status indication

Number of flashes	Red indicator flashing wave pattern	Fault description
1		Driver overcurrent
2		Driver internal voltage reference error
3		Error uploading drive parameters
4		Driver supply voltage exceeds maximum
5		Motor phase missing alarm
6		Motor phase missing alarm

Encoder signal

Symbol	Name	Wiring color
EB+	Encoder signal B input positive	/
EB-	Encoder signal B input negative	/
EA+	Encoder signal Ainput positive	/
EA-	Encoder signal Ainput negative	/
VCC	Encoder power	/
EGND	Encoder power ground	/

Motor and power

Symbol	Name	Remark
A+	Phase A+	/
A-	Phase A-	/
B+	Phase B+	/
B-	Phase B-	/
AC	AC power input	20~80V
AC	AC power input	20~80V

Control Signal

Symbol	Name	Remark
PUL+	Pulse signal +	Compatible with 5/12/24V
PUL-	Pulse signal -	
DIR+	Direction signal+	Compatible with 5/12/24V
DIR-	Direction signal-	
ENA+	Enable signal +	Only connected when used
ENA-	Enable signal -	Only connected when used

ALM Signal

Symbol	Name	Remark
ALM+	Positive alarm signal	Only connected when used
ALM-	Negative alarm signal	Only connected when used
PEND+	Positive signal	Only connected when used
PEND-	Negative signal in place	Only connected when used

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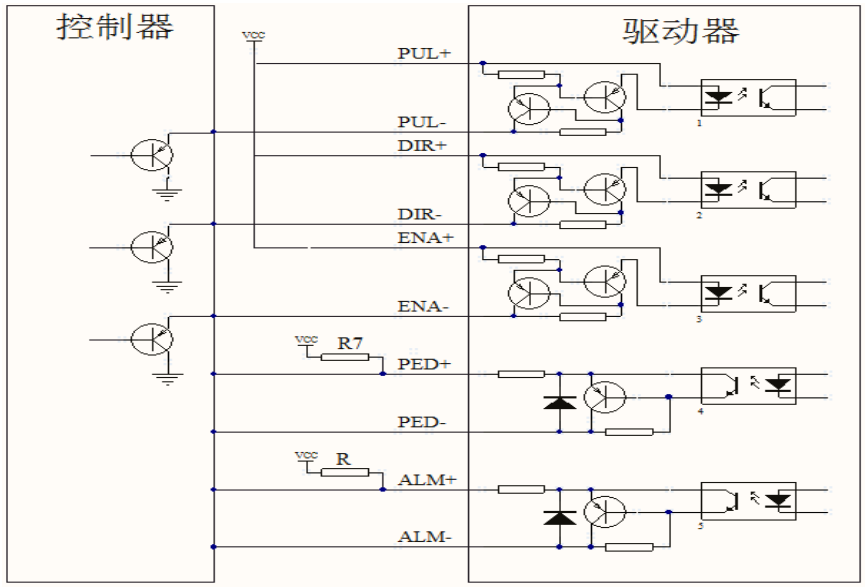
Control Signal Connection



Remarks：VCC compatible 5/12/24V

Control signal mode control

Pulse Trigger Edge Selection: The PWM rising edge or falling edge trigger is enabled by the PC software.

Single and double pulse selection: It is effective to set single pulse or double pulse by PC software.

Direction selection: Set the initial running direction of the motor through the PC software.

Subdivision accuracy

Pulse/rew	SW1	SW2	SW3	SW4
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	off	off	on
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

DIP switch setting

SW5 sets the motor direction. When it is OFF, the motor rotates counterclockwise to CCW.When it is ON, the motor rotates clockwise to CW.

SW6 function mode selection. When OFF, the drive is space vector control mode is FOC. When it is on, the drive point movement mode is PM.

