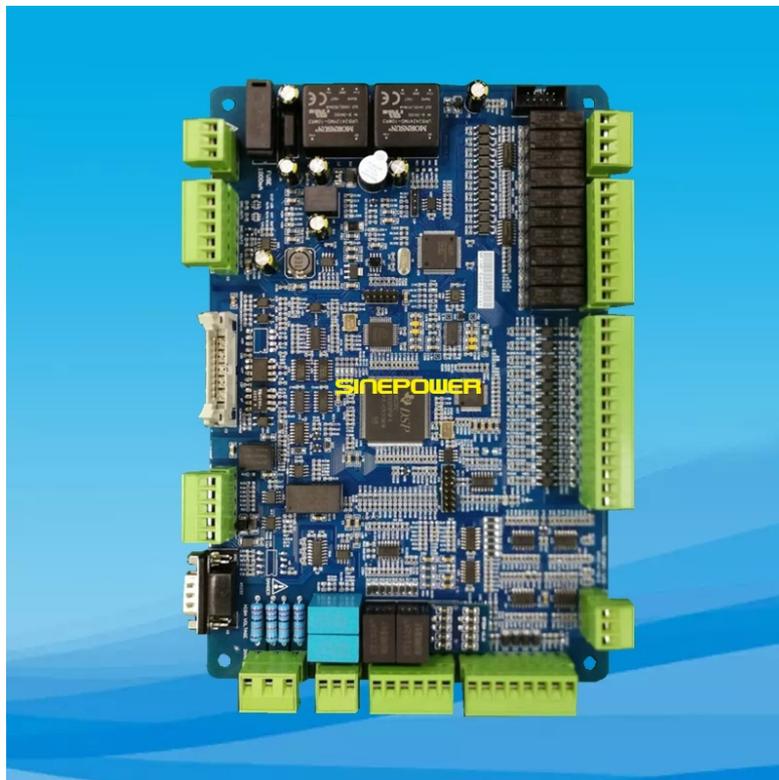


SINEPOWER

SD300 Induction Heating Power Supply

HMI Display Instruction



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Content in this user manual is just for your reference, we will update the user experiences, like to modify the parameters for better functions. Pls follow our updates on our website, and download the electronic edition freely.

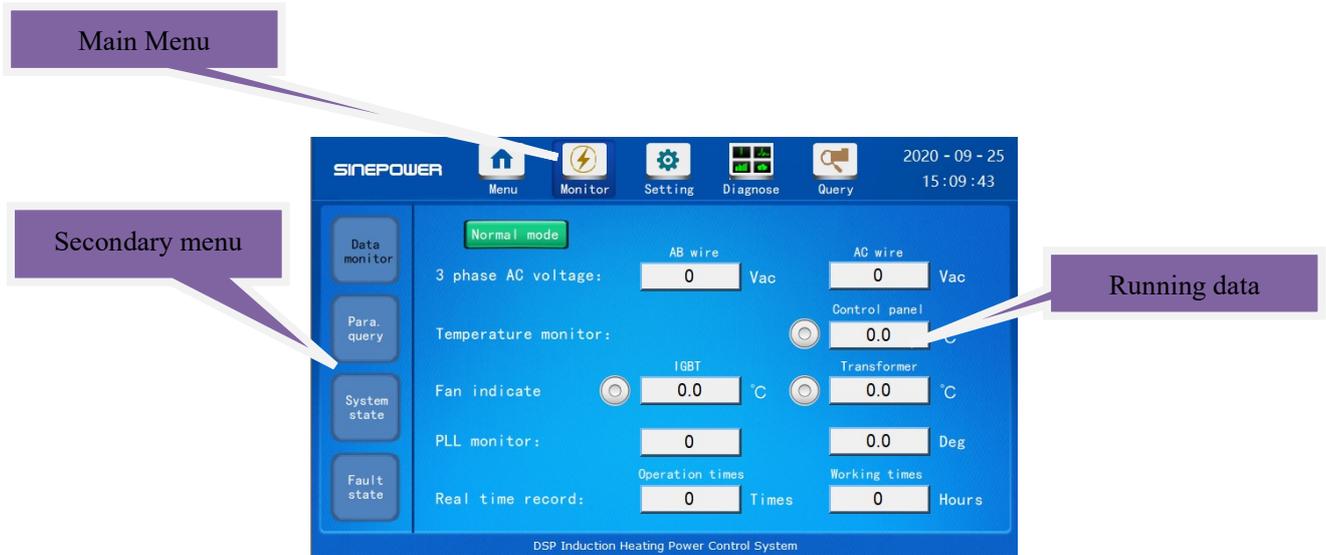
I. Main interface:



Main interface introduction I):



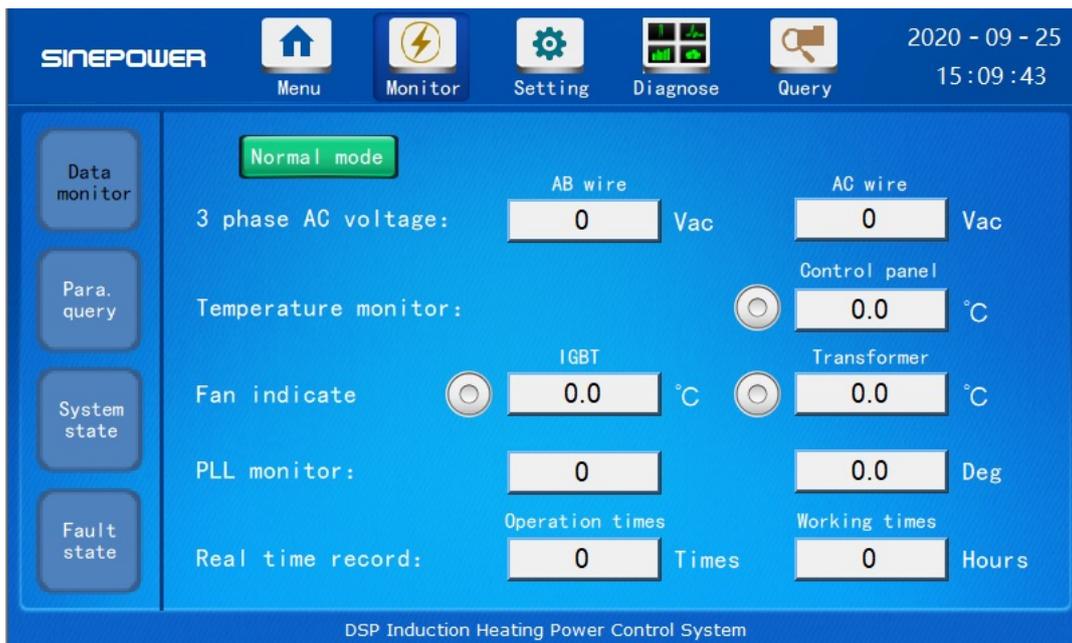
Running monitoring interface II)



