Manual Content

Manual

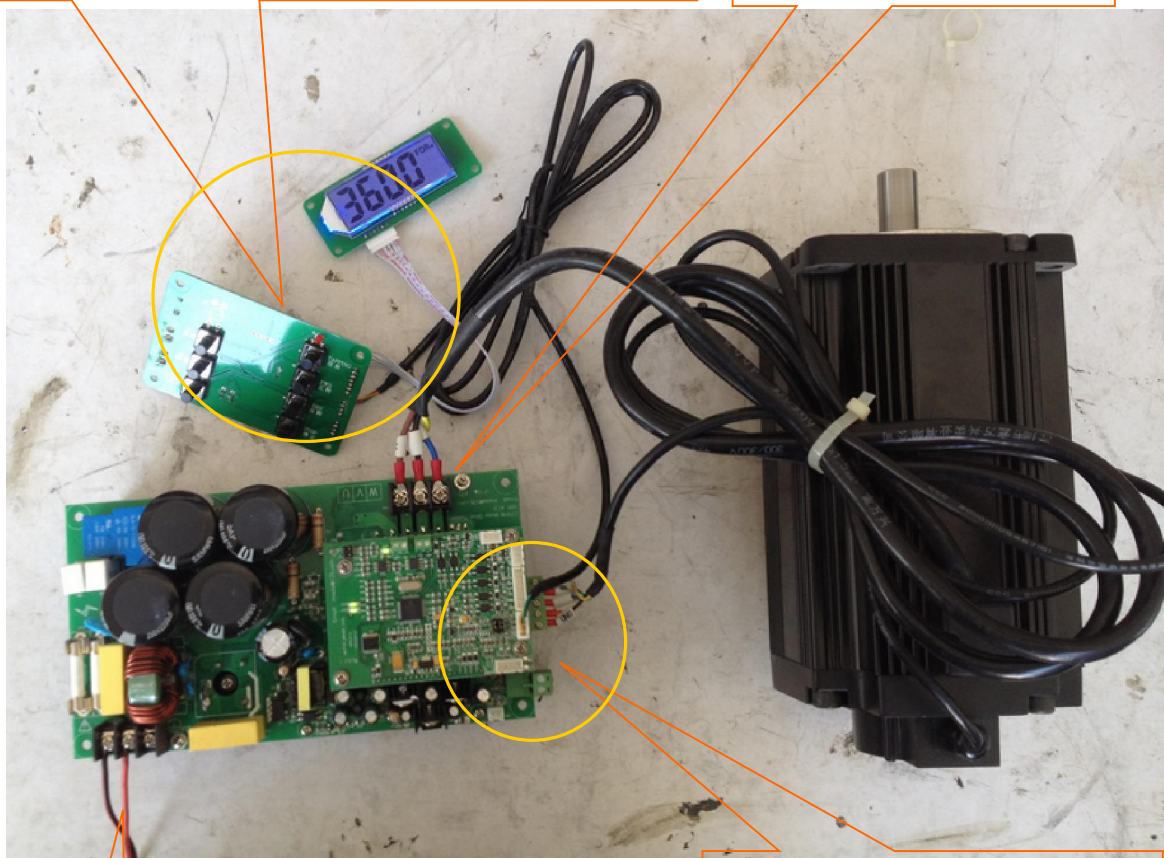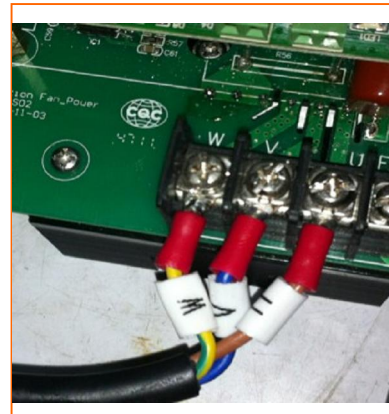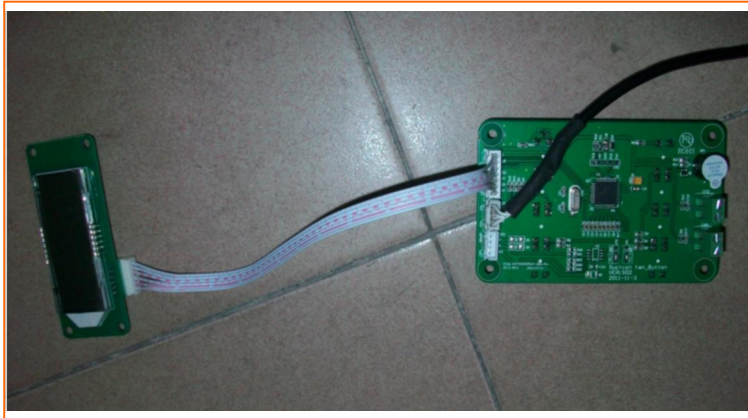## 2200W BLDC Motor

