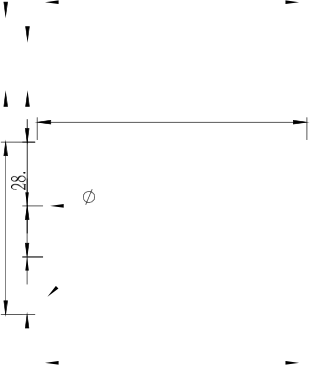
Specifications：

112



119

4- 4.50



M3

112

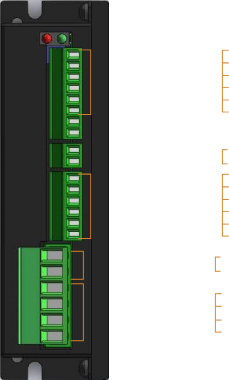
|  |  |  |
| --- | --- | --- |
| Property | Unit | Value |
| Power supply voltage | VAC | 18-80VAC |
| Control mode |  | Pulse control |
| Output Current（MAX） | A | 5.0A |
| Digital quantity input |  | 3 |
| Digital quantity output |  | 2 |
| Adjustable subdivision |  | 16th gear |
| Adjustable current |  | Fourth Gear |
| Adjustable acceleration and deceleration |  | Fourth Gear |
| Number of encoder lines | CPR | 1000 |
| Operating temperature | ℃ | -20-50℃ |
| Certification |  | CE,RoHS |
| IP level |  | IP20 |
| Weight | kg | 0.3 |
| Phase number |  | 2 |
| Step pulse width | KHZ | 400KHZ |
| Maximum adjustable subdivision | Pulse/rotation | 51200 |
| Type |  | Pulse control |

Overview

HBS86H V4 is a new generation high performance two-phase digital step driver based on 32-bit DSP technology. The driving voltage is 18-80VAC and the matching current is below 6.0 A, outside diameter 57 ~ 86 various types of two-phase hybrid 1000-wire closed-loop motor.

Drive sampling similar to servo control principle, unique circuit design, superior software algorithm processing, so that the motor even at low subdivision can also run smoothly, almost no vibration and noise, smooth and accurate current control technology greatly reduces the motor heating, external 16-stop angle constant force, moment subdivision, the highest adjustable subdivision 51200 pulse/rotation, optocoupler isolation differential signal input, strong anti-interference ability, with over-voltage, under-voltage, over-current protection and other fault protection functions. In the medium and high speed application fields, such as 3C, LED chip, its stability, vibration and noise performance advantages are obvious, can greatly improve equipment performance.

The schematic diagram of the product



Status Indicator Light

Control signal

EN+

Alarm output

In-place output

EX-

+5V EGND PB-

PB+

PA-

PA+

|  |
| --- |
| Power connection |
| (18-80VAC)  Power connection |

B-

B+

Ground screws



conEncoder connection

EN- ALM+

ALM-

EX+

PUL+ PUL- DIR+

DIR-

(1000CPR)

A-

A+

AC

AC

Maximum current setting

|  |  |  |
| --- | --- | --- |
| Electric current | SW9 | SW10 |
| 4.8A | OFF | OFF |
| 5.5A | ON | OFF |
| 6.2A | OFF | ON |
| 7.3A | ON | ON |

Add and decelerate time setting

|  |  |  |
| --- | --- | --- |
| Add and decelerate time setting | Sw7 | Sw8 |
| 40ms | OFF | OFF |
| 20ms | ON | OFF |
| 4ms | OFF | ON |
| 0ms | ON | ON |

Subdivision settings

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Subdivision (step/Turn) | 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 |

Logical direction setting

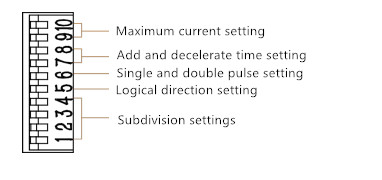
SW5:OFF=CW；

ON=CCW。

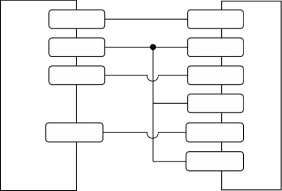
Single and double pulse setting

SW6:OFF=Pulse, direction；

ON=Double Pulse。



input interface wiring schematic diagram



PUL+

PUL-

DIR+

DIR-

EN+

EN-

OUT0

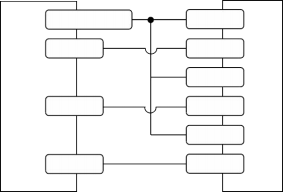
COM

OUT1

PC

Drive

OUT2



+3.3~28VDC

OUT0

DIR+

OUT1

EN+

OUT2

PUL+

PUL-

PC

Drive

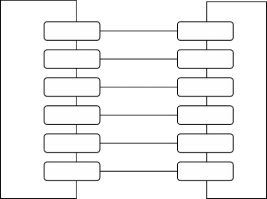
DIR-

EN-

The connection mode of the upper computer&#039;s

pouring current output (co-yang) Upper computer source current output connection (total negative)





