

Changzhou ACT Motor Co., Ltd.

HBS

Hybrid Step Servo Motor Driver

HBS57

MicroSteps Setting:200~51200

DC : 24~60V

Products Image



Overview

- Without losing step, High accuracy in positioning.
- Accelerate and decelerate control inside, Great improvement in smoothness of starting or stopping the motor.
- Small vibration, Smooth and reliable moving at low speed.
- The optocoupler isolates the differential signal input.
- Over current, over voltage and over position error protection.
- The impulse response frequency can reach up to 200KHz.
- Subdivision Settings (within 200~ 51200).

Features

Input voltage	24~60VDC
Output current	4.5A
Pulse frequency	0~200KHz
MicroSteps	16 MicroSteps
Signal current	7~20mA
Using environment	0 ~ 70 °C, avoid dust and corrosive gas
Storage environment	-20~+80°C , avoid direct sunlight
Heavy volume	280g (Does not contain the packaging)

Generally speaking, the power supply voltage is a little higher, and the motor's high-speed performance will be relatively low when the power supply voltage is good. It is suggested that the normal operating speed range is 36V above power supply for high-speed operation.

Encoder signal

Symbol	Name	Wiring color
PB+	Encoder phase B +	Green
PB-	Encoder phase B -	Yellow
PA+	Encoder phase A +	Blue
PA-	Encoder phase A -	BLACK
+5V	Encoder power	Red (+5V)
GND	Encoder power ground	White (0V)

Motor and power

Symbol	Name	Remark
A+	Phase A+	Black
A-	Phase A-	Red
B+	Phase B+	Yellow
B-	Phase B-	Blue
+V	Input Power +	+24V~60V
GND	Input Power-	0V

Control Signal

Symbol	Name	Remark
PUL+	Pulse signal +	/
PUL-	Pulse signal -	/
DIR+	Direction signal+	/
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

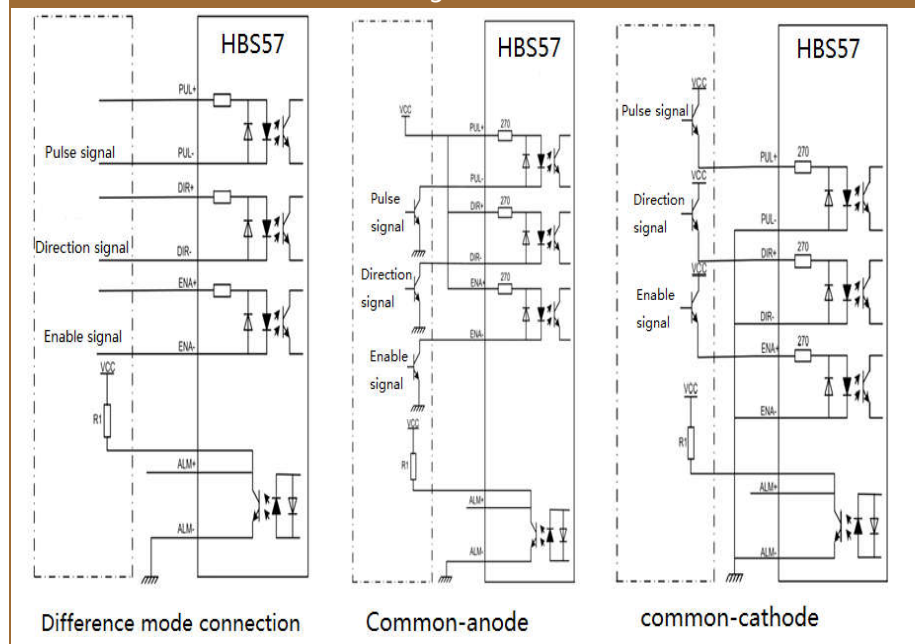
Dial Code Switch Setting

SW1 is used for setting the activate edge of the input signal, "off" means the activate edge is the rising edge, while "on" is the falling edge.
 SW2 is used for setting the running direction, "off" means CCW, while "on" means CW.

