

LABDex



**Benchtop
Hot Air Sterilizer
LX401HAS**

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1. Introduction

Benchtop Hot Air Sterilizer LX401HAS is a benchtop design, back heating, horizontal force convection with adjustable inflow and outflow air speed to ensure chamber temperature uniformity. This is utilized for the effects of poisoning caused by oxidation of microorganisms, denaturizing of protein and concentration of electrolyte under high temperature and dry heat, chiefly to destroy the cell protoplasm through oxidation and thus to kill microorganisms within a certain heating time.

2. Features

- (Internal material) 304 stainless steel working chamber and (external material) powder-coated steel housing with dual-layer toughened glass window
- PID microprocessor Temperature controller with high-speed, high-performance CPU chip
- High-sensitivity and high precision PT100 as temperature sensor
- Adjustable inflow and outflow air speed
- Preset programmed control with a timing range of up to 99 hours for power-on, power-off and working
- Multiple alarms for sensor failure, high/low-temperature deviation, over-temperature
- 10-segment temperature control program to realize temperatures stepped program operation
- Came with stainless steel shelf and users can adjust space according to their need
- Can store the parameters memory
- Temperature display calibration and dynamic self-diagnostic, control technology

3. Specifications

Model No.	LX401HAS
Chamber volume	50 L
Control	PID microprocessor
Display	LED display
Convection method	Horizontal forced convection (Fan)
Temperature control range	Room temperature +10°C~250°C
Temperature accuracy	±1°C at 100°C
Temperature fluctuation	±1°C
Temperature uniformity	±1°C at 100°C
Temperature sensor	Pt100
Timer	1min-99hr
Shelf size	366 x 340 mm
Shelf quantity (std. /max.)	2/7 pcs
Power	940W
Power supply	220V / 50Hz
Internal dimensions	420 x 350 x 350 mm
External dimensions	710 x 520 x 520 mm
Net weight	43 kg
Packing dimensions	810 x 650 x 690 mm
Gross weight	60 kg

4. Applications

Used in Industrial and mining enterprises as well as in laboratories, scientific research institutes, medical colleges and universities for drying, curing, melt, and sterilizing.

5. Instrument Introduction

5.1 Temperature indicators

1) Temperature sensor

Sensor type	Set range °C	Measurement range °C
PT100	-50.0-400.0 (max)	-55.0-420.0
K-type thermocouple	0-1200.0 (max)	-20-1220.0
S-type thermocouple	0-1600.0 (max)	-20-1620.0

- 2) NTC measures ambient temperature, acting on K-type and S-type thermocouple temperature measurement methods (Measurement range: -20.0 to 95.0 °C)
- 3) Basic error of temperature measurement value: PT100 thermal resistance<0.2% FS; K-type and S-type thermocouples<0.5% FS. (**Note:** FS – Full Scale)
- 4) The minimum resolution between temperature measurement values and set values is 0.1 °C.
PT100-type temperature units can be switched to Celsius (°C) and Fahrenheit (°F), while K-type and S-type thermocouples can only be in Celsius (°C).

5.2 Input Signal

One switch input (used for **gate control** or **water level**) determines the specific function by the parameters, and the meaning of the parameter values is 0 or none.

- 1) Alarm
- 2) Alarm and cut off heating
- 3) Gate control function.

5.3 Communication Interface

- 1) Upper computer communication: RS485 interface
- 2) Configuration screen: RS232 interface

5.4 Data Storage

It can store historical data; Operation logs and alarm records.

5.5 Timing function

- 1) **Mode functions:** Constant value mode, program mode.
- 2) **Fixed value mode:** Set time format: hours: minutes, setting range: 000:00~999h:59min; When the time is 0, it indicates that the constant value mode continues to operate.
- 3) **Program mode:** Set time format: minutes, setting range: -2 to 9999min.
 - Setting a certain period of time to 0 means running in constant value mode to the temperature of that period and jumping to the next period.

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- Set the duration to -1, indicating continuous operation of the previous temperature.
 - Set the duration to -2, indicating the end of the run.
- 4) The timing method of fixed value mode: Running timing and constant temperature timing can be selected.
 - 5) Program Mode - Segment Range: 1-100 (valid only in program mode).
 - 6) Program mode - curve temperature control mode: 0: Enter the next control segment at a fixed time; 1: After the time reaches and the temperature reaches the set value, it enters the next stage of control.

6. Software Operations

6.1 Main Interface

In the main interface, users can view the data to be controlled, the running time progress, the output status of various system controls, the input and output status of control system operations, temperature heating, reservation, door control, etc., and view alarm records.






