T757工业控制电脑

T757 Industrial Control Computer

User's Manual

使用说明书

佛山市南海天富科技有限公司

ANHAI TIANFU TECHNOLOGY CO., LTD.

Contents

Chapter 1 Foreword

1 Development and application of T757 industrial control computer

Industrial control computer is designed based on the harsh industrial field, especially for multi-process and multi-procedure production in textile dyeing and printing enterprises, to adapt to high temperature, more dust, high static production site. The T757 industrial control computer is widely used in the equipment control of various process such as spinning, weaving, printing/jacquard, pretreatment, dyeing, finishing, environmental protection and energy management. It adopts the embedded hardware and software design, achieves the international advanced level, and product features strong reliability and rich scalable.

The T757 industrial control computer can be adapted to automatic control requirements for all types of dyeing machine such as cheese dyeing machine, hank dyeing machine, fast dyeing machine, airflow dyeing machine, jigger and so on. Using the advanced distributed modular design concept, the input/output points can be flexible according to the needs of the application to expand with strong adaptability. Its Chinese LCD display features friendly interface, easy operation, and also provides English interface. It communicates with the central monitoring and management system of Tianfu dyeing machine or factory ERP system through RS485, CAN, TCP/IP protocol communication mode, constitute the advanced dyeing machine central monitoring and management information system, so that dyeing process control management to achieve network.

This manual provides the T757 industrial control computer in dyeing and printing control aspects of control function introduction, operation instructions, process editing and running, parameters setting and debugging, on-site fault judgment and elimination. At the same time, the manual is also on-site installation and commissioning instructions for the technical staffs of our company and our user, as well as dyeing equipment factory.

Due to the improvement of dyeing technology and progress of control technology, the software and hardware of the T757 industrial control computer will be updated and updated. Changes and performance characteristics of the control functions or which that is not written in the manual, please refer to the software version on the T757 industrial control computer.

If you have any errors, omissions, and inability to understand this instruction manual, please contact our company headquarters or office at any time.

2 Function characteristics of T757 industrial control computer

1. The use of split design, host and control module separate installation, reduce the host cable.

2. The use of 7-inch widescreen and color screen, high resolution, bright colors, and window display intuitive, window interface layout is reasonable and beautiful.

3. Using the linux operating system, through the company's independent research and development, "Tianfu TF-ES4 dyeing machine control software", dyeing machine production process for comprehensive control is carried out with stable operation, flexible editing capabilities to meet the different requirements of the software development.

4. Function menu to sort, merge, reduce the menu directory (to reduce the excessive function code).

5. With multi-level password management and distribution functions, you can assign different operators, using different operating privileges.。

6. With real-time and historical running record query, can store 2 months of running records, including the process curve, dyeing batches, abnormal alarm records.

7. With intelligent prompts, in advance to prevent the occurrence of errors, reduce the wrong problems in editing, running, parameter settings, and operation.

8. Meet with the dyeing tank control of double dosing tank, sub tank, main tank at the same time, while improving the control function of double dosing tank, and control of double dosing tank/double dosing pump, double dosing tank/single dosing pump (common dosing pump), common proportional valve and independent proportional valve, and feeding control of feeding pump frequency conversion ratio.

9. With appending procedures and additional procedures to achieve the main program, additional procedures, and appending program functions coexist, you can achieve the program jump, flexible implementation of different procedures.

10. With the "sampling" after the appending procedures and additional program functions, for sampling failed, you can choose to implement appending procedures and additional procedures. After executing the add-on program, the main program automatically returns to sampling step after execution of appending and additional programs, and the selection or re-selection of one or different appending programs and additional programs。

11. Sub-function with traceability, that is, running the process, skip the sub-function running step, the program should be traced back to whether the previous program has the operating steps of

sub-function,to avoid jumping problems that do not run.

12. To provide manual operation button on the computer, to achieve a manual alone to perform a single (single step) or multiple functions (multi-step), without the need to use the editing process cumbersome operation (using computer control function to operate separately), to solve the original manual operation which can not achieve the effect of computer control.

13. Synchronization function selection application, to reduce the editing of process steps, mainly positive and negative, guide cloth, spray tank positive and negative synchronous main pump operation.

14. Both with the switch and analog customization. According to the device control configuration and control requirements of custom input and output functions and display content of the display window. Provide customizable main window information; provide equipment and user to customize the company name.

15. With water volume conversion table of main tank, dosing tank, sub tank, in the absence of flowmeter case, to achieve water volume (weight) water inlet and backflow.

16. With cloth dyeing and yarn dyeing mode optional, water inlet of cloth dyeing according to cloth weight, while water inlet of yarn dyeing according to yarn conversion, so as to achieve bath ratio control effectively.

17. Different stage time and interval time, can achieve effective, purposeful control of direct output, to achieve energy saving and improve the effect of heating.

18. With water inlet and drainage, choose whether to open the main pump or stop the main pump, and reduce the editing steps of main pump start or stop.

19. With multi-channel water inlet and multi-channel drainage options, can achieve a different way of water inlet and drainage, to achieve different requirements of water inlet and drainage, to achieve water and sewage diversion, cold water and hot water choose to reuse.

20. A variety way of overflow washing, can effectively achieve the purpose of energy conservation.

21. Fan constant power control of airflow dyeing machine and gas-liquid dyeing machine, and automatic control of fabric circulation cycle.

22. Statistical functions of water, steam, electricity and other, can grasp the energy consumption of equipment timely, to provide data for cost accounting.

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Chapter 2 Basic introduction

1 Main technical performance

Control System	Using advanced ARM CORTEX-A9， the use of Linux operating system.
Display method	Using 800 × 480 pixel true color, 7-inch display screen, Chinese/ English switch display.
storage	Be programmed to store 1000 different processes at the same time, each process up to 250 steps.
Data protection	Support multi-level password protection and U disk backup process, parameter data, and keyboard lock function.
Communication Technology	Using RS485/422 communication interface to connect a variety of PLC; Ethernet interface for connecting to a computer for central monitoring; USB interface to support program upgrades, parameter updates and data copy.
Communication Interface	One RJ45 Ethernet interface, One USB, One serial ports, One- channel RS485/422 communication.
Temperature control mode	Switch type and proportional type optional ,can achieve the switch-type cooling, proportional type cooling, proportional heating and switch cooling, the maximum deviation of ≤ 1 ℃, display accuracy of 0.1 ℃.
Feeding mode	Switch type and proportional type optional, features fast feeding, quantitative feeding (built-in 9 feeding curve), the cycle of feeding, add salt (overflow type), cleaning the feeding tank and other functions.
Bath ratio control	The use of flow meters, liquid level transmitter and other sensors, achieve to control the amount of water intake by automatically conversion of cloth (yarn) weight or yarn height, including water inlet of water level, bath ratio, water quantity and memory.
Input signal	4-channel PT100 analog signals for temperature detection of main tank and feeding tank.
	5- channel 4-20mA current signal for the main tank, feeding tank water level (transmitter) and pressure signal access.
	5- channel pulse signal for flow meter, water meter signal access, control bath ratio of dyeing.
	64- channel switch input signal (expandable), switch signal of high and low water level in main tank and sub tank, and switch signal of main pump failure, blocking cloth, and central control contact, through communication interface to PLC access.
Output signal	80- channel switch output signal (expandable), the switch output through the communication interface to connect to the PLC output, to achieve a variety of water inlet and drainage, the main pump, heating and cooling, overflow, washing, alarm calls and other functions.
	11- channel 4-20mA current signal for the output control of the main pump frequency conversion, guided cloth frequency control, airflow fan, proportional lift valve, proportion feeding valve.
Information query	The operating records can store 2 months, including process curve, dyeing batches, abnormal alarm records.
Parameter settings	Through parameter settings to achieve different control requirements, including inlet/drainage, heating methods etc.several hundred parameters of choice
Define function	With DIY input/output technology, making custom input, output more flexible and

	convenient.
Functional characteristics	Precision bath ratio control, including automatic control bath ratio water inlet by cloth weight and yarn layer, as well as other control functions of accurate quantitative feeding, a variety of overflow washing, energy saving and reduced discharge.
Applicable scope	All kinds of automatic control of dyeing machine of steaming, electric heating, oil heating, infrared heating etc.
How to use it	Combination: host + analog module + PLC.
Working conditions	Operating voltage: AC180 - 260V, 47-53Hz, power consumption ≤ 20W, operating temperature 0 - 50 ℃.
Dimensions	215mm (width) X268mm (height) X98mm (depth).
Hole Size	185mm (width) × 238mm (height).

2 Hardware composition

T757 industrial control computer consists of two parts: host, analog modules.

Host: including display window, operating keyboard and one RJ45 Ethernet interface, two USB, one serial port, 2-way RS485 communication, 1-way CAN communication.

Analog module: two models optional, including 1-way RS485, 3-way pulse input, 4-way PT100, 5-way current input, 11-way current output (1-way RS485 communication, 2-way pulse input, 2-way PT100, 2-way current input, 5-way current output).

Host

Analog modules

3 System structure

Operating system: the use of Linux operating system.

Input method: the system contains input method of number, letter (English), symbol, pinyin (Chinese).

4 Display window and keyboard

◆ **The display window includes the following:**

Time window: shows the current time (Beijing time).

Status Window: Displays the current working status, run or stop of the computer, and prompt content of fault alarm.

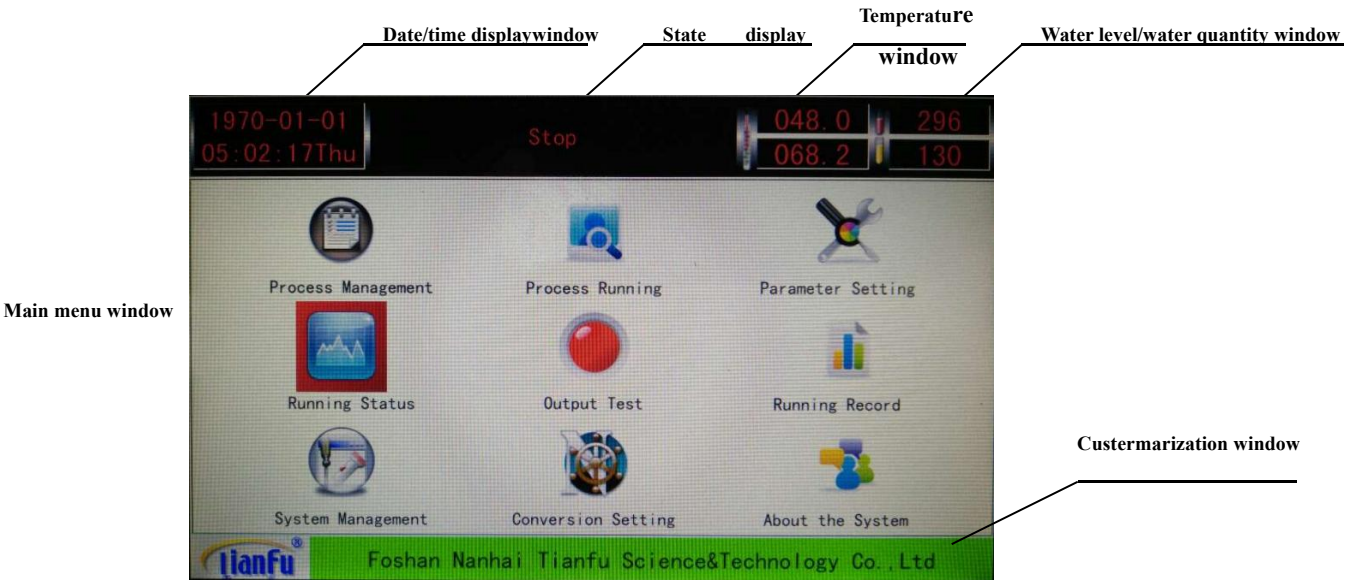
Temperature window: show the temperature of main vat and feeding vat, the default is above for the temperature of main vat, below for the temperature of feeding vat.

Water level window: show the water level of main vat and feeding vat, the default is above for the water level of main vat, below for the water level of feeding vat.

In the current step with the water inlet output, the upper right corner of the water window switch shows the details of the "water intake" data, go to the next step, and automatically switch back to the original definition of the display.

Menu window: display menu name, process editing and running, function and operating status, system parameters and parameter settings and other information.

Definition window: The factory default setting is "Foshan Nanhai Tianfu Technology Co., Ltd.", the customer changes the content according to the need.



◆ The keyboard includes the following sections:

Program function key

"F1, F2, F3, F4, F5" key corresponding to 5 buttons below the display. Its effect depends on the contents of the actual window button box of the computer.

Function shortcut keys: used to directly enter or switch to the function operation keys.

Lock/unlock key: for password release or password lock, the indicator light is on, indicating the unlocked state.

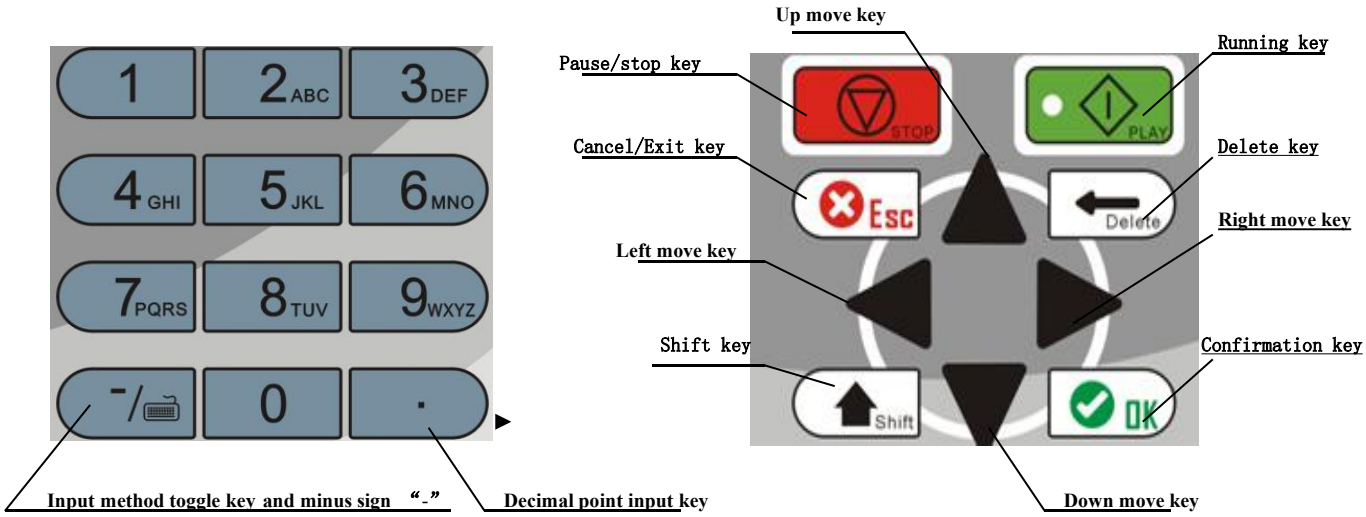
Alarm/eliminate alarm key: This key is on, indicating an alarm event or an important message and output alarm, press the key, the light goes off, the alarm stops output.

Central contact key: Used for on-site calling central control room.

Process management key: process programming shortcut keys; press this key, directly into the process management.

Manual single-step operation key: press this button directly into the computer manual single-step operation.

Switch key of numbers, letters, input method: **Exclusive function keys:**



Pause / stop key: In the running state, press the key for the first time, the computer is in the paused state, and the "Run" indicator flashes.

Press this button for the second time, the computer stops running, and the "Run" indicator goes off.

Running key: Press this button, the computer is running, "run" indicator light.

Cancel/Exit key: Used to cancel, exit, and close the open window.

Delete key: **Be u**sed to delete the characters, items, and process data.

Confirmation key:: Used to select or confirm characters, data, operations, items.

Shift key: Includes "up" "down" "left" and "right" arrow keys to move the cursor and select item.

Conversion key: **Be** used for double key operation, combined with other keys.

5 Boot and shutdown

To power on, connect the AC220V terminal to the analog module. When the AC220V power supply is connected, the analog "POWER" lamp is on and the "RUN" lamp flashes (about 1 second flashes). The host is flashing, enter the black screen state for about 5 seconds, and then the display shows my company information and computer software version information about 20 seconds, the computer before entering the initial interface. If the computer is interrupted before the exit, then power into the state when the power is turned off.

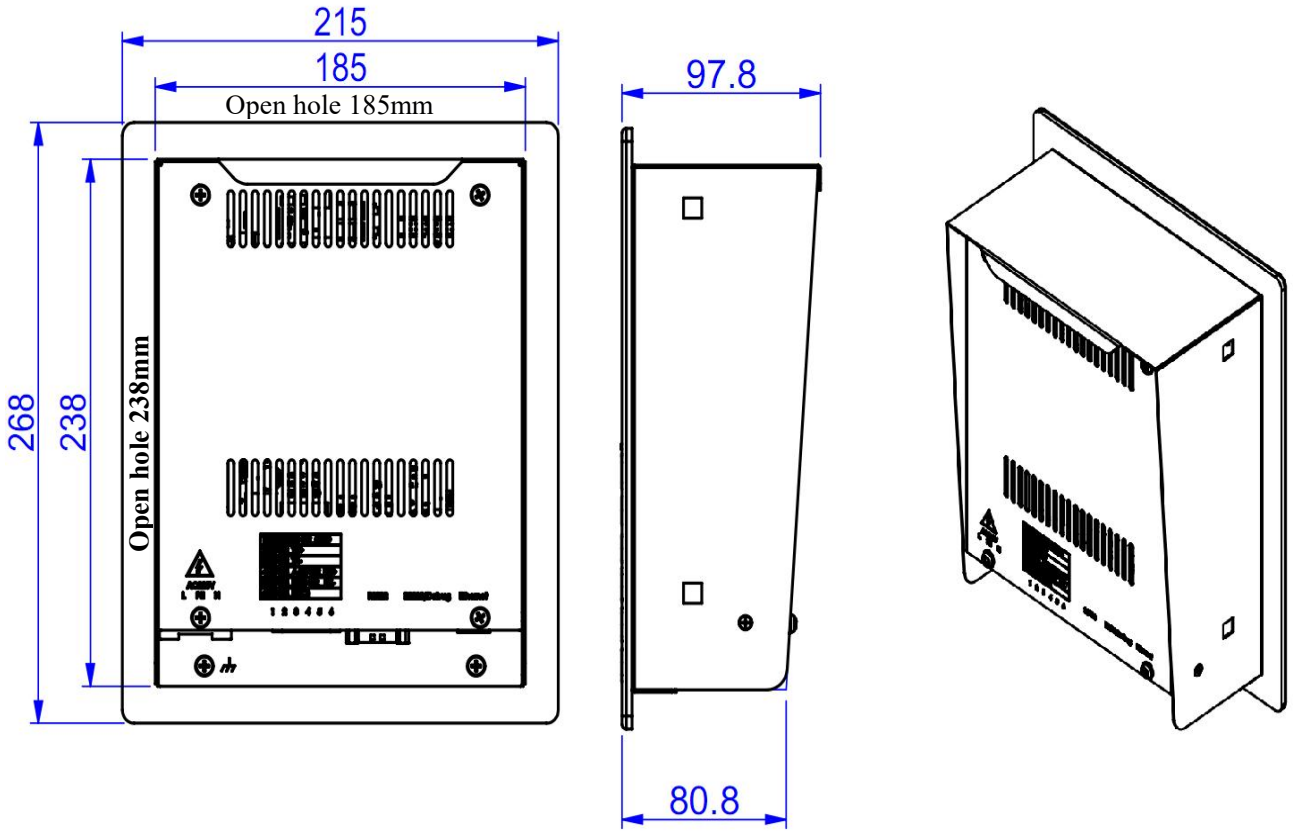
To shut down, directly disconnect the analog module AC220V power supply can be.

Note: T757 industrial control computer host 12V and 24V power supply provided by the analog module.

Chapter 3 Computer installation and wiring

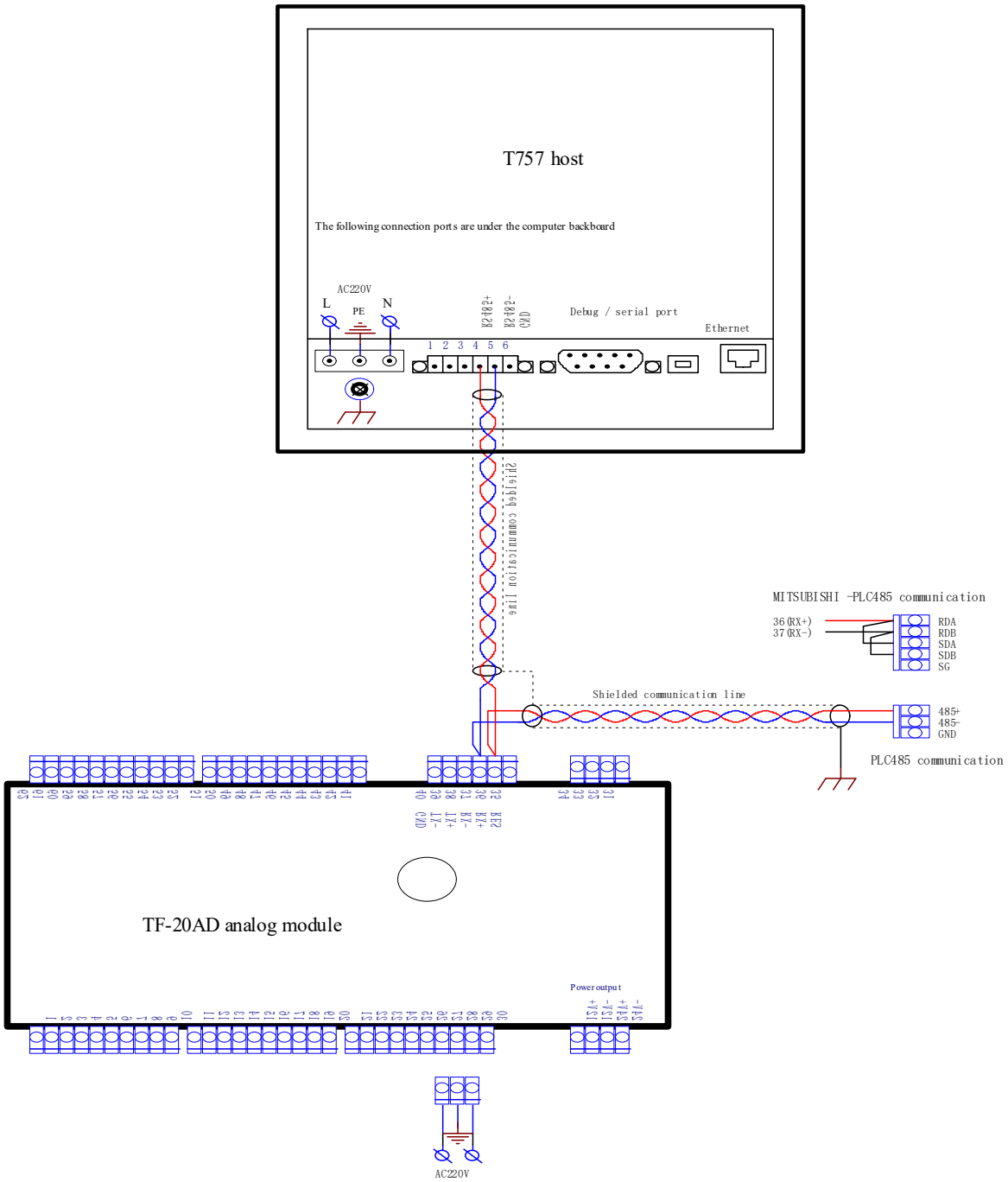
1 Host installation

T757 industrial control computer - host: Installation and dimensions



Dimensions 215mm (width) ×268mm (height) ×98mm (depth).
Hole Size 185mm (width) × 238mm (height).

T757 industrial control computer host and analog module wiring diagram



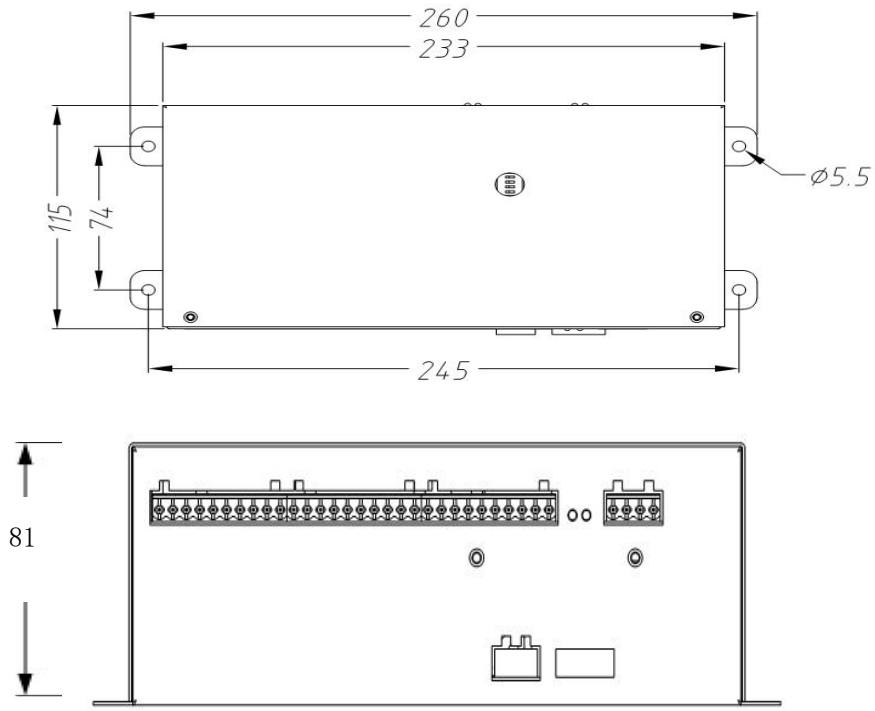
The host and analog module need to access AC220V power independently.
ncorrect grounding or no grounding will affect the normal operation of the computer.

2 Modules installation

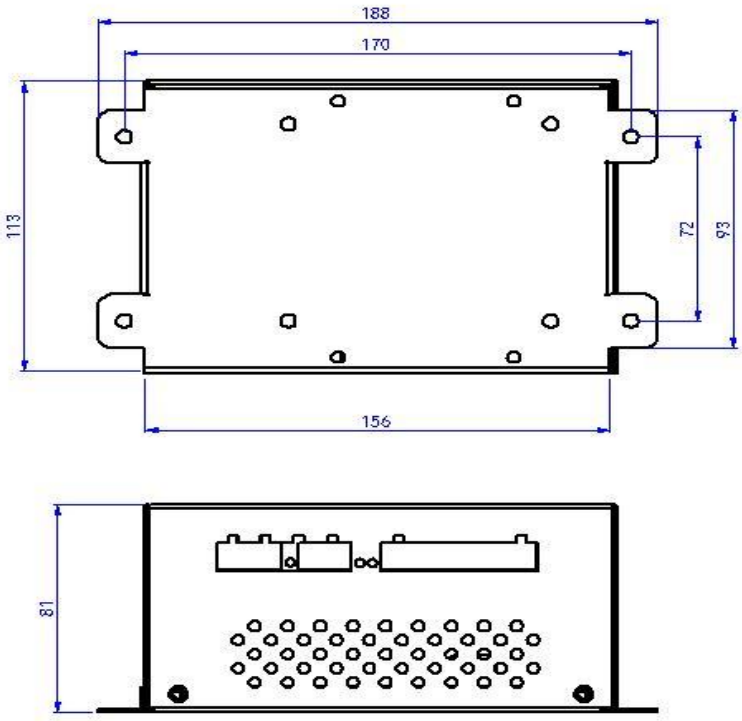
T757 Industrial Control Computer - Analog Modules: Installation Dimensional Drawings

TF-20AD analog module

The analog module is mounted on the bottom of the control cabinet!