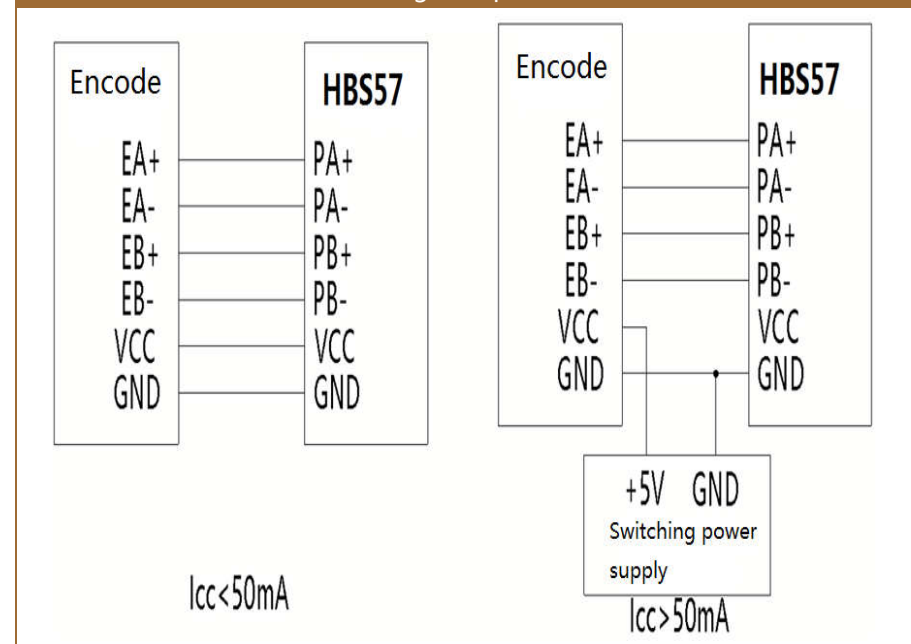
MicroSteps Setting

RPM	Default	800	1600	3200	6400	12800	25600	51200	1000	2000	4000	5000	8000	10000	20000	40000
SW3	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
SW4	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW5	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF
SW6	ON	ON	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

Control Signal Connection

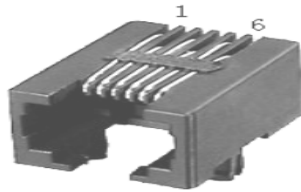


Control Signal Input Terminal

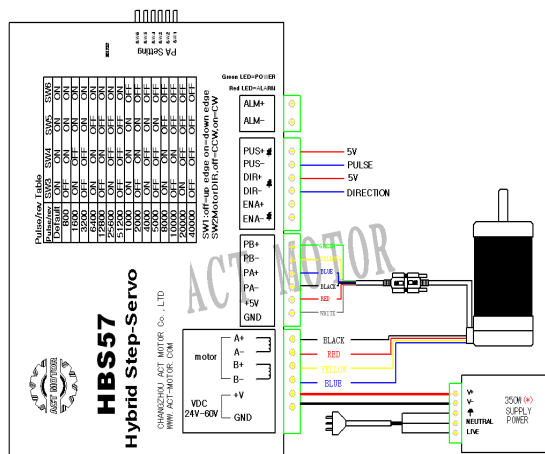


RS232 Interface Pin Definition

Terminals no.	Symbol	Designation	Instructions
1	NC	/	/
2	+5V	Positive-supply	For external use only
3	TxD	RS232 sender	/
4	GND	Power ground	0V
5	RxD	RS232 receiver	/
6	NC	/	/



Normal Connection Diagram



Description

Light

Driver overcurrent	●
Driver internal voltage reference error	● ●
Error uploading drive parameters	● ● ●
Driver supply voltage exceeds maximum	● ● ● ●
Driver position deviation exceeds maximum	● ● ● ● ●
Motor phase missing alarm	● ● ● ● ● ●

Note: one red light means one flashing.