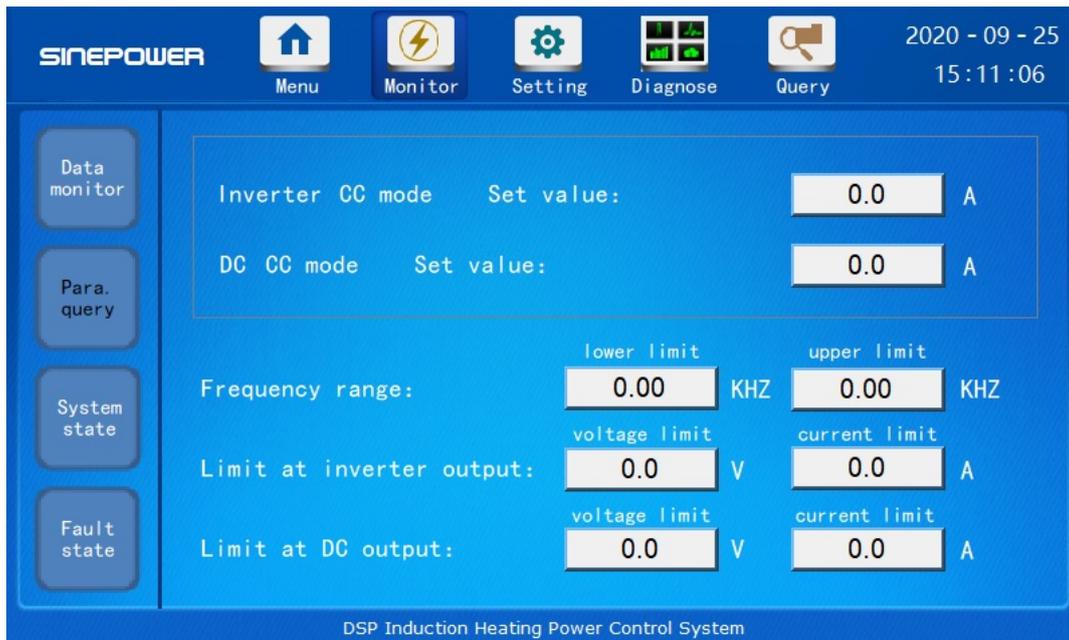
Parameter setting interface III)



II. Running monitor:



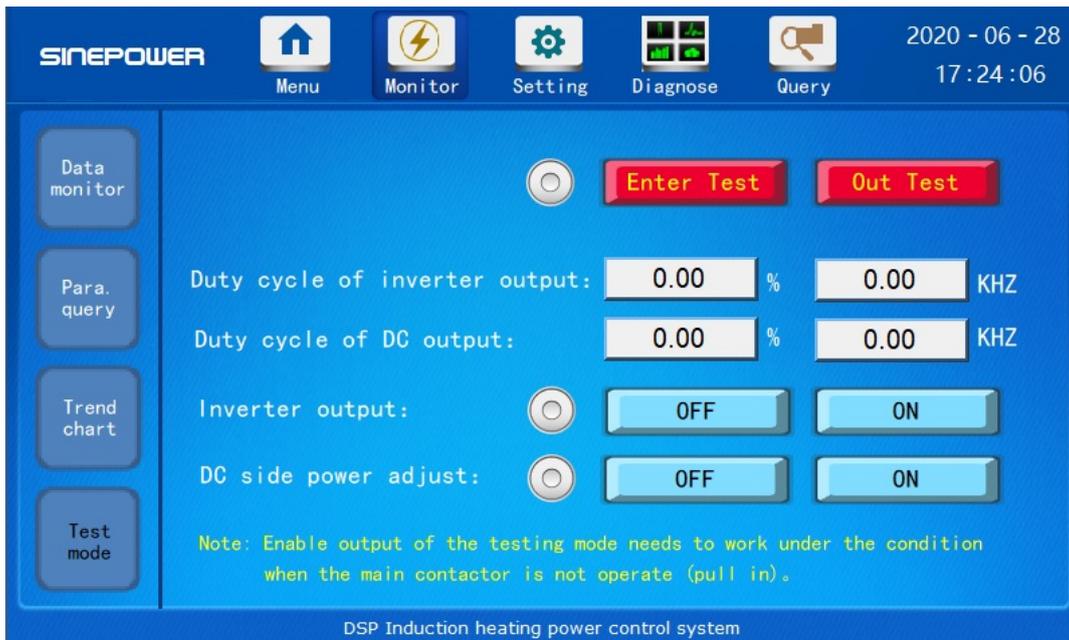
- 1、 Real time display 3 phase AC voltage situation; all parameter in this interface are for display only, cannot be modified here.
- 2、 Temperature monitoring: display the temperature of the control panel, IGBT heat sink and transformer; and it will control the fan ON and OFF automatically, when the related temperature upper than 50 degree, it will turn on the fan.
- 3、 Frequency sweep data display, running times and working hours, real time display the calculated running situation.