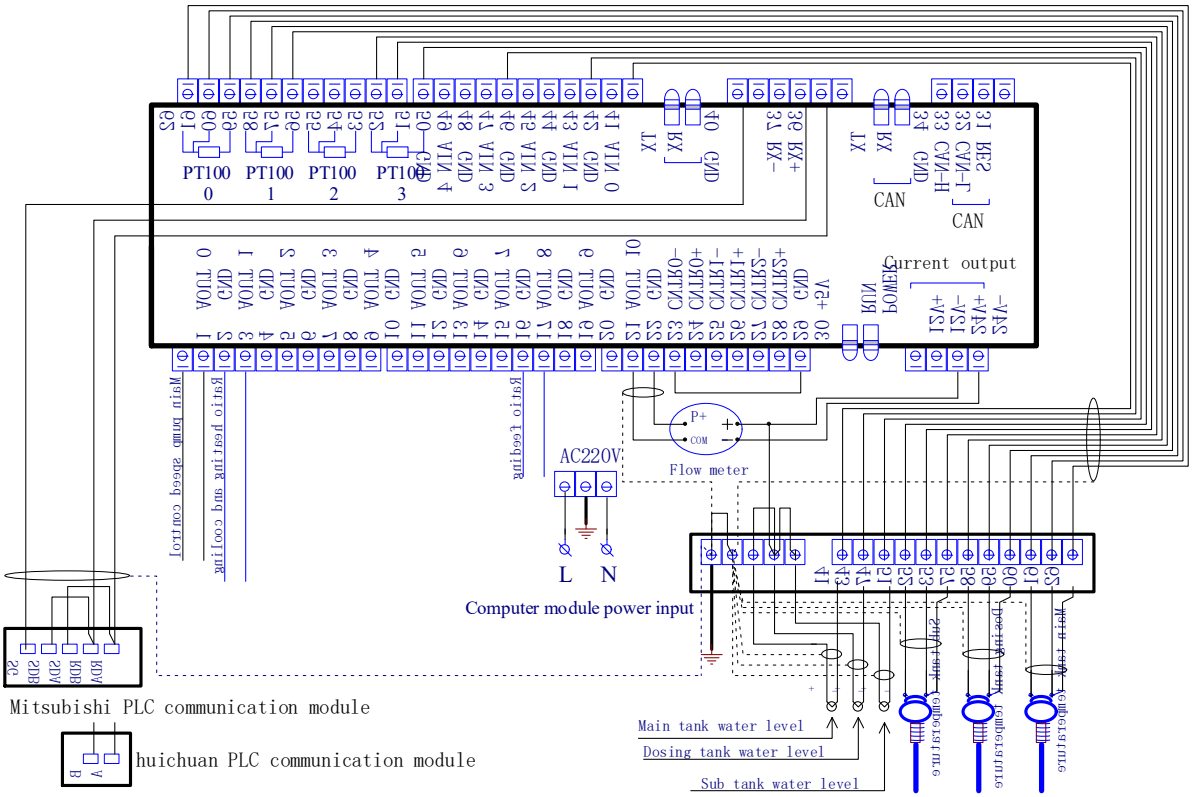


TF-10AD analog module



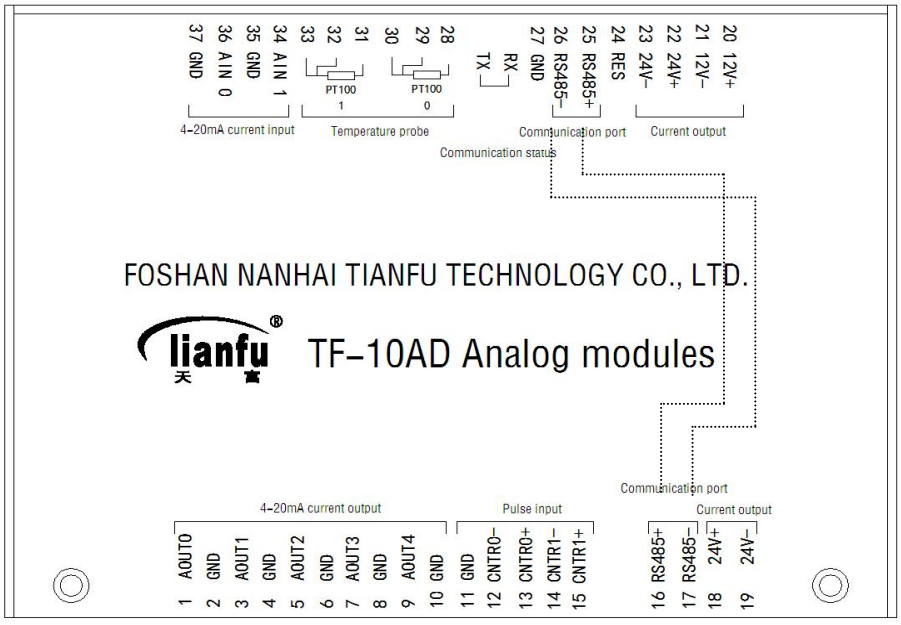
3 Analog signal wiring

T757 industrial control computer analog module wiring reference picture



TF-20AD analog module

Friendly Tip: All current input / output, pulse input signal can be customized according to the different device settings.



TF-10AD analog module (refer to TF-20AD analog module wiring)

4 On-site grounding requirements of dyeing machine computer

1. The earthing terminal of the inverter must be connected to the ground

The inverter is a powerful source of interference, especially the high-power inverter must be reliably grounded, which can significantly reduce its interference with the surrounding electrical equipment, it is recommended to dye the computer as far as possible away from the inverter installation.

2. The signal lines can not be parallel to the power lines

PT100 temperature sensor cable, the water level transmitter analog signal line can not be with the power line (the motor three phase lines, especially the inverter output to the motor power line) close parallel alignment, but can not be tied together, such as Parallel traces require a distance of 50-200 cm or more (depending on the magnitude of the strong current). It is recommended that the signal lines be placed in a metal pipe or metal trunking with isolation measures. The signal line must be shielded, shielded network to be a reliable grounding.

3. RS485 communication wiring RS485

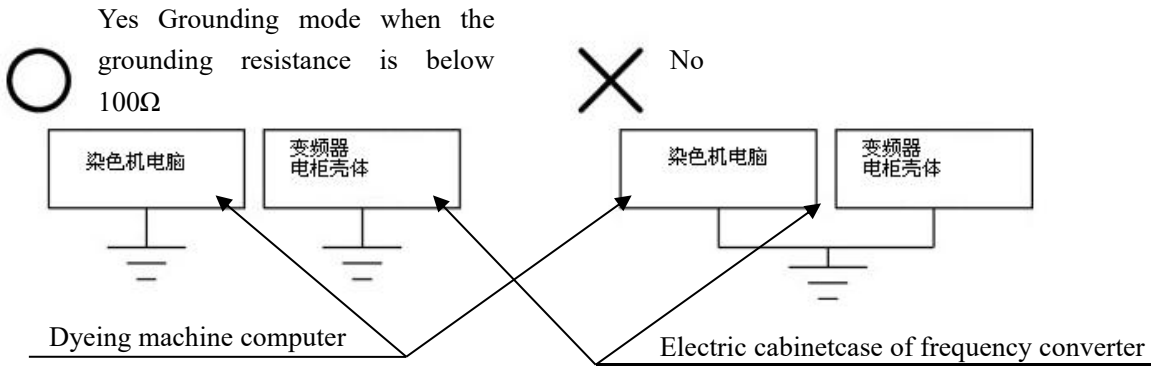
Communication line using three-core shielded cable, three core were connected: RS485 +, RS485-, signal ground (GND, SG), shielding network to be a reliable grounding.

4. Dyeing machine computer shell grounding and control cabinet grounding

It is recommended that both the host shell and the electrical control cabinet shell are grounded at the same time. Electric cabinet shell grouding is the most important

5. Grounding attention

- Ground is connected to the earth, it is recommended to access the dedicated ground wire, ground wire as short as possible, ground pile material using hot-dip galvanized iron or flat iron.
- ground wire should be more than 2mm² copper wire, grounding resistance should be less than 100 ohms (to ensure that the ground connector without corrosion or oxidation)
- For all shielded wire, the shielding network must be a single point of grounding (line at one end of the shield network can be grounded), to avoid the two ends of the ground or the formation of loop circuit grounding.
- Power ground (FG, E) and analog signal line shield are connected separately to the earth.
- If the sensor and other sensors using external DC24V power supply, DC24V switching power supply must be 0V and 24V on the computer connected to the common ground.



Chapter 4 Operation menu introduction

T757 computer operation tips:

① **When looking for (or selecting) a menu or project operation on a desktop or menu, press"▲""▼""◀""▶" Direction shift key, move the cursor, looking for menus and items.**

② **When you want to open (or enter) the selected menu or item, press** OK **key.**

③ **When you want to exit (or cancel) a menu or item, press** Esc **key.**

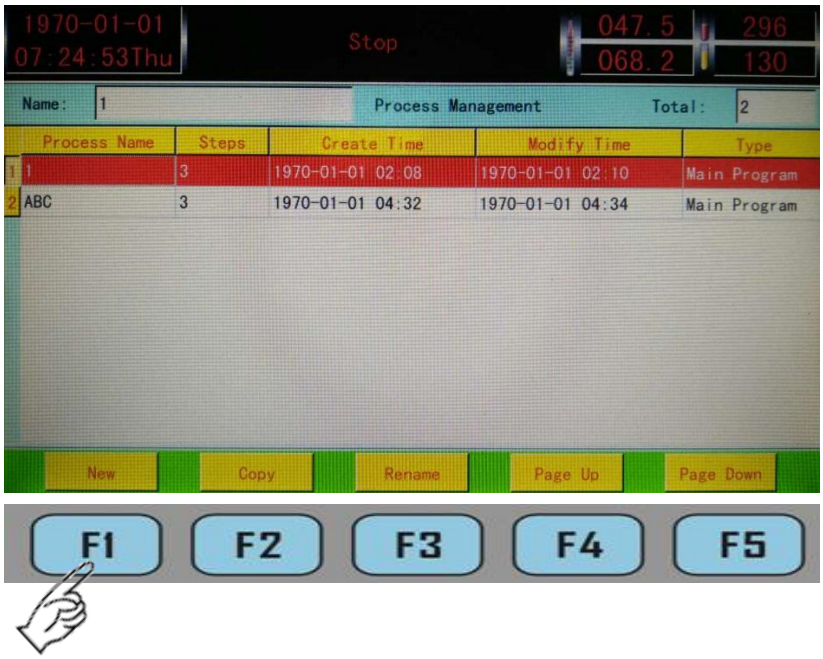
④ **When you want to exit from a menu or item into another menu or another item, first press** Esc **key, exit the menu or item, press again "▲""▼""◀""▶" direction shift key, select another menu or another item, finally, press** OK **key to enter.**

Process management

Create a new process, modify, delete, copy, and view the operation of the process.

In the initial interface state of the computer, press the cursor to shift the key, move the red cursor to the "process management" icon, press OK key.

Or in the initial interface state of the computer, press the number keys 1 or press Program key, into the "process management" menu, as shown below.



Tips:

The "F1, F2, F3, F4, F5" keys on the T7 computer panel correspond to the five operation buttons below the display.

Press F1 key，correspond to "New"，used for creat the new process.

Press F2 key，correspond to "Copy"，used for copy the process.

Press F3 key，correspond to"Rename"，used for rename the process.

Press F4 key，correspond to "Page up"，go to the previous page.

Press F5 key，correspond to "Page down"，go to the next page.

Process running

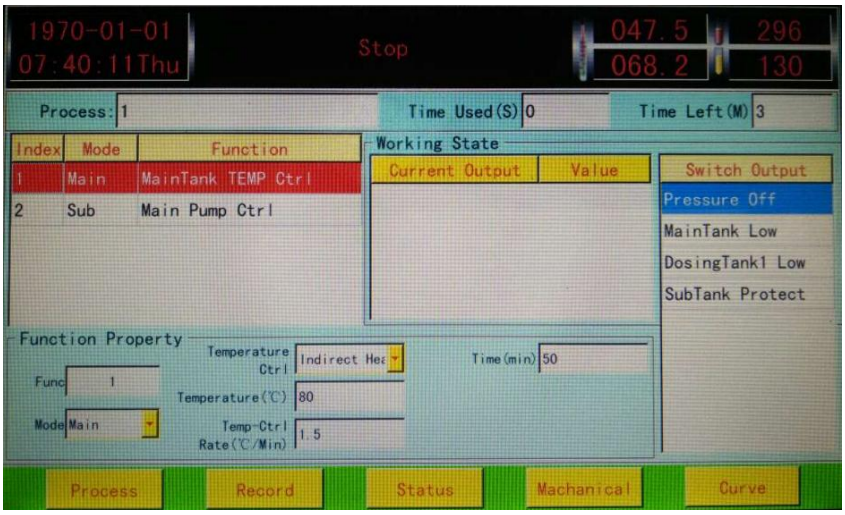
The operation of the process edited or stored in the computer, includs the process of running the interruption and the re-running process.

In the initial interface state of the computer, as shown above

1， Move the red cursor to the "Run" icon,press OK key，go to the "process running" menu.

2， or directly press the number on the keyboard 2ABC key， go to the "process running " menu.

Press"▲""▼"key，select the process to run,press OK key，or press F1 key "Load"，select the running process.



Parameter settings

In order to meet the requirements of equipment and processes, the control parameters should be set and adjust the operation.

In the initial interface state of the computer, move the red cursor to the "Parameter Settings" icon,press OK key，or press directly 3DEF key， go to the " Parameter Settings " menu. As shown below.

Note：

For the last time you enter the "parameter settings", from a window exit, the next time to enter the "parameter settings", the computer will directly enter the last exit window. But the computer power off again after power, enter the "parameter settings" menu, that is, enter the "common parameters" of the "temperature class parameters" item.

1 Common parameters, as shown below.

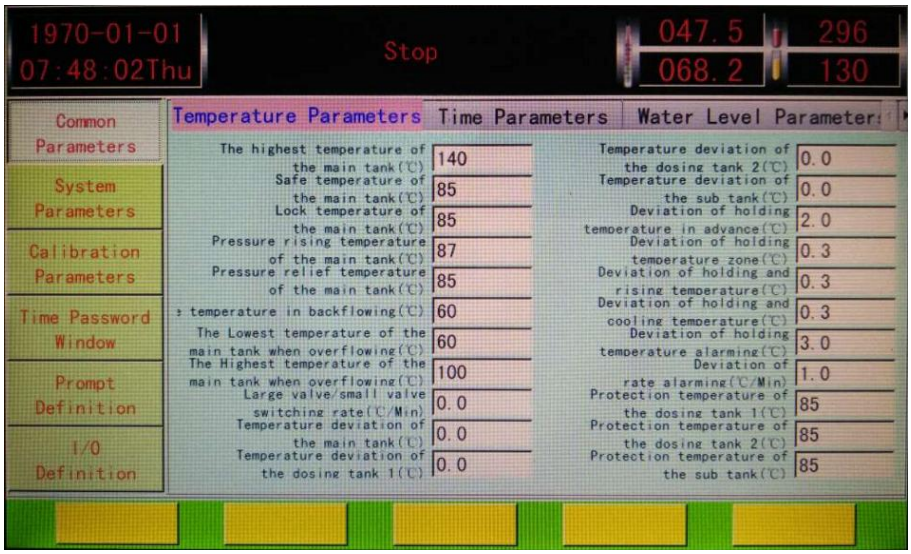
①. Temperature class parameters, enter the "parameter settings" menu，press OK key，which is enter the "temperature class parameter".

②. Time class parameters, continue to press "▶"key，move the red cursor to the right and display the "Time class parameter".

③. Water level parameters, continue to press "▶"key， move the red cursor to the right and display the "water level parameter".

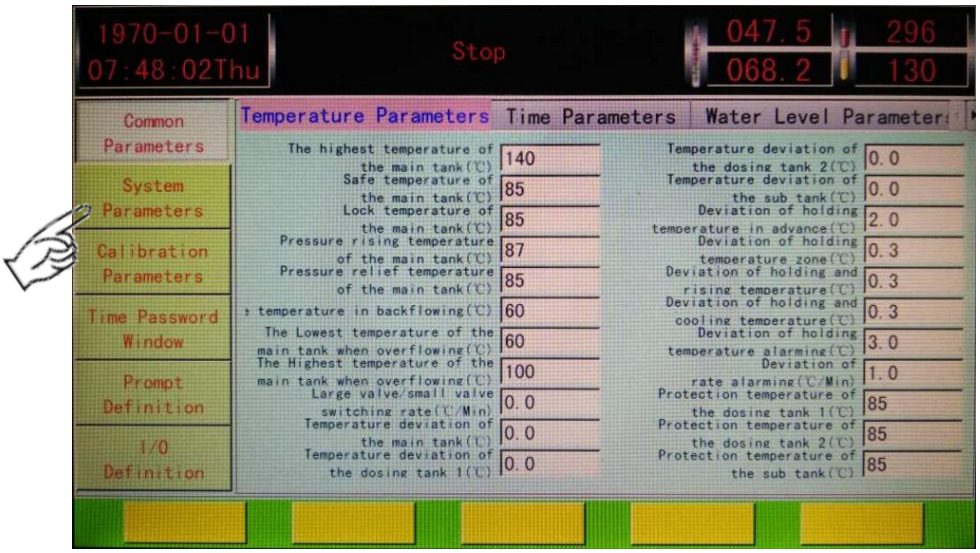
④. Control class parameters, continue to press "▶"key， move the red cursor to the right, showing "Control class parameters".

⑤. Adjustment class parameters, continue to press "▶"key， move the red cursor to the right and display the "Adjustment class parameters".

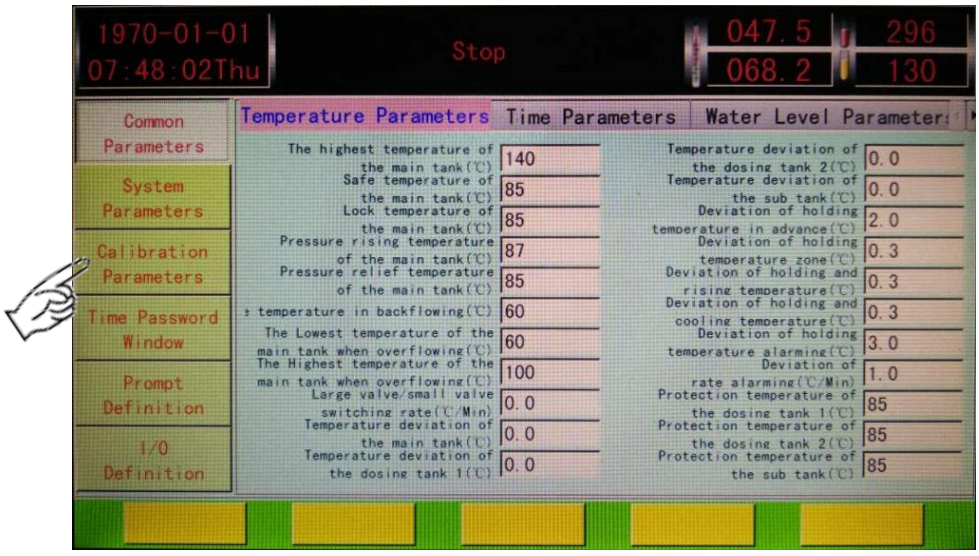


2 System parameters

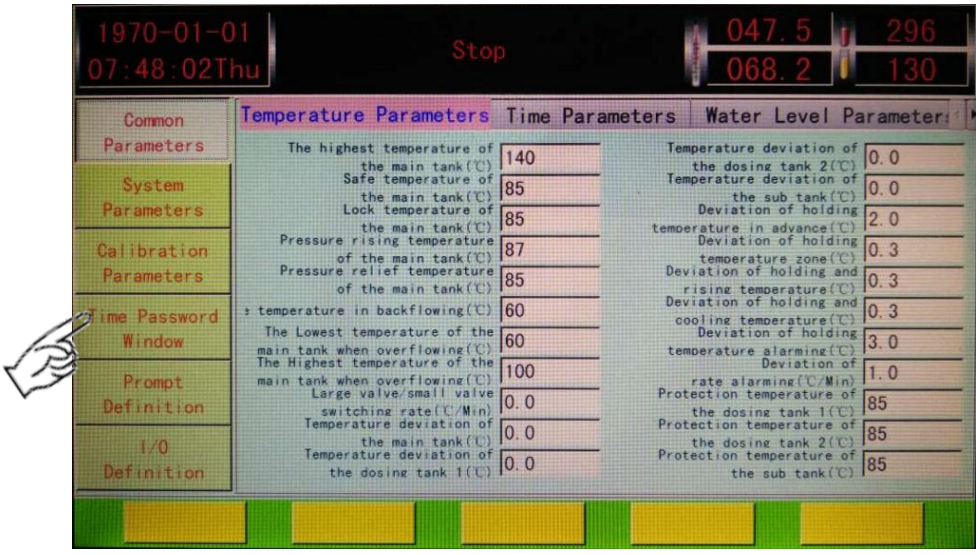
When you enter the "parameter settings" menu, press "▼"key， can enter the "system parameters" as shown below.



3 Calibration settings，continue to press "▼"key，you can enter the "calibration settings",as shown below.



4 Date, time, password and window definition, as shown below.



① Date and time settings，continue to press"▶"key，You can enter the "Time / Password" setting.

② Password setting, when entering the "time / password" menu，press"▶"key，you can enter the

"password" setting.

③ Custom window, press"▶"key， You can enter the "window definition" setting.

Time setting: Enter the parameter system and select the "Time / Password / Window" parameter item.

Password setting：

Password level classification: running craft password, manual jump (stop running) password, edit password online, edit craft password, normal parameter password, system set password, input and output password, calibration password.

Password privilege level: Run process password <Manual jump (stop running) Password <Edit password online <Edit process password <Normal parameter password <System setting password <Input and output password <Calibration setting password.

Factory default password：

Run process password = 1111, manual jump (stop running) password = 2222, online edit password = 3333, edit process password = 4444.

If you are doing a function, the computer prompts you to enter a password, or enter the password does not match, the password is wrong, but do not know or forget the password, first exit the password and input prompt box, p**ress directly on the keyboard** 

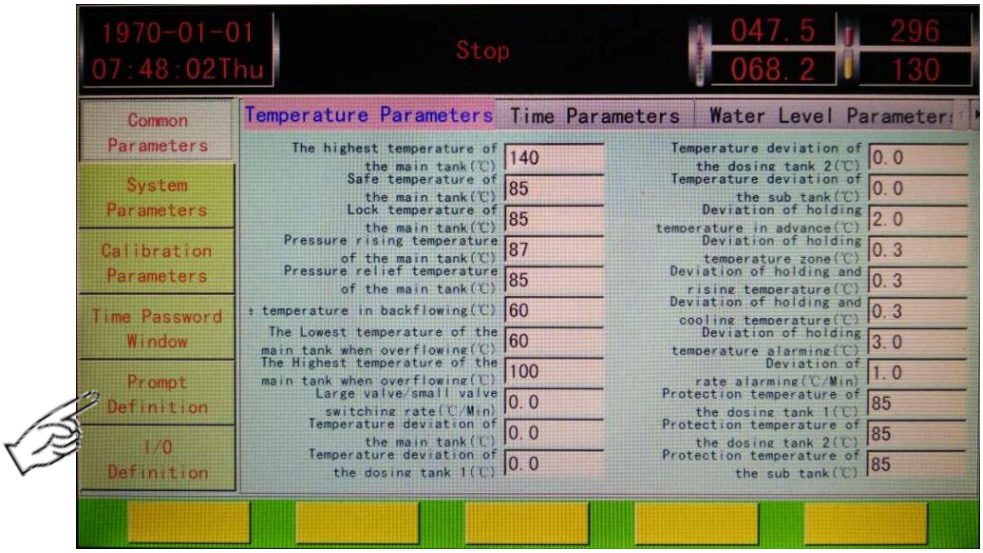
key， use other passwords (above this level)to enter.

Friendly reminder: privilege level incremental, the next level password with subordinate password permissions, the upper level password can modify the below level password.

。Please contact the supplier for other levels of password, please modify the factory original password.

Window definition: used to customize the content of company name，

5 Prompt definition， continiu to press"▼"key， you can enter the "prompt definition" settings, as shown below.



6 I/O definition, as shown below.

Continiu to press"▼"key， you can enter the I / O Definition setting.

① Temperature input definition, when entering the "I / O definition" settings, press the "OK" button, you can enter the "temperature input" definition.

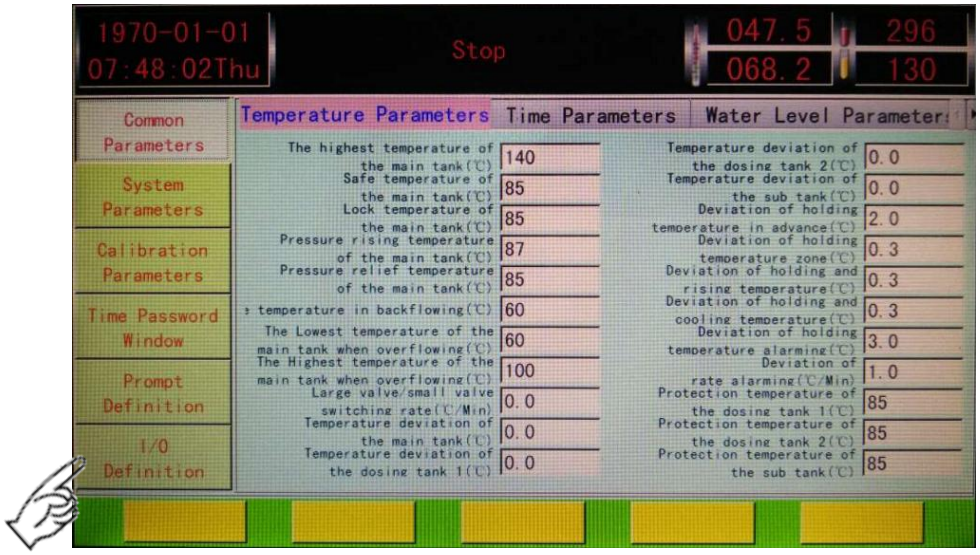
② Switch input definition, continue to press "▼"key， you can enter the "switch input" definition.

③ Switch output definition, continue to press"▼"key, you can enter the "switch output" definition.

④ Current input definition, continue to press"▼"key, you can enter the "current input" definition.

⑤ Current output definition, continue to press "▼"key, you can enter the "current output" definition.

⑥ Pulse input definition, continue to press"▼"key, you can enter the "pulse input" definition.



Running status

Display and access the current computer switch and analog signal output, input status and value.

In the initial interface state of the computer, move the red cursor to the "running status" icon, as shown in the following figure。

① Switch output status, when the red cursor to the "running status" icon, press OK key, or directly press the number key 4 GHI, enter the "running status" menu.

② Switch input status, when entering the "running status" menu, press" ▶ "key, display "switch input status".

③ Analog state, press " ▶ "key, display "analog status".

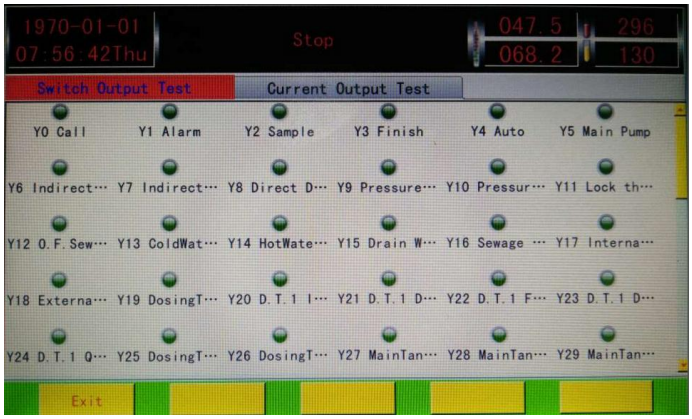
Output test

Check whether the switch and the analog output is normal operation, as shown below.

In the initial interface state of the computer, move the red cursor to the "Output Test" icon.

1. Switch output test, when the red cursor moves to the "output test" icon, press OK key， or directly press the number key 5 JKL， go to the "Switch Output Test" menu.
2. Current output test, press "▶"key, you can enter the "current output test".

Note: the computer is running, can not carry out the output test operation, exit the test, the switch output is off, the current output returns to 4mA！



Running record

The record data of current and runned curve, batch, alarm event of computer is showed as below.

In the initial interface state of the computer, move the red cursor to the "Running record" icon.

Curve record, main vat temperature change curve record, when the red cursor move to the "running record" icon, press OK key， or directly press the number key 6 MNO， go to the "Running Record" menu. Batch record, press"▶"key，go to "Batch record"menu. Alarm record, continue to press "▶"key，go to "Alarm record"menu，which "alarm record" is divided into historical records and real-time records.

System Management

The system for computer upgrades, backup, parameters and the process of backup and copy operations.

In the initial interface state of the computer, move the red cursor to the "System Management" icon, press OK key，or directly press number key 7PQRS，go to “System Management”menu.

"System management" includes system recovery, system backup, parameter transfer, process transfer, computer upgrade.

- **System recovery:** the T757 computer internal system backup disk or external U disk parameters will be restored to the T757 computer internal disks.

Recover from the computer：Go to the "System Management" menu，press“▲”“▼”Shift key, select "System Recovery", then press "OK" button, enter select "Restore from the computer". Press the "F1" key, and then press the "F3" key, the computer pops up the confirmation prompt window, press "OK" key to start the implementation of all parameters recovery.

Restore factory default： Go to the “System Management”menu， press “▲”“▼”Shift key, select "system recovery", then press "OK" key, enter select "restore factory default". And then press the "F3" key, the selected parameter is restored to the factory default value.

◆ **System backup：** The parameters of T757 computer internal disk will be backed up to the T757 computer internal system backup disk or external U disk.

The backup of all parameters and partial parameters refers to "system recovery" operation.

- **Parameter transfer：**The parameters can be transferred (upload or download) between the ordinary disk and the external USB disk of the T757 computer each other.
  The transfer of all parameters and partial parameters refers to "system recovery" operation.
- **Process transmission：** The processes can be transferred (upload or download) between the T757 computer and the external USB disk each other.
  The transmission of all parameters and partial parameters refers to "system recovery" operation.
- **Computer upgrade：** Through the USB interface to upgrade the T757 computer application software and libraries, the computer automatically detects the U disk update file.

At present, mainly from the U disk upgrade program, will upgrade the program to download the file in the U disk root directory, and then insert the U disk T757 computer host USB port (two USB port optional), into the "system management" menu， press “▲”“▼”shift key, select "computer upgrade", then press "OK" button， press “▼”shift button, select "upgrade from U disk", and then press the "F3" key, the computer pops up confirmation window, press "OK" button to start the implementation of the upgrade process.

Tips:

① **T757industrial control computer has two file storage disk, one is the system backup disk, one is the ordinary disk.**

② **Computer boot operation to read the parameters and parameters set parameters are stored in the ordinary disk, the system backup operation, if you choose to backup to the computer, the normal disk parameters will be backed up to the system backup disk.**

③ **System backup disk for storing backup system parameters, the system recovery, if you choose to restore from the computer, the system backup disk parameters will be restored to T757 computer general.**

④ **System backup to the U disk, the parameters are stored in the U disk root directory in the "backup_setting" folder.**

⑤ **Parameters sent to the U disk, the parameters are stored in the.**

⑥ **Process to send to the U disk, the process is stored in the U disk root directory in the "goyidata" folder.**

⑦ **When system backup, parameter transmission, process transmission to the U disk, the above folder is automatically generated in the U disk.**

Comparison table of parameter file name：

Parameter name	Parameter file name	Parameter name	Parameter file name
Temperature parameters	temperture.conf	System parameters	system.conf
Time parameter	time.conf	Prompt definition	tip.conf
Water level parameters	water.conf	I/O definition	io.conf
Control parameters	control.conf	Water conversion table	waterMap.conf
Adjust parameters	others.conf	Process name	****.prg

Conversion settings

In order to achieve accurate bath ratio control, the water level of main tank and feeding tank corresponding to the water weight is measured and input, to provide bath ratio control conversion.