Figure-1

6.2 Icon and button description

6.2.1 Icon Description

Name	Icon
Heating output	
Door opening status	
Stop	
Alarm	
Fan gear status	 1: 1 st gear ; 2: 2 nd gear ; 3: 3 rd gear
Working	

6.2.2 Key Description

Icon	Name	Description
	[Content]	Click to enter the [Directory Interface]
	[Alarm]	Enter the alarm recording interface to view detailed alarm content. The icon is gray when there is no alarm, and red when there is an alarm.
	[Run/Stop]	Click to pop up a sub dialog box to put the system into a running or stopping state.

6.3 Operating status

6.3.1 Running

Timing judgment in fixed value mode:

Users can set the timing method in the [Parameter Setting] → [Time Parameters] interface, as shown in the following figure:



Figure-2

- **Running timing:** After startup, it directly enters the [timing] state.
 - **Constant temperature timing:** When the deviation value between the set temperature and constant temperature timing is \leq the temperature measurement value is \leq the set temperature + constant temperature timing deviation value, the system enters the timing state from the running state.
- Program mode timing judgment:
After startup, enter the [Timing] state directly.

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6.3.2 Timing

After meeting the conditions for timing judgment, the system will enter the "Timing" state from "Running", and the timing time will start to change positively. The system will automatically switch between the "Running" and "Timing" states according to different control methods and mode conditions (Refer to [Mode Settings](#)). When the running stop condition is met, it will enter the "Stopping" state.

6.3.3 Stop

After the scheduled operation ends, the system closes all outputs and enters the [Stopping] state.

6.4 Alarm function

When an alarm occurs in the system, the buzzer will sound for a long time to prompt (press any position on the screen to cancel the beep). The alarm button in the lower-left corner of the main interface is red and displays the corresponding alarm prompt. Click to enter the alarm list interface and view the specific alarm content, as shown in the figure:



Figure-3

6.4.1 Temperature alarm

Temperature alarms include four types: Main temperature fault, environmental temperature fault, main temperature upper deviation alarm, and main temperature lower deviation alarm. Refer to the table below for details:

Alarm type	Alarm Description
Main temperature overflow	When the main temperature sensor or (connected to K/S type sensor, environmental temperature fault) temperature malfunctions, a main temperature overflow alarm is generated.

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Environmental temperature fault alarm	When the environmental temperature sensor malfunctions, an environmental temperature fault alarm is generated.
Main temperature deviation alarm	When the measured temperature of the main temperature is greater than the set value of the main temperature + the upper deviation over the temperature alarm value, there is an upper deviation alarm for the main temperature; When the measured temperature of the main temperature is less than the set value of the main temperature + the upper deviation over temperature alarm value, the upper deviation alarm of the main temperature will be restored.
Main temperature deviation alarm	When the measured temperature is less than the set value + lower deviation over the temperature alarm value and the duration exceeds the under-temperature alarm delay, there is an under-temperature deviation alarm. Setting it to 0 indicates that this function is invalid.

Users can set the values of the upper deviation over the temperature alarm value and the lower deviation over the temperature alarm value in the parameter settings → temperature parameters, as shown in the following figure:



Figure-4

6.4.2 Other alarms

Alarm type	Alarm Description
Door opening delay alarm	When the switch input function is "door control", there is a door opening alarm when "detected door opening time > door opening alarm delay".

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Switching input alarm	When the switch input function is set to "alarm" and a valid signal is detected, there is a switch input alarm.
Temperature control board communication failure	When there is a communication failure between the lower computer and the display screen, there is a display screen communication failure alarm, and the control board communication indicator light is on.

6.5 Content interface

Users can click the **"Directory"** button on the main interface to enter the directory interface. In the directory interface, users can enter the "Mode Editing", "Data Curve", "Parameter Setting", and "System Setting" interfaces. The password of the parameter setting is 3 and the system setting is 9.