- 1、 Inverter value setting, users can set the related parameters, can be modified.
- 2、 The last three column are for parameter checking, cannot be modified.

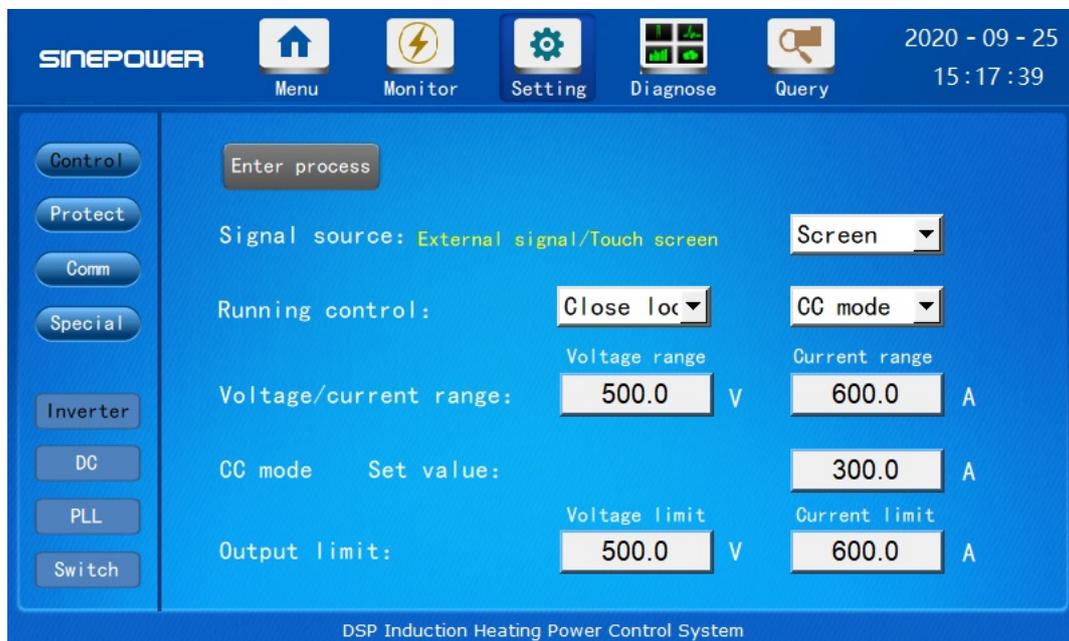


1. The two interfaces “State1” and “State2” are related to the System Status and Fault Status”, they will display the present working status in real time, please refer to the indicator lights.
2. When there is a system fault or system abnormal, there will be corresponding problem prompts in the event record, please check and eliminate in time.
3. Before heating, pls pay attention to the indicate lights in “System state”, only when the control board has no system abnormal indication and main contactor is pulled in, can we enter and run the heating.



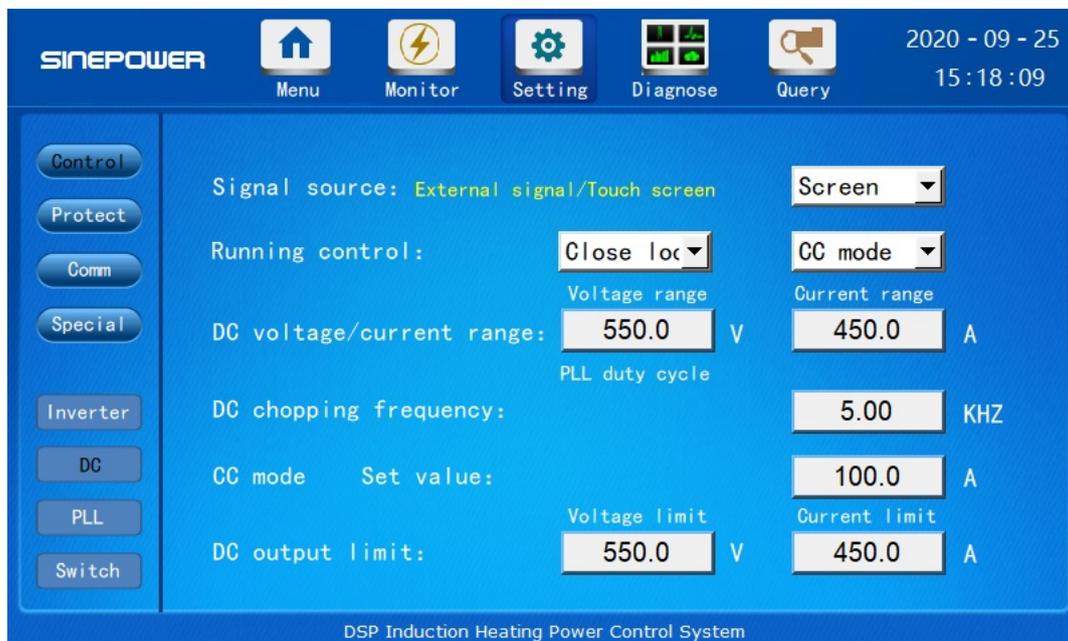
- 1、 Testing mode: used for manufacturer to do trial debugging after connected wires. Output after enabling, please note if the main contactor is not pull in while working.
- 2、 Users can set the related frequency and duty cycle to output.