In the initial interface state of the computer, move the red cursor to the "Water volume" icon， press OK key，or directly press number key 8 TUV， go to "Water volume conversion"table，press" ▶ "key，you can enter the conversion table of dosing tank 1, dosing tank 2, sub tank.

Data input of water level/ water volume conversion table (see above)

① Install the water level sensor correctly and calibrate the set water level parameters, including 0 and maximum calibration. For the flap level gauge should pay attention to the 0 bit of the sensor and scale 0 to keep the

same, to avoid the computer display the height value and the scale value of the flap is inconsistent.

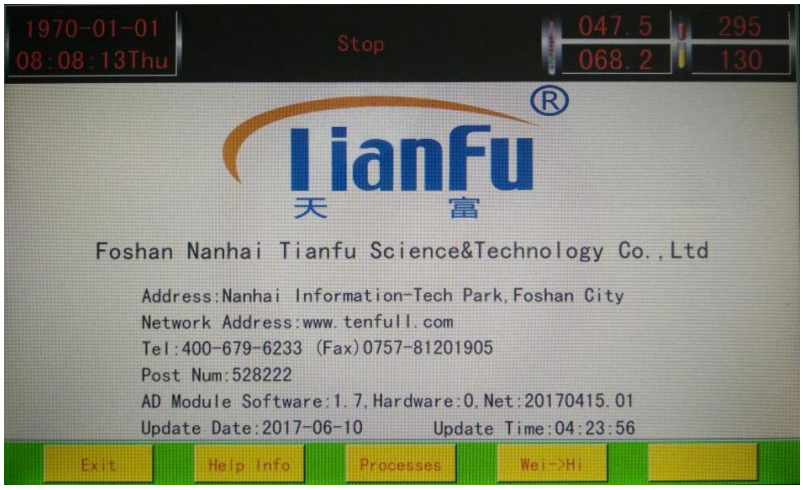
② The water in the tank is completely drained, and then the water meter (or flow meter) is fed into the tank. At the same time, enter the computer running state, check the current input window in the main tank water level height change, and write down the water volume data at different heights (weight) in sequence.

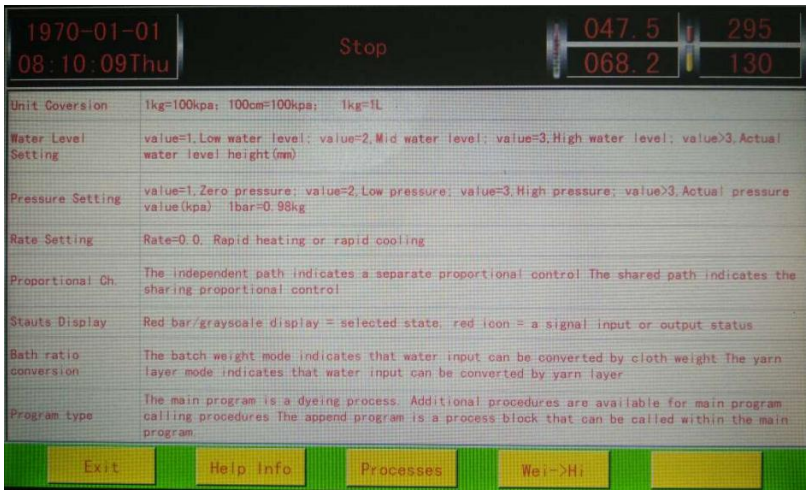
Enter the measured data into the "Water level/water volume conversion table"menu and save it.

About the system

Provide our company's contact information, computer software version number, function list, help information.

When the red cursor moves to the "Contact System" icon， press OK key， or directly press number key 9wxyz， go to "About the system"menu.

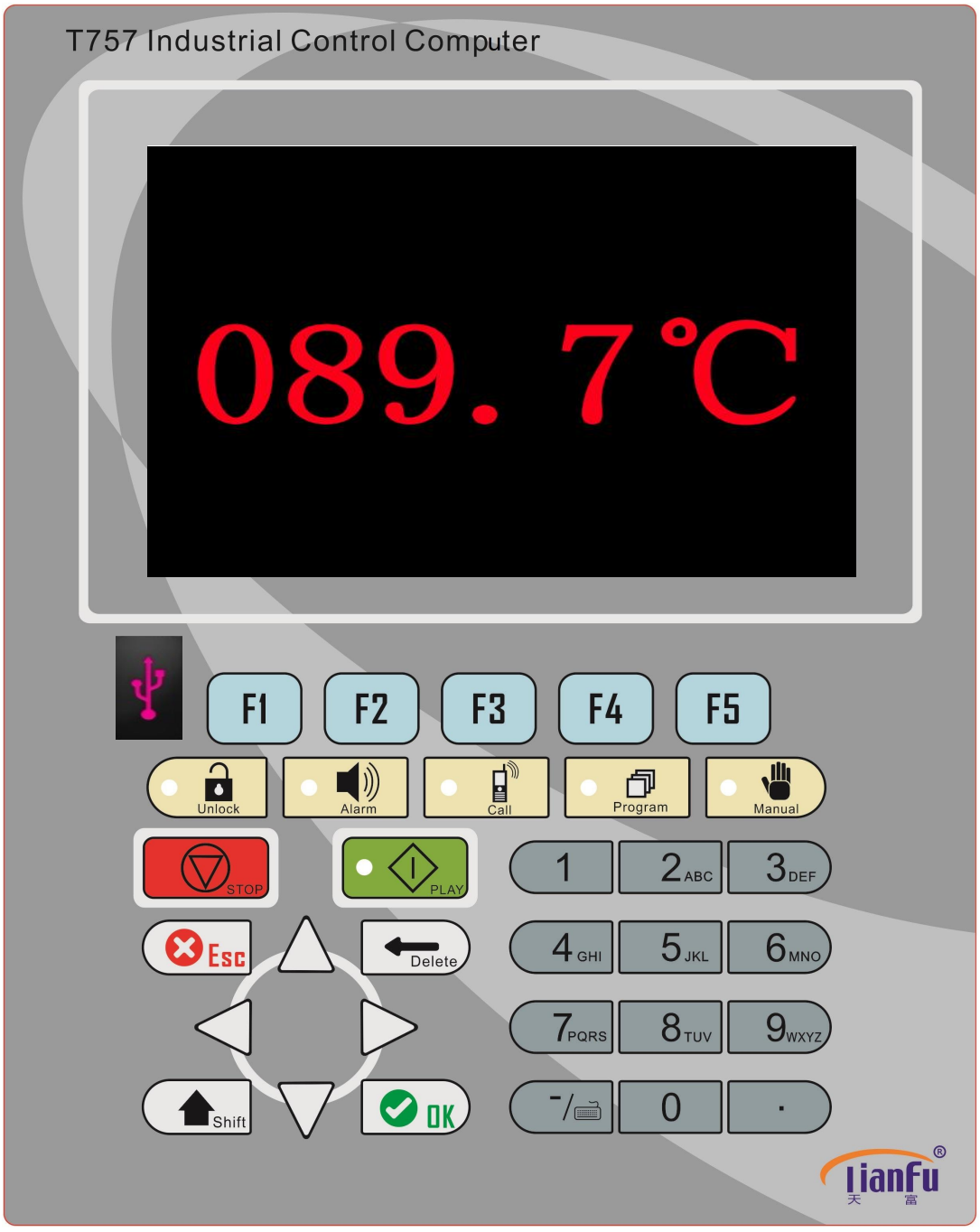




Screen saver display

Full screen display of main tank temperature

Computer in the power state, when the parameters of the "screen saver time" has a time value, the computer did not do any operation in the set time,the main tank temperature is displayed in full screen on the computer, as shown below, press any key to exit. When the screen saver time is set to "0", the full screen display of the main tank temperature is canceled.


T757 Industrial Control Computer
089.7℃
F1
F2
F3
F4
F5
Unlock
Alarm
Call
Program
Manual
STOP
PLAY
1
2 ABC
3 DEF
Esc
Delete
4 GHI
5 JKL
6 MNO
7 PQRS
8 TUV
9 WXYZ
Shift
OK
0
.

Chapter 5 Control function introduction

Process editing

Main program, additional program, appending program:

"Main program" is the process of editing the whole process of dyeing。

The "additional program" is one or more of the pre-edited processes and has a name that can be retrieved for use when the running main process reaches the "Sampling function" step, with multiple additional programs for invocation。

"Appending program" is edited before the final step and end of the main process, is fixed, no selectivity, only for the main process.

"Additional program" is a separate program that can run independently, in the implementation of different main program process for the choice of use. You can reduce the number of editing steps for the main process.

Main function, sub function and parallel function:

In the editing process, the working way of "control function" in running should be determined according to process requirements, which is divided into main functions, sub-functions and parallel function.

① The main function is the foreground work, a single independent work, only when the conditions are met; to perform the next main function works. A main function can be accompanied by multiple sub-functions and parallel functions。

② The sub function is the background work, but it is attached to the main function, and the main function of synchronous operation, can not work independently. When the main function is finished, the sub-function automatically goes to the next step, and the next step of the main function of synchronous operation, until the end of the work instructions or。

③ The parallel function is the background work, but it is attached to the main function, and the main function of synchronous operation, can not work independently. When the main function is finished, the parallel function ends at the same time; the main function is not finished but conditional is satisfied, and the parallel function ends.

Access and permission of process editing:

The editing process requires the operator who needs permission to obtain the "Edit Process Password" can edit, modify, copy, or delete a process. The editing process password is set in the "Time/ Password Setting" parameter of the "System Management", when the light 

is on, it means that the password is unlocked, permission is enabled. If the light is off, it means that it is locked and is not authorized to operate.

Unlock operation:

Press 

key， which password is entered with the permission level, which has permission to operate the password level,you can use the various permission level password to enter.

In the operation of a certain function, the computer prompts you need to enter the password, you need to enter the password which appropriate permission to operate, enter the password is wrong or the password is not the permission password, the computer prompt password error.

Tip: In a certain function of operation, the computer prompts need to enter the password, or enter the password does not match and password error, but do not know or forget the permission password, first exit the prompt box of password input, press directly  **key on the keyboard， use other passwords (above this level) to enter。**

Running process password (1111) <Manual jump/stop running password (2222) <On-line editing password (3333) <Editing process password (4444)

Lock operation： After the operation is completed, press again  key，  light is off and the computer is locked.

Tips: When the computer is in the locked state, the "default password level" parameter should select certain operation permission in the system parameters, can be carried out in the case of not unlocking, while the operation which above this permission requires password unlocking.

There are three ways to enter the process editing：

i. In the initial interface state of the computer, press the cursor direction shift key, move the cursor to the "process management" icon， press  key enter.

ii. In the initial state of the computer interface, directly press the number key  , enter.

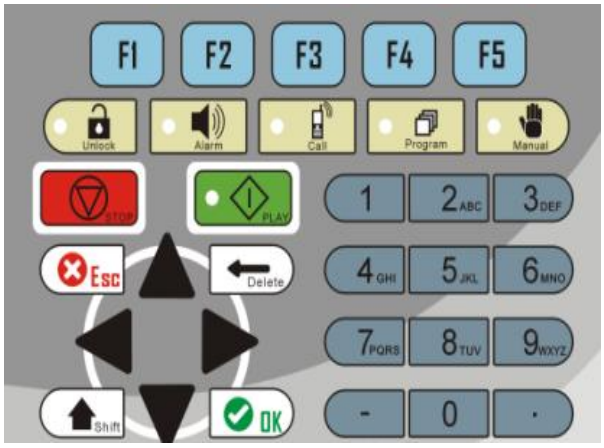
iii. In the initial interface state of the computer,press  key enter.

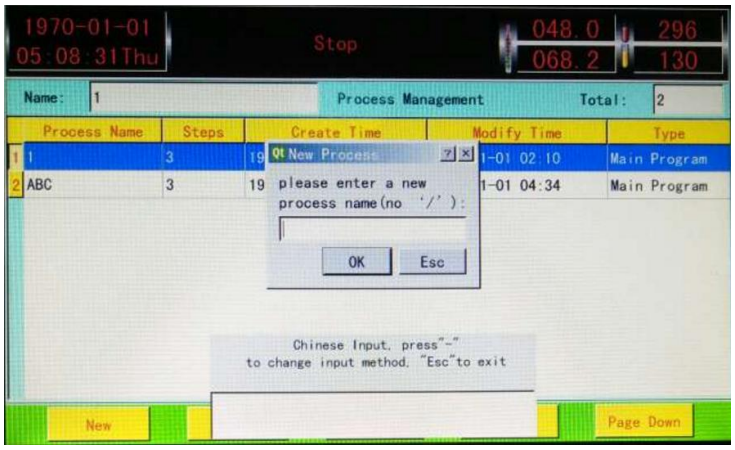
When  **key light is on， indicates that go to the process editing， press**  **key again， exit the process editing，**  **key light off.**

1 Edit and rename the process name and prompt name

Process name can be composed of letters, numbers, symbols combined into the name of the process, you can also built through the computer "smart Pinyin input method"Chinese and English names. At the computer's initial interface, move the cursor to the "Process Management" icon，press  key， or directly press number key 

or  key， go to “process management”menu， as shown the left figure below.





Press F1 key， create a new process, as shown above. Press - key, can be switched to input Chinese, English, symbols.

Tips

① **When editing a process, from the "Function Name" item entry into the "Functional Properties"，press OK key，returns the "Function Name" item from the "Function Properties" item，press Esc key.**

② **Switch between "Functional property" items，press"▲""▼"shiftkey.**

③ **Enter the property item of the drop-down key， press OK key. Press"▲""▼"select the drop item，press OK select the drop-down item.**

Tips

Computer built-in part of the "prompt name", you can add "prompt name", you can also rename the original "prompt name". The prompt name is suggested within 8 words.

Add the "Prompt Name" method：

Enter the parameter settings, select "prompt definition"， press [OK] key， press the shift key, select the prompt name, the computer pops up the "prompt name" box, enter the new "prompt name" ,press [OK] key， press again [F1] save. And so on, edit the next "prompt name".

2 New process

a) Go to process management，press [F1] key，creat a new process，enter the process name，press [OK] keyto confirm.

b) Enter "function serial number" in the "function" item，or press [F1] help，go to the function selection box (see below).

c) Press"▲""▼""◀""▶"shift keys， Select the "serial number" corresponding to the "function name", or directly entering the corresponding serial number of the function name to select the function name.

d) Press again [OK] select "function name".

e) Then editing the function "property" item of the other items according to process requirements, finally press [F3] key to save the process.

After press [F3] key to save the previous step， the computer automatically enter the next step of the process editing, continue to the above ② ③ ④ ⑤ step operation, and so on,until the process to complete editing， press [Esc] key，exit the process editing.

3 Modify the process

Modifing process include: removing a step, inserting a step process, and modifying the process data or changing the way it works.

Removing a step process:

Enter the name of the process to be modified, press"▲""▼"shift key, find the process steps to be modified, press Delete key, the computer pops up the dialog box of "confirm to delete this step of the process? , press OK keyto confirm, otherwise, press Esc key to cancel.

Inserting a step process:

Enter the name of the process to be modified, press"▲""▼"shift key, find the process steps to insert, press F2 key (F2 key corresponding to the "new", that is, "insert").

For example, if you insert a step betwee step 7 and step 8 of the process, move the cursor to step 8 and press the corresponding "F2" key, after press F2 key, the original step 8 back into step 9, the cursor to stay in the new step 8, enter the function number in the "Function Property" item or press F1 help, enter the function selection box, select the "function name" corresponding to the "serial number", and input data and save in other properties according to the process requirements,to insert step press F3 key to save, then continue to insert the steps. If you continue to insert, press the above operation to continue, otherwise, press Esc key to exit.

Modify the process data or the working way:

Enter the name of the process to be modified, press"▲""▼"shift key, find the process steps to be modified, press OK key to enter the "function property" item, press again"▲""▼"shift key, and then modify the property items of the process step, after modification, press F3 key to save the process data of this step.

For example, if you want to modify the data and methods of step 8 of the process, move the cursor to step 8, press OK key to enter the "function property" item in step 8, press"▲""▼"shift key again, select the data or mode of the "function property" item to be modified.

4 Delete the process

Deleting a process means deleting the entire process. Enter process management, press"▲""▼"shift key, find the name of the process to be deleted, press Delete key, the computer pops up dialog box of "Confirm to delete this process?", press OK keyto confirm, otherwise, press Esc key to cance.

5 Copy the process

When the new process and the computer's original process requirements are similar, in order to reduce the operation, you can choose the process similar with the new process, the process can be copied, and another name the process name.

Enter into process management, press"▲""▼"shift key, find the name of the process to be copied, press F2 key, the computer pops up the dialog box of "Please enter the new process name", enter the new process name, press OK key to confirm, the computer pops up the prompt window of "copy successful", and then enter the process which is copied, modify and supplement it according to process requirements.

6 Query the process

Enter to process management, press"▲""▼"shift key，select the name of the process to be queried，press OK key to enter the selected process，press Esc key to exit. Press the previous page F4 or next page F5 key to flip page view.

7 Upload and download the process

T757 computer has two USB interface. Through the USB interface, the process and parameters can be uploading or downloading between the computers of the dyeing machine, and can also be stored on the computer.

① Move the cursor to the "System Management" icon，press OK key，or directly press number key 7PQRS, go to "System Management" menu，press"▲""▼"shif key，select "process transfer".

② Press OK key，confirm "process transfer"，press"▲""▼"shift key again，choose "computer transfer to U disk" or "U disk transfer to computer"。

③ Press OK key，enter the name of the process you want to download or upload, if you want to download or upload the entire process，please press F1 key to select all，then press F3 execute key. If download process, the computer pops up the prompt window of "Confirm to download process to U disk?". If upload process, the computer is pop-up the prompt window of "confirm to upload process from U disk?" Press OK key，start to download the process or upload the process.

Tips：

① **Download process selection "computer transmission U disk", upload process selection "U disk transfer computer.**

② **When downloading or uploading a single or multiple processes, please move the cursor to the name of the process to be selected, press OK key，when there is "√"in the selection box, indicates that it is selected.**

③ **Download or upload all process, please press F1 select all keys, all boxes are"√" , indicates that all selected.**

④ **When the option has "√"，press the anti-check F2 key to become unselected. On the other hand, when the status is not selected. Press the anti-check F2 key to become the selected state.**

⑤ **When send the process to the U disk, the process is stored in the "goyidata" folder of U disk root directory (automatically generated folder), you can also modify the folder name.**

In "goyidata" folder, all process file name is: × × × × .prg.

Process editing flowchart

There are three ways to enter the "process management" to access, edit, modify, copy, delete, and rename the operation. First click directly on the panel  enter; Second in the computer initial interface (any other interface, continuous press  can return to the initial interface), directly click on the number key "1" to enter, the third to move the cursor to the "process management" menu,press  enter.

Edit the control function

Main tank temperature control	Function: suitable for cooling, indirect cooling, and insulation timing control. Mode: Main function/sub function/parallel function (default main function). Temperature control mode: Indirect heating/indirect cooling/direct heating /direct cooling (indirect cooling can choose "cold water cooling or hot water cooling"). Temperature/℃: 0-180. Rate(℃ / min): 0.0-9.9. Time/min: 0-255.
Editing instructions	1, Temperature: enter the target temperature value, the set value shall not be greater than the highest temperature of the main tank. 2, Rate: According to the process requirements input rate, 0.0 indicates rapid heating or cooling. 3, Time: holding time under the set temperature.
Associated parameters	Temperature parameters: the maximum temperature of the main tank, the main tank temperature deviation, large valve/small valve switching rate, insulation temperature in advance, insulation zone deviation, insulation temperature rising, insulation deviation cooling, insulation deviation alarm, rate deviation alarm. Time parameters: heating/cooling switch, heating and direct drainage time, heating and direct drainage interval, insulation and direct drainage time, insulation and direct drainage interval, the first heating and direct drainage, heating and direct drainage after cooling of the main tank. Control parameters: the main tank temperature control protected by the main pump, when holding over temperature allow to cooling, start small valve heating, steam/ oil heating switch. System parameters: indirect heating mode, indirect cooling mode, direct heating mode, direct cooling mode, direct/indirect ratio, direct ratio.
Instructions for use	1, For the use of temperature control valve or proportional valve, in the system parameters, select the "heating mode" and "cooling method". 2, For the proportion of temperature rise and fall, according to the use of shared proportional valve and independent proportional valve, to select the common channel or independent channel.

	3， For the difference between computer display temperature and the actual temperature of the main tank. A difference of less than 5 ℃, it is recommended to use the temperature offset to correct the temperature. A difference of more than 5 ℃, it is recommended to use the correction temperature to correct the temperature. 4， For the temperature correction settings, please the manufacturer's technical staff to set the operation. 5， The output of direct drainage in different temperature, according to the parameters set requirements, direct drainage and indirect cooling should output synchronously. 6， If the control parameters set in the "main tank temperature control protected by the main pump = Yes", the temperature control must be made when the main pump open. 7， If you only need to control the temperature, and do not need the computer to open the main pump, then the control parameter set "main tank temperature control protected by the main pump = no". 8， In order to solve the oil heating (ratio) and steam heating (switch) free to switch use, you need to set.

Main pump control	Function：Applicable to control the pump of main tank or motor open/stop. Method：Sub-function/parallel function (default sub-function). Mode：Open/close. Adjustment method：Dyeing (%) / dyeing yarn (%) / pressure (kpa). Main pump opening：0-100. Circulation pump：Indicates whether to open the circulating pump at the same time when opening the main pump.
Editing instructions	1， Mode: According to the equipment control and process requirements, in the drop-down list to select whether to open the main pump or close the main pump. 2， Adjustment method: according to the dyeing mode to choose the cloth dyeing mode or yarn dyeing mode or pressure adjustment mode. 3， Main pump opening: 0-not speed, 100- output 20mA current, full speed control 4， In the yarn dyeing mode or pressure adjustment mode, you can set the different speeds of the main pump in internal flow, outflow, and interval.
Associated parameters	Time parameters: the main pump protection delay, start delay, the main pump pilot cloth guiding wheel open, behind cloth guiding wheel closed, the main pump current protection time. Water level parameters: the main pump to protect the water level, the main pump to start the water level. Control parameters: the main pump current deviation alarm value, the main pump limited by the fan start (airflow machine effective). Adjustment parameters: manual main pump speed, this parameter provides manual open pump for adjustment, automatically invalid.
Instructions for use	1， The main pump control can only be used as a sub-function and parallel function, the main pump control can not be compiled in the first step. 2， When running the main pump alone, it is recommended to step by step "running time" as the main function step, and then editing the main pump control. 3， When the process of editing a "main pump open" sub-function step, the computer is running, regardless of running the "main pump open" function step after any process step, as long as the the conditions of main pump to open, the computer automatically open the main pump. Because the sub-function is traceable, even when running the process, skip the sub-function running step, the program should be traced back to the front of the program whether there are sub-function of the steps to avoid jumping and not running.

	4， For different dyeing stages need for different speed control, then in the process of editing multi-step "main pump control" function, to set a different speed control data to meet the requirements of different speed control. 5， The main pump function control by many factors. For example: low water level, protection of water level, start water level. In the water tank or water level below the start level, the main pump can not start,as well as the main pump does not start limiting other functions to work. For example: the main pump is not activated, can not heat, feeding, guide cloth can not start and so on. If the main pump is turned on or off during the intake and drainage function, the main pump is turned on or off when the computer is running to this step. For airflow dyeing machine, the main pump limited by the fan start = Yes, the fan control function is running in order to run the main pump.

Main tank input water	Function：According to the process requirements, the computer automatically control water inlet of dyeing tank by water level or waterquantity. Method：Main function / sub function / parallel function (default main function). Mode：Water level water-inlet / water quantity water-inlet / memory water inlet / water level bath ratio / water quantity bath ratio / sand layer water-inlet / full water-inlet / replenishment water inlet Water type：Cold water / hot water / soft water / hard water / cold water + hot water / vice tank water. Main pump：Open/close. Water level/water quantity（mm/L）：0 / low water level / mid water level / high water level. Time/s：0-999. Bath ratio conversion：Dry cloth conversion / wet cloth conversion. Measurement method：Clear calculation / not clear calculation.
Editing instructions	1， Water type: in the "mode" drop-down list to select the need for water pipe. 2， Main pump: according to the process requirements to choose whether to allow the main pump open。 3， Water level/water quantity: According to the choice of mode items, the computer automatically shows the water inlet weather water level or water quantity. Water level, you can directly enter the height value, you can also choose high, medium and low switching signal to water intake. Water can be measured by the water flow meter, and also can be converted by conversion table to intake. 4， Time: When the water (bit) item is 0, this time is the water inlet time. When the water (bit) item is not 0, this time of the water inlet overtime prompts the time. 5， When according to water quantity intake or water quantity/bath ratio conversion intake, the water measurement mode is divided into zero measurement and not zero measurement. Zero measurement is the computer when the implementation of water inlet to re-measure the water, not zero measurement is the cumulative measurement of water intake.
Associated parameters	Temperature parameters: safe temperature of the main tank, higher than the safe temperature prohibited water intake. Time parameter: Water intake delay of the main tank. Water level parameters: high water level of the main tank, mid water level of the main tank, low water level of the main tank, water level of the largest yarn layer, overflow high water level of the main tank, water intake in advance of the main tank water level, water intake in advance of the main tank water quantity. Control parameters: bath ratio conversion mode, allowing high temperature water intake, water

	metering mode of the main tank, water level window display of the main tank, implementation of the water intake and drainage function, the water level has been reached, the main tank switch water level detection, yarn layer height, the maximum number of yarn layers, overflow high water level limit. System parameters: channel 0 pulse numbers, channel 1 pulse number, use the flow meter to make water intake effective.
Instructions for use	1， The water level intake, memory water intake, yarn layer water intake, water level bath ratio is according to the height of water intake. When the model item selected in these items, the computer automatically water intake by the height of water or conversion by the height of water intake, Water level/water quantity "item is displayed as" water level (mm). 2， The water quantity intake, water quantity bath ratio is according to the flow of water intake. When the model item selected in these items, the computer automatically water intake according to water quantity, "water level/water quantity" item is displayed as "water quantity (L). 3， "water level/water quantity" items and time items can not be compiled at the same time 0. "Water level/water quantity" item data must be greater than the water level intake in advance or water quantity intake in advance of the main tank. 4， The water level bath ratio, according to the cloth weight or yarn weight multiplied by the bath ratio, converted to the height of water intake, choose this mode of water intake. Before running the process, you need to enter the data to the conversion table (water weight/water height corresponding table). Otherwise, the computer can not be converted or prompted that the data of conversion table is error 5， When select yarn layer water intake, to set the maximum yarn layer water level, yarn layer height, the maximum number of yarn layer, bath ratio mode = yarn layer. 6， The replenishment of water is used to water intake control for the easy ed cotton, loose hair, tops which is easy to absorb water, to ensure the height of water level, to prevent water level drop.
Main tank drain	Function：According to the process requirements, the computer by water level or time automatically controls the dye tank drainage. Mode：Main function / sub function / parallel function (default main function) Main pump：Open/close. Water type：Drain water/sewage water/high temperature discharge/high pressure dehydration. Water level（mm）：0/low water level/mid water level/high water level. Time/s：0-999.
Editing instructions	1， The main pump: According to the process requirements to choose whether to allow opening the main pump. 2， Drainage of water type: in the "drainage of water type" drop-down list to select the pipeline for draining. 3， Water level: according to the process requirements to select the drainage to what position, of which 10 or "low water level" indicates the drainage finished. 4， Time: when the water level item is 0, this item is the drainage time. When the water level item is not 0, this item is the prompts time if drain overtime.
Associated parameters	Temperature parameters: the main tank safe temperature, higher than the safe temperature to prohibit drainage. Time parameters: the main tank drainage delay, the continuous drainage time after drainage to low water level (simulated water level 10mm). Water level parameters: high water level, mid water level, low water level of the main tank.

	Control parameters: allow high temperature drainage, otherwise the main tank temperature is higher than the safe temperature,should limit drain water and sewage, but the drainage of water options "high temperature drainage" and "high pressure dehydration" except. Note: "high temperature drainage" and "high pressure dehydration" is open "high temperature drainage" valve.
Instructions for use	1， The "main pump open" in the attribute item indicates that the main pump is allowed to be opened during the drain, rather than automatically open the main pump when draining. There is a step of "main pump open" in the process and the water level to reach the "main pump start water level" conditions, to open the main pump, otherwise the main pump is not running. 2， The water level and time items can not be compiled 0 at the same time. For the simulated water level, after draining, the setting data of the water level item is the "10", for high and low water level signal, the water level item select the "low water level." 3， The water level abnormal tips, the computer is running, the water level has reached the set level or "0", suggesting that the water level is abnormal, press "ok" to enter the next step; otherwise, the computer does not enter the next step. 4， The process error message, time and water level is set to "0", save the process, suggesting that "process error." 5， The water level parameters: high water level, mid water level,low water level of the main tank, these parameters are analog water level signal is converted to switch signal output, To achieve drainage according to switch volume. 6， Low water level instructions, 4-20mA water level signals. The computer default 10mm for the low water level, the water level signal of switch volume is selected "low water level".

Main tank overflow	Function：According to the process requirements, cloth, yarn, loose wool should be rinsing in the dyeing process. Mode：Main function/sub function/parallel function (default main function）. Overflow：Overflow sewage valve/draining water/sewage water/overflow valve Water type：Cold water/hot water/soft water/hard water/cold water + hot water/vice tank water. Overflow method：Time/water quantiry/number of times. Cycles：0-999times. Water quantity（L）：9999. Time/s：0-999.
Editing instructions	1， Overflow: according to process requirements in the drop-down list to select the outlet of overflow. 2， Water type: in the "water type" drop-down list to select the water pipes for water intake. 3， Water volume (L): according to process requirements, the amount of overflow water needs to quantify (see the following operating instructions). 4， The number of cycles: When overflow according to the number of times, it is the repeated times from the overflow high water level to the overflow low water level. 5， Time: When the water item is 0, the time of this item is the overflow time. When the water item is not 0, the item is the prompt time when the time out of water overflow (see the following operating instructions).
Associated parameters	Temperature parameters: the safe temperature of the main tank, higher than the safe temperature to prohibit overflow. Time parameters: delay time and alarm time of the main tank overflow water level. Water level parameters: overflow high water level and overflow low water level of the main tank. Control parameters: overflow high water level limit.