1. Component

The components of this motor are BLDC motor, controller, keyboard and
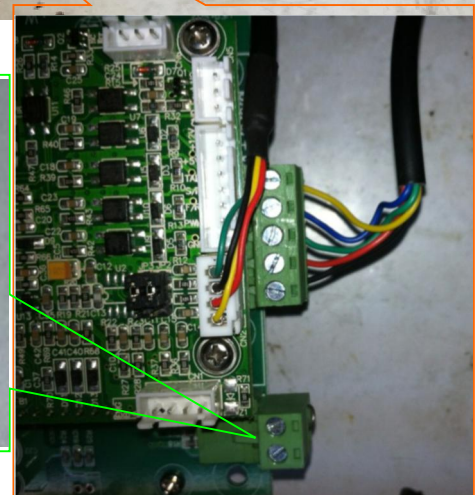
LCD

2. Specification

Model	Voltage(v)	Power (W)	Speed (RPM)	Shaft	Pole	Torque (N.M)
HSBL-123F-22036	300	2200	3600	42	8	6.1
HSBL-123F-22060	300	2200	6000	42	4	3.5

3. Connection Mark

220V/110V AC

4. The Terminal Introduction

Power Board Terminals Introduction：

功 率 板
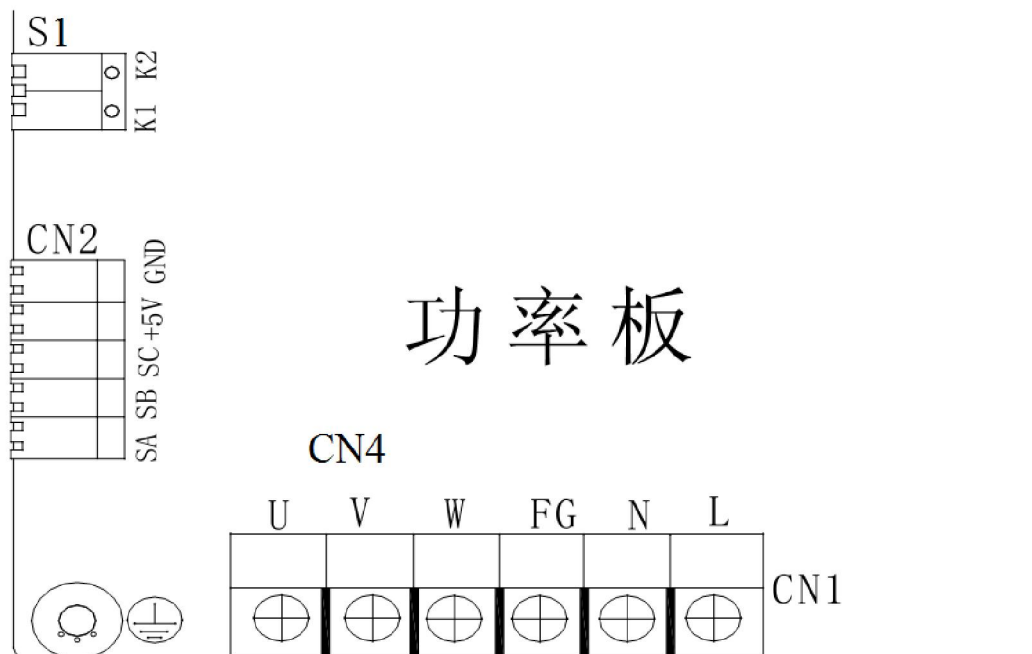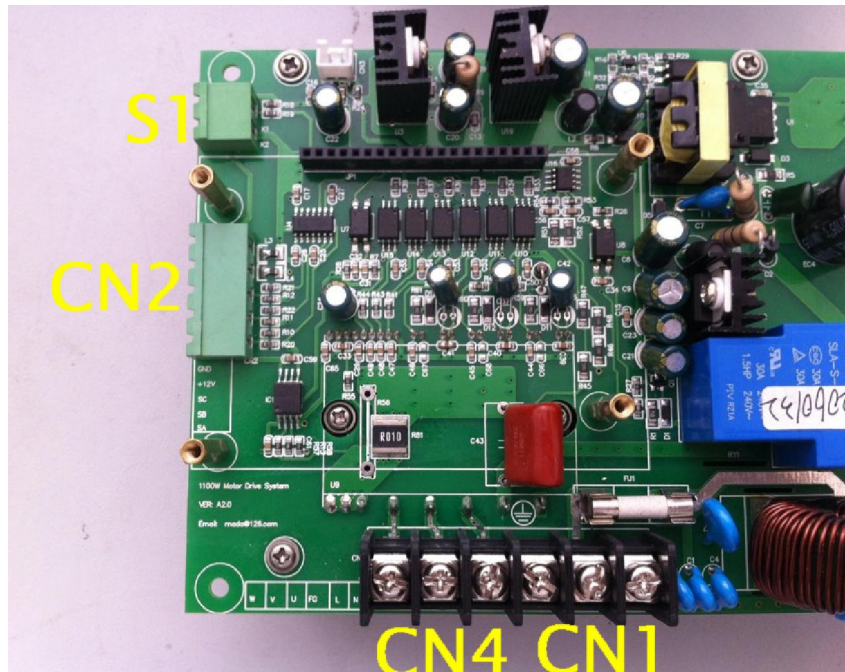
CN4			CN1			CN2					S1		J1/J2	
Motor input			power			Hall line					Limit switch		110V/220Vtransfer switch	
U	V	W	FG	N	L	SA	SB	SC	+5V	GND	K1	K2	J1	J2