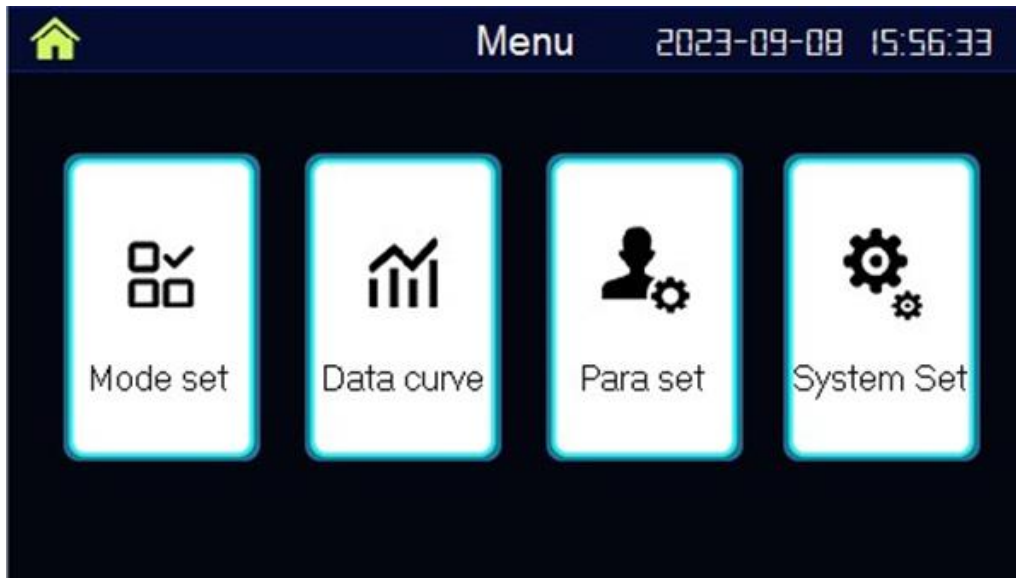


Figure-5

6.6 Mode set

The system has constant mode and program modes, the program mode has three programs and each one can set the number of segments (1-100) in each running mode of the editing program, as well as the time and temperature.

6.6.1 Fixed value mode

The constant value mode only sets one temperature control point; The temperature can be set according to the timing method selected in [Parameter Setting] → [Time Parameters], as well as whether the time setting value is set to 0.

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The working mode in the table below can be achieved:

Time setting value	Timing method	Description
For 0	---	The timing time is always 0 and runs continuously without stopping.
Not 0	Start timing	Click to run the system to start timing. When the timing reaches the set time, stop running.
	Constant temperature timing	Click to run the system to control the temperature. After reaching the constant temperature timing range, start timing. When the timing time reaches the set time, stop running.

6.6.2 Program Mode

In program mode, multiple steps can be set to control temperature and timing, as well as the number of operating segments for this mode.

Time setting value	Timing method	Description
For 0	Run timing	The system reaches the current set temperature point as quickly as possible in fixed value mode and then jumps to the next section.
Greater than 0	Timed switch achieved	Click Run to start timing the step time. After the step time reaches the set time, it will jump to the next set value to continue running. The step time will start timing again. If it is the last step, it will jump to the first step and stop running.
	Temperature reaches switch	Click Run to start timing the step time. After the step time reaches the set time and the set value range, it will jump to the next set value to continue running. If it is the last segment, it will jump to the first segment and stop running.
Equal to -1		Execute the previous temperature setting and keep running until the user presses the stop button.
Equal to -2		When the execution reaches this stage, the system automatically stops running.

6.6.3 Operation examples

6.6.3.1 Fixed (Constant) value mode

For example, set the temperature to 30.0 °C, and run for 0 hours and 30 minutes before stopping. The setting operation process is as follows: when the system is in constant value mode, click on the set value on the main interface to quickly enter the [Constant Value Mode] setting interface; When the system is in program mode, enter the directory interface and click the mode setting button to enter the [Mode Selection] interface. Select the constant value mode, and then click the **[Edit]** button to enter the [Constant Value Mode] setting interface; After setting the correct setting value, the operator can use it.



Figure-6

No.	Content	Description
1	Time setting	Click on the time text box (hour: minute) to set it to 0:30
2	Temperature setting	Click to set the constant value mode and set the temperature value

6.6.3.2 Program Mode

For example, it takes 30 minutes for the temperature to rise to 80.0 ± 0.5 °C, maintain it for 60 minutes, then the temperature needs to drop again to 50.0 °C (± 0.5 °C) after 30 minutes, maintain it for 60 minutes, and finally stop running. The settings are shown in the following table:

Number of step segments	Set time	Setting temperature
01 segment	30 minutes	80.0 °C
02 segment	60 minutes	80.0 °C
03 segment	30 minutes	50.0 °C
04 segment	60 minutes	50.0 °C
05 segment	-2	50.0 °C

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The operation process is as follows: Confirm that the constant temperature deviation value in [Parameter Setting] → [Temperature Parameters] is 0.5 °C; Ensure that the Curve Temperature Control Method in System Settings → Temperature Parameters is set to "Temperature Reaching Switch"; Enter the directory interface, click the **Pro_ 01**. Click the **[Edit]** button again to enter the [Pro_01] setting interface; After setting the correct settings, click the **[Mode Switching]** button, and it will prompt whether to modify the mode. Then click **[Confirm]** to complete the Pro_ Selection of 01.