Instructions for use	1， If the limit of overflow high water level select "Yes", when the water level is higher than "overflow high water level",the water intake is closed. So that the overflow water level is maintained between the overflow high water level and the overflow low water level of the main tank. 2， If the limit of overflow high water level select "no", the overflow is not subject to high water level restrictions, does not close the water in the overflow process. 3， Only in the case of the installation of the flow meter, need to measure the amount of water overflow, should input the water consumption in the item of water vulume, otherwise, the item of water volume is set to "0". 4， Alarm time of the overflow water level, if the limit of overflow high water level select "Yes", during the overflow process, the water level exceeds the overflow high water level or below the overflow low water level, an alarm is issued when the setting of the "overflow water level alarm time" is reached. 5, If the limit of overflow high water level select "no", the parameters of the overflow high water level and overflow low water level, delay time and alarm time of the overflow water level of the main tank are invalid. 6, For the overflow of water type to select the "vice tank of water", enter the data on the amount of water, the computer default choice " water volume conversion table of the vice tank ", according to the water volume required for the overflow converted to the water level for overflow. When the water level of vice tank drops to the water level converted to water volume, overflow ended. 7, When the overflow mode is selected as "the number of times", open the drain in running, the water level reaches the parameter item of "overflow low water level" to close the clear water valve or the sewage water valve, and then open the water intake, when the water level reaches the parameter item of " overflow high water level " to close the water intake and start timing, when reach the set time of the " time "item, open the " clear water valve or sewage water valve "overflow port set, when the water level reach the parameter item of " overflow low water level " to close the clear water valve and sewage water valve. If the "number of cycles" is set more than 2 times, the water intake is turned on again. The water level reaches the parameter item of "overflow high water level", close the water intake and start timing. The time reaches the time set by the "time" item, open the "clear water valve or sewage water valve" overflow port set, the water level reaches the parameter item of "overflow low water level" to close the clear water valve or sewage water valve. So repeat this cycle, the third and the fourth times ... ... repeat the second process. Until the number of times reach the "number of cycles" has been set. **The overflow and washing function are two kinds of different rinsing methods in dyeing process, depending on dyeing requirements optional.**

Main tank washing	Function：According to the process requirements, in the dyeing process, cloth, yarn, loose wool should be washing function, different from the overflow bleaching and rinsing. Mode：Main function/sub function/parallel function (default main function). Water type：Cold water/hot water/soft water/hard water/cold water + hot water/vice tank water. Temperature/℃：0-180. Water level（mm）：0/low water level/mid water level/high water level. Cycles：1-255. Time/s：1-999.
Editing instructions	1， Water type: in the "water of the water intake" drop-down list to select the pipes need for water. 2， Measurement methods: choose to water metering method for washing, according to water level or water volume of the water intake.

	3， Temperature (℃): Washing temperature. 4， Water level (mm): water level of washing. This item can not be set to "0". 5， The number of cycles: washing times, the item can not be set to "0". 6， Time (min): the time is each washing time; the item can not be set to "0".
Associated parameters	Temperature parameters: main tank temperature, hot washing limited by the hightest temperature. Control parameters: draining of the main tank washing ended. When washing ended, whether it is drained or not according to the process requirements.
Instructions for use	1， Washing can be divided into hot washing and cold washing. In hot washing, it is need to set the washing temperature in the temperature item. In cold washing, the temperature is set to "0". 2， The number of cycles is set to greater than "1", and then repeated the implementation of multiple washing. 3， The temperature can be set to "0", said the water is not heated when washing. 4， Water level, the number of cycles, time can not be "0" any one. **The overflow and washing function is two kinds of different rinsing methods in dyeing process, choose according to different dyeing requirements.**

Airflow washing	Function：It is suitable for the rinse mode function of airflow dyeing machine. Mode：Main function/sub function/parallel function (default main function). Water type of intake：Cold water / hot water / soft water / hard water / cold water + hot water / vice tank water. Water type of drain：Draining water/sewage water. Spray shower：Open/close. Temperature/℃：0-180. Water quantity（L）：1-9999. Time/s：1-9999.
Editing instructions	1， Water type of water intake: select the water pipe for water intake. 2， Drainage of water: selected the water pipe for draining. 3， Spray shower: when washing, you choose whether open the spray shower valve or not. 4， Temperature (℃): Heating temperature of washing, that is, washing temperature. 5， Water volume (L): according to the process need to quantify the amount of water for washing (see the following operating instructions). 6， Time: When the water volume item is 0, the time of this item is the overflow time. When the water volume item is not 0, this item is the prompt time when the water volume overflow is time out (see the following operating instructions).
Associated parameters	Temperature parameters: the main tank safe temperature, higher than the safe temperature to prohibit airflow. Time parameters: delay time and alarm time of overflow water level of the main tank. Water level parameters: airflow high water level and airflow low water level of the main tank, airflow low water level is too high to affect the draining in airflow washing. Control parameters: overflow high water level limit.
Instructions for use	1， The airflow washing process can maintain the overflow water level between airflow high water level and airflow low water level in the main tank. 2， Only in the case of the installation of the flow meter, need to measure the amount of water in washing, enter the water consumption in the water volume item, otherwise, the water volume item is set to "0". 3， In airflow washing process, the water level higher than the airflow high water level or lower than

	the airflow low water level to set the "overflow water level alarm time", the alarm is issued.

Pressure control	Function：According to the process requirements to implement the pressure, pressure discharge, constant pressure control function in dyeing process. Mode：Main function/sub function/parallel function (default main function）. Control method：Constant pressure /pressure/pressure discharge. Mode：Open/close. Pressure（kpa）：0/ zero pressure/low pressure/high pressure. Time/s：1-999.
Editing instructions	1， The way: according to the process needs to choose the main function or vice function or parallel function. 2， Control: select constant pressure or pressure or pressure discharge control. 3， Mode: according to process requirements to choose to open or close. 4， Pressure: choose to control the pressure range. 5， Time (min): choose to control the working time.
Associated parameters	Temperature parameters: pressure temperature, pressure discharge temperature (pressure drop). Time parameters: add/drop pressure switch time. Water level parameters: zero pressure, low pressure, and high pressure of the main tank.
Instructions for use	1， The description of the pressure and pressure temperature. The pressure is a separate implementation of the function, need to edit in the process step will be implemented, while the pressure temperature, the computer is running, as long as the temperature is higher than the parameter set temperature value, the computer output pressure. 2， The description of the pressure drop and pressure discharge temperature (pressure relief temperature), the pressure discharge is a separate function, need to edit in the process step will be implemented, while the pressure discharge temperature, the computer is in the power state, ss long as the temperature is higher than the parameter set temperature value, the computer output pressure discharge. 3， The pressure temperature, the pressure discharge temperature is set to "0", the computer does not output pressure or pressure discharge. 4， The add pressure/drop pressure switching time is the intervals to stop adding pressure to perform the pressure discharge or stop droping pressure to perform adding the pressure. 5， The instructions of main tank zero pressure, low pressure, zero pressure, when the main tank pressure reaches the set value of "main tank zero pressure", the computer output tank locked. When the main tank pressure reaches the set value of "main tank low pressure", the computer stops pressing. When the main tank pressure reaches the set value of "main tank high pressure", the computer output pressure discharge. Note that the need for pressure signal feedback in order to achieve this function. **In the case of safety and facilities, please choose pressure function carefully!**

Commutation control	Function：To control the dye flow or pump rotation direction. Mode：Sub-function/parallel function (default sub-function). Mode：Open/close. Flow time/s：0-9999. Outflow time/s：0-9999. Intermittent time/s：0-9999.

Editing instructions	1， Mode: According to the equipment control and process requirements, in the drop-down list to select whether to perform or close. 2， The flow time (seconds): set the time of internal flow output, the internal flow corresponds to the reverse output. 3， Outflow time (seconds): set the time of outflow output, the outflow corresponds to forward output. 4， Intermittent time (seconds): set the interval output time of internal flow and outflow.
Associated parameters	Time parameters: The detection alarm time of internal flow and external flow. Control parameters: the initial direction of the internal and external flow, the main pump synchronization of internal and external flow, the forward and reverse detection of internal and external flow. Adjustment parameters: synchronous/manual internal flow time, synchronous/manual outflow time, synchronous/manual internal and external interval time, the three parameters to provide manual and synchronized with the main pump to adjust the use. When automatically, not selected "internal and external synchronization of the main pump", the three parameters are invalid.
Instructions for use	1， The "commutation control" function can only be used as a sub-function and parallel function. 2， The "commutation control" function can not be compiled in the first step of the process. 3， The separate operation of the "commutation control" function, first editing the step of "running time" as the main function step, and then editing the sub-function step as "commutation control" function. 4， When the process edited the sub-function step of "commutation control", the computer is running, regardless of running the any step after the "commutation control" function step, as long as the conditions to run the "commutation control" function, the computer automatically turn on the "commutation control" function. Because the sub-function is traceable, even when running the process, skip the sub-function running step, the program should be traced back to the previous program whether there are sub-function of the operating steps to avoid jumping and does not run. 5， The "commutation control" function mode select "off", the time data of internal and external flow is invalid. 6， For the internal and external flow need to speed control, the function item of the "main pump control" should be set. 7， The parameters of the data for manual operation are the synchronous/manual internal flow time, synchronous/manual external flow time, and synchronous/manual internal and external flow interval time (sent to the PLC's register) and select the "internal and external flow synchronous main pump" used when running automatically. 8， For different stages need for different speed control, the main pump function by setting different frequency values of the internal flow or external flow and intermittent period to meet the requirements. You can edit the multi-step "main pump control" function in the process, to set a different speed control data to meet the different requirements of speed control. 9， On the internal and external flow of positive and negative detection, the internal and external flow of positive and negative detection choose to "Yes", you need to feedback signal, if the "internal and external flow detection alarm time" set the time did not detect the feedback signal, the computer alarm, check whether the reversal is faulty. If the internal and external flow reversal detection select "No", the computer does not detect the feedback signal. And "internal and external flow detection alarm time" is invalid.

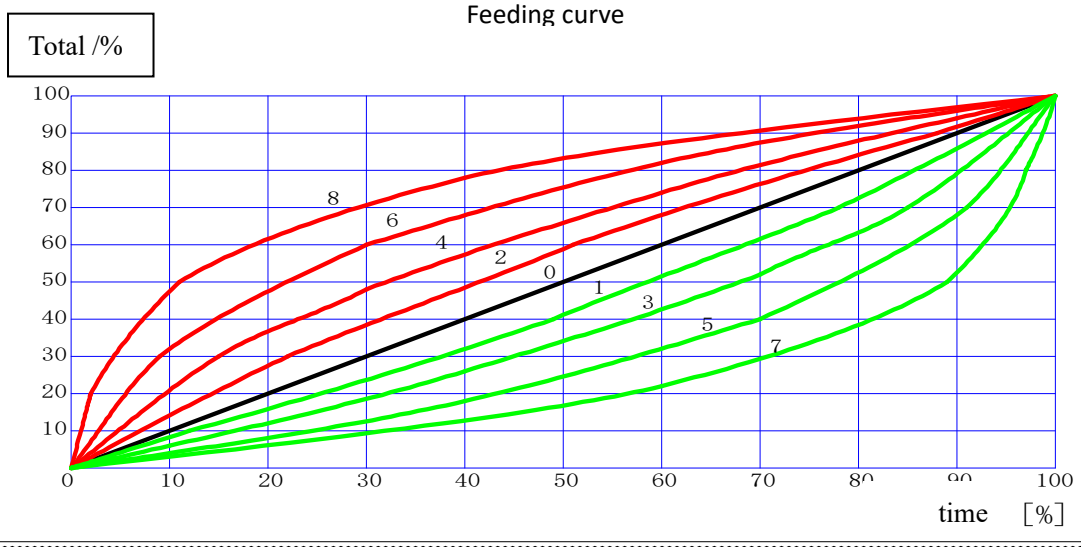
Guide cloth control	Function：The guide cloth function is to control the opening or stoping the guide cloth wheel and to adjust the speed of guiding cloth and the cycle. Mode：Sub-function/parallel function (default sub-function). Control mode：Open/close. Speed adjustment：Percentage, m/min, cycle. Guide cloth opening degree：0-100. Swing cloth opening degree：0-100. m/min：0-999. Cycle（seconds）：0-999.
Editing instructions	1， Mode: According to equipment control and process requirements, selected to whether open the guide cloth or close the guide cloth. 2， The guide cloth opening degree: 0 that does not adjust the speed of the guide cloth, 100 said output 20mA current, full speed control. 3， The swing cloth opening degree: 0 that is not speed regulationof the swing cloth, 100 said output 20mA current, full speed control. 4， The m/min: The computer refers to the parameter item of the maximum cloth speed, according to set the cloth speed; adjust the output current to control the speed. 5， Cycle (seconds): for speed control automatically, according to the cycle time to automatically adjust the speed of the guide cloth.
Associated parameters	Time parameter: start time of guide cloth delay. Control parameters: guide cloth synchronization of the main pump, the number of the guide cloth pipe, the maximum speed of guide cloth. Adjustment parameters: synchronous/manual guide cloth speed, this parameter provides synchronous and manual guide cloth adjustment, automatically invalid.
Instructions for use	1， Guide cloth control can only be used as a sub-function and parallel function, guide cloth control can not be edited in the first step of the process. 2， When the process edited a sub-function step of "guide cloth opening", the computer is running, regardless of running any step after the function step of "guide cloth open", as long as the conditions allowed to guide cloth opening, the computer automatically open the guide cloth. Because the sub-function is traceable, even when running the process, skip the sub-function running step, the program should be traced back to previous program whether there are sub-function of the operating steps to avoid jumping and does not run. 3， For different dyeing stages need for different speed control, you can edit multi-step "guide cloth control" function in the process, to set a different speed control data to meet the different requirements. 4， When the speed adjustment mode is for the cycle, the computer according to the comparison between the cycle time and the set time of the cloth in the tank, to automatically adjust the speed of the guide cloth, so that the actual cycle time and the set time to be consistent. 5， On the use of guide cloth delay start time, as the guide cloth starting relative to the main pump starting has a delay time, that is, after the start of the main pump, the guide cloth delay to start. Otherwise start with the main pump is likely to cause the occurrence of blocking cloth, so reasonable to set the delay time to guide cloth starting can effectively prevent blocking cloth.

Nozzle control	Function：Control the opening stalls of the nozzle during the computer is performing the dyeing process. Mode：Sub-function/parallel function (default sub-function). Mode：On/off (default on). Stalls：1-4。
Editing	1， Way: sub-function or function.

instructions	2， Mode: on/off, that is run or close. 3， Stall: select the opening degree of nozzle corresponding to the setparameter.
Associated parameters	Set in the control class parameters: Nozzle control synchronous main pump = Yes/No (default = No). Set in the adjustment class parameters: manual/synchronous nozzle stalls = 4 files. Set in the adjustment class parameters: Nozzle opening degree of 1 file = 100% Nozzle opening degree of 2 files = 70% Nozzle opening degree of 3 files = 40% Nozzle opening degree of 4 files = 10%
Instructions for use	This function is somewhat similar to the guide cloth function. But the output current is output according to the corresponding value of the gear, in the main pump running state is valid.

Fan control	Function：Control to open and stop the fan of airflow tank, and to control its speed. Mode：Sub-function/parallel function (default sub-function). Control mode：On/Off. Airflow jetting：1/2/3/1+2/1+3/2+3. Fan opening degree：0-100. Time（min）：0-999.
Editing instructions	1， The control mode: According to the equipment control and process requirements, in the drop-down list to select the fan on or off. 2， Airflow jeting: 1/2/3/1 + 2/1 + 3/2 + 3, that can choose to open the airflow jetting 1, or open the airflow jetting 2, or open the airflow jetting 1 and 2, or open the airflow jetting 1 and 3, or open the airflow jetting 2 and 3. 3， Fan opening degree: 0 that does not speed adjustment, 100 said output 20mA current, full speed control. 4， Time (minutes): generally default to 0.
Associated parameters	Control parameters: fan number, fan synchronization main pump, the main pump limited by the fan starting, starting the fan constant power control, fan constant power output current, constant power current allowable deviation, 100 degrees above the fan speed down (%), 110 degrees above the fan speed down (%), and 120 degrees above the fan speed down (%). Adjustment parameters: Synchronous/manual fan speed, this parameter is provided for synchronous and manual to adjust the fan, automatically invalid.
Instructions for use	1， Fan control can only be used as a sub-function and parallel function; fan control can not be edited in the first step of the process. 2， A separate operation of the fan, it is recommended to step by step edit the "running time" as the main function step, and then edit the fan control. 3， When the process of editing a sub-function steps of "fan open", the fan will run through the entire process until the end. 4， In airflow dyeing machine control, if you choose the "main pump limited by the fan starting ", the fan can run to open the main pump. 5， Inthe parameters selected "fan synchronization main pump", you do not have to edit the fan opening, open the main pump to start the fan, but this time the fan speed adjustment can only be given by adjusting class parameters.

Quantitative feeding	Function：According to a certain time, graded several times or once feeding the dosing liquid evenly or accordance to the set feeding curve to control the feeding. Dosing tank select： Dosing tank 1/dosing tank 2/sub tank/ dosing tank 1 feeding intodosing tank 2/dosing tank 2 feeding into dosing tank 1. Cleaning mode: Input water cleaning/back flow cleaning/no cleaning. Temperature：0-180. Curve number：0-8. Percentage：0-100%. Time（min）：0-255.
Editing instructions	1， The choice of dosing tank: according to equipment control and process requirements, feeding source or whereabouts. 2， Cleaning mode: in the "mode" drop-down list to choose whether to clean the dosing ank or clean water source. 3， Temperature (℃): According to the process requirements to choose whether to control the main tank holding or not, input 0 means that the feeding process is not holding temperature. 4， Curve number: Select the feeding curve. 5， Percentage: select several times or one-time feeding finished, set to 0 or 100 said a one-time feeding finished. 6， Time: select the time of one-time feeding or several times feeding.
Associated parameters	Temperature parameters: main tank safe temperature, higher than the safe temperature to prohibit the feeding. Time parameter: The delay time of feeding in the dosing tank, the time to continue feeding after feeding to the low water level. Water level parameters: the water level of dispensing in the dosing tank, the water level of stirring in the dosing tank, in feeding process to start the water level of dispensing or stirring. When set to 0, it means not to start. Control parameters: feeding limited by the main pump, the proportional feeding delay opening, the proportional feeding initial opening, switch valve is invalid. The cleaning times set to 0 that does not clean. System parameters: quantitative way of dosing tank 1, quantitative way of dosing tank 2, according to the equipment structure and control actuator to choose. Quantitative proportional mode, for the double dosing tank according to whether to share the proportional valve or feeding pump to choose. Adjustment parameters: manual feeding tank 1/2 proportional opening, manual feeding tank 1 proportional opening, manual feeding tank 2 proportional opening, is to provide manual control of the feeding current to control the proportional valve or dosing pump opening.
Instructions for use	1， Quantitative feeding function requires a dosing tank equipped with a level gauge (4-20mA signal), otherwise the computer can not perform quantitative feeding. 2， Quantitative feeding function of the computer built-in 9 feeding curve for selection (see below). According to the feeding process and different requirements, choose a different curve for feeding. 3， The parameters of cleaning times set to 0 that does not clean. The cleaning is not performed even if the cleaning is selected in the quantitative feeding function. Quantitative feeding to perform cleaning need to have the parameters of cleaning times ≠ 0, cleaning mode ≠ not clean. Otherwise do not perform cleaning.

	4， Each feeding is finished, you can choose to return or input water cleaning or not cleaning the dosing tank. If you choose to clean, the computer defaults to perform the last rinse of the washing are to open the dosing tank into the water, and at the same time the dosing tank opens the drain. 5， According to the different structure of the feeding valve can be divided into switch valve and proportional valve way to control the feeding. 6， For different feeding control actuator can be divided into switch feeding, proportional feeding, feeding by feeding pump speed adjustment. 7， In quantitative feeding process, the feeding valve is the proportional valve, when the water level of dosing tank is higher than the parameter set water level of stirring, open the stirring motor; while the feeding valve is the switch valve, the water level of dosing tank is higher than the parameter set the water level of dispensing, when the feeding valve is closed, open the dispending valve. 8， For the requirements of speed and time for feeding chemicals or additives, you can choose quantitative feeding function. 9， For one-time quantitative feeding, in the "percentage" item is set to 0 or 100 that indicates a one-time feeding finished. 10， For several times quantitative feeding, in the "percentage" item according to the times of process requirements, to set the amount of each feeding, set the value of 1-99, but the last set to 0 or 100.
Feeding curve	 The correspondence relationship between the curve number and the feeding process: Curve No.0 indicates feeding constantly (linear feeding) during the feeding time. Curve No.1, 3, 5, 7 indicates that first feeding slowly and then feeding rapidly during the feeding time(increasing feeding). Curve No.2, 4, 6, 8 indicates that first feeding rapidly and then feeding slowly during the feeding time(decreasing feeding).

Dosing tank input water	Function： The computer will automatically open the water inlet valve of dosing tank to reach the set water volume (weight) or the set water level (height). Dosing tank select： dosing tank 1/dosing tank 2/sub tank Water type： input water 1/input water 2/backflow water

	Measurement method：Water level/water volume/percentage. Water level/water volume（mm/L）：0/low water level/middle water level/high water level. Time（seconds）：0-999.
Editing instructions	1， Dosing tank selection: According to the equipment control and process requirements, choose dosing tank 1 or dosing tank 2 or vice tank to input water. 2， Water type: in the drop-down list to select the pipe need for input water. Backflow water, that is, the main tank back to the feeding tank. 3， Measurement methods: according to the process requirements to choose water intake by water level or water intake by water volume measurement. 4， Water level/water volume: According to the choice of mode items, the computer automatically shows the water intake by water level or by water volume. a) : When measurement mode item select "water level", you can choose 0/low water level/middle water level/high water level, (0) means that you can set the height value, use the analog water intake, low water level/middle water level/high water level, indicates that water intake by switch volume. ②: When measurement mode item select "water volume", it means that the weight value can be set. The computer automatically converts the water intake by the conversion table. ③: When measurement methods select "Percentage", it means that you can set the percentage, the computer according to the proportion of capacity of the dosing barrel to input water. 5， Time: When the water volume (bit) is 0, this time is the water intake time. 6， When the water volume (bit) is not 0, this time is the prompt time for water intake overtime.
Associated parameters	Water level parameters: Dosing tank 1 (dosing tank 2, sub tank) high water level Dosing tank 1 (dosing tank 2, sub tank) middle water level Dosing tank 1 (dosing tank 2, sub tank) low water level The above parameters are the analog water level signal convert to a switch signal output, to achieve the water intake by switch volume.
Instructions for use	1， When the measurement method select the "water level", the computer automatically water intake by the height, water volume/water volume items shown as "water level (mm)". 2， When the measurement method select "water volume", the computer is converted to water intake by the conversion table, the water weight will automatically converte to the corresponding height of the water by the conversion table, water intake by water height,the "water level/water volume" item displayed as "water volume(L) ". 3， Water level/water volume items and time items can not be compiled 0 at the same time. 4， When the measurement method select "water volume", select this mode to input water, before running the process, you need to enter the data to conversion table (water weight/water height corresponding table). Otherwise, the computer can not be converted or prompted to data error of the conversion table.

Dosing tank drain	Function：During dyeing process or dyeing ended, water discharge the residue in dosing tank or the water cleaning the tank. Dosing tank selection：Dosing tank 1/dosing tank 2/sub tank. Water level(mm）：0/low water level/middle water level/high water level. Time（seconds）：0-999.

Editing instructions	1， The choice of dosing tank: According to equipment control and process requirements, choose dosing tank 1 or dosing tank 2 or sub tank to discharge. 2， Water level (mm): According to the process requirements, choose discharge to what position, of which 10 or low water level indicates that water discharge finished. 3， Time: when the water level item is 0, this time is the drainage time. When the water level item is not 0, this time is the prompt time for draining overtime.
Associated parameters	Water level parameters: Dosing tank 1 (dosing tank 2, sub tank) high water level Dosing tank 1 (dosing tank 2, sub tank) middle water level Dosing tank 1 (dosing tank 2, sub tank) low water level The above parameters are the analog water level signal converted to switch signal to output, to achieve water discharge by switch volume.
Instructions for use	1， Water level item and time items can not be compiled 0 at the same time. 2， The drainage function of the dosing tank according to water level to discharge, the dosing tank should be equipped with a liquid level gauge (switch signal or 4-20mA signal). 3， The dosing tank without liquid level gauge, according to time to discharge, the drainage time can be measured, the drainage time is the time required to complete the water from the dosing tank, with this time value as the drainage time reference time. 4， The drainage delay time is the time required to discharge the water in the dosing tank from the low water level to the water all completed. 5， Low water level description, for 4-20mA water level signal. The computer default 10mm as the low water level, it is selected "low water level" for the switch water level signal.

Dosing tank backflow	Function：Return the dye liquor or water to the dosing tank for dissolving dyes and auxiliaries. Dosing tank selection：Dosing tank 1/dosing tank 2/sub tank. Measurement method：Water level/water volume percentage. Water level/water volume（mm/L）：0/low water level/middle water level/high water level. Time（seconds）：0-999.
Editing description	1， Dosing tank selection: According to equipment control and process requirements, select the dosing tank 1 or dosing tank 2 or sub tank to backflow. 2， Measurement methods: according to the process requirements to choose backflow by water level or backflow by water volume measurement. 3， Water level/water volume: According to the choice of mode items, the computer automatically shows the backflow by water level or by of water volume. a) When the metering method item select "water level" , you can select 0/low water level/middle water level/high water level, "0" means that you can set the height value, use analog return, low water level/middle water level/high water level indicates backflow by switch volume. b) When metering method select "water volume" , it means that the weight value can be set. The computer automatically switches backflow by the conversion table. c) When metering method select "percentage" , it means that the percentage can be set, and the computer backflows according to the proportion of the capacity of the barrel. 4， Time: When the water (bit) is 0, this time is the return time. When the water level (bit) is not 0, this time is the prompts time of backflow timeout.
Associated	Temperature parameters: the main tank safe temperature, above this temperature to prohibit

parameters	backflow. Water level parameters: dosing tank 1 (dosing tank 2, sub tank) high water level dosing tank 1 (dosing tank 2, sub tank) middle water level dosing tank 1 (dosing tank 2, sub tank) low water level The above parameters are the analog water level signal is converted to switch signal to output, to achieve backflow by the switch volume.
Instructions for use	1， When the measurement method select "water level", the computer automatically backflows by the height, water level/water volume items shown as "water level (mm)". 2， When the measurement method select "water volume", the computer is converted according to the dosing tank conversion table to backflow, the water weight will automatically converted to the water height corresponding to the conversion table, backflow by the height, "water level/water volume" item is displayed as "water volume(L) ". 3， Water level/water vulome items and time items can not be compiled 0 at the same time. 4， When the measurement method select "water volume", select this mode backflow, before running the process, you should enter the data into conversion table (water weight/water height corresponding table). Otherwise, the computer can not be converted or prompted data error to conversion table.

Dosing tank dissolving	Function：Stirring the dye and auxiliaries in the dosing tank evenly, so that the dye or auxiliaries fully dissolved. Dosing tank selection：Dosing tank 1/dosing tank 2/sub tank. Mode：Recycling dissolving/mixing dissolving/recycling stirring. Temperature（℃）：Heating for the dosing tank, holding temperature. Water level（mm）：0/low water level/middle water level/high water level. Time（min）：0-999.
Editing discripertion	1， Dosing tank selection: According to the equipment control and process requirements, select the dosing tank 1 or dosing tank 2 or sub tank to dissolve, press "OK" to confirm. 2， Temperature (℃): Set the holding temperature of the dosing tank for dissolving. 3， Water level (mm): Select the lowest water level and the analog water level for dissolving, you can set the height value as the water level of dissolving, but the water level can not be set to "0". Select the switch water level; you can set the low water level/middle water level/high water level as the water level of dissolving. 4， Time (minutes): this time is the time for dissolving.
Associated parameters	Water level parameters: dosing tank 1 (dosing tank 2, sub tank) high water level dosing tank 1 (dosing tank 2, sub tank) middle water level dosing tank 1 (dosing tank 2, sub tank) low water level The above parameters are the analog water level signal is converted to switch signal to output, set the switch to quantify the water level for dissolving. The dissolving of dosing tank has nothing to do with the "dissolving water level" and "stirring water level" in the water level parameters.
Instructions for use	1， There are three different methods of dissolving, that is the recycle dissolving, mixing, recycle stiring, you can choose them according to the requirements of dissolving. 2， In the dissolving process, needs to be heated or maintained at a certain temperature, you can set the dissolving temperature value in the temperature item of the disolving function. 3， In the process of quantitative feeding needs to start dissolving or mixing, set in the parameters, the computer automatically select to start dissolving or stirring, without a separate editing

	dissolving or mixing function. 4， When recycle dissolving, open the dissolving pump and the dissolving valve simultaneously. When stirring, start stirring motor. When recycle stirring, start dosing tank, dissolving valve, stirring motor at the same time.