◇CN1--the wiring terminal N connect zero line, L connect fire wire. Must according to J1/J2 to electricity

◇CN4--output terminal U, V, W connect to the motor's U phase, V phase, W phase；

◇CN2--Hall sensor terminal connect to the motor hall line

◇S1--limit switch terminal K1, K2 can make threshold switch, abrupt stop switch protection，Short circuit K1, K2, the controller working normally. Disconnect K1, K2 the controller stop working.

◇J1/J2--J1/J2 disconnect, the work voltage is 220V (Figure1). J1/J2 connect, the work voltage is 110V (Figure2). (Remark: J1/J2 needs to use a thick line to connect.)
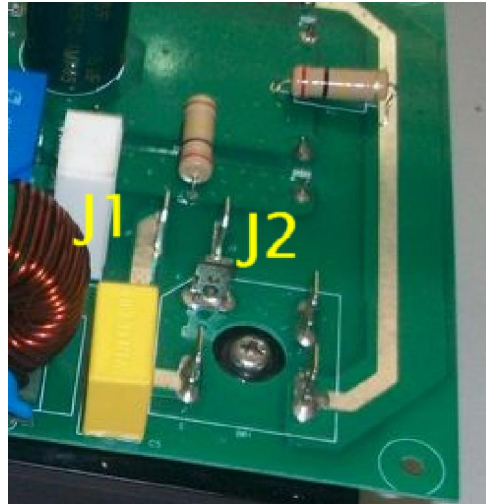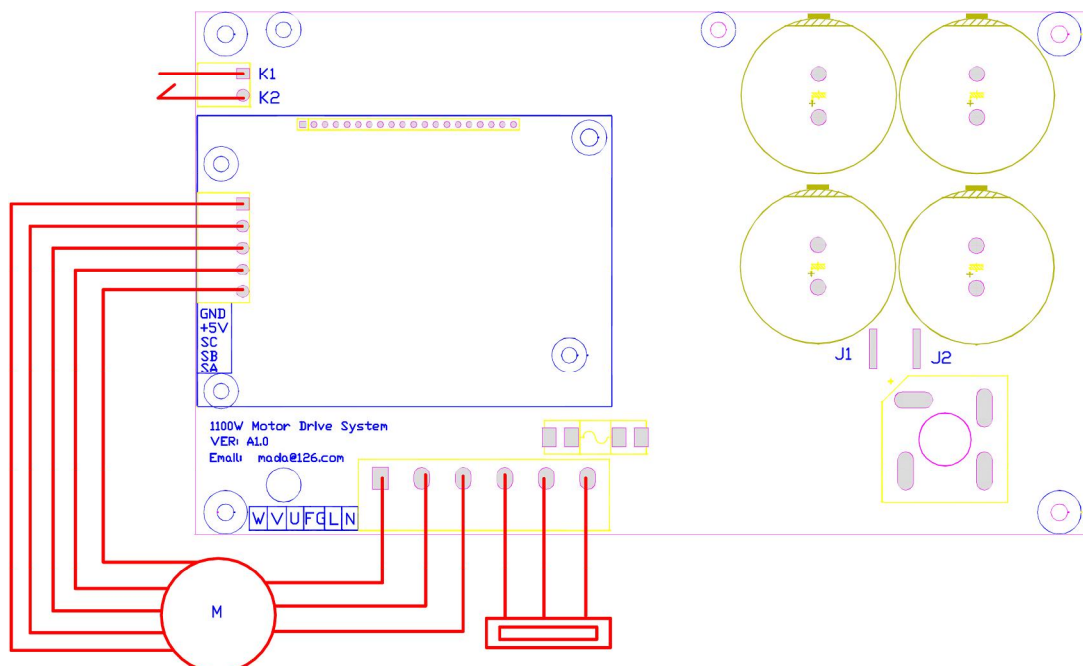