6.7 Historical data

6.7.1 Historical Data Description

6.7.1.1 Interface description

Users can click on **[Data Curve]** in the directory interface to enter the **[Historical Data]** interface, where they can view the historical data of temperature measurement, set values, operation status, and alarm status automatically saved by the system. The sampling interval can be set, and it is saved once every 60 seconds by default.

6.7.1.2 Key description

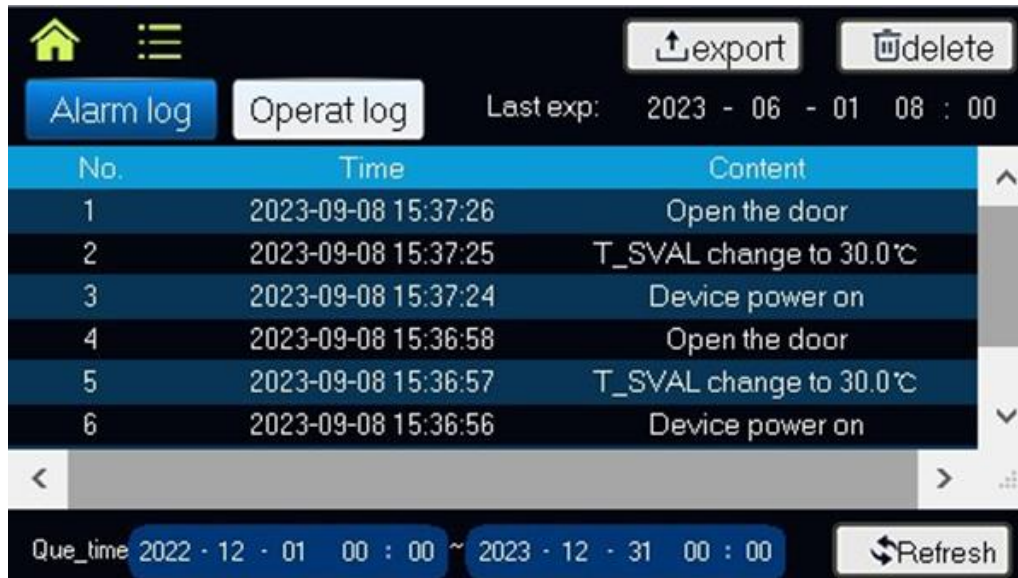


Figure-7

No.	Content	Description
1	[History Curve]	Click to enter the [Historical Curve] interface
2	[Refresh]	Click to refresh historical data once
3	[Export]	When the USB drive connection status is connected, click the [Export] to pop up a USB drive export confirmation dialog box.

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4	[Delete]	Click to pop up the confirmation dialog box for clearing data, and then click "Yes" to delete the data.
5	[Up and Down]	Slide to view historical data
6	Left and right guide blocks	Slide to view all historical data content of a single item

6.7.1.3 Export Data

If the user needs to export historical data using a USB flash drive, they can click the **[Export]** button, and a confirmation dialog box will pop up. The user should confirm that the USB flash drive has been inserted to avoid system errors. Click **OK** to complete the data export.

6.7.2 Historical Curve

Interface description

In the [Historical Curve] interface, users can view the trend of historical data curves within a day. They can modify the upper and lower limits of the vertical axis to enlarge or shrink the data curve. The curve corresponds to the data stored in the [Historical Data] (after deleting historical data, the corresponding historical curve will also be deleted, operate with caution).