Rapid feeding	Function：Feeding the dosing liquid into the main tank quickly by several times or one-time Dosing tankselection：Dosing tank 1/dosing tank 2/subtank. Cleaning mode:进 input water cleaning/backflow cleaning/no cleaning. Water level（mm）：0/low water level/middle water level/high water level. Time（min）：0-255.
Editing description	1， The choice of dosing tank: According to equipment control and process requirements, and feeding source. 2， Cleaning mode: in the "mode" drop-down list to choose whether to clean the dosing tank or wate source. 3， Water level (mm): select 10/low water level/middle water level/high water level, to choose the feeding by several times or by one-time. 4， Time (minutes): the prompt time of feeding timeout.
Associated parameters	Temperature parameters: main tank safe temperature, higher than the safe temperature to prohibit the feeding. Time parameter: Feeding delay time of the dosing tank is the time to continue feeding after feeding to the low water level. Water level parameters: dosing tank 1 (dosing tank 2, sub tank) high water level, middle water level, low water level, these parameters are converted the analog water level signal into a switch signal to output, to achieve several times feeding by the switch volume. Control parameters: feeding limited by the main pump, cleaning times, the number is set to 0 that does not clean. Adjustment parameters: manual feeding 1/2 proportional opening, manual feeding 1 proportional opening, manual feeding 2 proportional opening, is to provide manual control of the feeding current to control the proportional valve or feeding pump opening. For the feeding valve as the switch valve has nothing to do with this.
Instrutions for use	1， The feeding function requires the dosing tank equipped with a liquid level gauge (switch signal or 4-20mA signal), otherwise can not use the computer feeding. 2， The speed and time of feeding chemicals or additives are not required; you can choose fast feeding function. 3， The number of parameters cleaning, set to 0 that does not clean, feeding function selects the cleaning, and do not perform cleaning. Feeding to perform cleaning operation is required to have the number of cleaning times ≠ 0, the cleaning mode ≠ not cleaned, otherwise the cleaning is not performed. 4， Each feeding is completed, you can choose to return or input water cleaning or not cleaning the dosing tank. 5， According to different structures of the feeding valve, the way of feeding control can be divided into switch valve and proportional valve. 6， For several times feeding, you can set the water level or select the low water level/ middle water level/high water level to determine the amount of each feeding arrival. 7， For one-time feeding, for the 4-20mA signal water level, you can set the water level = 10, for the switch water level you can select the low water level.

	8， Feeding limited by the main pump set to "Yes", if the main pump is not running, stop feeding or prompted the main pump is not activated and alarm. Feeding limited by the main pump is set to "No"; it will not be controlled by the main pump.

Dosing tank temperature control	Function：Applicable to heating and holding time control of the dosing tank or sub tank. Dosing tank selection：Dosing tank 1/dosing tank 2/sub tank. Temperature/℃：0-100. Time/min：0-255.
Editing description	1， The dosing tank selection: According to the process requirements, heating the dosing tank 1 or dosing tank 2 or sub tank. 2， The temperature: enter the target temperature value, the set value should not be higher than 100 ℃. 3， Time: the holding time to set the temperature to reach.
Associated parameters	Temperature parameters: temperature deviation of dosing tank 1, dosing tank 2 and sub tank; the hold temperature of dosing tank 1, dosing tank 2 and sub tank. Time parameters: heating and discharge directly interval of the dosing tank 1, holding and discharge directly time of the dosing tank 1. Water level parameters: limited by the middle water level, lower than the middle water level can not be heated.
Instructions for use	1， For the dosing tank temperature control, only dosing tank 1 set the parameter of direct discharge time, dosing tank 2 and sub tank system keep unused. 2， For dosing tank 1/ dosing tank 2 / sub tank heating is limited by the corresponding low water level, no this water level can not be heated. 3， For dosing tank 1/dosing tank 2/sub tank heating limited by the corresponding protection temperature, the temperature exceeds the protection temperature to stop heating. 4， For the difference between the display temperature and the actual temperature of the main tank, the difference is less than 5 ℃, it is recommended to use the temperature offset to correct the temperature, the difference is greater than 5 ℃, it is recommended to use the temperature correction to correct the temperature. 5， For the temperature correction settings, Please the manufacturer's technical staff to set the operation.

Circulating feeding	Function：Feeding and opening the backflow valve at the same time, so that the dye liquor in the main tank and the feeding liquid in the dosing tank will be circulated fully and evenly in the two tanks, suitable for salt control. Dosing tank selection：Dosing tank 1/dosing tank 2/sub tank. Cleaning mode：Input water cleaning/backflow cleaning/do not clean. Temperature（℃）：0-180. Time（min）：0-255.
Editing description	1， Dosing tank selection: According to equipment control and process requirements, select the feeding source. 2， Cleaning mode: in the "mode" drop-down list to choose whether to clean the dosing tank or cleaning water source. 3， Temperature (℃): According to the process requirements to choose whether to control the holding temperature of the main tank, enter "0" that means the feeding process without temperature control.

	4， Time (min): cycle feeding time. This time can not be "0".
Associated parameter	Temperature parameters: main tank safe temperature, higher than the safe temperature to prohibit the feeding. Time parameters: delay time of dosing tank feeding, water level delay of cycle feeding, water level alarm time of cycle feeding. Water level parameters: high water level of dosing tank cycle feeding, low water level of dosing tank cycle feeding. Control parameters: feeding manully limited by the main pump, cycle feeding mode, the number of cleaning times for dosing tank. Adjustment parameters: manual feeding 1/2 proportional opening, manual feeding 1 proportional opening, manual feeding 2 proportional opening, is to provide manual control the current of feeding to control the proportional valve or feeding pump opening. For the feeding valve as the switch valve has nothing to do with this.
Instructions for use	1， Feeding function requires the dosing tank equipped with a liquid level gauge (switch signal or 4-20mA signal), or can not use the computer feeding. 2， For feeding or larger amount of auxiliaries (solid), and not easy to dissolve, you can choose the cycle feeding function. 3， The parameters of the number of cleaning times and cleaning the dosing tank are the same as other feedings. 4， According to the different structure of the feeding valve, the parameter of "cycle feeding mode" can be divided into on-off valve and proportional valve to control the feeding. 5， When cycle feeding time up, stop backflow, continue to feeding (and rapid feeding at this time) until feeding is finished. 6， The parameters of "high water level of the dosing tank in cycle feeding " and " low water level of the dosing tank in cycle feeding " are used to set the highest level and the lowest level of the dosing tank during cycle feeding. 7， The parameter of "cycle feeding water level delay" refers to in cycle feeding process, when the liquid level is lower than the "high water level of dosing tank in cycle feeding " , delay and open the backflow. As well as in cycle feeding process, when the liquid level is higher than the " low water level of dosing tank in cycle feeding " ,delay and open the feeding. 8， The parameter "cycle feeding water level alarm time" refers to the time when the liquid level is higher than the "high water level of dosing tank in cycle feeding " or lower than the " low water level of dosing tank in cycle feeding " , over time, the computer alarm liquid level is abnormal. This parameter solves the phenomenon of valve failure during the feeding process. 9， If the main pump limit is set to "Yes", if the main pump is not running, stop feeding or indicate that the main pump is not started and alarm. If the main pump limit is set to "No", it will not be controlled by the main pump.

Dosing tank cleaning	Function：A function of water spraying, stirring, or heating for cleaning the inner wall of the dye tank by a computer independently. Dosing tank selection：Dosing tank 1/dosing tank 2/sub tank. Water type：Input water 1/input water 2/backflow water. Temperature（℃）：0-100。 Water level（mm）：0/low water level/middle water level/high water level. Time（min：0-999. Cleaning times：0-10.

Editing description	1， The dosing tank selection: According to equipment control and process requirements, select the dosing tank 1 or dosing tank 2 or sub tank to input water, press "OK" to confirm. 2， Water type: in the drop-down list to select the required water pipes, press "OK" to confirm. 3， Temperature (℃): According to the process requirements to select the heating temperature of the dosing tank. 4， Water level (mm): according to the requirements to select the target water level which input water to reach. 5， Time (minutes): that is cleaning time. 6， Cleaning times: that is the number of times for cleaning the dosing tankr.
Associated parameters	Temperature parameters: temperature deviation of dosing tank 1 and dosing tank 2, protection temperature of dosing tank 1 and dosing tank 2 and sub tank. Time parameters: delay time of dosing tank drainage, the continuous drainage time after the dosing tank drain to the low water level. Water level parameters: Dosing tank 1 (dosing tank 2, sub tank) high water level Dosing tank 1 (dosing tank 2, sub tank) middle water level Dosing tank 1 (dosing tank 2, sub tank) low water level The above parameters are the analog water level signal converted into a switch signal to output, to achieve the amount of switch to input water.
Instructions for use	1， The water level parameters: These parameters are the analog water level signal converted to switch signal to output, to achieve to input water by switch. 2， For heating in the dosing tank 1/dosing tank 2/sub tank is limited by the corresponding low water level. It can not be heated withoutthis water level. 3， For heating in the dosing tank 1/dosing tank 2/sub tank is limited by the corresponding protection temperature. The temperature exceeds the protection temperature to stop heating. 4， Water level and time items can not be compiled 0 at the same time. 5， The dosing tank should be equipped with a level gauge (switch signal or 4-20mA signal). 6， The drainage delay time, is the time required for discharge from the low water level to all the water is finished in dosing tank. 7， Low water level instructions, for the 4-20mA water level signal, the computer default 10mm as the low water level, for the switch water level signal is selected "low water level." 8， For heating, dissolving and stirring in cleaning process, only to achieve the appropriate conditions, to start the corresponding function. 9， You select the cleaning function in the dosing tank function and feeding function, the cleaning process is different.

Sub tank into the main tank	Function：According to the process requirements, the water is automatically pumped from the sub tank into the main tank by water level or water volume. Mode：Water level water intake/ water volume water intake/ memory water intake/ water level bath ratio / water volume bath ratio / sand layer water intake / full of water intake / replenishment water intake. Cleaning sub tank：Yes/No. Water level detection：main tank water level/sub tank water level. Water level（mm）：0/low water level/middle water level/high water level. Time（min）：0-999.
Editing Description	1， Mode: through the direction of the shift key in the "mode" drop-down list to select the metering mode to input water. 2， Cleaning the sub tank: in the drop-down list to select whether to clean the sub tank, press "OK" to

	determine. 3， Water level detection: According to the process requirements to select the target water level is the main tank water level or sub tank water level. 4， Water level (mm): According to the choice of mode items, input water to reach the target water level. 5， Time: When the water volume (bit) is 0, this time is the water-intake time. When the water volume (bit) is not 0, this time is the prompt time when input water overtime.
Related parameters	Temperature parameters: Main tank safety temperature, higher than the safety temperature prohibited input water. Time parameters: input water delay of the main tank, feeding delay of the sub tank. Water level parameters: the same with the input water parameters. Control parameters: allow high temperature water intake, overflow advance water intake, overflow high water level limit.
Instructions for use	1， The water level water intake, memory water intake, yarn layer water intake, water level bath ratio is depend on the height to input water, when the mode item selected in these items, the computer automatically input water by the height or converted to the height, the"water level / water volume "item is displayed as" water level (mm) ". 2， The water volume water intake, water volume bath ratio is depend on the flow to input water, when the mode items selected in these items, the computer automatically input water by water volume. 3， The water level bath ratio, select this mode to input water, before running the process, you need to enter the data in conversion table (water weight/water height corresponding table).Otherwise, the computer can not be converted or prompted data error in the conversion table. 4， The water level parameters: high water level of the main (sub) tank, mddle water level of the main (sub) tank, low water level of the main (sub) tank, these parameters convert the analog water level signal into a switching signal to output, to realize to input water by switch volume. 5， Water level detection: According to the process requirements to select the target water level is the main tank water level or the sub tank water level. For the selection of the sub tank water level, when the sub tank water level dropped to the set level, input water from the sub tank into the main tank is ended. 6， Cleaning sub tank: select to clean the sub tank, only the water level dropped below the low water level of the sub tank, the implementation to clean the sub tank.

Operation tips	Function：calling function, prompted to manually operate and send a signal in dyeing process. Dosing tank selection：Main tank/dosing tank 1/dosing tank 2/sub tank. Prompt：Prompt content. Time（min）：0-999>.
Editing descriptions	1， Dosing tank selection: according to equipment control and process requirements, select the operation object. 2， Prompt: enter the number of "prompt code" in the input box or press the "help" button to enter the "prompt selection box", through the direction of the shift key to find "prompt name" in the selection box. 3， Time: Indicates the duration of the prompt, set to "0", indicates that the prompt is kept, need to confirm the end manully.
Related	Call duration time, call interval time. When the interval time is set to "0", the calling signal remains

parameters	output.
Instruction for use	1， 1, the contents of the prompt can be customized and modified, but "sample plate, input cloth, output cloth" can not be modified. 2， On the prompt "time" indicates the duration of the prompt, set to "0", indicates that the prompt is kept, need to confirm the end manully. Set to non-"0", indicates the prompt time to the end, the computer ended to prompt, enter into the next step, so be careful to set the time. 3， Only choose the main function to use (the default choice).
Prompt name	Prompt definition No. Default name No. Default name No. Default name 0 Cloth in 9 Sampling plate 18 Hot water in 1 Cloth out 10 Preparing dyes 19 Drain clean water 2 Into tank 11 Dissolving dyes 20 Drain sewage 3 Out of tank 12 Adding auxiliary 21 Drain hot water 4 Confirm process finished 13 Adding dyes 22 Drain cold water 5 Process continue 14 Adding acid 23 Backflow 6 Pretreatment finished 15 Adding salt 24 Add soaping agent 7 Dyeing finished 16 Adding alkali 25 8 Bath ratio 17 Cold water in 26

Running time	Function: Be used for timing functions in dyeing process. Time（min）: 0-255.
Editing description	Mode: only select the main function to use (the default choice). Time: Indicates the time of timing.
Related parameters	No.
Instructions for use	When the computer runs to the "runing" step, the computer performs the countdown,the countdown ended, the computer goes to the next step. When it is necessary to use the timing control function step, and the need to run the sub-function or parallel function separately, the running time can be used as a main function to attach multiple sub-functions or parallel functions. For example, start pump timing or the first step of the process to start the main pump, then edit the "running time" as the main function, and then edit the "main pump starting" for the sub-function or parallel function.

Memory water level	Function: Memory water level function of the computer for sampling to the main tank water level, when the computer runs to the "running" step, the computer implementation countdown, the countdown is ended, the computer goes into the next step. Time（min）: 0-255.
Editing description	Mode: only select the main function to use (the default choice). Time: Enter the time to detect the water level (recommended not less than 30 seconds).
Related function	Main tank water intake, the mode item selects "memory water intake", this step must be compiled with "memory water level" function before input water.
Instructions	This function is required to the main tank equipped with a level sensor. Applicable to the

for use	equipment with 4-20mA signal level controller, otherwise, can not remember the water level, not applicable memory switch water level. If the detection of water level need to stop the pump (static water level), then in this step, and step by step the main pump stop. For the main pump power larger, the detection time should be longer. So that the main pump should be stopped when the water level is detected, to ensure that the water level is stable and then sampling.

Process cycle	Function: In a process, repeat a step or a few steps of the control procedure. Mode: Main funtion/sub funtion/parallel function. Cycle step number: 0-100. Cycles: 0-255.
Editing description	1， Mode: only be selected as the main function, the general default choice. 2， Cycle step number: the implementation of the cycle to start the step number. 3， Cycls: the number of cycles to repeat.
Functional principle	In dyeing process, due to the process of a few steps in the control steps are the same, in order to reduce the process of editing, need a functional step to repeat the same control process.
Instructions for use	1， The "process cycle" according to the number of cycles, repeat the entire process step between the beginning of the process step and the step before the"process cycle" step. 2， The "process cycle" step must be compiled in the process of repeating behind the last step of the process step. 3， The "process cycle" the implementation of the beginning and the last steps must be the main function step.

Squeeze water control	Function: After dyeing finished, add an appropriate amount of air to the tank, the water will be squeezed out from the yarn or cloth. Mode: Main function/sub function/parallel function. Time（min）: 0-255.
Editing description	1. Mode: the main function, the general default choice. 2. Time: holding pressure and squeezing time.
Functional principle	After beam dyeing or cheese dyeing, before out of the tank, open the pressure valve, add an appropriate amount of air to the tank, make the tank to a certain pressure and keep it for a while, so that the yarn or cloth on the water discharg.
Related parameters	Temperature parameters: pressure temperature, un-pressure temperature (pressure drop). Time parameters: add/drop pressure switch time. Water level parameters: the main tank zero pressure, the main tank low pressure, the main tank high pressure.
Instructions for use	1， The process of squeeze water is the first implementation of pressure, to reach the pressure of squeeze water (the computer default to high pressure), stop pressing, and then holding pressure and timing, the time up, to perform high pressure dehydration. 2， Need to switch the pressure signal feedback, to set the water level parameters of the main tank zero pressure, the main tank low pressure, the main tank high pressure. 3， To use the squeeze function in the case of safety and stress facilities.

Appending	Function: Provide a process control block that is selected for sampling. Mode: Main function/sub function/parallel function. Time(min): 0-255.

procedures	
Editing description	1， Method: only choose the main function, the default choice in general. 2， Mode: Select the appending start/appending program to end. 3， The step for "appending procedures" must be compiled behide the final step of the process.
Functional principle	Edit a block at the end of the final step and end of the process (main program). In dyeing process, when the computer is running to the step of "Sampling" function, the computer will make a call, prompt for manual sampling. If the sampling is qualified, the next step can be performed. If it is not acceptable, select "Appending program", the computer will jump to the pre-edited step of "Appending program", to carry out the control process of "appending program".
Instructions for use	1， Unlike the additional program, the additional program is a separate program (process), and the appending program is just a process block. 2， The implementation of appending procedures, the process must be edited the sampling steps and appending steps at the same time. 3， The function of appending program is used in combined with the sampling function. Only edit the "Sampling function" and run to this step, you can choose appending programs. 4， The function of appending program should have both the beginning step of appending procedures and the end step of appending procedures, are indispensable.

Jet tank rotation	Function：Control the direction of rotation of jet dyeing machine. Method：Sub-function/parallel function (default sub-function). Mode：Open/close. Number of forward turns：0-99. Number of reverse turns：0-99. Jet time（seconds）：0-255.
Editing description	1， Method: sub-function, default choice in general. 2， Mode: selected turn on or turn off. 3， The number of forward turns: the number of positive rotation. 4， The number of reverse turns: the number of reverse rotation. 5， The jet time: rotation interval.
Related parameters	Time parameters: the alarm time of jet tank rotation detection, the positioning time of jet rotation stop. Control parameters: the jet tank rotation synchronous the main pump. Adjustment parameters: synchronous/manual positive rotation number, synchronous/ manual reverse rotation number, synchronous/manual jet interval time, the three parameters to provide manual and synchronous adjustment with the main pump, automatically unselected "the jet tank rotation synchronous the main pump ", the three parameters are invalid.
Instructions for use	1， The jet tank is forward output corresponding to the "outflow" output; the jet tank is reverse output corresponding to the "internal flow" output. 2， The function of "Jet tank control" can only be used as a secondary function and parallel function. 3， The function of "jet tank control" can not be compiled in the first step of the process. 4， When the process of editing the sub-function step of "jet tank control" , the computer is running, regardless of running any step after function step of the "jet tank control", as long as the "jet tank control" function is allowed to run, the computer automatically turn on the "jet tank control" function. 5， The function mode of "jet tank control" select "off", the time data of internal and external flow is invalid or the data modified to 0. 6， The data in the parameters of synchronous/manual positive rotation number, synchronous/manual reversal rotation number, synchronous/manual jet interval time is for manual operation (sent to the PLC's register) and selected "jet tank rotation synchronous the

	main pump" automatically running. 7， On the jet tank rotation detection alarm time, if the set time of "jet tank rotation detection alarm time" did not detect the feedback signal, the computer alarm, check whether the reversal is faulty. 8， The jet tank rotation is generally in the case of the main pump to run. When the process is selected, the computer automatically runs the internal and external flow without editing the step of "jet tank control" function. At this time, the "jet tank control" function is the same as that of the main pump running synchronously.

Looking for cloth head	Function：In dyeing process, automatically find the cloth head and send a signal call function. Mode：Main function/sub function/parallel function. Select the cloth pipe：1/priority/order. Time（min）：0-255。
Editing description	1， Method: the main function, general default selection, you can also choose the parallel function. 2， Select the cloth pipe: According to equipment control and process requirements, select the cloth pipe number, or priority to find, or order to find. 3， Time: that is the time from finding cloth head to the end of this function.
Functional principle	When the computer is running to the step of "find the cloth head" (the process edited this function step), the computer detects the cloth head input signal, the computer calls, and a warning window pops up on the computer, displays the "pipe number "of cloth. Prompts the workers to operate, the operation is completed by the confirmation (press "ok" key or switch input "call confirmation key"), the computer goes into the next step to find the cloth head.
Associated parameters	Cloth dyeing mode: This function is active in cloth dyeing mode. Total number of cloth pipes (new parameters): 0-8 set the number of equipment piping. Check the cloth head off mode (new parameter): no/guide cloth/main pump, find the cloth head and choose to close the object. Cloth head detection alarm time (new parameters): 0-225 points. "0" means no time. Default 10.
Instructions for use	1， On the time: for multi-pipe and single-pipe search, detecting the next tube, re-timing, the time value shall not be less than the parameter item of the "cloth head detection alarm time", or give a prompt. When it is finished to find the cloth head, time is no longer calculated. 2， On the "detection of cloth head off mode", select "no" only output "cloth head output", select "guide cloth/main pump" will close the guide cloth or main pump, but "cloth head output" does not close. 3， In the process of finding the cloth head, when the "find cloth head (keep the signal)" "cloth head output" to stop the output, finish to find the cloth head. When the "find cloth head (keep the signal)" again enter, then find the next cloth head (select "Priority / order "and did not find the remaining cloth head), or need to enter a new cloth pipe number (select" 0 "set specific pipe number cloth head to find). 4， The computer running to "find cloth head" step, if not detected "looking for cloth head (to keep the signal)"; the prompt "did not detect the search cloth head signal." When the signal is input, the detection status is automatically restored.

Spray shower	Function：In dyeing process, used to clean the inner wall of the tank. Mode：Main function/sub function /parallel function. Time（min）：0-255。
Editing instructions	1， Mode: select the main function or parallel function. 2， Time: that is the time to open the spray valve to work.

Associated parameter	safety temperature
Instructions for use	1， The name of "spray shower" is not the same in different equipment manufacturers, also known as "spray", also called the "shower". 2， The "spray shower" is a separate control function, can be used independently as a main function, can also be used as a sub/parallel function and other functions in combination. 3， The function with the output of "spray shower" of the main tank overflow and airflow washing function is to control the same valve.If the function of main tank overflow, and airflow washing selected "spray shower" open, then do not have to edit the "spray shower" function in this step.

Shaving control	Function：In dyeing process, for intermittent opening or closing the shaving motor. Method：Main function/sub function/parallel function. Mode：Open/close. Shaving time（seconds）：0-255. Intervals time（seconds）：0-255.
Editing instructions	1， Method: select the sub-function or parallel function. 2， Mode: select to open or close the shaving motor. 3， Shaving time: that opens the shaving motor time. 4， Interval time: that closes the shaving motor time.
Associated parameters	None.
Instructions for use	1， The "Shaving control" is a separate control function, can be used independently as a main function, can also be used as a sub/parallel function and other functions in combination. 2， In order to protect the motor, the computer prompts "shaving time shall not be less than 5 seconds, the interval time shall not be less than 10 seconds."

8 Application examples of process editing

(1) Application examples of cloth dyeing process

Process requirements	Step No.	Function name	Editing description
Input water	1	Main tank input water	The input water is devided into two steps, first input water to the set water level (suitable for the water level to input cloth), Prompts the manual input cloth, the prompt item is set to "0", the time item is "0" And then input water to the set water level. If you do not have to suggest that you can directly edit the third step.
	2	Promp inputcloth	
	3	Main tankinput water	
Heating 40℃，	4	Main tank temperature control	Set the target temperature of 40 ℃ and rapid heating, the rate of 0 indicates rapid heating, no holding temperature.
	5	Main pump control	Heating and start the main pump at the same time, the way to select the sub-function, the main pump opening is "0".
	6	Dosing tank 1 backflow	The temperature of the main tank reaches 40 ° C and returns to the high water level for dissolving.
	7	Promp feeding	Prompts the manual feeding, the computer runs to this step, press "OK" key to perform the next step. Note: If the time item is edited, the time is up, the computer ended prompts, goes to the next step.
Feeding 20 minutes, one-time finished	8	Quantitative feeding	Curve number select "0" for uniform feeding, the time is 20 minutes, the percentage item is 100, said that one-time finished, the cleaning mode is cleaning the dosing tank for two times after feeding.

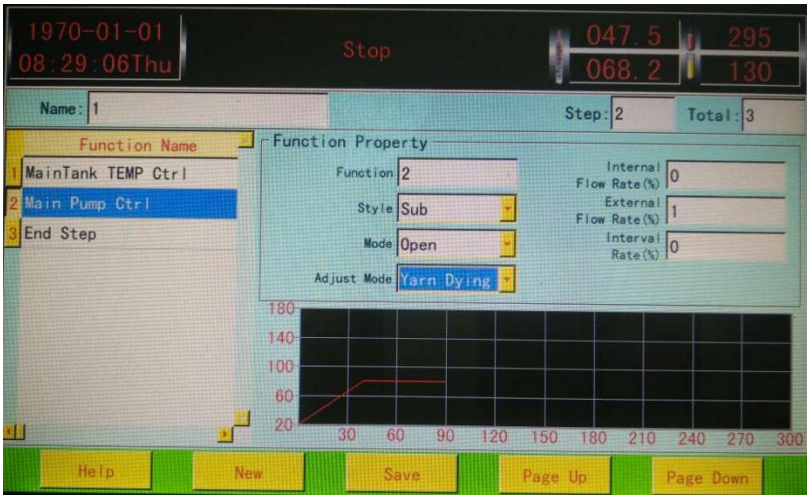
Heating 98℃,rate 2℃/min, holding 30min	9	Main tank temperature control	Set the target temperature 98℃，heating at rate of 2℃/min，holding 30min.
Cooling 60℃, rate 2℃/min	10	Main tank temperature control	Set the target temperature 60℃，cooling at rate of 2℃/min.
Discharge(sewage water)	11	Main tank discharge	Because the drainage need to stop the pump, the main pump options off, the water level is the low water level, drainage type selects sewage water
Rinsing 10min	12	Main tank inputwater	Mode items to select the water level input water; water level is the high water level, the main pump options off, input water type select input cold water.
	13	Main tank overflow	Water item is set to "0", time item "10" means overflow washing for 10 minutes.
Drain(dischargewater)	14	Main tank drain	Because the drainage needs to stop the pump, the main pump options off, the time item is "0" that according to the water level drainage, water level can be set to "low water level", drainage type selects discharge water.
	15	Process ended	Computer default

(2) Application examples of yarn dyeing process（Requirements: computer control forward and reverse rotation）

Process requirements	Step No.	Function name	Editing description
1. Input water 2. Start main pump 3. Heating 4. Cooling	1.	Main tank input water	As required
	2.	Main tank temperature control	As required
	3.	Main pump control	Mode item "sub-function", the model item "open", the other items edited into as the required.
	4.	Commutation control	Mode item "sub-function", the model item "open", the other items edited as the required
	5.	Main tank temperature control	As required
	6.	Program ended	Computer default
	Editing tip: in yarn dyeing process If you want the computer to control the positive and negative, while opening the main pump, edit the commutation control (positive and negative), on the contrary, do not edit the commutation control.		

(3) Application examples of main pump speed control

Cloth dyeing mode	Adjust the main pump speed according to the percentage output: For speed control of the main pump in cloth dyeing tank, the adjust mode item select the "dyeing cloth%", the opening items of the main pump set the speed of the main pump.

	Full speed of 100, set to 0, no current output, the main pump without speed control, the dyeing mode is applied to running process, the main pump for the same speed, it is also suitable for dyeing the main pump process for the same speed control. 
Yarn dyeing mode	The yarn dyeing mode is suitable for different main pump speed of internal flow, outflow, intermittent in running process, but also suitable for the same speed of internal flow, outflow, intermittent in running process, but the same value. 
Pressure mode	System reserved

(4) Application examples of memory water level and memory input water

Process requirement	Step number	Function name	Editing description
Memory input water	1.	Main tank input water	Edit as required
	2.	Memory water level	Time item enter the time to detect the water level (not less than 30 seconds)
		Others steps	N steps.
		Main tank output water	Enter as required
		Main tank input water	The mode item selects the memory water, and the other items are edited as required.
		Other steps	N steps.
		End step	Computer default

	Edit the prompts The computer is running, and check the water level step, the water level data of the first step into the water will be recorded. When running to the memory step into the water, The computer will automatically change the water level of this step into the recorded water level data, and input water according to this data.

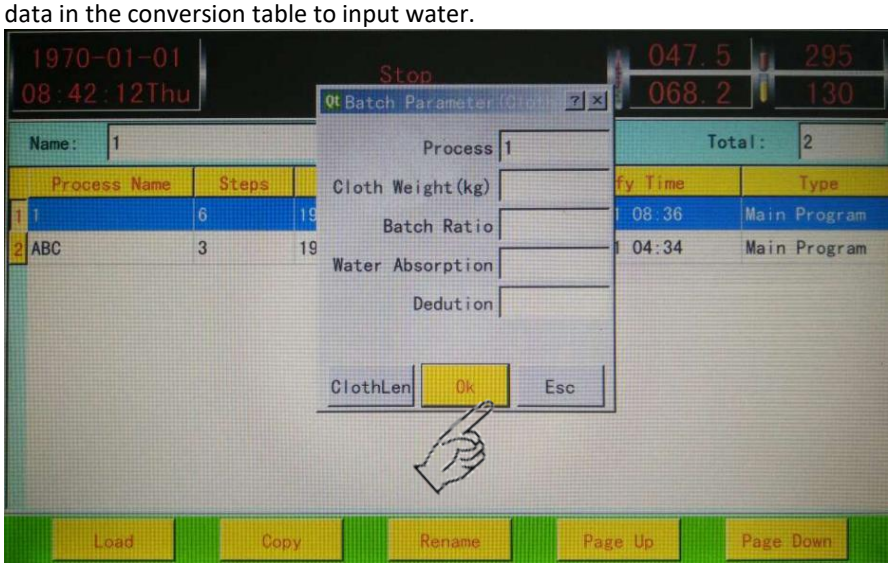
(5) Application examples of process cycle

Process requirement	Step number	Function name	Editing description
Process cycle	1.	Main tankinput water	Function item "15", mode item "1. Main", cycle step number enter 1 (for the first step), the number of cycles item 2 (repeat two times). Indicating that the process runs to step 5, repeat step 1 to step 4, after repeated two times, and then perform the next process. 
	2.	Main tank temperature control	
	3.	Main pump	
	4.	Main tank output water	
	5.	Process cycle	
	6.	Other steps	N steps.
		End step	Computer default

(6) Application examples of bath ratio input water function (no flowmeter)

Only the equipment used to install the differential pressure sensor of the main tank, no flowmeter, but would like to use the bath ratio input water.Before use, you need to fill in the conversion table of water weight and water height (please see the table below).