The wiring diagram at AC220V:

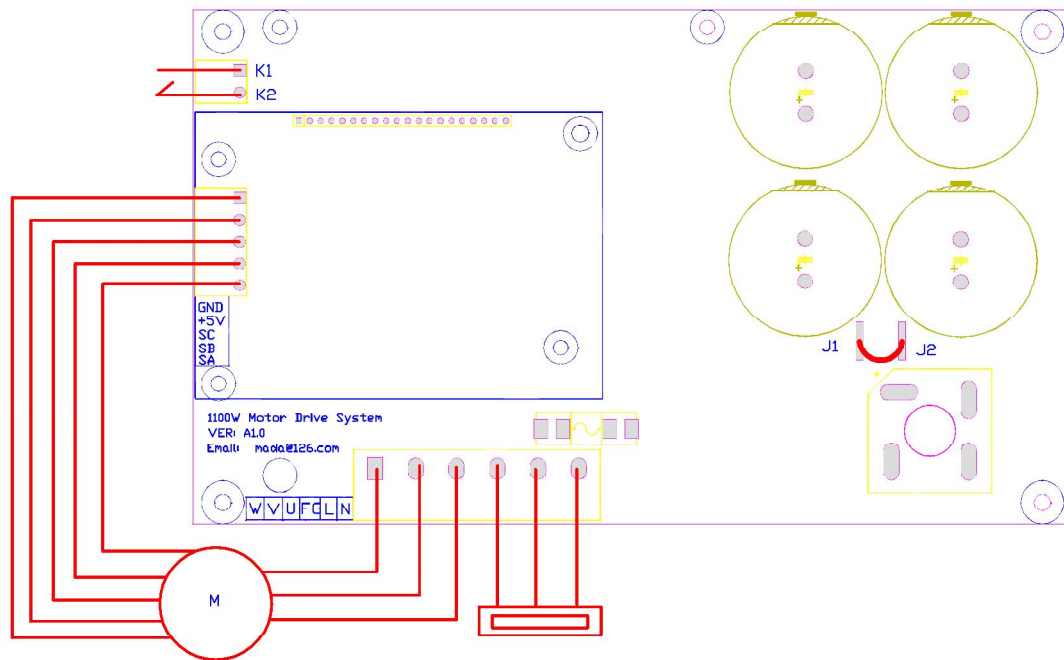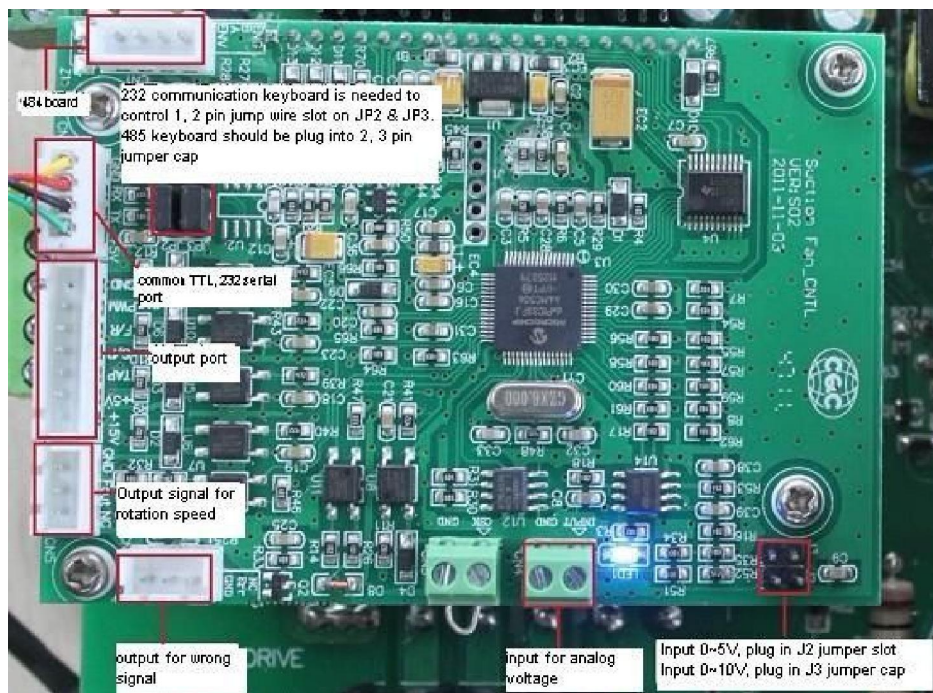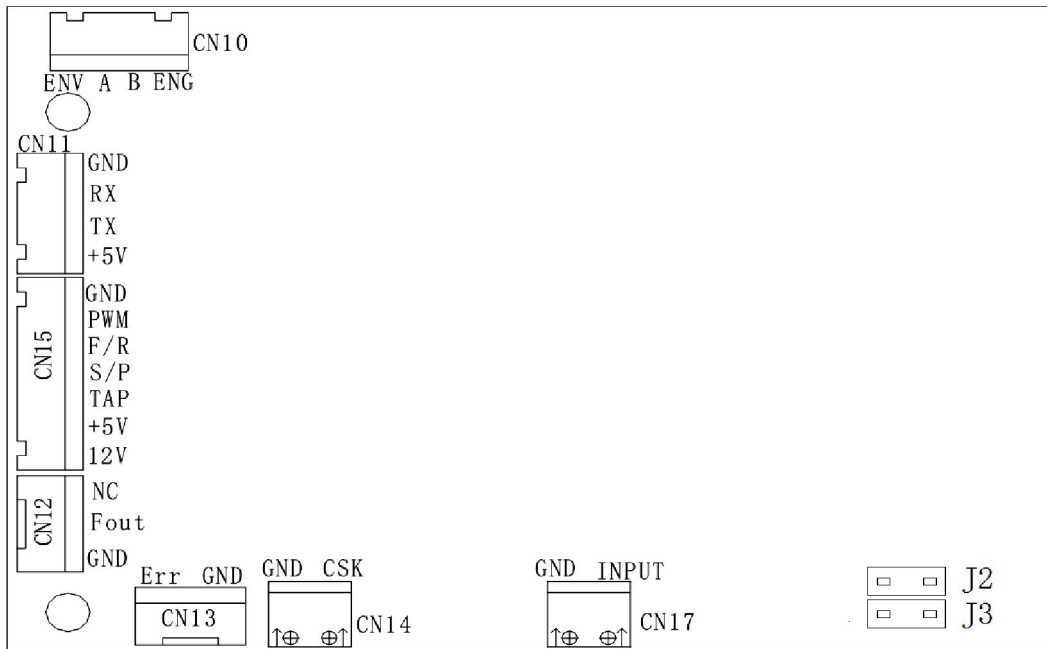**Figure1**

The wiring diagram at AC110V:

Figure2

Small Plate Of The Interface Controller Terminal Function：

CN10				CN11				CN12			CN13		
485 Serial interface communication mouth				TTL Serial interface communication mouth				Speed signal output			Error signal output		
5V	A	B	GND	5V	TR	RX	GND	NC	Fout	GND	NC	Err	GND

CN14								CN17	
The user interface choice port	CN15							0V—10V speed	
	The user interface ports								
Short CK1 ,CK2 interface can be used	15V	+5V	TAP	S/P	F/R	PWM	GND	GND	Input

- CN10-485 Serial communication Port   Can be easily prepared with the realization of other high-line, so that intelligent controller, to facilitate better operation of more simple.
- CN11—common TTL serial port, according to JianBan corresponding interface connection to realize the motor internal control
- CN12-Speed signal output can be used to detect the motor speed, a pulse of 1RPM, must be CN15 with the client 5v power supply, only pulse output.

