



杰美康机电  
JUST MOTION CONTROL

# 2HSS86H-KH-XX

## Hybrid Stepper Servo Drive

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# Manual



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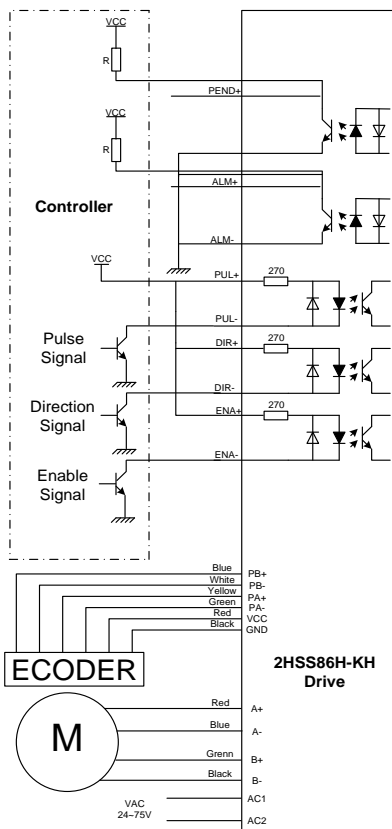








2HSS86H-KH.



## 10. Parameter Setting

The parameter setting method of 2HSS86H-KH drive is to use a HISU adjuster through the 232 serial communication ports, only in this way can we setting the parameters we want. There are a set of best default parameters to the corresponding motor which are carefully

adjusted by our engineers, users only need refer to the following table, specific condition and set the correct parameters.

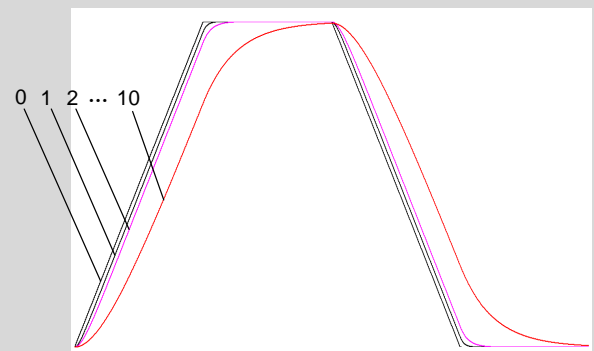
**Actual value = Set value × the corresponding dimension**

Mode	Definition	Range	Dimension	Drive Restart	Default Value
P1	Current loop Kp	0—4000	1	N	1000
P2	Current loop Ki	0—1000	1	N	100
P3	Damping coefficient	0—1000	1	N	100
P4	Position loop Kp	0—4000	1	N	1300
P5	Position loop Ki	0—1000	1	N	250
P6	Speed loop Kp	0—3000	1	N	50
P7	Position loop Ki	0—1000	1	N	10
P8	Open loop current	0—60	0.1	N	45
P9	Close loop current	0—40	0.1	N	20
P10	Alarm level	0—1	1	N	0
P11	Reserved				
P12	Stop lock enable	0—1	1	N	0
P13	Enable signal level	0—1	1	N	0
P14	Arrival level	0—1	1	N	1
P15	Encoder line number	0—1	1	Y	0
P16	Position error limit	0—3000	10	N	1000
P17	Reserved				
P18	Motor type	0—5	0	Y	4
P19	Speed smoothness	0—10	1	N	0
P20	User-defined p/r	4-1000	50	Y	8

There are total 20 parameter configurations, use the HISU to download the configured parameters to the drive, the detail descriptions to every parameter configuration are as follows:

Item	Description
<b>Current loop Kp</b>	Increase Kp to make current rise fast. Proportional Gain determines the response of the drive to setting command. Low Proportional Gain provides a stable system (doesn't oscillate), has low stiffness, and the current error, causing poor performances in tracking current setting command in each step. Too large proportional gain values will cause oscillations and unstable system.
<b>Current loop Ki</b>	Adjust Ki to reduce the steady error. Integral Gain helps the drive to overcome static current errors. A low or zero value for Integral Gain may have current errors at rest. Increasing the integral gain can reduce the error. If the Integral Gain is too large, the system may "hunt" (oscillate) around the desired position.
<b>Damping coefficient</b>	This parameter is used to change the damping coefficient in case of the desired operating state is under resonance frequency.
<b>Position loop Kp</b> <b>Position loop Ki</b>	The PI parameters of the position loop. The default values are suitable for most of the application, you don't need to change them. Contact us if you have any question.