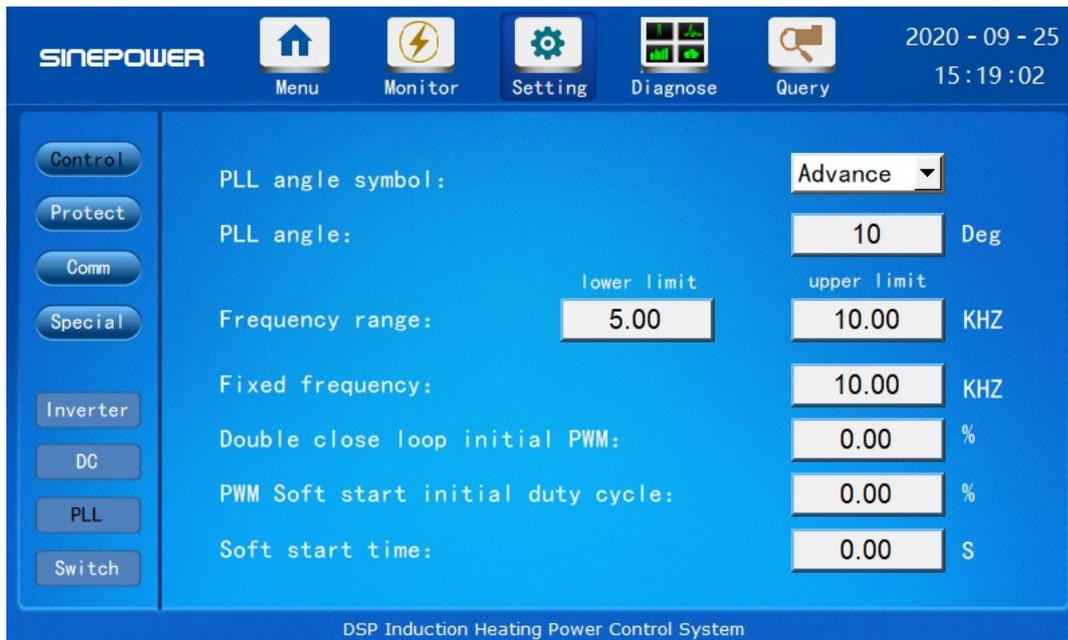
III. Parameter setting: (Login: User B, password 123321)



- 1、 This interface is for inverter power adjust (PSM) use, for setting the related parameters;“DC parameter”interface is for DC terminal power adjust use.
- 2、 Input signal source: Directly set by touch screen interface or by external signal, or adjust by potentiometer.

- 3、 Running control method: Close loop (Open loop is canceled); Close loop including CC (constant current) mode, CV (constant voltage) mode and CP (constant power) mode.
- 4、 Voltage/ current range set: Total range, set according to the max output of voltage and current, the sensor full range is related to the feedback side AC/DC5V, the value Of constant voltage, over voltage, under voltage, constant current, over current and under current are all set based on voltage and current total range.
- 5、 Output value set: set voltage, current and power, they are the actual out value.
- 6、 Output limit set: In case there is a too high output voltage or output current which will damage the load, the board limit the running of the actual output voltage or current value by limiting the maximum running voltage or current.





- 1、 PLL Angle symbol Phase direction: only for display, don't need to set.
- 2、 PLL angle: auto tracking the phase angle of resonance frequency, when running, the PLL angle is locked. It's been default, usually don't need to set.
- 3、 Frequency range: set the lower and upper limit of the working frequency.
- 4、 Fixed frequency only works when the version of control board is fixed version.
- 5、 Double close loop Initial PWM: the set value is the initial duty cycle value at the time of running operation.
- 6、 PWM Soft start initial duty cycle and Soft start time: It is suitable for power regulation at the DC terminal. The output gradually increases from a small value to a set value after starting, to eliminate the impact on the power grid and its own capacitance. The soft start time can be set to 0.00-10.00 seconds



- 1、 ON/OFF control methods: Jog 2 (2 means 2 keys), Jog 1 (1 means single key), self-lock (single key), they are related to the control terminal of 40-COM1, 41-D1, 42-D2. When the control method is Jog 2 keys, jog key signal control, press COM1 and D1 is ON, press COM1 and D2 is OFF; when the control method is Jog 1 key, press COM1 and D1 is ON, press COM1 and D1 again is OFF; when the control method is Self-lock, connect COM1 and D1 is ON, disconnect is OFF, the ON/OFF button on the touch screen are invalid.
- 2、 Temperature switch protection: ON or OFF, related to 46-D6, 47-D7, 48-D7 control terminal, to detect if it is over temperature.
- 3、 Water pressure protection: ON/OFF, related to 45-D5 control terminal, to detect if it is short of water or pressure is not enough.
- 4、 3 phase AC power phase loss protection: ON or OFF, corresponding to 17-VA, 18-VB, 19-VC input terminals, directly connected to AC380V voltage, signal isolation processing has been done on the main control board, when one phase has no power it will prompt phase loss protection.
- 5、 Hardware over-voltage and over-current protection: The hardware on the main control board has been protected accordingly, and does not need to be directly turned off.
- 6、 System automatic restart function: ON/OFF, such as flicker of power grid voltage, the system will automatically return to the original running state after power on again, to prevent production loss caused by shutdown.



- 1、 The temperature protection interface is to display and set the related parameters, and can enable or disable the detection of the present position.
- 2、 When the enable is ON, the system will prompt "system abnormal" when the temperature reaches the abnormal temperature point and continue to run.
- 3、 When enabled, when the temperature reaches the shutdown temperature point, it will prompt "system failure", the temperature is over temperature, and machine will be shutdown.