Motor selection

Motor	SW7	SW8
JK60-3/4N.m	ON	ON
JK86-4.5N.m	OFF	ON
JK86-8.5N.m	ON	OFF
JK86-12.5N.m	OFF	OFF

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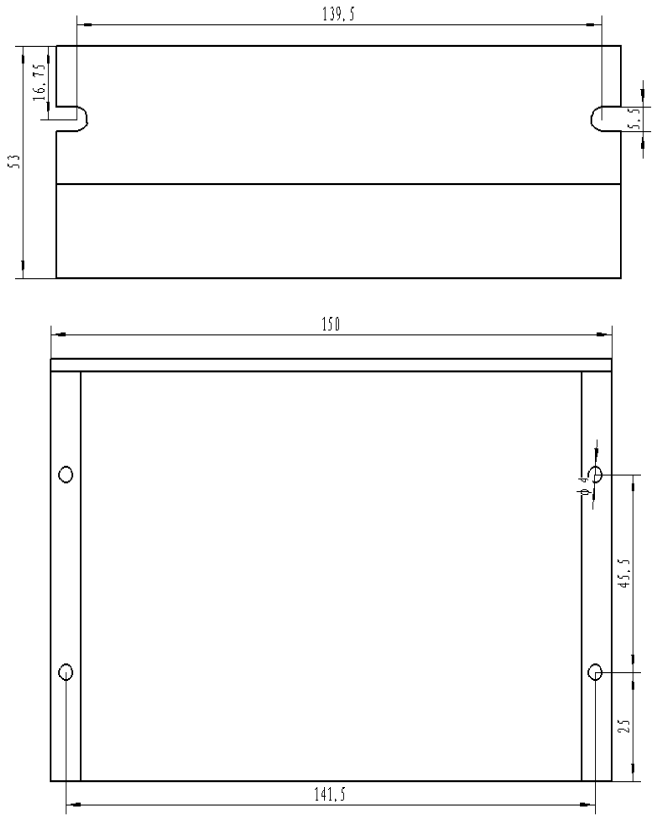
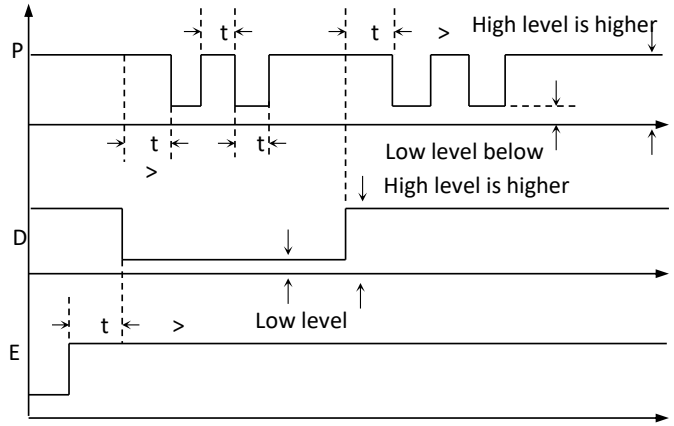
Drive Dimensional Chart(mm)



The reliable working environment temperature of the driver is usually within -5 ° C ~ 45 ° C, the operating temperature of the driver is 65 ° C, the motor working temperature is within 70 ° C, if necessary, install a fan near the drive to force heat dissipation to ensure reliable operation of the drive Working within the temperature range.

Control signal sequence diagram



Control signal timing

Remark:

T1: ENA (enable signal) should be determined to be high by a DIR of at least 5 μs. Under normal circumstances, it is recommended to hang up.

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

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

T4:low level width is not less than 1.5μs

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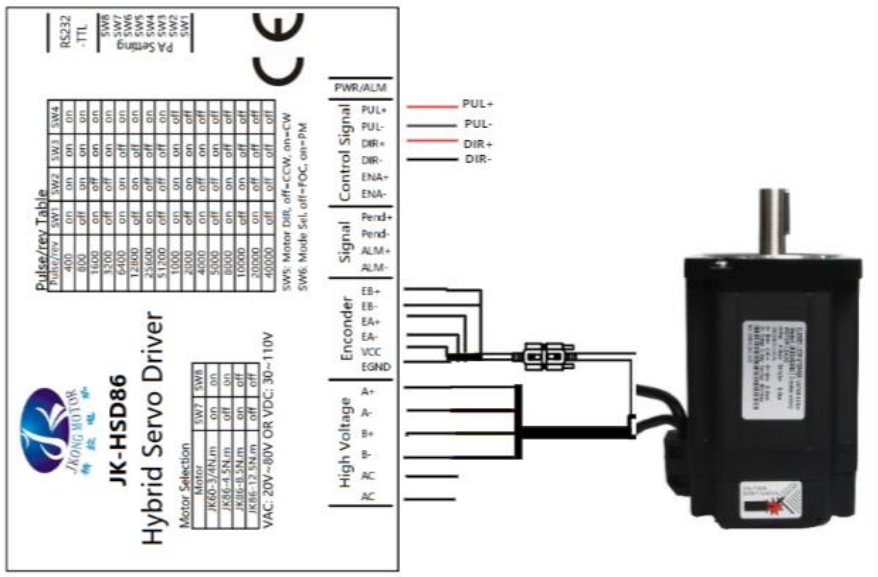

Remarks: For specific A+, A-, B+, B- line sequence colors, please refer to the motor manual used.

Frequently Questions And Troubleshooting
1. The motor does not turn:
The pulse signal is weak, adjust the signal current to 7-16mA
Check and connect the motor line
Check the supply voltage
Choose the correct subdivision gear
Restart the drive
Pull high or dangling enable signal
Check the supply voltage
2. Motor position is not allowed:
Eliminate signal interference
Reliable grounding
Check and connect the motor line
Set the correct segmentation
3. The motor is blocked when it accelerates:
Lengthen acceleration time
Choose a motor with a large torque
Increase the proper working voltage

Protective function
1) Overvoltage protection
When the input voltage is higher than 90VAC, the drive will stop working. At this point, the fault must be discharged and the power-on reset should be resumed.
2) Undervoltage protection
When the input voltage is lower than 15VAC, the drive will stop working. At this point, the fault must be discharged and the power-on reset should be resumed.
3) Overcurrent protection
When an overcurrent occurs, the drive will stop working. At this point, the fault must be discharged and the power-on reset
4) Tracking error tolerance
When the tracking error is out of tolerance, the drive stops working. At this point, the fault must be discharged and the power-on reset should be resumed.

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