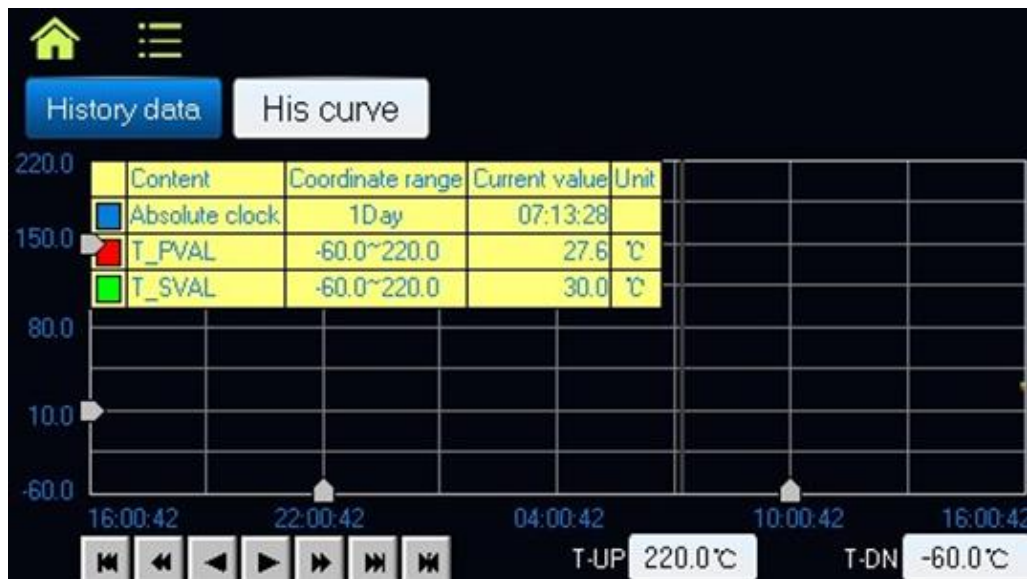


Figure-8

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6.7.3 Operation logs

6.7.3.1 Interface Description

Users can view the operation records in the [Operation Log] interface.

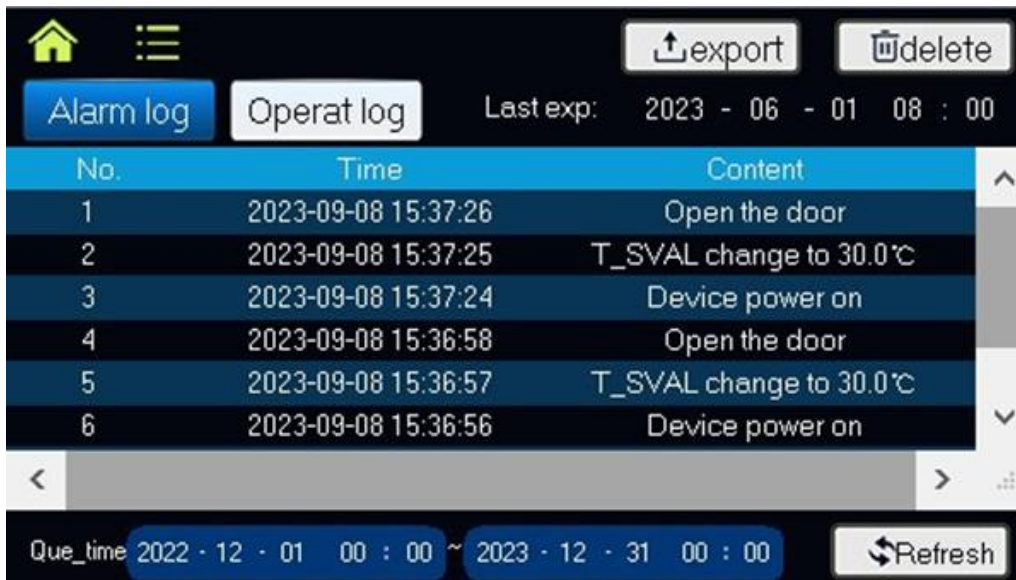


Figure-9

6.7.3.2 Key description

No.	Content	Description
1	[Alarm log]	Enter [Alarm log]
2	[Export]	When the USB drive is connected, click the [Export] button to pop up a USB drive export confirmation dialog box.
3	[Delete]	Click to pop up the confirmation dialog box for clearing logs, then click "Yes" to delete the logs.
4	[Refresh]	Operation log refresh
5	[Up and down]	Slide to view log records
6	[Left and Right]	Slide to view single log content Note 1

Note 1: The operation log includes: device startup, adding users, deleting users, changing temperature settings, system startup and operation, device door opening, login, USB export historical data, USB export alarm records, USB export operation logs, deleting historical data, deleting alarm records, and deleting operation logs.

6.8 Parameter settings

Administrators and maintenance personnel have access to the parameter setting interface, while other personnel do not have access (maintenance personnel need to enter password 3 to enter).

Note: When the user permission is **OFF**, entering password 3 is required to enter [Parameter Setting].

6.8.1 Temperature parameters



Figure-10



Figure-11

Explanation: The measured value of the main (box) temperature is referred to as PV, the set value of the main (box) temperature is referred to as SP, and the maximum value of the main (box) temperature is referred to as max. Different sensors are connected, and the maximum value varies.