转速脉冲输出口，每转一个脉冲
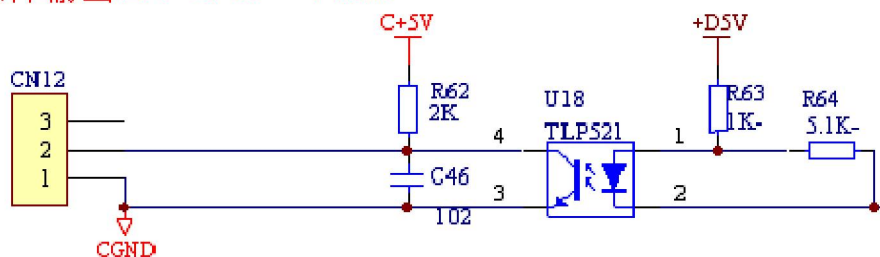
■ CN13-Wrong signal to the output port, when there is overload, over-current, locked rotor and other abnormalities, the output high, you must add CN15 client 5V power supply to work.
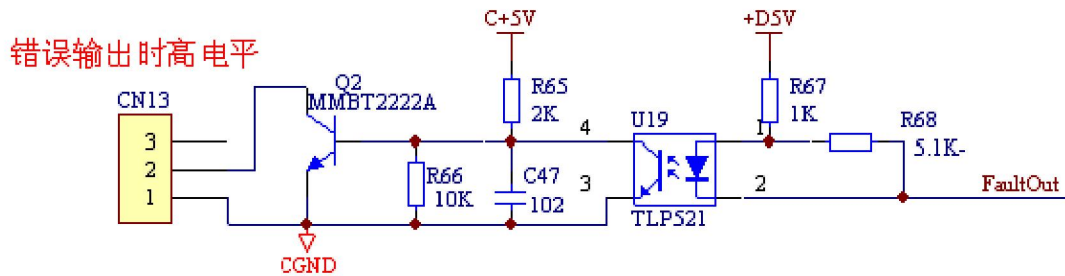
■ CN14-External user interface, select the port, short-circuit this port CN10, CN11 communication port is invalid, CN15 external users, then the effective end.

■ CN15—the external user interface port
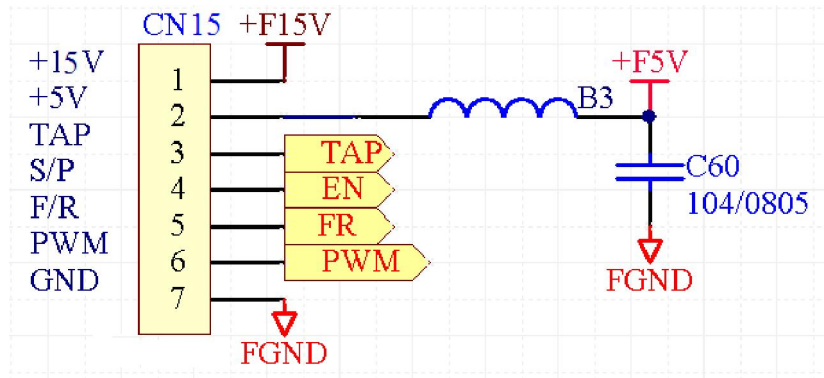
① +15V--15V power supply

② +5v--External +5 V power supply

③ TAP--External electric low-level, the tapping function is available. When motor running at 500RPM/m, high power or open, tapping function is invalid

④ S/P--Start/Stop in the shutdown state to a negative pulse start, turned down in a negative pulse stopped, a negative pulse every time a status change

⑤ F/R---Forward or Reverse running. Forward running on High level, reverse running on lower level

⑥ PWM-- control input-pin 500-5KHz of the PWM control signal 10% - 90% of the minimum speed can be controlled to the highest (Recommended frequency: 1KHz)

⑦ GND--External power of ground wire.