<b>Speed loop Kp</b>	The PI parameters of the speed loop. The default values are suitable for most of the application, you don't need to change them. Contact us if you have any question.
<b>Speed loop Ki</b>	
<b>Open loop current</b>	This parameter affects the static torque of the motor.
<b>Close loop current</b>	This parameter affects the dynamic torque of the motor. (The actual current = open loop current + close loop current)
<b>Alarm Control</b>	This parameter is set to control the Alarm optocoupler output transistor. 0 means the transistor is cut off when the system is in normal working, but when it comes to fault of the drive, the transistor becomes conductive. 1 means opposite to 0.
<b>Stop lock enable</b>	This parameter is set to enable the stop clock of the drive. 1 means enable this function while 0 means disable it.
<b>Enable Control</b>	This parameter is set to control the Enable input signal level, 0 means low, while 1 means high.
<b>Arrival Control</b>	This parameter is set to control the Arrival optocoupler output transistor. 0 means the transistor is cut off when the drive satisfies the arrival

	<p>command, but when it comes to not, the transistor becomes conductive. 1 means opposite to 0.</p>																		
<p><b>Encoder resolution</b></p>	<p>This drive provides two choices of the number of lines of the encoder. 0 means 1000 lines, while 1 means 2500 lines.</p>																		
<p><b>Position error limit</b></p>	<p>The limit of the position following error. When the actual position error exceeds this value, the drive will go into error mode and the fault output will be activated. (The actual value = the set value × 10)</p>																		
<p><b>Motor type selection</b></p>	<table border="1"> <thead> <tr> <th>Parameter</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> </tr> </thead> <tbody> <tr> <td>Type</td> <td>86J18</td> <td>86J18</td> <td>86J18</td> <td>86J18</td> <td>86J18</td> </tr> <tr> <td></td> <td>65EC</td> <td>80EC</td> <td>95EC</td> <td>118EC</td> <td>156EC</td> </tr> </tbody> </table>	Parameter	1	2	3	4	5	Type	86J18	86J18	86J18	86J18	86J18		65EC	80EC	95EC	118EC	156EC
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Type	86J18	86J18	86J18	86J18	86J18														
	65EC	80EC	95EC	118EC	156EC														
<p><b>Speed smoothness</b></p>	<p>This parameter is set to control the smoothness of the speed of the motor while acceleration or deceleration, the larger the value, the smoother the speed in acceleration or deceleration.</p> 																		

**User-defined p/r**

This parameter is set of user-defined pulse per revolution, the internal default micro steps inside is activate while SW3、SW4、SW5、SW6 are all on, users can also set the micro steps by the outer DIP switches. (The actual micro steps = the set value  $\times$  50)

## **11. Processing Methods to Common Problems and Faults**

### **11.1 Power on power light off**

- No power input, please check the power supply circuit. The voltage is too low.

### **11.2 Power on red alarm light on**

- Please check the motor feedback signal and if the motor is connected with the drive.
- The stepper servo drive is over voltage or under voltage. Please lower or increase the input voltage.

### **11.3 Red alarm light on after the motor running a small angle**

- Please check the motor phase wires if they are connected correctly, if not, please refer to the 3.4 Power Ports.

- Please check the parameter in the drive if the poles of the motor and the encoder lines are corresponding with the real parameters, if not, set them correctly.
- Please check if the frequency of the pulse signal is too fast, thus the motor may be out of its rated speed, and lead to position error.

#### **11.4 After input pulse signal but the motor not running**

- Please check the input pulse signal wires are connected in reliable way.
- Please make sure the input pulse mode is corresponding with the real input mode.