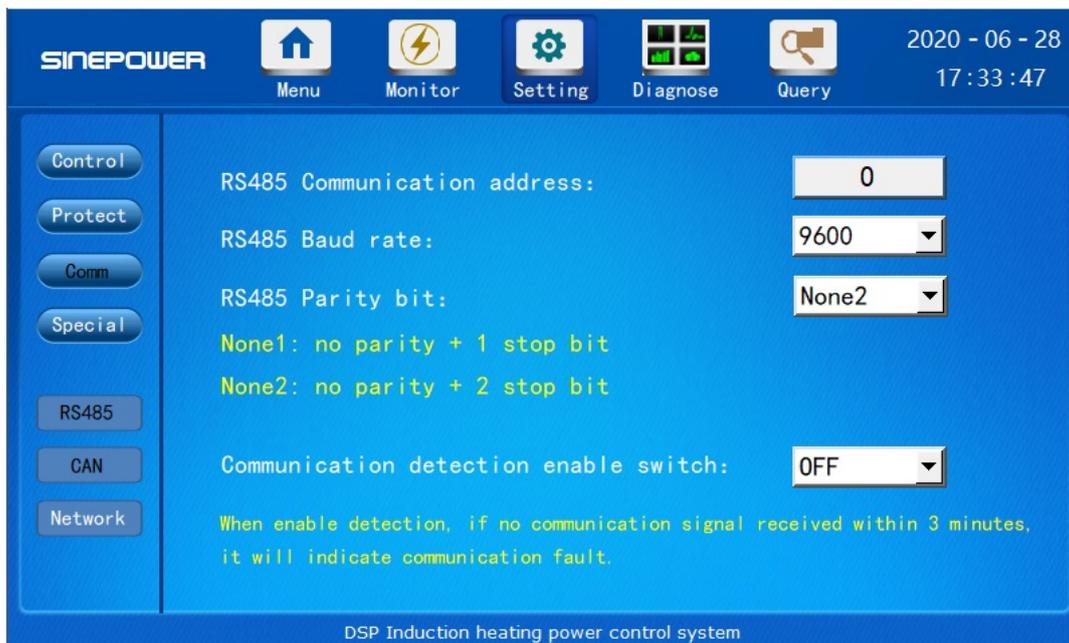
- 1、 The voltage and current protection interface, displays and sets the relevant parameters, and can enable

or disable the detection of the present position.

- When the enable is ON, if the voltage or current reaches the set value, it will prompt "system failure" and automatically shut down the machine.

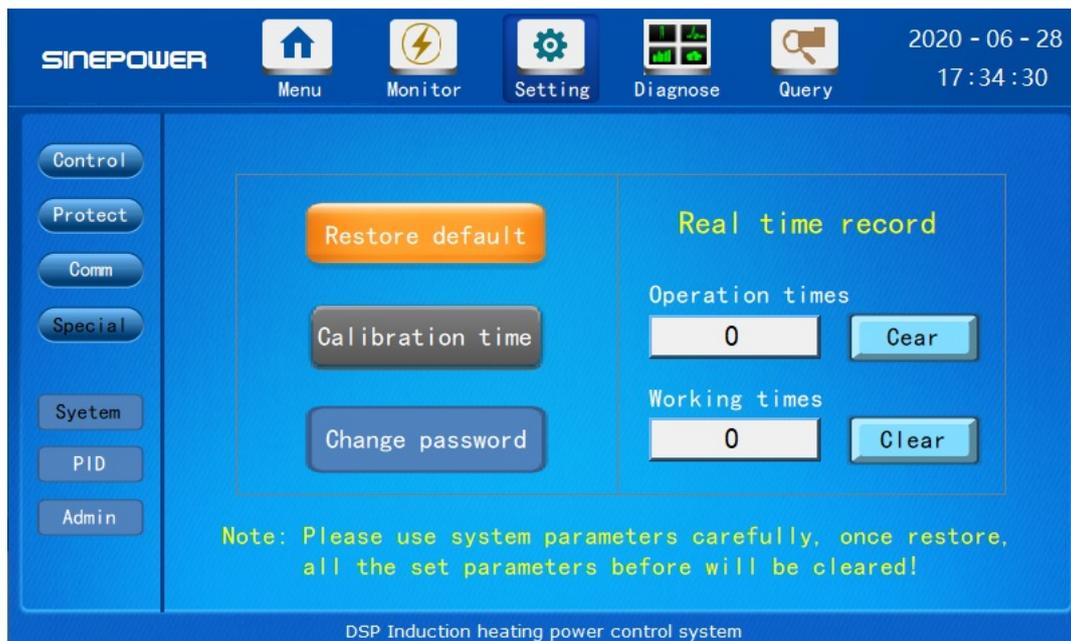


- The 3 phase AC voltage interface displays and sets related parameters, and can enable or disable detection for the present position.
- When the enable is ON, the system will prompt "system failure" when the voltage is too low or too high, and automatically shut down the machine.