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Name	Function	Initial value (set range)
Constant temperature deviation value	Constant temperature timing deviation	0.5 (0-5.0 °C)
Upper deviation over temperature alarm value	If "PV>SP + this parameter", the alarm indicator will flash, there will be an over-temperature alarm record, the over-temperature protection relay will disconnect, the buzzer will sound, and you can click any key to cancel the beep.	5.0 (0.0~50.0 °C)
Lower deviation over temperature alarm value	If PV<SP + this parameter and the duration exceeds the under-temperature alarm time, the alarm indicator will flash, there will be an under-temperature alarm record, and the buzzer will sound. You can click any key to cancel the beep. Note: When it is 0, there is no under-temperature alarm function.	0.0 (-50.0~0.0 °C)
Control cycle	Temperature control cycle	5 (1-30)
Main temperature display value	The main temperature display value facilitates deviation modification and display viewing.	
Boundary point 1 (dp1)	The temperature boundary point between high temperature PID control parameters and medium temperature PID control parameters	400 (dp2~max)
Boundary point 2 (dp2)	The temperature boundary point between medium temperature PID control parameters and low temperature PID control parameters	200 (0~dp1)
P1	High temperature proportional adjustment	30.0 (0.1-300.0)
I1	High temperature integral effect regulation	240 (1-2000 seconds)
D1	High temperature differential regulation	160 (0-1000 seconds)
Power output 1	High temperature control maximum heating output duty cycle	100 (0-100%)
P2	Medium temperature proportional regulation	30.0 (0.1-300.0)
I2	Regulation of intermediate temperature integral effect	240 (1-2000 seconds)

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D2	Medium temperature differential regulation	160 (0-1000 seconds)
Power output 2	Medium temperature control maximum heating output duty cycle	100 (0-100%)
P3	Low-temperature proportional regulation	30.0 (0.1-300.0)
I3	Low-temperature integral affects regulation	240 (1-2000 seconds)
D3	Low-temperature differential regulation	160 (0-1000 seconds)
Power output 3	Low-temperature control maximum heating output duty cycle	100 (0-100%)

6.8.2 Time parameters



Figure-12

Name	Function	Initial value (set range)
Timing method (fixed value mode is effective)	Start timing: Click the start button to start timing. Constant temperature timing: $PV \geq SV$ + Constant temperature timing deviation or $PV \leq SV$ + Constant temperature timing deviation starts timing.	Constant temperature timing
Run end prompt time	End of Run Time Interrupt Beep Prompt Time	60 (1-9999 seconds)
Appointment function	Opening and closing the appointment function	OFF

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Screen saver function	Automatic screen rest function	OFF
Turn off backlight time	After the screen saver function is turned on, the screen will automatically shut down after a certain period of time without touching the screen.	60 (15-1800 seconds)

6.8.3 Other parameters



Figure-13

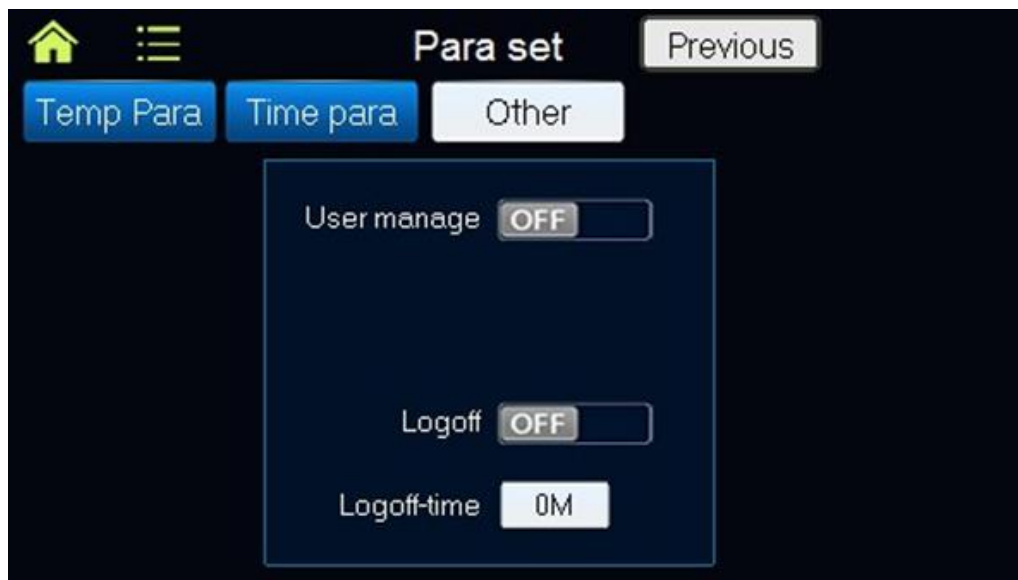


Figure-14

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Name	Function	Initial value (set range)
Power failure memory	OFF: No power-off memory function. ON: Save the operating status before the power outage, and when the system is powered on again, decide whether to run or stop based on the saved operating status.	OFF
Button beep	There is a touch prompt sound on the touch screen when opened	open
Printing function	Printing function switch	shut
Printing interval	Printer printing data interval time	60 (10~9999 seconds)
Equipment number	Manually modifiable current device number (5-digit number)	0 (5-digit number)
User permission management	User permission management can be turned on and off, and users can access the settings of user permission management after logging in	OFF
Automatic logout function	User automatic exit function	OFF
Automatic logout time	User automatic exit delay time	0 (0-9999 minutes)

6.9 System Settings

Only administrators have access to the system settings interface, and other personnel do not have access.