Step	Operation content	Application note

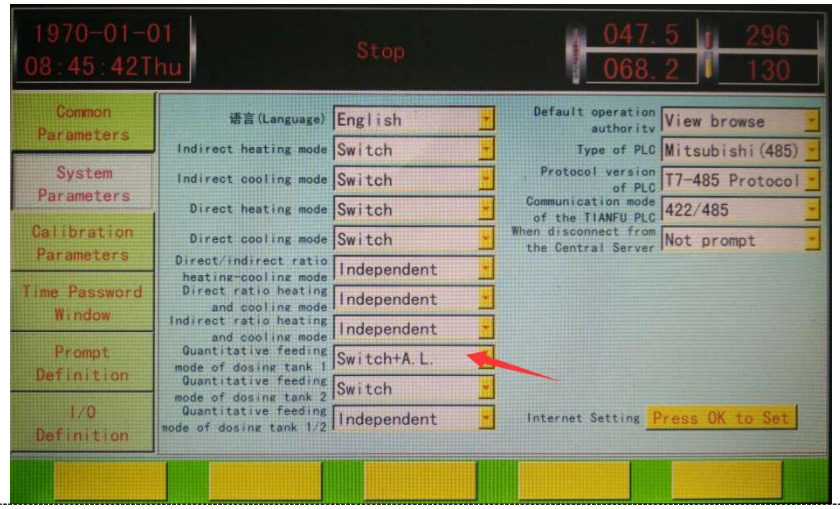
Step 1	FFill in the conversion table	Measure the height of water level corresponding to the water weight in dyeing tank, fill the measured data into the conversion table. 
Step 2	Process editing	Main tank input water function, the mode item select "water level bath ratio".
Step 3	Process running	When running the process, enter the batch weight and bath ratio. The computer calculates and converts the water volume to the corresponding height of water level according to the data in the conversion table to input water. 

(7) The relationship table of equipment configuration, input water mode, water level measurement

Equipment configuration	Input water mode	Achieved function	Description
Switch signal level gauge	Water level input water	Input water according to high, medium and low water level	
4-20mA signal level sensor	① Water level input water ② Memory input water ③ Water level bath ratio ④ Yarn layer input water	① Input water by height（mm） ② Input water by memory ③ Input water by bath ratio ④ Input water by yarn layer	Memory input water needs to be used in combination with the memory water leve. For the bath ratio input water needs to improve the water volume data in conversion table, and enter the cloth weight and bath ratio during the process of running.

Flowmeter (pulse signal)	① Water volume input water ② Water volume bath ratio	① Input water by water volume ② Input water by bath ratio	For the bath ratio input water, needs to enter the cloth weight and bath ratio in the process of running.
①Switch signal level gauge **③ Flowmeter (pulse signal)**	① Water level input water ② Water volume input water ③ Water volume bath ratio	① Input water by high, middle, low water level ② Input water by water volume ③ Input water by bath ratio	
① 4-20mA signal level sensor **② Flowmeter (pulse signal)**	① Water level input water ② Memory input water ③ Water volume input water ④ Water level bath ratio ⑤ Water volume bath ratio ⑥ Yarn layer input water	① Input water by height（mm） ② Input water by high, middle, low water level ③ Input water by memory ④ Input water by water volume ⑤ Input water by bath ratio ⑥ Input water by yarn layer	For the bath ratio input water, needs to enter the cloth weight and bath ratio in the process of running. If you choose the mode of water level bath ratio, you need to improve the water volume data in conversion table, if you choose the mode of water volume bath ratio, you does not need the data in conversion table.

⑻ Application examples of editing quantitative feeding function

Step	Operation content	Application note
Step 1	Feeding options	First to determine the feeding valve is used to the switch valve or the proportional valve (this step should be set in the debugging).See below. 

Step 2	Process editing	Percentage item is 100 or 0, the curve number is the feeding curve, and the time item is the feeding time. The computer has built-in nine curves, of which 0 curve on behalf of the uniform feeding in the set time, 1,3,5,7 curves on behalf of the first feeding slowly and then feeding rapidly, 2,4,6,8 curves on behalf of the first feeding rapidly and then feeding slowly. Quantitative feeding requires attention to the editing of percentages item, the percentage item is set to "0" or "100", and it means that the dosing is completed at one time. For the sub-or sub-quantitative feeding, the dyes is dissolved in dosing tank and added several times, each time the percentage of the data is calculated according to the percentage of the total calculation, the percentage of all the sub-feeding is equal to 100 %.

⑼ Application of water level/water volume conversion table function

Step 1: Fill in the conversion table, measure the water weight corresponding to the height of water level in dyeing tank, and fill the measured data into the conversion table

Step 2: Process editing, in the step of input water, the mode item of main tank input water function selected as "input water bath ratio."

Step 3: Running process, when running the process, enter the batch weight and bath ratio in the batch parameter window. The computer will calculate the water volume and convert it to the corresponding height of water level to input water according to the data in the conversion table.

⑽ Application of temperature offset and temperature correction

Temperature offset is to solve the difference between actual temperature and computer display temperature (error ≤ ± 9.9 ℃). The reason for the temperature difference is mainly due to the error of the external line and the sensor. The temperature deviation can be set in the temperature parameter, so the displayed value is consistent with the actual value by adjusting.

Temperature correction is to solve the difference between actual temperature and computer display temperature. The reason for the difference in temperature is mainly due to the longer external lines or the loss of computer parameters. Then the temperature to re-calibration settings, this operation requires professional and technical personnel to carry out.

⑾ Relationship between time of inflow/drain and water level/water volume

When the water inlet and drain function are edited, if water level and water volume items and time item are compiled with data, according to water level and water volume, time is the alarm time when input water overtime. The water level and the water volume are 0, whichever is the time, but the time and water level or water volume can not be zero at the same time.

⑿ The relationship between the time and water level of dosing tank water inlet and outlet functions

Refer to the main tank water inlet and outlet functions.

The relationship between the main tank water input/output and the main pump

In general, input water and output water need to stop the pump, so in editing the function of input and output water, select the main pump off in the property item.If the water intake and drainage of non-stop pump, then select the main pump on in the property item. If the parameter is set to the main pump protection level, when the water level is lower than the protection level, the pump automatically stops; if there is no main pump to protect the water level, the pump will not stop. So, when water intake and drainage if it does not stop the pump and no protection of the water level, caution with non-stop pump to input and output water. For stoped the pump when water intake and drainage, allow the case of starting the pump in the next step, the main pump automatically start, no need to re-edit the main pump start.

⑬ **Application of dosing tank cleaning function and rapid feeding, quantitative feeding and circulating feeding function**

The dosing tank cleaning function is a separate function that can be edited at any step in the process. But its control process is not the same as the cleaning method of the cleaning function in rapid feeding, quantitative feeding and recycle feeding functions.

The cleaning function of rapid feeding, quantitative feeding and circulating feeding functions are tied to these functions. The cleaning mode is selected in these functions. However, whether or not to clean the dosing tank, in the ordinary parameters of the control parameters of the "dosing tank cleaning times", the water level parameters of the "cleaning water level", the time parameters of the "rinsing backflow time" to determine. The "dosing tank cleaning times" is set to 0, it means that does not clean the dosing tank.

⑭ **Application of water level to dissolving function and the parameters of the liquid level to dissolving and stirring**

The "water level" in the dissolving function is the liquid level to open the dissolving valve or stiring when the dissolving function is operated separately.

The parameters of "dissolving liquid level" and "stiring liquid level" are the height of "liquid level" of opening the "dissolving valve"and "stirring" in the quantitative feeding function. Whenthe parameters of "dissolving liquid level" and "stiring liquid level"set to 0, the "dissolving valve" or "stiring" is not opened during the dosing process.

⑮ **Application of the parameter of "default password level" in system parameters**

"Default password level" refers to the computer in the absence of unlocking; you can do this permission without need to enter a password.

The default password level is divided into: View browsing, running process, manual jumping (stop running), online modification, editing process.

Select "View browsing": you can only browse the window in the boot state, do not have permission to run the

process,and other operation which is higher than this level need to enter the password.

Select "Running process": has the permissions of "process running", you do not need to enter a password when running the process, the other operation which is higher than this level need to enter the password.

Select "Manual jumping (stop running)": has the permission of "manual jump and stop running", the other operation which is higher than this level need to enter the password.

Select "Online Modification": has the permission of "online modification process", the other operation which is higher than this level need to enter the password.

Select "Editing process": has the permission of "Editing process", the other operation which is higher than this level need to enter the password.

Process running

1. Running new process

① In the initial state of the computer interface, move the red cursor to the "process running",press OK key.

② In the initial state of the computer interface, directly press the number key 2 ABC on the keyboard.

Tips

In running, due to power failure or stop running halfway, and the process exit the running state. If you press the key on the keyboard directly PLAY, the computer will continue to the process which is stopped halfway or stopped by power off.

2. Running operation

① Go to the "Process running" menu.

② Press "▲""▼"key, Choose the process to run.

③ Press OK key, or press F1 key, Load the selected process.

④ If you choose to run the process without the requirements of bath ratio control, directly press OK key, go into the first step of process.

⑤ Press PLAY key, the computer starts running.

Tips

If you choose to run the process with the requirements of bath ratio control, for cloth dyeing mode in the cloth dyeing tank, enter "cloth weight", "bath ratio" or "water absorption" (no water absorption may not enter) in the

batch parameter window. For yarn dyeing mode in the yarn dyeing tank, enter the number of "yarn layer" or "water absorption" (no water absorption may not enter) in the batch parameter window, press OK key again, go to the first step of the process, press PLAY key, the computer starts running.

For the steps of input water by bath ratio or by yarn layer in the process, there is no enter the data of cloth weight, bath ratio or yarn layer, then the step to input water according to the height of water level parameters set.

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3. Running the interrupted process

① Press the key PLAY on the keyboard directly; go to the interrupted process step.

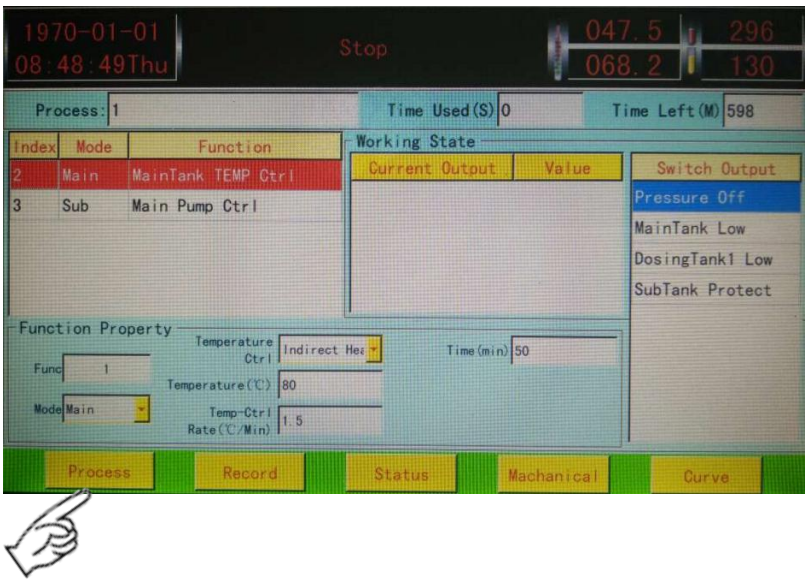
② If the computer power off and re-power again, the display pop-up the dialog box "Whether to restore the runned process before power off ?", press OK key, go to the interrupted process step.

4. Running the jumped process

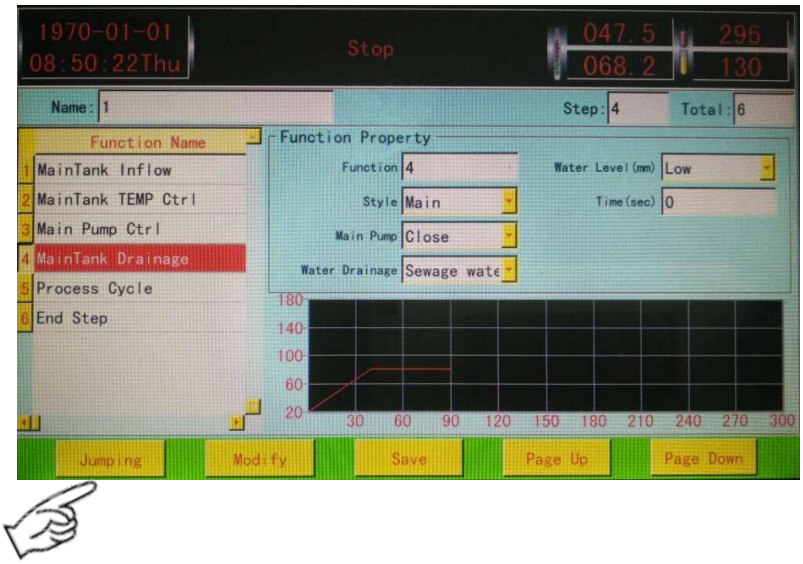
① When the process is not running, directly start running from a step in the process.

First choose to enter the process to run.

And then press the corresponding process keys F1, access to the process, as shown below:



Press "▲""▼" key, select the process steps to run, press jumping key F1, select the process steps to run, press PLAY key. The computer performs a jump run. As shown below:



② In running process, skip a step or a few steps in the process to continue running.

In running process， press the "Process"corresponding key F1 ， and then press the "▲""▼"key， select the process steps to run, press jumping key F1 again， select the process steps to run, the computer performs a jump run.

Tips

When performing a jump run, please select the jumping function carefully and correctly to avoid errors.

Select the jump to a certain step to run, this step must be the main function step and not be a secondary function step, otherwise the computer prompts "the current step must be the main function" prompt window, can not perform jump operation. The correct way is to jump to the main function step in front of this sub-function step, start running.

5. Modify the running process

In running process, temporarily adjust and modify the running process data according to the dyeing process and the actual situation. The modified process data is valid only for this operation. After the operation is finished, the original process data is restored to the data before modification.

Operation is as follows:

① In the running state, select the main function step which is running currently, press OK key， go to the "functional property" item.

② Select the need to modify the project, for example, to modify the holding time of the main tank temperature control, press"▲""▼"key， move the cursor to the "Time" item, modify the data of the "Time" item, and press the"save"key.

③ The computer pop-up the prompt window og "modify successfully!", press OK key， the

modification is finished.

6. Running record query

In the computer running state, you can query the temperature curve, batch records (the beginning and the end of the dyeing process, and the completion in dyeing), alarm records data, press the query key F1 , press"► ""◄ "key，select to query "curve record", "batch record", "alarm record".

When the interface is displayed as a curve record, press OK key，and then press the day before F4 or the day after F5 key, to select the date for query. Press the fast forward F2 or fast exit key F3 , to select the curve for different time periods.

When the interface is displayed as a curve record, press two times OK key，when the cursor flashes in the "query date" box，press the delete key on the keyboard Delete , modify the date, and then enter the date to query.

7. Running status query

In running state, you can query the running record; you can also query the current operating status, including the input and output of the digital signal and the analog signal, pulse value, water volume statistics, cloth head data.

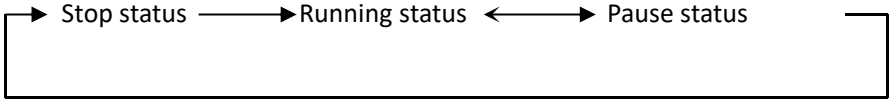
Switch output status query: Computer displays switch output status window, each output point consists of round icon, name and serial number, where the round icon is red that is the output state, name and serial number is red that the cursor stay at this point, press OK key，go to the switch output state, the cursor will stay in a switch output point，press "▲""▼"shift key，so that the red cursor up and down, or press the "page down" "page up" key, you can query other output points, a total of 80 output points.

Switch input status query: Refer to the query method operation of the "Switch output status".

Analog status query: Go into the analog state window, including the temperature input, current input, current output, pulse input, water volume statistics, cloth head data, a total of six data display area, each display area shows a total of four data, to see the data that is not shown, press OK key, can be circulated in six display areas, when the red cursor goes to view the display area, press "▲""▼"shift key， So that move the red cursor up and down, you can query other data.

The contents of the simulation status display window are displayed according to the "function name" instead of the input channel position, that is, the "function name" position of the simulation status window is fixed and does not change with the configuration of the input channel.

The relationship between the states of computer running, pausing, stopping



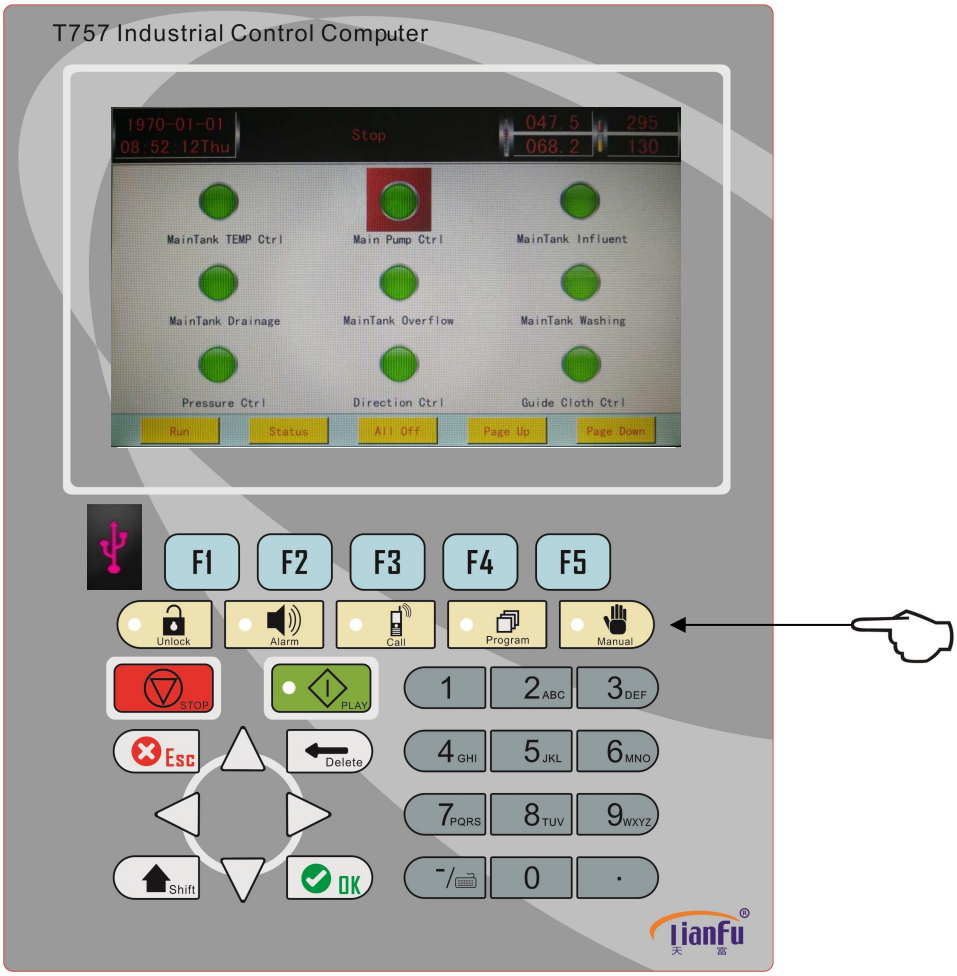
8. Computer manual running and operation

T757 control computer provides a manual operation button to achieve a manual implementation of one or more

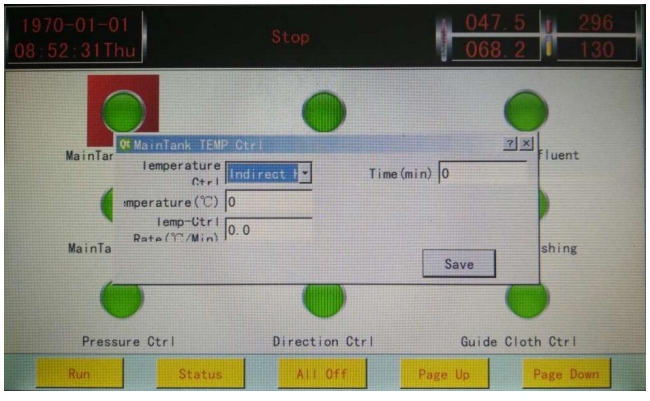
control function, without the cumbersome operation to editing process, to solve the original manual operation can not achieve the effect of computer control.

Manual running operation to enter: as shown below.

The button display window of manual running



Click on the key  **, as shown below.**



a) Press "▲" "▼" shift key to move the cursor to the function to be operated, press "OK" key to enter the data setting of this function, as shown above.

b) Set the data to finished and move the cursor to the "Save"position，Click the key  ，The computer exits to the manual running interface, as above.

c) Click the F1 corresponding button"Running"， the function is running, the indicator light on the key Manual will flash. At the same time, the "Running"button switch display the "Stop"button， and then click the F1 corresponding button"Stop"， this function stops running.

d) And then click the F2 corresponding button "Statue", go to the status of the details to view the input and output status.

Tips for manual operation:

When the computer automatically runs the main tank function, it can not perform the manual operation of the main tank function. Only the operation of the dosing tank/sub tank function can be carried out. However, if the computer is automatically running a function of the dosing tank/sub tank, at this time the computer can not carry out the manual operation of the dosing tank/sub tank.

When the light Manual is flashing, that has a manual function in the run. If at this time switch to the computer automatically run, the computer will be forced to close the function which is running manually.

For example: When the computer in the automatic operation of the main tank function of main tank temperature control and main pump control, close or can not carry out the manual operation of input water and output water. But this time you can manually operate to input water, backflow, dissolving and feeding in the dosing tank. When the computer in the automatic operation of the quantitative feeding in the dosing tank, at this time the dosing tank can not be manually operated.

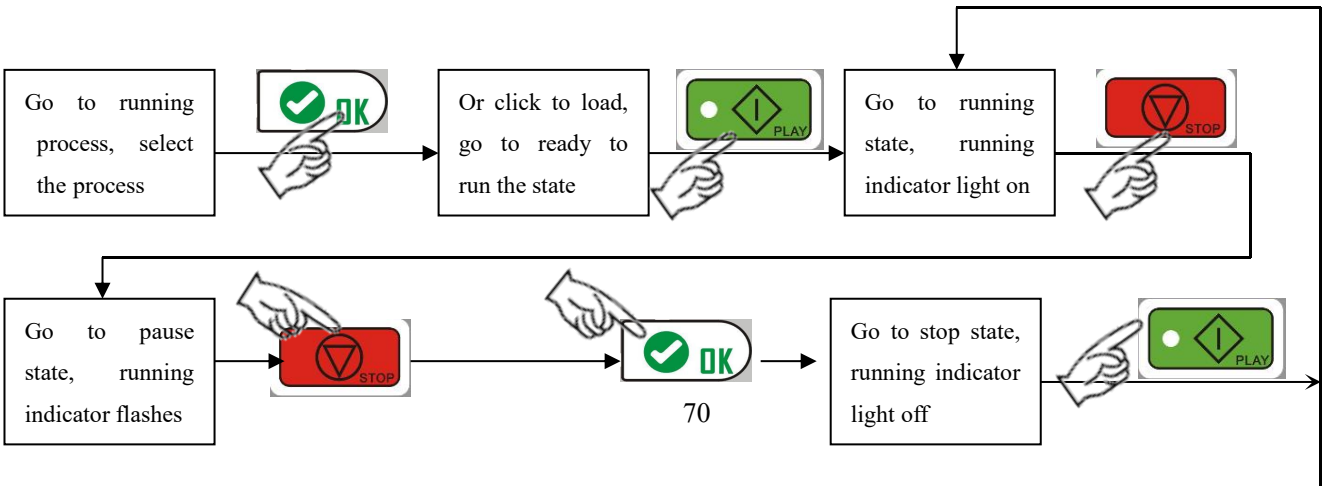
(Note: When the computer is carrying the function of dosing tank 1, you can carry out the manual operation of dosing tank 2 or sub tank, or the computer is carrying the function of dosing tank 2, you can carry out the manual operation of dosing tank 1 or sub tank, and so on).

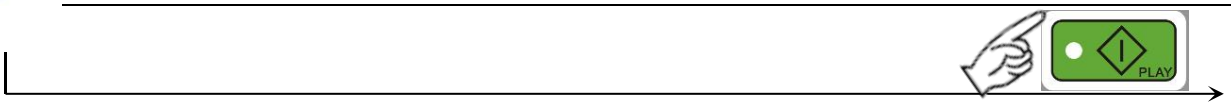
When the computer is manually operated, it is possible to perform a plurality of functional operations. If you want to turn off all manual control functions, in addition to being able to close one by one, you can click the button "All off" to close all manual output.

All manual control functions are also subject to the associated parameter limits, and their operating conditions are the same as those for automatic operation.

For example: the main pump limited by water level, temperature control limited by the main pump and so on.

Process running, pause, stop operation flow chart





Chapter 6 Parameter setting introduction

T757 Industrial Control Computer Parameter Setting List

（Parameters values in the following table are factory defaults）

Temperature Parameters				
Parameter Name	Default	Unit	Range	Description
The highest temperature of the main tank	140	℃	0-180	When temperature is higher than the setting temperature, the computer stops and alarms.
Safe temperature of the main tank	85	℃	0-180	When temperature is lower than the setting temperature, You can open the cover, sampling and other manual operation.
Lock temperature of the main tank	85	℃	0-180	When actual temperature is higher than the setting temperature, the computer outputs signal to lock the tank.
Pressure rising temperature of the main tank	87	℃	0-180	When temperature is higher than the setting temperature, the computer outputs signal to rising the pressure.
Pressure relief temperature of the main tank	85	℃	0-180	When temperature is higher than the setting temperature, the computer outputs signal to relief the pressure.
Large valve/small valve switching rate	0	℃/min	0-9.9	When rate=0, no switch(apply to heating control by large valve only) When rate>0, When the set heating rate is greater than this value, heating with a large valve; on the contrary, heating with a small valve. Large valve heating corresponding to indirect heating needs to "start small valve heating", parameter is set to "yes", and the indirect heating for the switch mode is valid.
Temperature deviation of the main tank	0	℃	±9.9	To adjust the deviation between the displayed temperature and the actual temperature of the main tank.
Temperature deviation of the dosing tank 1	0	℃	±9.9	To adjust the deviation between the displayed temperature and the actual temperature of the dosing tank 1.
Temperature deviation of the dosing tank 2	0	℃	±9.9	To adjust the deviation between the displayed temperature and the actual temperature of the dosing tank 2.
Temperature deviation of the sub tank	0	℃	±9.9	To adjust the deviation between the displayed temperature and the actual temperature of the sub tank.
Deviation of holding temperature in advance	2	℃	0-9.9	In heating, the deviation in advance to holding temperature phase, to avoid excess temperature .
Deviation of holding temperature zone	0.3	℃	0-9.9	A range temperature ofholding temperature. It is not suggested to set 0 and it can't be a minus.
Deviation of holding and rising temperature	0.3	℃	0-9.9	When actual temperature is lower than holding temperature and the deviation is over the setting temperature, temperature rising signal is output. It is not suggested to set 0.
Deviation of holding and cooling temperature	0.3	℃	0-9.9	When actual temperature is higher than holding temperature and the deviation is over the setting temperature, temperature cooling signal is output. It is not suggested to set 0.
Deviation of holding temperature alarming	0.3	℃	0-9.9	Alarm when the deviation between actual temperature and holding temperature is over the setting temperature. No alarm when it is set for 0.
Deviation of rate alarming	1.0	℃/min	0-9.9	Alarm when the actual rate deviation is over the setting rate. No alarm when it is set for 0.
Alarm temperature difference between main tank and bottom of the tank	9.9	℃	0-9.9	Alarm when the actual temperature difference between dyeing tank and bottom of the tank is over the setting temperature. No alarm when it is set for 0.
Protection temperature of dosing tank 1	85	℃	0-99	When the actual temperature is over the setting temperature, protection signal for dosing tank 1 is output, which can be applied

				for manual temperature control.
Protection temperature of dosing tank 2	85	℃	0-99	When the actual temperature is over the setting temperature, protection signal for dosing tank 2 is output, which can be applied for manual temperature control.
Protection temperature of sub tank	85	℃	0-99	When the actual temperature is over the setting temperature, protection signal for sub tank is output, which can be applied for manual temperature control.
Close temperature of the main tank directly draining	0	℃	0-180	When the actual temperature is over the setting temperature, closing signal for direct drainage is output. When it is set for 0, closing signal will not be output.
Open temperature of heat recycle	0	℃	0-180	When the actual temperature is over the setting temperature, heat recycling signal is output. When it is set for 0, signal will not be output.
Temperature to allow direct cooling	102	℃	0-110	When the actual temperature is over the setting temperature, direct cooling signal will not be output.
Open rate of temperature control cycle	3	℃	0-9.9	When the process heating setting rate is over or equal to the set value, the temperature control cycle signal is output.
Temperature difference between main tank and bottom of the tank	9.9	℃	0-9.9	Alarm when the actual temperature difference is over the setting temperature. No alarm when it is set for 0.
Cooling and pressure discharge temperature of the main tank	85	℃	0-180	When cooling is operated and the actual temperature is lower than the setting temperature, pressure discharge signal is output.

Description: Data which is shielded in the parameter table (system reserved), that is not put into use, can not be modified.