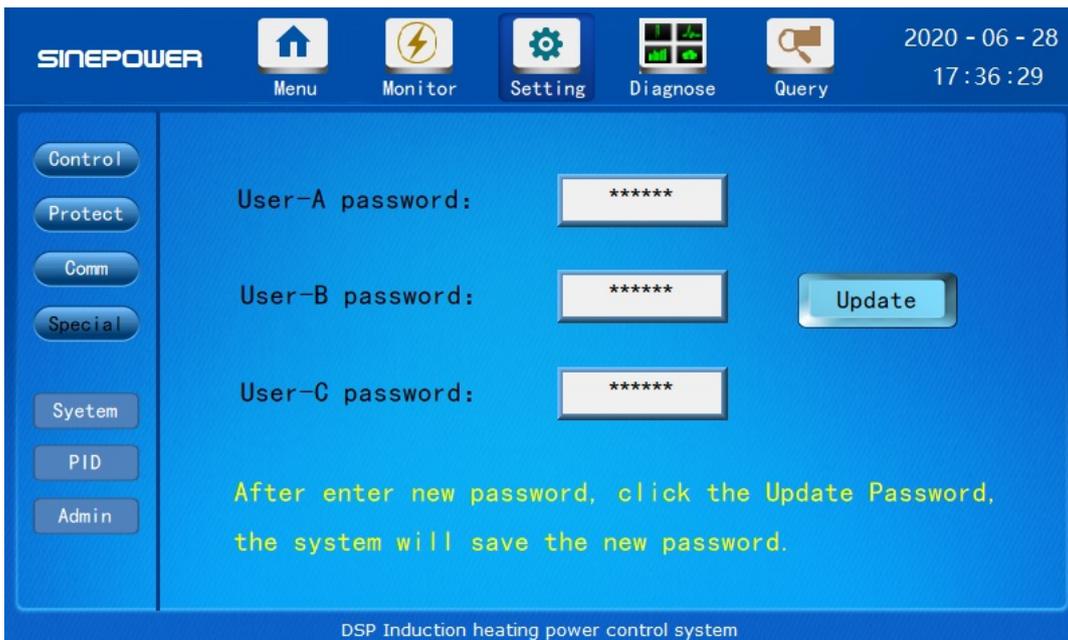
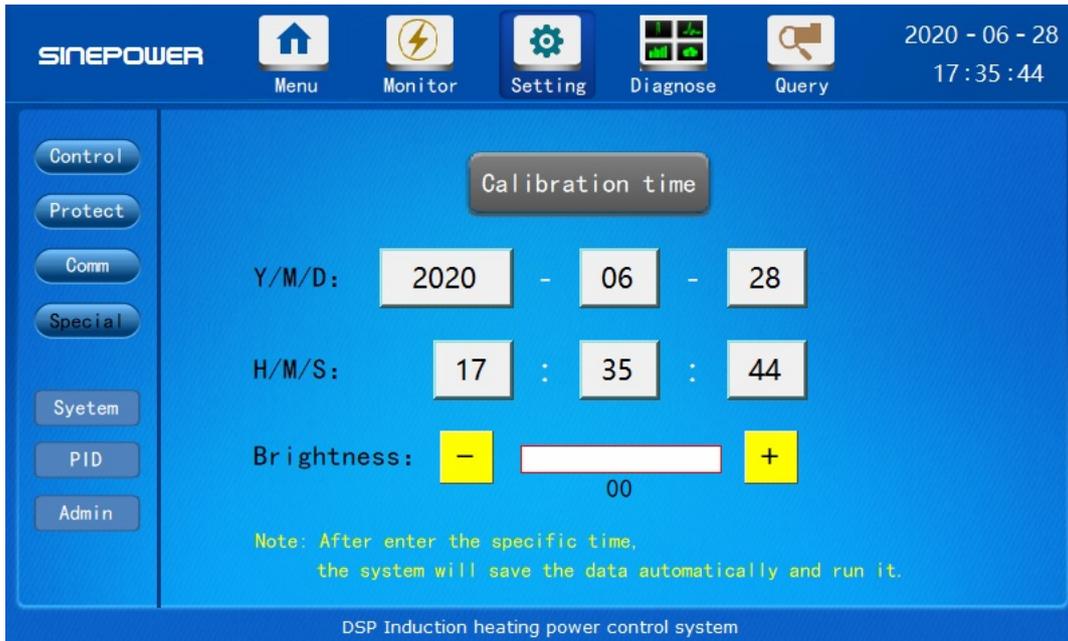


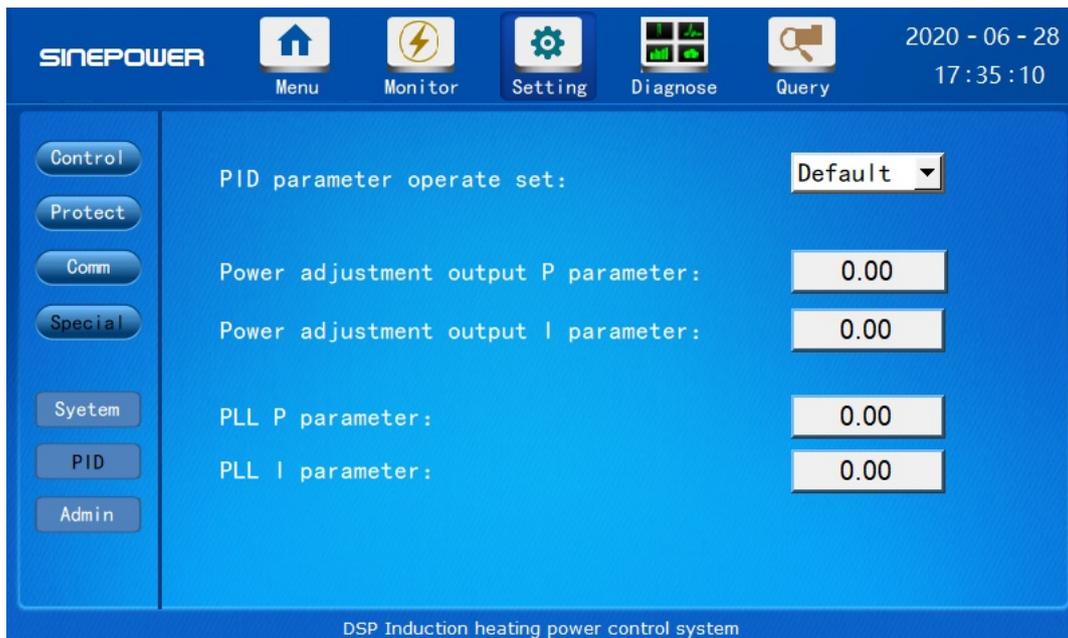
- Communication address configuration: 1~247, adopt RS485 communication methods, accord with MODBUS RTU bus protocol.

- 2、 Baud rate configuration: 4800, 9600, 14400, 19200, 38400, 56000.
- 3、 Parity configuration: odd, even, no parity + 1 stop bit, no parity + 2 stop bits.
- 4、 Communication detection enable switch: to judge if the communication between the host computer and the main control board is normal. When this function is ON, it will prompt "485 communication abnormality" if the main control board does not receive the command sent by the host computer for 3 minutes.