Use this port CN1 after, CN2 communication mouth is invalid

■ CN17—analog input voltage connector, through the J2, J3 set is 0 ~ 5 V input or 0 ~ 10 V input;

5. Keyboards Function
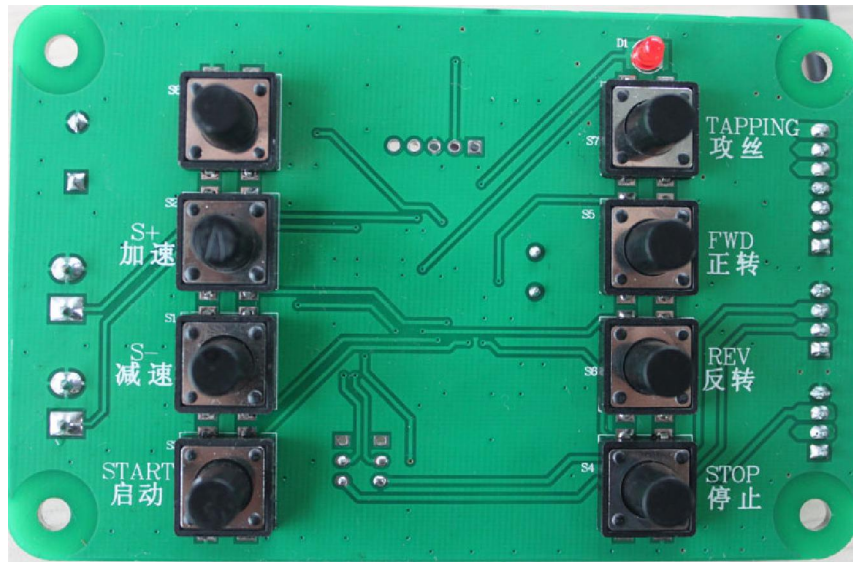
1．**START**----------Drives START control key
2．**STOP**------------Drive STOP control key
3．**FWD**---- --------Forward running control key
4．**REV**-------------- Reverse running control key
5．**"S+"**--------------Drive acceleration control key
6．**"S-"**--------------Drive deceleration control key
7．**TAPPING**------ -Drive TAPPING function control
8．**LED**--------------Tapping function indicator
9. **Memory**------------Running speed memory

START---Press this button under resting status is to **START** motor, at starting status, press this button is invalid
STOP---Press this button to **STOP** motor at running state, at the stop state, click this button is invalid
FWD--- motor will run on axial clockwise/anticlockwise as designed program after start motor.

REV---Press **REV** button motor will run at axial anticlockwise/clockwise direction against **FWD**. It is invalid operation for press this button when motor running at reverse status as designed program.
**"S+"**--- Acceleration control key. One short press to this button, motor speed will increase 20 **RPM**. Long press on this button to increase rotating speed rapidly, and only 5 seconds needed for speed from lowest up to highest.

"S−"--- Deceleration control key. One short press to this button, motor speed will decrease 20 RPM, Long press on this button to decrease rotating speed rapidly, and

only 5 seconds needed for speed from highest to lowest. Motor will stop quickly if press **"S−"** and **STOP** at same time.

TAPPING--- At the starting status, press this button to enter **TAPPING** function, **LED** lights on, motor will turn to running at forward no matter motor status was forward or reverse.

Memory---The key board will record the running speed automatically when press **STOP**. The motor will run at speed as same as previous running statue if restart motor at next time.

6. LCD Show On Operation

ⅰ.connect to the power, the LCD show "0", "FOR", "STOP"

ⅱ.Press the start button, show original speed 400rpm designed in program, and the motor run on.
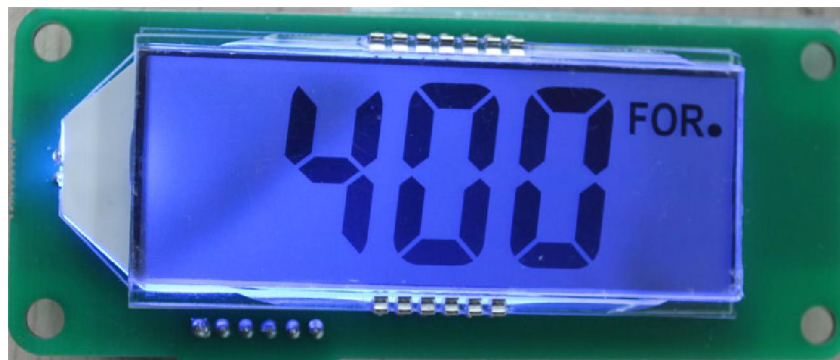
ⅲ.One short press to this button, motor speed will increase 20 **RPM**. Long press on this button to increase rotating speed rapidly, buzzer will be on along this acceleration, and only 5 seconds needed for speed from lowest up to highest.