Note: When the user permission is OFF, entering password 9 is required to enter [System Settings].

6.9.1 Main temperature parameters

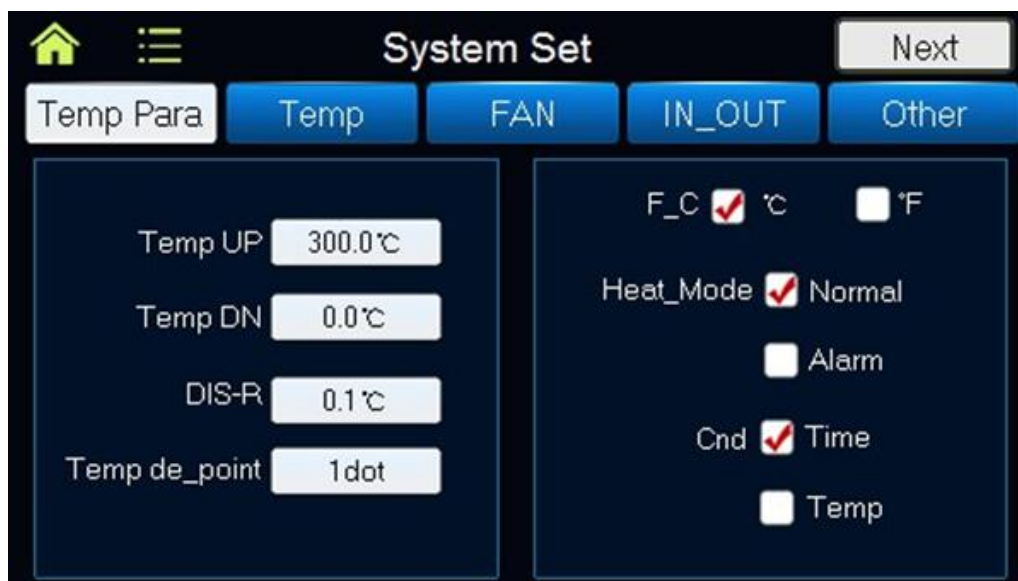


Figure-15

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Figure-16

Name	Function	Initial value (set range)
Temperature setting upper limit	The maximum value of the temperature setting value	Three hundred (Temperature setting lower limit~max)
Lower temperature setting limit	The minimum value of the temperature setting value	0 (-50.0 °C~20 °C)
Temperature insensitive zone	Temperature display insensitive zone	0.1 (0.0~1.0 °C)
Temperature decimal point	0: The main interface temperature has no decimal point 1: Main interface temperature to one decimal place	1 (0-1)
Temperature unit	0: Celsius 1: Fahrenheit degree Note: When switching, the system will prompt whether the parameters in the mode have been restored to the corresponding unit parameters. Users need to operate with caution.	1 (0-1)
Heating output mode	0: Conventional heating (solid-state relay as heating output, alarm interface as heating protection function, cycle changed to 5)	Conventional heating

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	1: Alarm heating (solid-state relay as heating protection function, alarm interface as heating output, cycle changed to 20)	
Curve temperature control method	0: Timed arrival switching (in program mode, if the set time is greater than 0 and the set time is reached, it will automatically switch to the next section of operation) 1: Temperature switch (in program mode, if the set time is greater than 0 and the set time is reached, and then the temperature measurement value reaches the set value, it will automatically switch to the next section of operation)	Timed arrival switching
Temperature sensor type	0: PT100 1: K-type thermocouple 2: S-type thermocouple	0 (0-2)
Auto tuning function	PID parameter auto-tuning function switch (self-tuning temperature needs to be ≥ 60 °C)	OFF