Frequently Questions And Troubleshooting

1, Power light is off, while the power is on

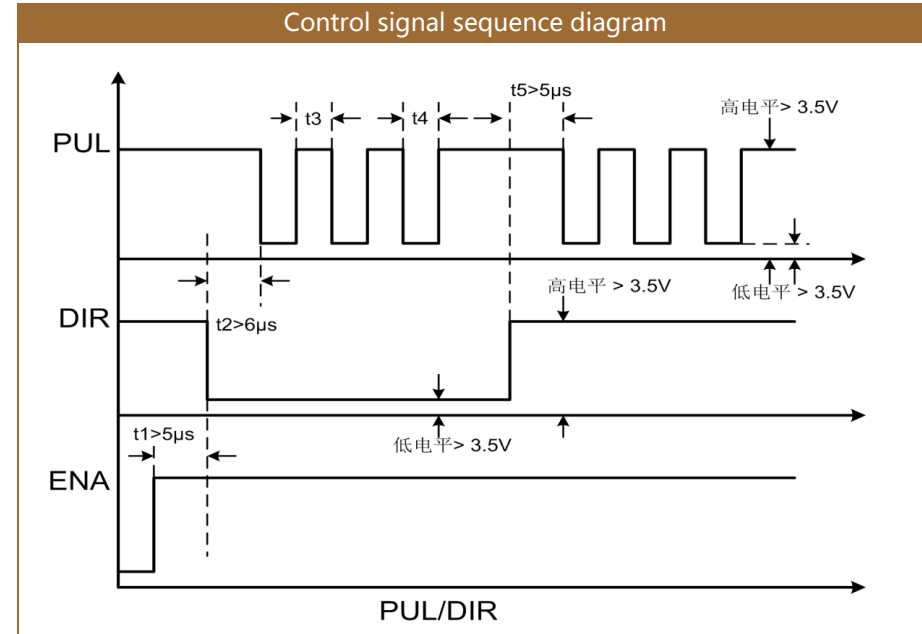
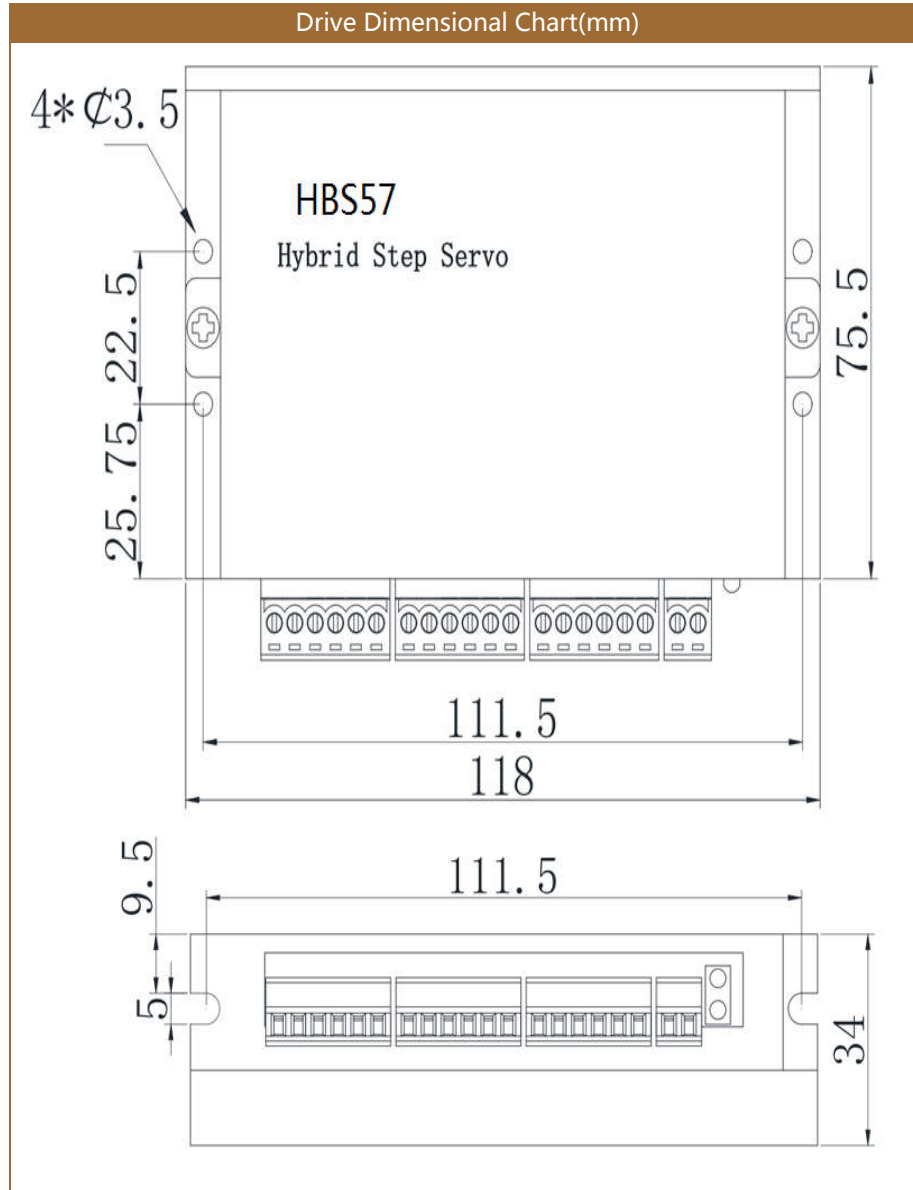
- Input power failure, please check the power line, to see if the voltage is too low or not.

2, Red light alarms when offering power

- Please check if the motor feedback signal line and motor power cable are connected or not.
- Please check if driver's input voltage is too high or too low.

3, The red light alarms after running a small angle

- Please check if motor's phase wires are connected correctly or not. If not, please double check motor's wires & driver's corresponding phase sequence are correctly connected.
 - In the driver configuration parameters, if the number of wires for motor encoder is the same as the actual parameters for connected motor or not? If not, please reset.
 - Please check if pulse's input speed is higher than motor's rated speed or not? If so, it will cause position's out of tolerance.
- ### 4, The driver doesn't run after offering input pulse
- Please check if wiring of pulse input terminals for the driver is reliable or not?
 - Please check if input mode of the step servo drive system configuration is the same as pulse's input method or not.
 - Please check if the motor's Enable signal is on or off.



Remark :

- ENA must be ahead of DIR by at least $5\mu s$. Usually, ENA+ and ENA- are NC (not connected);
- DIR must be ahead of PUL active edge by $6\mu s$ to ensure correct direction;
- Pulse width not less than $2.5\mu s$;
- Low level width not less than $2.5\mu s$.