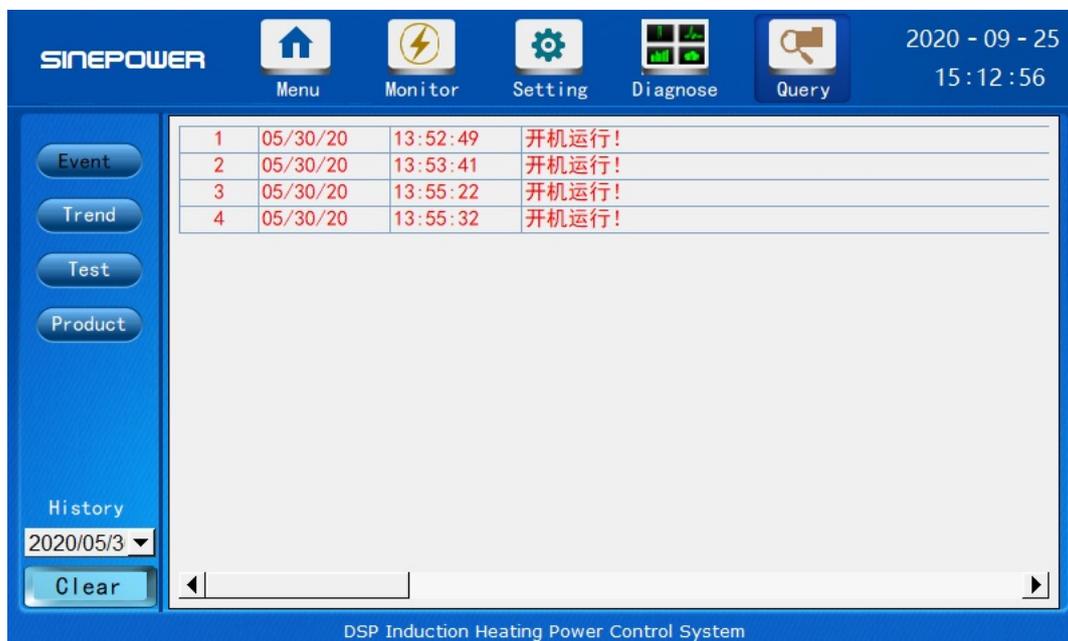
- 1、 System parameters: user can restore to default parameters, calibrate the time on the touch screen, and change user password.
- 2、 When using, please operate carefully, all data set by the user may be cleared or changed.
- 3、 Operation times: increase the count number by 1 every time user start the operation, user can press "Clear" to clear the data.
- 4、 Working times: the actual working time of the machine at power-on, user can press "Clear" to clear the data.



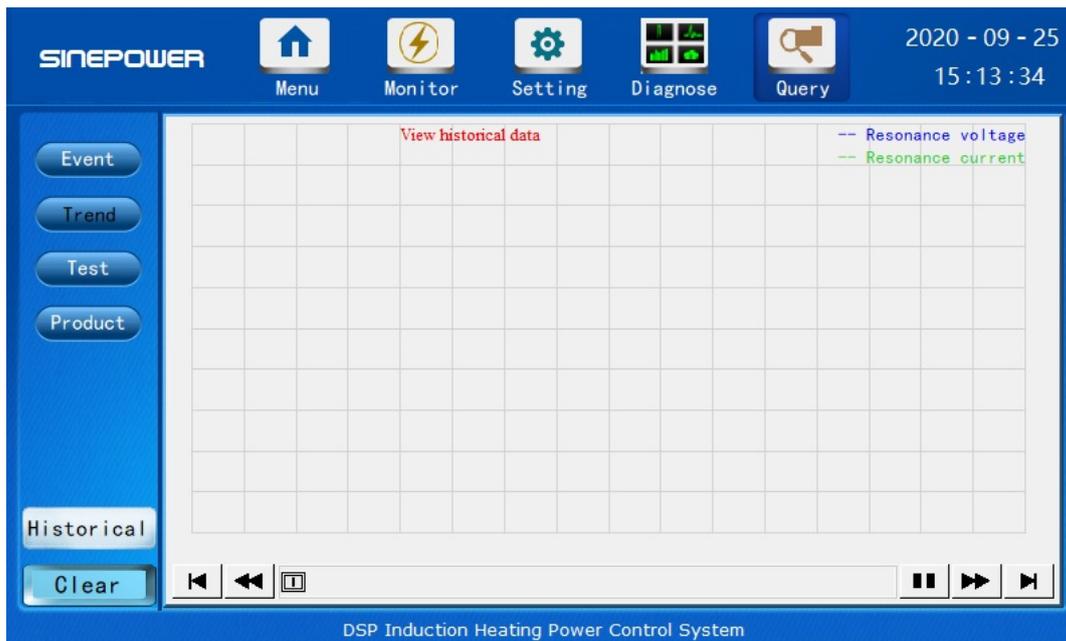


- 1、 PID parameter enable configuration: Please use the default PID for normal use.
- 2、 When use with customize mode, the greater the P value, the faster the adjustment speed.
- 3、 When the resonance frequency is 1-5Khz, DC chopper power adjustment P parameter can set from 5-10, other parameter don't need to change.

IV. Query:



- 1、 Event: The system records the running and shutdown (ON/OFF), and system faults in real time, which is convenient for users to query running information and fault information, troubleshoot the power supply problems faster, and find corresponding solutions.
- 2、 It will save 7 days history record, the user can press "History" to select the date, and press "Clear" to clear all the recorded event data.
- 3、 The “Event” along with the indicator lights of “State1” (system status) and “State2” (fault status), to facilitate observation and eliminate problem points more conveniently.