Time Parameters				
Parameter Name	Default	Unit	Range	Description
Call duration	20	s	0-255	Continuous time of the computer alarms or makes a call. No alarm when it is set for 0.
Call interval	0	s	0-255	Internal time of the computer alarms or makes a call. Alarm continues when it is set for 0.
Protection delay for main pump	5	s	0-255	Delay time for main pump to stop. When water level is below the protection level, pump delays to stop.
Operation delay for mai n pupm	6	s	0-255	Delay time for main pump to start. When water level reaches the starting level, pump delays to start.
Operation delay for guid e cloth	15	s	0-255	Duration between main pump starts and guide cloth starts (main pump starts and guide cloth delays to starts).
Stop delay for main pu mp	5	s	0-255	Duration between guide cloth stops and main pump stops (guide cloth stops and main pump delays to stop).
Current protection duration for main pump	0	min	0-255	Current deviation alarm time of main pump, used with current deviation alarm value of main pump.
Inflow delay for main tank	0	s	0-255	Time of water inflow after the water level reaches the setting level.
Drainage delay for main tank	60	s	0-255	Time of drainage after the water level gets below the setting level.
Overflow water level delay for main tank	6	s	0-255	Delay time to start inflowing when water level of overfall is below the overflow high water level. Delay time to start draining when water level of outlet is higher than the overflow low water level.
Overflow stop delay for main tank	5	s	0-255	System reserved , Not put into use yet.
Overflow water level alarm duration	0	s	0-255	Alarm time of water level of main tank that is higher than the overflow high level or low than the overflow low level while parameter overflow is not limited by high water level(which is set"NO").
Liquidometer flushing time	0	s	0-255	Inflow time of opening the flushing valve.
Liquidometer flushing	2	s	0-255	Time of the liquidometer flushing gets into a steady state.

steady time				
Heating/cooling switch of main tank	6	s	0-255	Time to delay starting when heating and cooling switch.
Direct discharge time in heating of main tank	5	s	0-255	Time of direct discharge in heating phase.
Direct discharge interval in heating of main tank	20	min	0-255	Interval time of direct discharge starting in heating phase.
Direct discharge time in holding temperature of main tank	3	s	0-255	Time of direct discharge in holding temperature phase.
Direct discharge interval in holding temperature of main tank	30	min	0-255	Interval time of direct discharge starting in holding temperature phase.
Direct discharge time in the first heating of main tank	10	s	0-255	Time of direct discharge in the first heating phase.
Direct discharge time after cooling of main tank	10	s	0-255	Time of direct discharge in heating phase after cooling.
Pressure on/off switch time	0	s	0-255	Time to delay pressure on or off when they switch.
Detection alarm time of internal and external flow	0	s	0-255	Alarm time to detect the feedback signal when internal and external flow output. Detection does not operate when it is set for 0.
Detection alarm time of jet tank rotation	9	s	0-255	Alarm time to detect the feedback signal when jet tank rotates positively or negatively. Detection does not operate when it is set for 0.
Positioning time of jet rotation stop	9.9	s	0-255	Time of rotation once again when positioning signal is detected.
Direct discharge time of dosing tank 1	5	s	0-255	Time of direct discharge in indirectly heating phase of dosing tank 1.
Direct discharge interval of dosing tank 1	2	min	0-255	Interval time of direct discharge in indirectly heating phase of dosing tank 1.
Start flushing time of do sing tank	2	s	0-255	Start flushing or inflow time when dosing tank 1 and 2 get flushed.
Stop flushing time of do sing tank	5	s	0-255	Interval time to start flushing or inflow when dosing tank 1 and 2 get flushed.
Operation delay time of dosing pump	10	s	0-255	Operation delay time of dosing pump when feeding into dosing tank 1 and 2.
Operation delay time of dosing tank	15	s	0-255	Continuous time of feeding when it gets to the low level of dosing tank 1 and 2 in feeding phase.
Drainage delay time of dosing tank	20	s	0-255	Continuous time of drainage when it gets to the low level of dosing tank 1 and 2 in discharge phase.
Water level delay time of circulation feeding	0	s	0-255	Delay time of getting backflow when water level is below the high level and of feeding when water level is higher than the low level in the circulation feeding phase of dosing tank 1 and 2.
Water level alarm time of circulation feeding	0	s	0-255	Alarm time when water level is higher than the high level or when water level is lower than the low level in the circulation feeding phase.

Time Parameter（follow-up）				
Parameter Name	Default	Unit	Range	Description
Drainage delay time of sub tank	15	s	0-255	Continuous time of drainage when it gets to the low water level of sub tank in discharge phase.
Feeding delay time of sub tank	20	s	0-255	Continuous time of feeding when it gets to the low water level of dosing tanks in feeding phase.
Detection alarm time of cloth head	10	min	0-255	Alarm when none of cloth head is found in the duration. Once one head of cloth is found, timing restarts and alarm again till the time is out when next cloth head is found.
Protection delay time of dissolving and stiring	5	s	0-255	Start-up delay time when stirrer gets to the start-up water level.

Time of stirring	10	s	0-255	Continuous time of stirring. Cannot be set for 0.
Interval of stirring	5	s	0-255	Time of stop stirring. Continuously stirring when it is set for 0.
Complement water delay opening time	2	s	0-255	Delay time to get inflow when water level is below the setting level.
Adding salt backwash time	5	s		System reserved, not put into use yet.
Timeout alarm time of inflow of main tank	5	min	0-255	Alarm when time is over the setting time in case that inflow time is not made by process.
Timeout alarm time of drainage of main tank	3	min	0-255	Alarm when time is over the setting time in case that drainage time is not made by process.
Timeout alarm time of inflow of dosing tank	5	min	0-255	Alarm when time is over the setting time in case that water inflow time is not edited by process.
Timeout alarm time of drainage of dosing tank	2	min	0-255	Alarm when time is over the setting time in case that drainage time is not edited by process.
Timeout alarm time of backflow of dosing tank	3	min	0-255	Alarm when time is over the setting time in case that backflow time is not edited by process.
Allowed deviation of guide cloth cycle speed control	10	s	0-255	The allowed deviation between the actual time and the setting time in the control guide cloth by cycle, alarm when which is over the set value.

Water Level Parameters **Tip: Water level parameters need to be set in the condition that the communication of host and analog modules is normal.**				
Parameter Name	Default	Unit	Range	Description
Protection water level of main pump	10	mm	0-9999	Water level to stop the main pump: Set to "0", indicates no signal can operate the main pump. Set to "1", indicates that the main pump is controlled by low-water-level switch. Set to "2", indicates that the main pump is controlled by normal-water-level switch. Set to "3", indicates that the main pump is controlled by high-water-level switch. If it is set for number that is over 3, the main pump is controlled by the level of the set value (apply to simulate water level).
Start-up water level of main pump	100	mm	0-9999	Main pump start up when the water level of the main tank is over the set value. Others ditto.
Water level of the largest yarn layer	1000	mm	0-9999	Water level of the largest yarn layer to be dyed(apply to inflow of yarn dyeing tank bath ratio conversion)
High water level of main tank	1000	mm	0-9999	High water level that output switch signal.
Normal water level of main tank	900	mm	0-9999	Normal water level that output switch signal.
Low water level of main tank	10	mm	0-9999	Low water level that output switch signal.
Overflow high water level of main tank	1000	mm	0-9999	Upper limit water level to stop water inflowing in overflow dyeing: Set to "1", indicates that the main pump is controlled by low-water-level switch. Set to "2", indicates that the main pump is controlled by normal-water-level switch. Set to "3", indicates that the main pump is controlled by high-water-level switch. If it is set for number that is over 3, the main pump is controlled by the water level of the set value (apply to simulate water level).
Overflow low water level of main tank	900	mm	0-9999	Lower limit water level to start water inflowing in overflow dyeing. Ditto.
Maximum water consumption of once overflow	100	Kg	0-9999	Overflow chosen water is thar of sub tank and memory water consumpetion, maximum conversion water consumption.
Water level of main tank to	50	mm	0-9999	Water level that output signal to stop inflowing in advance

inflow in advance				(apply to simulate water level).
Water volume of main tank to inflow in advance	50	L	0-9999	Water volume that output signal to stop inflowing in advance (apply to simulate water level).
Water level of main tank to drain in advance	50	mm	0-9999	Water level that output signal to stop draining in advance (apply to simulate water level).
Water volume of main tank to drain in advance	50	L	0-9999	Water volume that output signal to stop draining in advance (apply to simulate water level).
Water level deviation of main tank	0	mm	±9.9	To adjust the deviation between the shown water level of main tank by computer and the actual level.
Water level offset of dosing tank 1	0	mm	±9.9	Similar to which of main tank as above
Water level offset of dosing tank 2	0	mm	±9.9	Similar to which of main tank as above
Water level offset of sub tank	0	mm	±9.9	Similar to which of main tank as above
Zero pressure of main tank	1	Kpa	0-9999	Set to "1", indicates that the zero-pressure signal of switch. Set to "2", indicates that the low-pressure signal of switch. Set to "3", indicates that the high-pressure signal of switch. If it is set for number that is over 3, than the pressure will be the set value(apply to simulate signal)
Low pressure of main tank	2	Kpa	0-9999	ditto
High pressure of main tank	3	Kpa	0-9999	ditto
High water level of dosing tank 1	800	mm	0-9999	High water level that output switch signal.
Normal water level of dosing tank 1	700	mm	0-9999	Normal water level that output switch signal.
Low water level of dosing tank 1	10	mm	0-9999	Low water level that output switch signal.
High water level of dosing tank 2	800	mm	0-9999	High water level that output switch signal.
Normal water level of dosing tank 2	700	mm	0-9999	Normal water level that output switch signal.
Low water level of dosing tank 2	10	mm	0-9999	Low water level that output switch signal.
High water level of sub tank	1000	mm	0-9999	High water level that output switch signal.
Normal water level of sub tank	800	mm	0-9999	Normal water level that output switch signal.
Low water level of sub tank	10	mm	0-9999	Low water level that output switch signal.
Dissolving liquid level of dosing tanks	200	mm	0-9999	The lowest water level that dissolving valve opens in quantitatively dosing phase. Set to "1", indicates that the main pump is controlled by low-water-level switch. Set to "2", indicates that the main pump is controlled by normal-water-level switch. Set to "3", indicates that the main pump is controlled by high-water-level switch. If it is set for number that is over 3, than the main pump is controlled by the level of the set value (apply to simulate water level).
Stirring liquid level of dosing tanks	300	mm	0-9999	The lowest water level that starts stirring in quantitatively dosing phase. Others ditto.
High water level of dosing tanks in circulation feeding phase	800	mm	0-9999	Water level that stops backflowing in circulation feeding phase of the dosing tank 1 and tank 2. Others ditto.
Low water level of dosing tanks in circulation feeding phase	700	mm	0-9999	Water level that starts backflowing and stops feeding in circulation feeding phase of the dosing tank 1 and dosing tank 2. Others ditto.
Deviation of water replenishment open	50	mm	0-9999	In water replenishment, iInflow again when the water level is below the set value.
High water level of airflow washing	1000	mm	0-9999	Upper limit water level to stop inflowing when airflow washing: Set to "1", indicates that the main pump is controlled by

				low-water-level switch. Set to "2", indicates that the main pump is controlled by normal-water-level switch. Set to "3", indicates that the main pump is controlled by high-water-level switch. If it is set for number that is over 3, than the main pump is controlled by the level of the set value (apply to simulate water level).
Low water level of airflow washing	900	mm	0-9999	Lower limit water level to stop draining when airflow washing. Set to "0", indicates non-stop. Ditto.
Water level of dosing tanks to add salt	500	mm	0-9999	Water level of dosing tanks 1 and 2 that output switch signal to add salt.

Control Parameters				
Parameter Name	Default	Unit	Range	Description
Switch heating intensity	80	%	1-100	Switch valve effects,whose valid range is 30-100
Switch integral constant	20	%	1-100	Switch valve effects,whose valid range is 20-50
Ratio heating intensity	8	%	1-100	Ratio valve effects,whose valid range is 4-30
Ratio integral constant	6	%	1-100	Ratio valve effects,whose valid range is 3-30
Quantitative feeding intensity	75	%	1-100	Switch valve or ratio valve effects,whose valid range is 30-100
Quantitative feeding integral constant	50	%	1-100	Switch valve or ratio valve effects,whose valid range is 20-80
Ratio feeding delay opening degree	50	%	1-100	Ratio feeding valve opening degree when quantitative ratio feeding delays.
Ratio feeding initial opening degree	50	%	1-100	Ratio feeding valve initial opening degree when quantitative ratio feeding starts.
Current deviation alarm of main pump	0	A	0-9999	Current deviation of main pump, being used with current deviation alarm time of main pump.
Yarn layer height	20	mm	1-20	The height of the bobbin of a single cheese yarn.
Maximum layer of yarn	20	layer	1-20	Total of yarn layer in dyeing tank.
Cleaning times of dosing tanks	3	time	1-10	Times of cleaning tanks after feeding.
Number of guide cloth tube	4	number	1-8	Number of guide cloth tube in dyeing tank, determines the number of switch/simulate output of guide cloth.
Number of fan	1	number	1-8	Number of fan in dyeing tank, determines the number of switch/simulate output of fan.
Allowed deviation of quantitative feeding	30	%	1-100	In quantitative feeding, alarm when actual deviation of feeding is over the set value.
Adjustment cycle of temperature control	10	s		Save.
Maximum speed of guide cloth	500	m/min	0-999	It is effective when the guide cloth speed is adjusted in "m/min".
Initial opening degree of cycle guide cloth	80	%	1-100	Start-up speed of guide cloth when speed of guide cloth is set for "cycle".
Initial opening degree of ratio heating	80	%	1-100	Initial opening degree of ratio valve when ratio heating starts.
Speed down of fan when main tank temperature gets 100℃	5	%	0-100	Speed down of fan when main tank temperature gets 100℃. No adjustment when it is set for 0.
Speed down of fan when main tank temperature gets	10	%	0-100	Speed down of fan when main tank temperature gets 110℃. No adjustment when it is set for 0.

110℃				
Speed down of fan when main tank temperature gets 120℃	15	%	0-100	Speed down of fan when main tank temperature gets 120℃. No adjustment when it is set for 0.
Output current of fan at constant power	80	%	0-100	Control the maximum percentage of current output when fan is at constant power.
Allowed current deviation of fan at constant power	5	%	0-100	Allowed current deviation of fan at a speed down.
Allowed pressure deviation of nozzle	10	Kpa	0-999	Allowed deviation range between nozzle pressure of main pump and the setting pressure.
Allowed nozzle pressure deviation to alarm	20	Kpa	0-999	Alarm when deviation of nozzle pressure of main pump is over the set value.

Setting relations between intensity and integral constant of heating, quantitative feeding:
Usually, intensity and integral constant are set oppositely, if goal temperature or speed cannot be reached in temperature control, increase the intensity and decrease the integral constant; otherwise, decrease the intensity and increase the integral constant. We donot suggest to adjust these parameters unless there's some reasons for the device.

Bath ratio conversion mode	batch weight	batch weight/yarn layer	To count the inflow, "batch weight" uses the conversion of weight and "yarn layer" uses the conversion of number of yarn layer.
Allowed drainage at high temperature	NO	YES/NO	"YES" allows to drain sweage or clean water, which "NO" doesn't allow. "High temperature drainage" and "high pressure dehydration" are not limited by this command.
Allowed inflow at high temperature	NO	YES/NO	"YES" allows high temperature inflow, while "NO" does not allow.
Circulation feeding mode	switch	switch/ratio	"Switch" indicates that feeding controlled by switch valve, while "ratio" indicates the ratio valve.
Feeding protected by main pump	YES	YES/NO	"YES" indicates the need to operate main pump in feeding, and "NO" indicates no need.
Initial direction of internal and external flow	external	internal /external	"Internal "indicates internal flow (negative direction) first," external " indicates external flow (positive direction) first.
Temperature control protected by main pump	NO	YES/NO	"YES" indicates the need to operate main pump while temperature controlling, and "NO" indicates no need.
Allow heating when directly cooling and holding temperature	NO	YES/NO	"YES" indicates that indirectly heating signal is output when actual temperature is below holding temperature from directly cooling phase to holding phase. "NO" indicates that no indirectly heating signal is output.
Allow cooling when holding temperature	NO	YES/NO	"YES" indicates that cooling signal is output when holding temperature is too much high. "NO" indicates that no cooling signal is output.
Start small valve to heating	NO	YES/NO	"YES" indicates to start up (apply to large/small heating valve). "NO" indicates not to start up.
Type of dyeing tank in temperature control	overflow	overflow/ airflow machine/air-liquid machine	Select the Type of dyeing tank is corresponding to mechanical drawing. Difference of calculation mode of computer temperature control.
Tank bottom temperature to start	NO	YES/NO	"YES" indicates to start the comparison of main tank temperature and the tank bottom temperature, while "NO" indicates not to start.
Limit to overflow high water level	YES	YES/NO	"YES" indicates that stop inflowing when overflow water level gets to high water level. "NO" indicates not to stop it.
Main pump limited by f an's start-up	NO	YES/NO	"YES" indicates that need to start fan before running main pump. "NO" indicates no need.
Guide cloth is synchronous with main pump	NO	YES/NO	"YES" indicates that no need to edit running guide cloth in the pocess, main pump and guide cloth running synchronously. "NO" indicates out of sync.
Internal and external flow synchronous with main pump	NO	YES/NO	Ditto.

Rotation of jet tank synchronous with main pump	NO	YES/NO	Ditto.
Fan synchronous with main pump	NO	YES/NO	Ditto.
Nozzle synchronous with main pump	NO	YES/NO	Ditto.
Procedure ends	on	on/off	"On" indicates that keep running at the end of the process. "Off" indicates that keep stopping at the end of the process.
Fan synchronous with main pump	NO	YES/NO	"YES" indicates that no need to edit running fan in the pocess, main pump and fan running synchronously. "NO" indicates out of sync.
Positive and negative rotation detection of internal and external flow	NO	YES/NO	"YES" indicates detection on feedback signal when internal and external flow is operating, while "NO" indicates no detection.
Stopping mode of detecting cloth head	none	none/guide cloth/main pump	"None" indicates alarm when cloth head is detected. "Guide cloth" indicates alarm and stop guiding cloth when cloth head is detected. "Main pump" indicates alarm and stop the main pump when cloth head is detected.
Measure mode of main tank water volume	conversion table	conversion table/flowmeter	To count the inflow, "conversion table" uses the conversion of weight in the conversion table and "flowmeter" uses the conversion of weight that flowmeter pulse count.
Measure mode of dosing tank 1 water volume	conversion table	Ditto.	Ditto.
Measure mode of dosing tank 2 water volume	conversion table	Ditto.	Ditto.
Measure mode of sub tank water volume	conversion table	Ditto.	Ditto.
Control fan in constant power	NO	YES/NO	"YES" indicates to detect current of fan, adjust speed of fan and alarm when deviation is over the set value.
Procedure operates after fault removed	continue	continue/waiting	Continue is the program continues after the fault is removed. Waiting is the program continues, need to have "Run Continue" switch signal feedback after the fault is removed.
Display window of water level	simulate water level	simulate water level/switch water level/conversion water level	Simulate water level: the window shows the simulate water level after inflowing. Switch water level: the window shows the switch water level after inflowing. Conversion water level: the window shows the conversion water level after inflowing.
End up feeding cleaning in dosing tanks	discharge	discharge/feeding	Choose to clean the dosing tank, discharged the last feeding-liquid or added to the tank.
Water level gets to the value in the inflow or drainage function	Waiting for confirm	Waiting for confirm/ Waiting for 60s/ Waiting for 30s/ Procedure continues	Waiting for confirm: Water level gets to the value which operates inflow or drainage function, computer alarms, if there's a confirmation call(or push "ok" button), computer will go to next step, otherwise will not. Waiting for 60s: Water level gets to the value which operates inflow or drainage function, computer alarms, after 60s, computer will continue to next step. If there's a confirmation call (or push "ok" button) and not until 60s, computer will continue to next step. Waiting for 30s: Ditto. Procedure continues: Water level gets to the value which indicates inflow or drainage function, computer will continue to next step.
Temperature gets to the value which operates temperature control function	Waiting for confirm	Waiting for confirm/ Waiting for 60s/ Waiting for 30s/ Procedure continues	Ditto in operating temperature control function.

Water level of main tank overflow timing	Overflow low water level	Overflow low water level/ Overflow high water level	Choose overflow low water level or overflow high water level, begin timing the overflow time.
Drainage mode after washing in main tank	No drainage	No drainage/ Drain clean water/ Drain sweage	No drainage: There's no drainage at the last time of washing in main tank. Drain clean water: Drain clean water at the last time of washing in main tank. Drain sweage: Drain sweage at the last time of washing in main tank.
Manual one-step operation	YES	YES/NO	"YES" allows manual operation on computer, while "NO" means forbidden.
Detection of switch water level of main tank	Input signal	Input signal/output signal	Computer identifies switch water level signal by detecting the switch input or switch output signal.
Detection of switch water level of dosing tanks	Input signal	Input signal/output signal	Ditto.
Steam/oil heating mode switch	Feedback output	Feedback output/batch parameter	Steam/oil heating mode can switch output. Feedback input: means there's feedback signal, switch steam heating to oil ratio heating. Batch parameter: no need to feedback, batch parameter decides to choose steam heating or oil ratio heating.

Adjustment Parameters				
Parameter Name	Default	Unit	Range	Description
Manual main pump speed	80	%	1-100	Provide current for manual adjustment to main pump speed.
Synchronous/manual guide cloth wheel 1 speed	80	%	1-100	Provide current for manual and synchronously adjust the speed of guide cloth 1.
Synchronous/manual guide cloth wheel 2 speed	80	%	1-100	Provide current for manual and synchronously adjust the speed of guide cloth 2.
Synchronous/manual guide cloth wheel 3 speed	80	%	1-100	Provide current for manual and synchronously adjust the speed of guide cloth 3.
Synchronous/manual guide cloth wheel 4 speed	80	%	1-100	Provide current for manual and synchronously adjust the speed of guide cloth 4.
Synchronous/manual fan speed	80	%	1-100	Provide current for manual and synchronously adjust the speed of fan.
Synchronous/manual internal flow time	180	s	0-9999	For manual and synchronous internal flow starting time.
Synchronous/manual external flow time	180	s	0-9999	For manual and synchronous external flow starting time.
Synchronous/manual internal and external flow interval time	10	s	0-9999	For manual and synchronous internal and external flow interval time.
Synchronous/manual jet tank positive rotation turning number	3	round	0-9999	For manual and synchronous jet tank positive rotation turning number.
Synchronous/manual jet tank negative rotation turning n umber	3	round	0-9999	For manual and synchronous jet tank negative rotation turning number.
Synchronous/manual jet tank jetting time	30	s	0-9999	For manual and synchronous jetting time.
Manual dosing tank 1/2 ratio opening degree	80	%	1-100	For manual ratio valve opening degree (apply to shared ratio valve for the two dosing tanks).
Manual dosing tank 1 ratio opening degree	80	%	1-100	For manual ratio valve opening degree of dosing tank 1.
Manual dosing tank 2 ratio opening degree	80	%	1-100	For manual ratio valve opening degree of dosing tank 2.
Manual direct/indirect opening degree	80	%	1-100	For manual temperature control(apply to direct/indirect shared ratio valve).
Manual indirect heating opening degree	80	%	1-100	For manual indirect heating (apply to indirect temperature control independent ratio valve) .
Manual indirect cooling	80	%	1-100	For manual indirect cooling (apply to indirect temperature

opening degree				control independent ratio valve).
Manual indirect heating and cooling opening degree	80	%	1-100	For manual indirect heating and cooling (apply to indirect temperature control shared ratio valve).
Manual direct heating opening degree	80	%	1-100	For manual direct heating (apply to direct temperature control independent ratio valve).
Manual direct cooling opening degree	80	%	1-100	For manual direct cooling (apply to direct temperature control independent ratio valve).
Manual direct heating and cooling opening degree	80	%	1-100	For manual direct heating and cooling (apply to direct temperature control shared ratio valve).
Manual temperature control of main tank	85	℃	1-180	Set goal temperature for manual temperature control.
Manual swing cloth speed adjustment	80	%	0-100	Provide current for manual and synchronous adjust the speed of swing cloth.
Synchronous/manual nozzle gears	4	gear	1-4	Provide current for manual and synchronous adjustment to nozzle speed.
Nozzle the 1st opening degree	100	%	0-100	Percentage of output current at manual nozzle the 1st gear.
Nozzle the 2nd opening degree	70	%	0-100	Percentage of output current at manual nozzle the 2nd gear.
Nozzle the 3rd opening degree	40	%	0-100	Percentage of output current at manual nozzle the 3rd gear.
Nozzle the 4th opening degree	10	%	0-100	Percentage of output current at manual nozzle the 4th gear.

The above parameters are for manual operation, or functions on synchronous operation of computer and main pump. Press  into this item directly. Manual operation means pushing the manual button or knob of control box.

System Parameters			
Parameter Name	Default	Selections	Description
Language	Chinese	Chinese/English	Choose Chinese or English to display.
Indirect heating mode	Switch heating	Steam switch/steam ratio/steam switch-oil ratio/steam ratio-oil ratio	Choose "switch heating", "ratio heating", "steam switch-oil ratio"switch, "steam ratio-oil ratio" switch to start up.
Indirect cooling mode	Switch cooling	Switch cooling/ Ratio cooling	Ditto.
Direct heating mode	Switch heating	Switch heating/ Ratio heating	Ditto.
Direct cooling mode	Switch cooling	Switch cooling/ Ratio cooling	Ditto.
Direct/indirect ratio	Independent path	Independent path/ Shared path	Choose the "shared path" for direct/ indirect heating and cooling with the shared ratio valve. Choose the "independent path" for direct/ indirect heating and cooling using independent ratio valve.
Direct ratio	Independent path	Independent path/ Shared path	Choose the "shared path" for direct heating and cooling shared ratio valve. Choose the "independent path" for direct heating and cooling using independent ratio valve.
Indirect ratio	Independent path	Independent path/ Shared path	Choose the "shared path" for indirect heating and cooling shared ratio valve. Choose the "independent path" for indirect heating and cooling using independent ratio valve.
Quantitative feeding mode of dosing tank 1	Switch valve	Switch valve/ Ratio valve	Choose "switch valve" or "ratio valve" based on device configuration.
Quantitative feeding mode of dosing tank 2	Switch valve	Switch valve/ Ratio valve	Choose "switch valve" or "ratio valve" based on device configuration.
Quantitative ratio mode	Independent path	Independent path/ Shared path	Choose the "shared path" for dosing tank 1 and 2 shared ratio valve. If not, choose the "independent path".

Default operation authority	View and browsing	For view and browse/run stop/modify online, jump/ edit process	Authority to operate this order without input password and computer unlocked. See *Password management*.
Type of PLC	Mitsubishi PLC（485）	TIANFU PLC/ Mitsubishi PLC（485）/LG-PLC/XINJIE PLC/TAIDA PLC	Choose one of them to connect.HUICHUAN and HECHUAN is in common use with Mitsubishi PLC（485）.
Protocol version of PLC	T7/8-485	Protocol T7/8-485/ Protocol TF-485	Choose Protocol TF-485 for TF9000 PLC, otherwise choose Protocol T7/8-485.
Communication mode of TIANFU PLC	422/485	Interface 422/485, Interface CAN	Communication mode for TIANFU PLC with host.
Type of mechanical drawing	Airflow tank	Airflow/loose wool/normal temperature...	Choose mechanical drawing based on type of dyeing machine.

Parameter Name	Default	Unit	Range	Instruction
Local IP address				For central communication link settings.
Computer monitoring port	0		0000-9999	For central communication link settings.
Computer number	1		1-255	Communication number, corresponding with machine number
Pulse count of path 0	0.010000		0.000000-99.999999	Current per pulse, depending on pulse of flowmeter.
Pulse count of path 1	0.010000		0.000000-99.999999	Ditto.
Pulse count of path 2	0.010000		0.000000-99.999999	Ditto.
Count of TIANFU PLC	1	set	1-6	Allowed number of TIANFU PLC connected.
Spare register 1 for PLC	0		0-9999	User can define the unit of the register.
Spare register 2 for PLC	0		0-9999	Ditto.
Screen protection time	0	s	0-9999	Temperature of main tank is shown on screen protection, while no screen protection if it is set for 0.
Maximum range for main tank water level	1000	mm	0-9999	Maximum value of main tank water level in the mechanical drawing.
Maximum range for dosing tank 1 water level	1000	mm	0-9999	Maximum value of dosing tank 1 water level in the mechanical drawing.
Maximum range for dosing tank 2 water leve	1000	mm	0-9999	Maximum value of dosing tank 2 water level in the mechanical drawing.
Maximum range for sub tank water level	1000	mm	0-9999	Maximum value of sub tank water level in the mechanical drawing.
Cylinder height of main tank bottom	300	mm	0-9999	Set the cylinder height of main tank bottom, which confirm to the actual one.

Instruction of central control communication setting:
IP of dyeing machine computer and monitoring computer should be in the same local are network, whose IP address, computer monitoring port, computer number should be in correspondence. IP and number of dyeing machine can not be repeatitive. Otherwise the communication will be fault. Computer monitoring port can be repetitive.

Time/Password/ Display window definition		
Date and time to set		
Parameter Name	Range to set	Description
Date	yyyy-mm-dd	Indicates year-month-day.
Time	HH:mm:ss	Indicates hour: minute: second.

Notice: need to restart the computer after date and time are modified.		
Password management		
Type of password	Default password	Password authority
Operate process	1111	Start the process.
Manual jumping	2222	Stop or jump operating the process.
Modify online	3333	Modify process data online while process operating.
Editing process	4444	Newly build, copy, modify or delete the process, modify the prompt name.
Normal parameters	Need to request	Set and modify normal parameters, including water level conversion list, output test.
System parameters	Need to request	Set and modify system parameters, including time set.
Input/output	Need to request	Custom setting of turn on and off, simulate signal input and output.
Correct setting	Need to request	Correct the curent input signal including temperature, water level and so on.
Instruction: The authority is gradual increasing from "Running process "to " Correct setting ". Password can be modifying at the same grade and superior one can modify the junior one.		