Figure 4

ⅳ. Motor running forward with LCD displaying "FOR", press reverse button, motor will running reversal and LCD shows "REV" at the same time. Repeat pressing reverse button is invalid. If press "FOR" button, "REV" will disappear and "FOR" be showed in LCD.

ⅴ. Press TAPPING button to enter tapping status, tapping LED light on, as shown in figure 5. Speed is 500 RPM and forward running on tapping status, no matter how much is the original speed, forward or reverse running, and FWD, REV button are invalid, but speed is adjustable. Repeat pressing TAPPING button, motor will stop tapping and return to previous status.
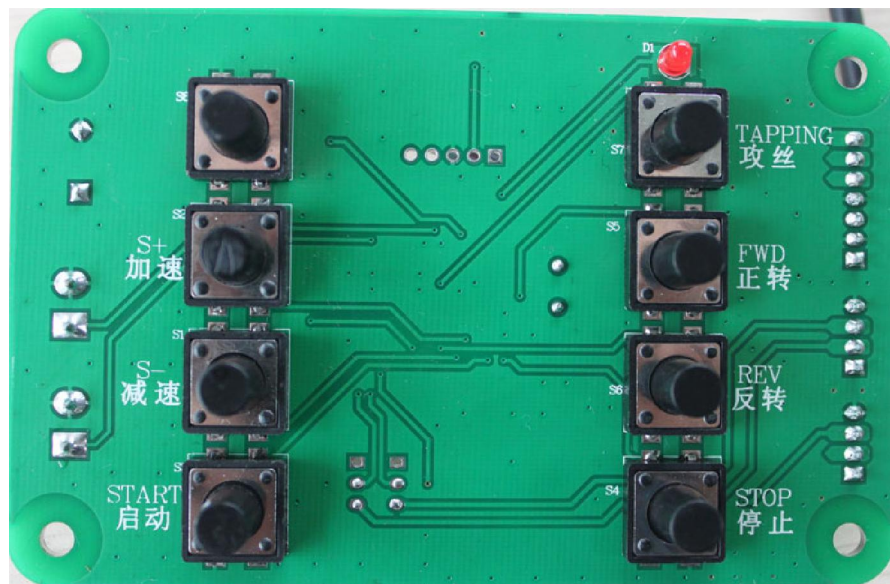
ⅵ. Press STOP button, motor will stop running. Motor will run as previous status when you start next time. But motor will not running on tapping status when you start next time if motor was running on tapping status, because tapping status are never wrote into memory.

7. Products Feature

- Energy efficient
- No rubbing mechanical wastage between exciting power and carbon brush, an energy saving product
- High performance, lower noise, smoothly running and longer service life, high reliability, good stability, simple to repair and maintain
- Low-heat operation due to direct magnet drive
- No radio disturbance, no electrical spark

- Power module uses True Sine Wave technology for high reliability.
- Chip and module imported from Germany or Japanese factory

8. Our Advantage

- We supply you perfect design, OEM, ODM, label services.
- We supply sample, and reimburse the buyer once an order is confirmed
- Small order accepted
- Experienced engineer and staff
- Guarantee
- Prompt delivery

9. Motor Dimension Drawing

9.1: HSBL-123F-22036

9.2: HSBL-123F-22060

技术要求:
1. 电机在空载不接电源的情况下,用手转动电机的转轴,转子转动应无轴紧,平滑无死点。
2. 电机运行时轴身径向圆跳动应不大于0.02mm。
3. 电机转向:面对出轴电机转向为逆时针方向。
4. 在额定电压,额定转速下空载运行,声音均匀和谐,不夹有害噪音和轴承异音,振动不大于1.5mm。
5. 电源及霍尔出线长度:1500mm。

传感器出线
VCC GND SA SB SC

电机出线
U V W FG

A-A

额定电压	300V DC	电机引线				传感器接线				
额定功率	2200 W	1	2	3	4	1	2	3	4	5
额定转速	6000 RPM	黄/绿	黑	蓝	棕	红	黑	黄	蓝	绿
额定转矩	3.5 N.M	GND	W	V	U	+5V	GND	SA	SB	SC
额定电流	9.1 A									

标记	处数	更改导号	签字	日期			
设计		标准化		2200W6000RPM		123#电机外形图	
绘图		审定					
校对		视图		图样标记	重量	比例	
审核		版本号	S			1:1	
工艺		日期	2012.8.8	共1张		第1张	

10. Service Contact

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