PUL+

PUL-

DIR+

DIR-

EN+ Drive

EN-

OUT0+

OUT0-

OUT1+

OUT1-

OUT2+

OUT2-

PC

The differential signal output connection mode of the host computer

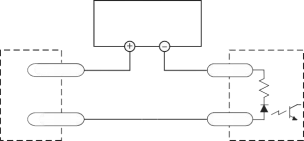
Description：

1. In monopulse mode, OUT0 is a pulse signal, OUT1 is a direction signal, the motor rotates clockwise when Out0 is on, and counter-clockwise when OUT0 and OUT1 are on at the same time.

2. Double Pulse mode, OUT0 is a pulse signal, OUT1 is also a pulse signal, OUT0 connected, when the motor clockwise rotation, OUT1 connected when the motor counter-clockwise rotation. OUT0 and OUT1 can not be connected at the same time.

3. The EN input enables or shuts off the power portion of the drive. The signal input is optically isolated and accepts 3.3-28VDC single-ended or differential signals. When the EN signal is suspended or low level (optocoupler is not on) , the drive is in enable state and the motor operates normally; when the EN signal is high level (optocoupler is on) , the drive power is partly off and the motor has no excitation. When the motor is in error state, EN input, can be used to restart the drive. First from the application system to remove the existence of the fault, and then input a, a drop along the signal to the EN end, the driver can restart the power part of the motor excitation operation.

Output wiring schematic diagram



3.3V~28V Power supply

OUT+

OUT-

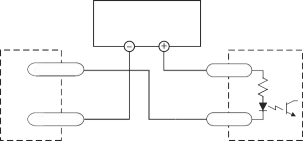
Drive

COM

PLC

IN

PLC Com interface 0V when the connection(PNP)



3.3V~28V Power supply

OUT+

OUT-

Drive

COM

PLC

IN

PLC Com interface when the connection of 24V(NPN)

Description of alarm function

|  |  |  |
| --- | --- | --- |
| LED codes | | ERROR |
|  | The green light is always on | Motor running |
|  | The green light flashes | Motor stop |
|  | One Red and one green | Drive over current |
|  | Two red and one green | Motor windings open |
|  | Three Red and one green | Drive input overvoltage |
|  | Four red and one green | Drive input undervoltage |
|  | Five Red and one green | Position error warning |
|  | Six Red and one green | Encoder error |

Troubleshooting

1. One Red and one green: drive overcurrent, possible causes are as follows：

2. A: drive damage; (remove the motor wire and encoder wire, re-power, continue to quote a red and green note drive itself over-current, drive damage, back to repair)

B:Short Circuit of motor AB windings; (note not the same phase windings, less than 1m ω, basically can judge the damage of the motor itself, internal short circuit, the motor back to the factory maintenance)

C:Line fault; (check the line)

3. Two Red and one green: the motor is open to each other. The possible reasons are as follows：

A:Motor Damage; (with a multimeter respectively test AB two-phase winding“The same phase”, greater than 100ω or two-phase winding deviation is large, the basic motor itself can be judged damaged, motor repair back to the factory)

B:Drive damage; (such as the motor itself test OK, may be drive damage, replace the normal use of motor, the problem is still the same, basic confirmation of the open-circuit drive, back to factory maintenance.)

C:Line fault; (check the line, in the detection of motor winding, can be detected along with this item.)

4. Three Red and one green: drive input overvoltage, check whether the input power supply exceeds the drive rating voltage.

5. Four Red and one green: under-voltage drive input, possible causes are as follows:

A:Check whether the input voltage of the power supply is lower than the rated voltage of the drive；

B:The power supply power is not enough, the replacement of high-power power supply, the performance of power back to normal。

6. Five Red One Green: encoder logic position and motor rotor position deviation, possible reasons are as follows：

7. A:After power-on pulse appears, possible reasons：

a：Wiring error, carefully check the motor label, see if the wiring is correct,，Interchangeable without wiring diagramA+A-.

b：Line Fault, test the line

8. B:Short running time appears, may be too fast or speed up and deceleration time is too short, adjust the speed and deceleration to the appropriate value.

C:Long-term operation, may be bad contact for the line, the replacement of motor and encoder wire, if the drag chain structure, the need to replace the drag chain wire.

9. Six Red and one green: the drive can not detect the encoder, possibly for the following reasons：

A:Encoder wiring error, check encoder wiring.

B:Structure stuck, the motor can not rotate, in the motor with brakes need special attention, after power-on brake release time can not be more than 10s.

10.For other faults, consult our engineer, or replace the drive.