- 1、 Resonance voltage and current real time sampling trend chart, convenient for long time observing of the running situation of the machine.
- 2、 Click the “Clear” on the right upper corner, users can delete all sampling data which have been saved

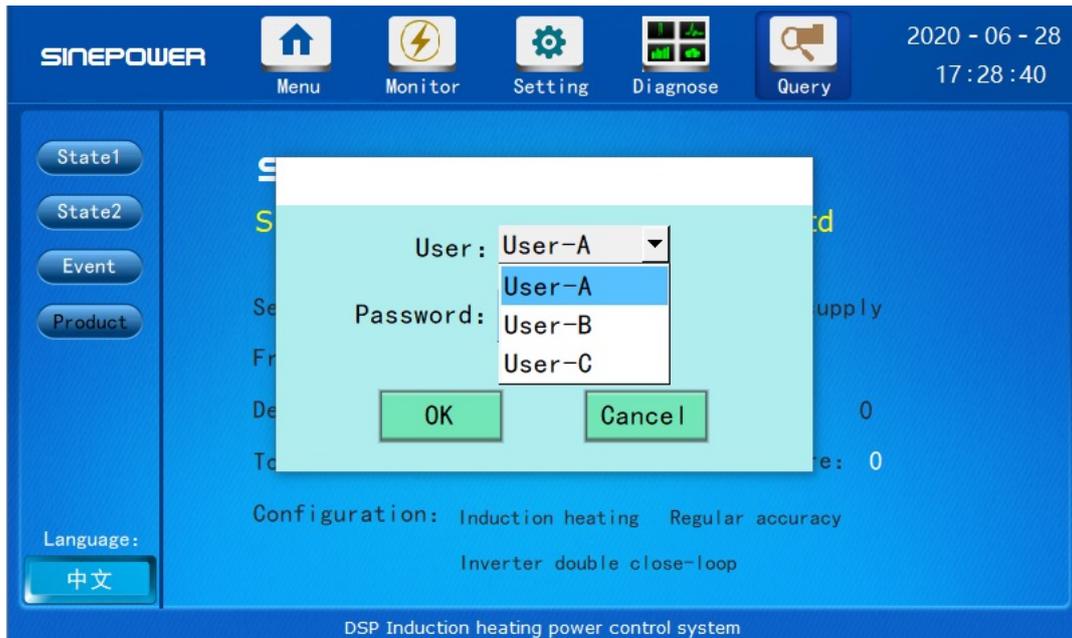


1. Testing mode: used for manufacturer to do trial debugging after connected wires. Output after enabling, please note if the main contactor is not pull in while working.
2. Users can set the related frequency and duty cycle to output.



Language: Click the language button to switch between Chinese and English.

V. Login with password and Language switch



1. For parameter setting: choose User-B, and the login password is 123321.
2. For management authority: choose User-C, and the login password is 667788, not open for customer.
3. For running monitoring: choose User-A, and the login password is 112233, not open for customer.
4. With the user password, users can enter the “Special” column in the "Settings" column to change the password.
5. The login users of different interfaces has permission restrictions, cannot be changed at will. It is dedicated.
6. The registration of data diagnosis is limited to production manufacturers.

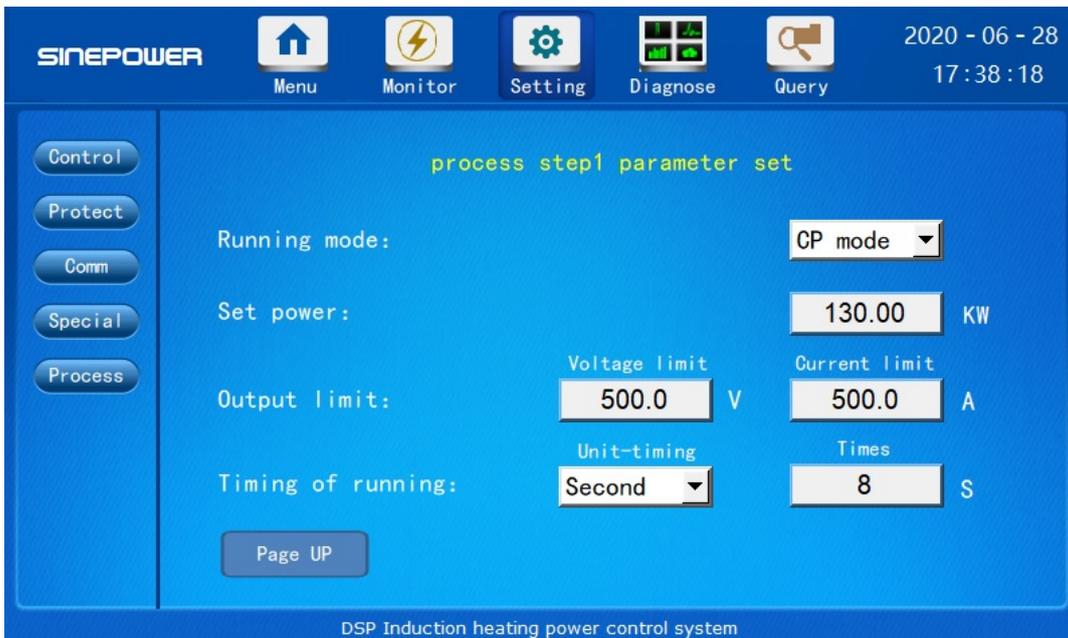
Startup interface—Chinese or English language interfaces switching, support manually switching, it will enter the set language interface automatically after 3 seconds.



VI. Process procedure mode



1. When the process procedure "ON", the output of the main control board will run according to the parameters set in the process steps.
2. Circulate type: infinite cycle or single cycle; infinite cycle is from process step 1 to the final set steps, and then returns to process step 1, continuous circulate; single cycle is running from process step 1 to the final set steps, and then will stop running.
3. For example: if the running steps is 3, then it will only run "P step1", "P step2", and "P step3", 1-3 is a circulate.



- 1、 This setting parameters please refer to “Inverter” parameter setting interface to operate