Definition of window		
Window of simulate	Default	Define selections
Upleft window	Temperature of main tank	Temperature of main tank/dosing tank1/dosing tank 2/sub tank.
Left lower window	Temperature of dosing tank 1	Temperature of main tank/dosing tank1/dosing tank 2/sub tank
Upright window	Water level of main tank	Water level of main tank/dosing tank 1/dosing tank 2/sub tank /current of main tank/water volume list of main tank/steam flow table
Right lower window	Water level of dosing tank 1	Water level of main tank/dosing tank 1/dosing tank 2/sub tank /current of main tank/water volume table of main tank/steam flow sheet.

Client information	Default	Description
Company name	FOSHAN NANHAI TIANFU TECHNOLOGY CO., LTD.	User can define it

Fuction management		
Function name	Function property	Description
Inflow of main tank(for excample)	Define some functions of inflow: Mode: inflow controlled by water level. Water level: high. Main pump: closed.	User defines some setting value or selection in "control function" based on device characteristics and process demands, to decrease operating steps in edting process.

I/O define default input table

Path	Default name of input signal	Path	Default name of input signal	Path	Default name of input signa
X0	Low water level of main tank	X22	Call for confirmation	X44	Cloth head 4
X1	Normal water level of main tank	X23	Looking for cloth head	X45	Blocking cloth 11
X2	High water level of main tank	X24	Main pump breakdown	X46	Blocking cloth 2
X3	Low water level of dosing tank 1	X25	Main pump normal	X47	Blocking cloth 3
X4	Normal water level of dosing tank 1	X26	Fan 1 breakdown	X48	Blocking cloth 4
X5	High water level of dosing tank 1	X27	Dosing pump breakdown	X49	Soft water in
X6	Main pump/%	X28	Mechanic breakdown	X50	Hard water in
X7	Guide cloth 1 %	X29	Swing cloth breakdown	X51	High pressure signal

X8	Fan 1 %	X30	Cycle pump breakdown	X52	Overpressure signal
X9	Dosing tank 1 feeding/%	X31	Guide cloth 1 breakdown	X53	Automatic feedback
X10	Dosing tank 2 feeding/%	X32	Guide cloth 2 breakdown	X54	Running pause
X11	Dosing tank 1/2 feeding/%	X33	Guide cloth 3 breakdown	X55	Running continue
X12	Heating and cooling/%	X34	Guide cloth 4 breakdown	X56	Low water level of sub tank
X13	Indirect heating and cooling/%	X35	Fan 2 breakdown	X57	Normal water level of sub tank
X14	Indirect heating/%	X36	Fan 3 breakdown	X58	High water level of sub tank
X15	Indirect cooling/%	X37	Fan 4 breakdown	X59	Feeding into sub tank
X16	Direct heating and cooling/%	X38	Cold water in	X60	Sub tank inflow
X17	Direct heating/%	X39	Hot water in	X61	Sub tank drain
X18	Direct cooling/%	X40	Cooling by cold water	X62	Oil heating
X19	Suspend request	X41	Cloth head 1	X63	Refuel to fan
X20	Stop request	X42	Cloth head 2		
X21	Operate request	X43	Cloth head 3		

Instruction: Defalt switch input in I/O definition is corresponding to which in computer, and point M in PLC communication is in this corresponding order, which is provided by our communication protocol. Other input names not in the above list need to be defined within point 64.

I/O define default output table

Path	Default name of input signal	Path	Default name of input signal	Path	Default name of input signal
Y0	Call	Y31	Normal water level of dosing tank 1	Y62	Sub tank pump
Y1	Alarm	Y32	High water level of dosing tank 1	Y63	Sub tank drain
Y2	Sampling	Y33	Direct heating	Y64	Feeding into sub tank
Y3	End	Y34	Direct cooling	Y65	Dissolving in sub tank
Y4	Automation	Y35	Heatig by small valve	Y66	Sub tank backflow
Y5	Main pump	Y36	Drain at high temperature	Y67	Low water level of sub tank
Y6	Indirect heating	Y37	Soft water in	Y68	Normal water level of sub tank
Y7	Cooling by cold water	Y38	Hard water in	Y69	High water level of sub tank
Y8	Direct discharge	Y39	Master inflow valve	Y70	Protection of sub tank
Y9	Pressure off	Y40	Dissolving salt of dosing tank 1	Y71	Protection of dosing tank 1
Y10	Pressure on	Y41	Guide cloth wheel 1	Y72	Protection for safety
Y11	Lock the tank	Y42	Guide cloth wheel 2	Y73	Dosing tank inflow 2
Y12	Overflow sewage valve	Y43	Guide cloth wheel 3	Y74	Sub tank inflow 2
Y13	Cold water in	Y44	Guide cloth wheel 4	Y75	Dosing tank 1 stirring
Y14	Hot water in	Y45	Fan 1	Y76	Stirring water level of dosing tank 1
Y15	Drain clean water	Y46	Fan 2	Y77	Pause
Y16	Drain sewage	Y47	Fan 3	Y78	Manual temperature
Y17	Internal flow	Y48	Fan 4	Y79	From sub tank into main tank
Y18	External flow	Y49	Airflow jetting 1		
Y19	Dosing pump 1	Y50	Airflow jetting 2		
Y20	Dosing tank 1 inflow 1	Y51	Airflow jetting 3		
Y21	Dosing tank 1 drain	Y52	Cloth in		
Y22	Feeding into dosing tank 1	Y53	Cloth out		
Y23	Dissolving in dosing tank 1	Y54	Airflow cleaning		
Y24	Quantitative of dosing tank 1	Y55	Spray shower		
Y25	Dosing tank 1 backflow	Y56	Circulation pump		
Y26	Dosing tank 1 heating	Y57	Shaving		

Y27	Low water level of main tank	Y58	Swing cloth		
Y28	Normal water level of main tank	Y59	Adjust nozzle		
Y29	High water level of main tank	Y60	Sub tank heating		
Y30	Low water level of dosing tank 1	Y61	Sub tank inflow 1		

Instruction: Defalt switch output in I/O definition is corresponding to which in computer, and point M in PLC communication is in this corresponding order, which is provided by our communication protocol. Other output names not in the above list need to be defined within point 80.

Prompt definition and fault name

Prompt definition					
No.	Default name	No.	Default name	No.	Default name
0	Cloth in	9	Sampling plate	18	Hot water in
1	Cloth out	10	Preparing dyes	19	Drain clean water
2	Into tank	11	Dissolving dyes	20	Drain sewage
3	Out of tank	12	Adding auxiliary	21	Drain hot water
4	Confirm process finished	13	Adding dyes	22	Drain cold water
5	Process continue	14	Adding acid	23	Backflow
6	Pretreatment finished	15	Adding salt	24	Add soaping agent
7	Dyeing finished	16	Adding alkali	25	
8	Bath ratio	17	Cold water in	26	

◆Prompt definition setting

There are some "prompt name" for use in the computer, which user can rename or build new ones.

How to rename "prompt name":

Enter "prompt definition", push shift key, choose prompt name to modify, click "modify" key, the "prompt name"input box is poped up, then input a new name, click "OK" key and "F1" to save it. Other prompt name can be modified in this way except for "cloth in", "cloth out", "sampling plate", which are unmodified.

How to build new "prompt name":

Enter "prompt definition" item, push shift key, choose blank of prompt name to click "modify" key, the "prompt name"input box is poped up, then input a new name, click "OK" key and "F1" to save it. Other prompt name can be modified in this way. Eight Chinese characters can be used in it mostly.

Current input/out, pulse input, temperature input corresponding table

Current output				Current input			
Channel	Channel name	No.	Configuration name	Channel	Channel name	No.	Configuration name
0	Main pump speed control	0	Not defined	0	Main tank water level	0	Not defined
1	Indirect heating and cooling	1	Main pump speed control	1	Dosing tank 1 water level	1	Main tank water level
2	Indirect heating	2	Indirect heating and cooling	2	Dosing tank 2 water level	2	Dosing tank 1 water level
3	Indirect cooling	3	Indirect heating	3	Sub tankwater level	3	Dosing tank 2 water level
4	Direct heating	4	Indirect cooling	4	Main pump current	4	Sub tank water level
5	Direct cooling	5	Direct heating			5	Main pump current
6	Direct heating and cooling	6	Direct cooling			6	Main tank pressure
7	Direct/indirect	7	Direct heating and			7	Fan current

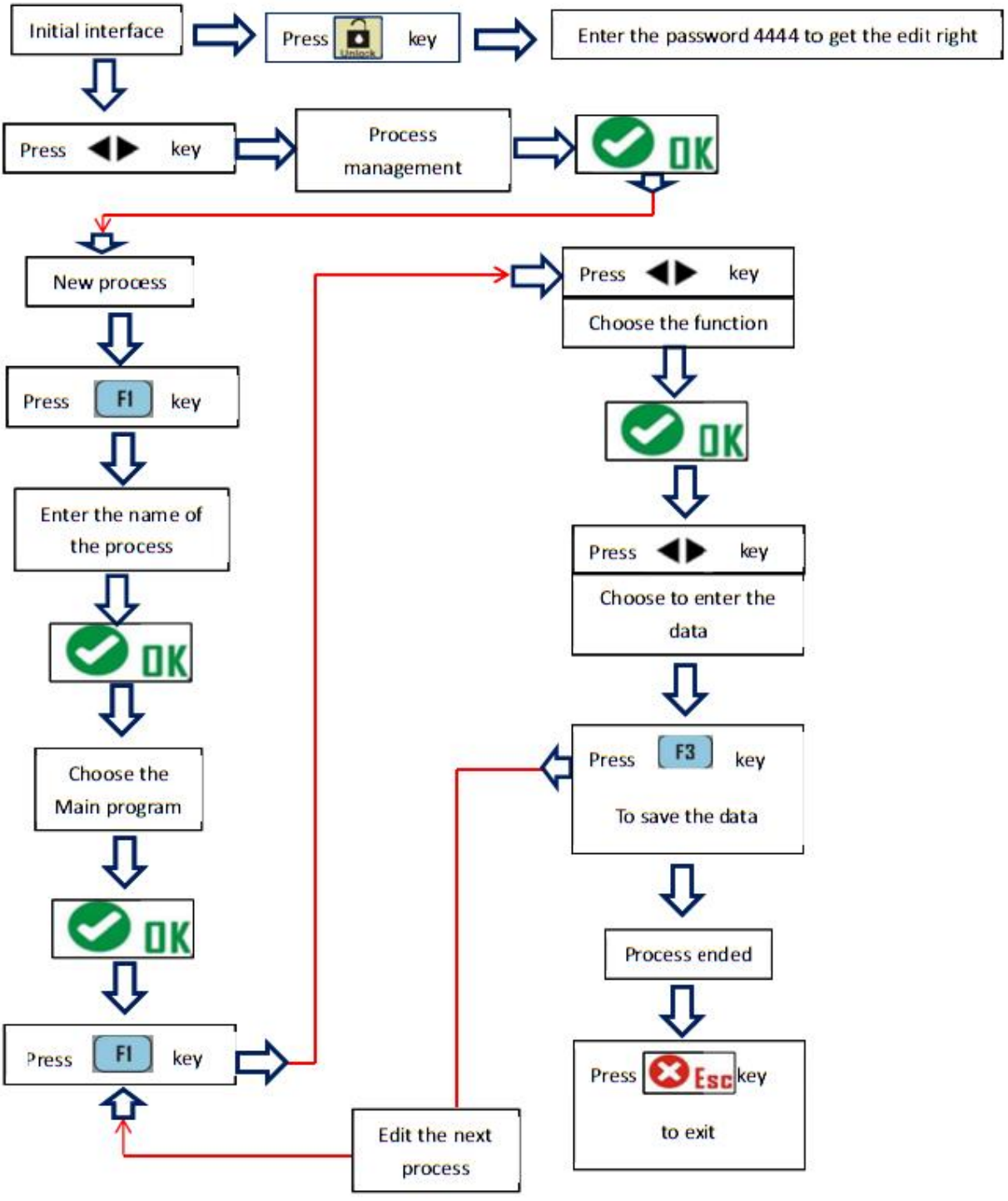
			cooling				
8	Dosing tank 1 ratio	8	Direct/indirect				
9	Dosing tank 2 ratio	9	Dosing tank 1 ratio				
10	Dosing tank 1/2 ratio	10	Dosing tank 2 ratio				
		11	Dosing tank 1/2 ratio	**Analog input and output the customized operation instructions: First click on the name to be modified in the "Channel name", then click the name item to be selected in the "Configuration name", then click the "Modify" button, the selected name item is modified in the "Channel name", and finally click the "Save"button. Customization is finished.**			
		12	Guide cloth 1 speed control				
		13	Sub tank pump				
		14	Fan 1 speed control				
		15	Guide cloth 2 speed control				
		16	Guide cloth 3 speed control				
		17	Guide cloth 4 speed control				
		18	Nozzle opening				
		19	Fan 2 speed control				
		20	Fan 3 speed control				
		21	Fan 4 speed control				
		22	Oil heating				

Pulse input					**Temperature input**			
Channel	Channel name	No.	Configuration name		Channel	Channel name	No.	Configuration name
0	Main tank water volume table	0	Main tank water volume meter		0	Main tank temperature	0	Not defined
1	Steam flow meter	1	Steam flow meter		1	Dosing tank 1 temperature	1	Main tank temperature
2	Dosing tank 1 water volume table	2	Dosing tank 1 water volume meter		2	Dosing tank 2 temperature	2	Dosing tank 1 temperature
		3	Dosing tank 2 water volume meter		3	Sub tank temperature	3	Dosing tank 2 temperature
		4	Sub tank water volume meter				4	Sub tank temperature
		5	Main pump flow meter				5	Bottom of the tank temperature
		6	Power meter					

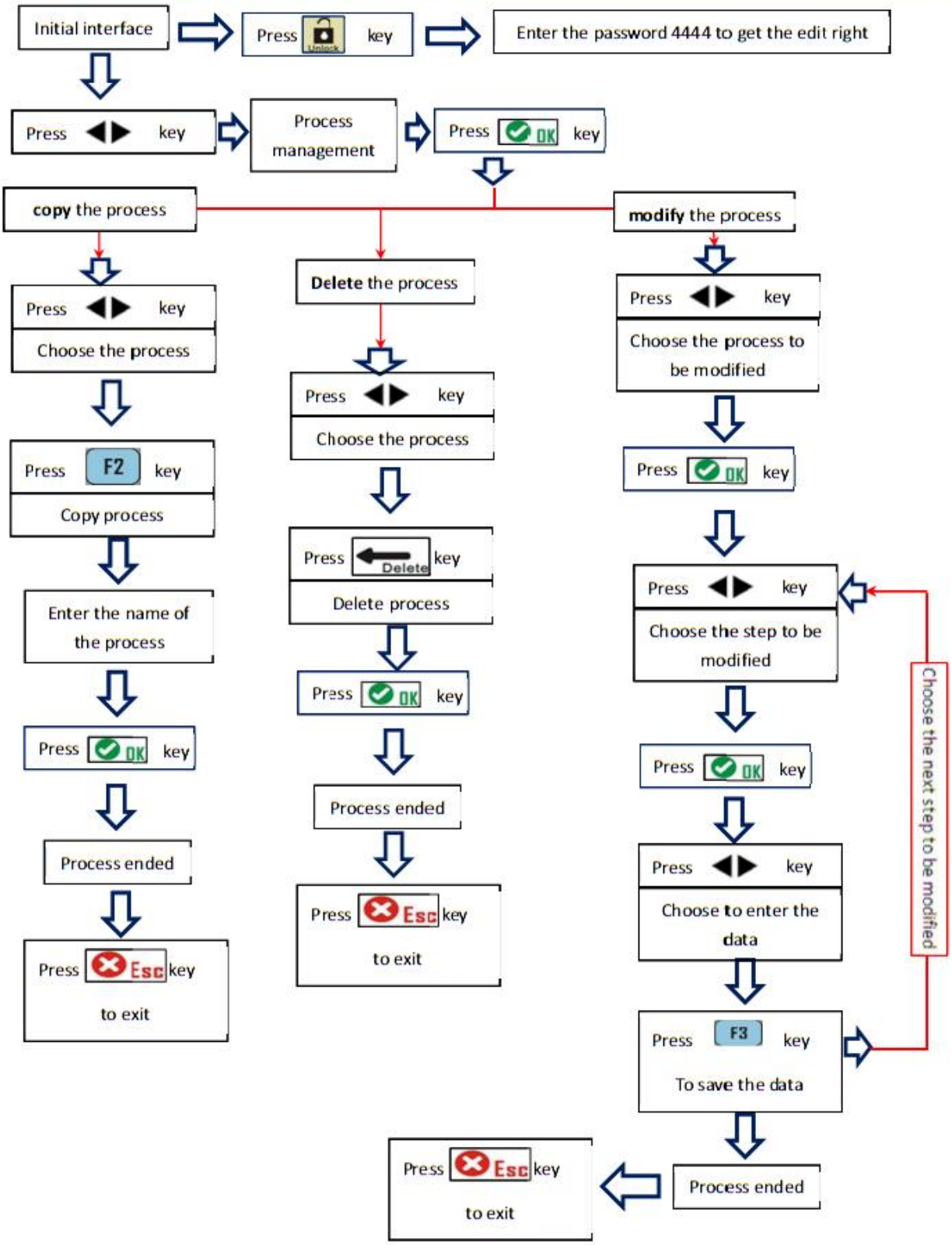
All data of the above list are factory defaults. If you do not meet the requirements of control equipment and process control, please refer to the modification or adjustment.

As the control software constantly updated and upgraded, resulting in the increase and replacement of control functions and control parameters, if the contents of the control computer are not consistent with the content of this manual, please contact our technical department.

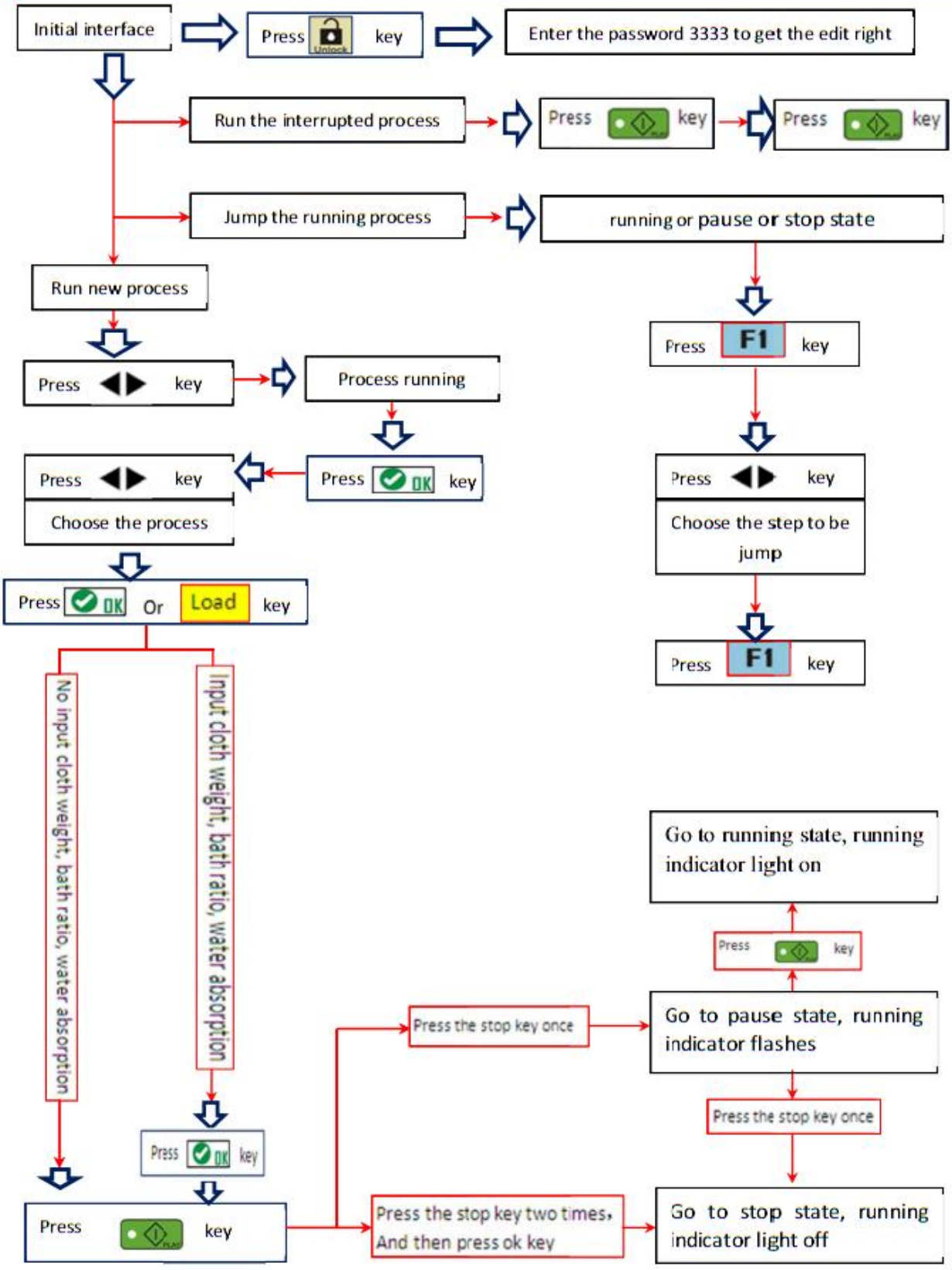
New the process（新建工艺）



modify, copy, deletethe process（修改、复制、删除工艺）



Running,pause,stop the process(运行、暂停、停止工艺)



Chapter 7 Alarm information table

Industrial control computer alarm message table

Alarm (promp)content	Alarm (promp)reason	Treatment measures
Main tank water level abnormal	When input water is running, At this time the computer detects the actual water level signal has reached or exceeded the set water level.	Check whether the water level has reached or exceeded the set water level, confirm and press the "OK" key, the computer directly goes into the next step, otherwise, press the "ESC" key, the computer is in standby mode. Check the water level sensor, channel setting or water level line.
Dosing tank 1 water level abnormal		
Dosing tank 2 water level abnormal		
Sub tank water level abnormal		
Main tank temperature abnormal	When temperature control is running, the computer detects that the actual temperature value has reached or exceeded the set temperature value.	Check whether the actual temperature has reached or exceeded the set temperature value, confirm and press the "OK" key, the computer directly goes into the next step, otherwise, press the "ESC" key, computer is in standby mode. Check the temperature sensor, channel setting or temperature probe line.
Dosing tank 2 temperature abnormal		
Sub tank temperature abnormal		
Super high temperature	The computer detects the actual temperature has reached or exceeded the highest temperature value of the main tank which is set in the computer parameters	Check the actual temperature value or temperature probe, the highest temperature value.
Super safe temperature	The computer detects the actual temperature has reached or exceeds the safe temperature value of the main tank which is set in the computer parameters.	For the function limited by the safe temperature, the actual temperature is higher than this temperature, suggesting that super safe temperature, prohibited × × work.
Heating failure	The computer detects that the actual temperature rise (cooling) rate reaches or exceeds the rate alarm deviation set by the parameter, or the actual temperature does not change	To detect valve, PT100 temperature probe, steam and so on
Cooling failure		To detect the valve, PT100 temperature probe, cooling water and so on.
The temperature is higher than the holding temperature deviation	After holding temperature, the computer detects the actual temperature deviation, to reach or exceed the holding temperature alarm deviation value set in the parameter.	Check the actual temperature value, temperature control valve, PT100 temperature probe, temperature line, steam, cooling water etc., the parameter of holding temperature alarm deviation is corrector or not.
The super highest temperature difference between main tank and bottom of the tank	The temperature difference between the detected actual temperature and the bottom temperature is reached and over the set alarm temperature difference of the main tank and the bottom of the tank.	Check the actual temperature, temperature control valve, PT100 probe, temperature detection circuit, steam, cooling water etc. Check the set alarm temperature difference of the main tank and the bottom of the tank is correct, or set "NO" for starting the bottom temperature.
PLC communication failure	Computer host and PLC are unconnected or fail to communicate.	Check whether system parameter setting "Type of PLC" and "protocol version of PLC" are correct. Check communication procedure of PLC and communication circuit.
AD board communication failure	Computer host and simulate module are unconnected or fail to communicate.	Check communication circuit. Disconnect the communication with the PLC connection, whether PLC communication failure causes the AD plate communication failure.

Probe failure	Temperature detection probe failure, unconneced or circuit is open.	Check temperature detection probe, temperature detection circuit and path setting.
Main pump failure	Signal that main pump overload or failure feedback is input.	Check the input signal of main pump failure or overload feedback.
Main pump current failure	The actual current detected by computer is over the set deviation alarm value of main pump.	Check the current input signal value of main pump, the current deviation alarm value of main pump
Cloth blocking failure	Blocking cloth feedback signal is input.	Check the input signal of blocking cloth feedback.
Dosing pump failure	Dosing pump overload or failure feedback signal is input.	Check the input signal of dosing pump overload or failure feedback.
Guide cloth failure	Guide cloth overload or failure feedback signal is input.	Check the input signal of guide cloth overload or failure feedback.
Fan failure	Fan overload or failure feedback signal is input.	Check the input signal of fan overload or failure feedback.
Stirring failure	Stirring overload or failure feedback signal is input.	Check the input signal of dosing pump overload or failure feedback.
Main pump unstarted	Control function of main pump is not edited in process.	Check whether there is control function of main pump and whether the editing is correct.
Fan unstarted	Control function of fan is not edited in process.	Check whether there is control function of fan and whether the editing is correct.
Reversal abnormal of internal and external flow	Feedback input signal of internal or external flow is not detected by computer in running the reversal control function within the time set by the parameter.	Check whether there is failure in reversing or cancel the detection function and set "NO" for "positive and negative rotation detection of internal and external flow" in control parameters list, "0" for "detection alarm time of internal and external flow" in time parameters list.
Jetting tank rotation abnormal	Positioning input signal is not detected by computer in running the jetting tank rotation function within the setting time.	Check whether there is failure in positioning proximity switch, rotating drive shaft and drive motor.
Water level abnormal and main pump unstarted	When the computer starts running, If actual water level detected by computer, does not reach the set water level of main pump starting. Main pump will not start.	Check whether actual water level, water level sensor and the parameter setting of the water level of main pump starting is correct.
Water level of main tank lower than the started water level		
Water level of main tank lower than the protected water level	In running process, if actual water level detected by computer is lower than the set protection water level of main pump. Main pump will stop.	Check whether actual water level, water level sensor and the parameter setting of the protection water level of main pump is correct.
Input water overtime	Actual water level(water volume) detected by computer do not reach the setting inflow water level(water volume)within the setting time.	Check whether actual water level(water volume), water inflow valve, water level sensor, flow meter, process water level(water volume) data and time are correct.
Output water overtime	Actual water level detected by computer does not reach the setting drainage water level within the setting time.	Check whether actual water level, drainage valve, water level sensor, process water level data and time are correct.
Input water overtime of the selected dosing tank	Similar to the reason of input water overtime of main tank	Similar to the treatment of input water overtime of main tank.

Output water overtime of the selected dosing tank	Similar to the reason of output water overtime of main tank.	Similar to the treatment of output water overtime of main tank.
Backflow overtime of the dosing tank	Similar to the reason of input water overtime of main tank.	Similar to the treatment of input water overtime of main tank.
Feeding overtime	Feeding time is up, the chemicals in dosing tank are not finished.	Check dosing valve, water level of dosing tank and water level sensor.
Feeding progress abnormal	In quantitative dosing process, when dosing too fast or too slowly and percentage deviation of actual dosing quantity and the set value (greater than 0%) of the curve, prompt the alarm.	Check dosing valve, water level of dosing tank and water level sensor.
Overflow overtime	In the water volume overflow function, water volume do not reach the set value in the setting time; In the time overflow function, water level do not reach the overflow high water level in the setting time, overflow does not start timing.	Check whether actual water level, water inflow valve, flowmeter, process water level data and overflow time is correct
Overflow water level abnormal	In the case of "limit to overflow high water level= YES", for water volume overflow or time overflow, if the time when water level is higher than overflow high water level or below or equal to overflow low water level is over the setting alarm time; In the case of "limit to overflow high water level= NO", for water volume overflow or time overflow, if the time when water level is below or equal to overflow low water level is over the setting alarm time.	Check whether actual water level, water inflow valve, overflow valve, drainage valve, process water level data and the setting of overflow high water level, overflow low water level are correct.
Overflow water volume abnormal	Within the alarm time of water volume overflow, the pulse signal is not received.	Check water inflow valve and flowmeter etc.
Airflow washing overtime	Water volume do not reach the set value in the setting time; In the time overflow function, water level do not reach the set overflow high water level in the setting time, overflow does not start timing.	Check whether actual water level, water inflow valve, overflow valve, drainage valve, process water level data and the setting of overflow high water level, overflow low water level is correct.
Cloth head finding overtime	The computer did not detect the entire cloth head signal in the setting time.	Check whether cloth tube is blocked, cloth head probe is failure, the setting of cloth tube amount and process editing is correct.

Chapter 8 Company communication address and after-sales telephone

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Tel：86-757-81201910 86-757-81201900 86-757-81201902
Fax：86-757-81201905
We chat number: fstenfull
Http：//www.tenfull.com.
E-mail：fstianfu@vip.163.com.

Directly company and overseas offices

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Add: 1102 #, 3 units, No. 1028 mid shixin Road, Xiaoshan District, Hangzhou City 311202，Zhejiang Province, China
Http：//www.hztianfu.com.cn.

Shaoxing Office
Add: Room 603, 2 Unit, 27 Building, West XingYue District, Keqiao, Shaoxing 312030, Zhejiang Province, China
Tel: 86-575-84816081 13806759631 13575589777 13357565756

Wuxi Office
Add: Room 302, No. 20, Xinghai Kangjia Garden, Qianzhou Town, Wuxi City 214181, Jiangsu Province, China
Tel: 86-510-83385071 13702743832

Shishi Office
Add: Room 203, Teachers' Building 1, No. 41 Xinxing Street, Shishi City 362700, Fujian Province, China
Tel: 86-13506082583

Qingdao Office
Tel: 86-13954255519

Puning Office
Tel: 86- 13923543617

hubei Office
Tel: 86- 13301516531

Please scan it

After-sales service Tel: 86-0757-81201902
Free Service Tel: 400-679-6233