6.9.2 Temperature correction

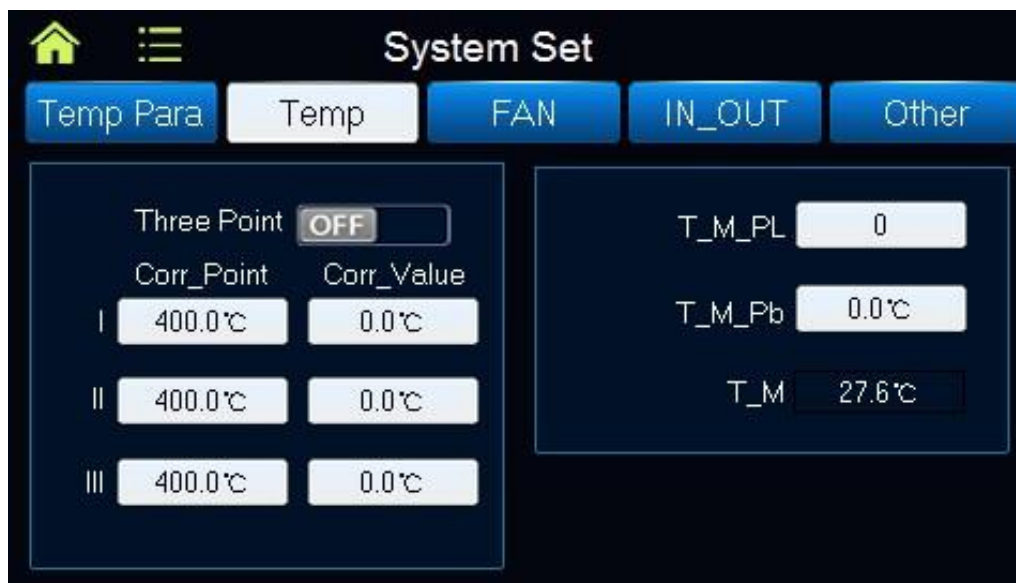


Figure-17

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Name	Function	Initial value (set range)
Main temperature three-point correction	Is the box temperature measurement value using a multi-stage correction function	OFF
Correction point 1	Low-temperature calibration point When $PV < 0\text{ }^{\circ}\text{C}$, use correction deviation 1 for temperature correction.	Four hundred (1.0 to calibration point 2)
Correction deviation 1	Correction deviation 1= Actual temperature value - PV	0.0 (-50.0~50.0 °C)
Correction point 2	High-temperature calibration point 2 When " $0\text{ }^{\circ}\text{C} \leq PV \leq$ calibration point 2", use calibration deviation 2 for temperature correction.	400.0 (calibration points 1 to 3)
Correction deviation 2	Correction deviation 2= Actual temperature value - PV	0.0 (-50.0~50.0 °C)
Correction point 3	High-temperature correction point 1 When $PV >$ calibration point 2, use calibration deviation 1 and calibration deviation 2 for temperature correction.	400.0 (calibration point 2 to max)
Correction deviation 3	Correction deviation 1= Actual temperature value - PV	0.0 (-50.0~50.0 °C)
Temperature slope correction	Correcting errors generated during temperature measurement. This parameter= Actual temperature value - instrument measurement value	0.0 (-50.0~50.0 °C)
Temperature deviation correction	Usually used to correct errors generated during high-temperature measurements. This parameter= $1000 \times (\text{Actual temperature value} - \text{instrument measurement value}) \div \text{Instrument measurement value}$.	(-999 to 999)

Three-point calibration function description:

- The range of calibration points and deviations varies with the switching of temperature unit parameters.
- When the three-point correction function is turned on, the "Temperature Slope Correction" parameter in the "Parameter Setting" ->"Temperature Parameters" is invalid.
- The "Temperature Deviation Correction" value in the "Parameter Setting" ->"Temperature Parameters" must be set to 0 first.
- When calibrating calibration point 1, it is necessary to first set the values of calibration deviation 1, calibration deviation 2, and calibration deviation 3 to 0, and then perform temperature correction on calibration point 1.

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- After the temperature correction deviation 1 is modified, if necessary, you can continue to perform temperature deviation correction on calibration point 2.
- When calibrating point 2, it is necessary to first set the values of calibration deviation 2 and calibration deviation 3 to 0, and then perform temperature correction on calibration point 2. After the temperature correction deviation 2 is modified, if necessary, you can continue to perform temperature deviation correction on calibration point 3.
- When calibrating point 3, it is necessary to first set the value of calibration deviation 3 to 0, and then perform temperature correction at calibration point 3. After the temperature correction deviation 3 is modified, the entire calibration process is completed.
- After temperature correction is completed, the "deviation correction" parameter can still be used for temperature correction.

6.9.3 Fan parameters



Figure-18

Name	Function	Initial value (set range)
Adjustable fan	OFF (0): The fan parameters are not displayed and cannot be modified. When the system is running, the fan is fully turned on and outputted; ON (1): Fan parameters are displayed and modifiable, and the fan operates according to the parameters	OFF
Fan operating mode	The working mode of the fan; Mode 0: Run the fan according to the set fan gear (FSd) Mode 1: When $PV \leq (SP \text{ constant temperature deviation})$ or $PV \geq (SP +$	0 (0-1)

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	constant temperature deviation), the fan is fully open for output; When $PV > (SP + \text{constant temperature deviation})$ and $PV < (SP - \text{constant temperature deviation})$, control the fan according to a fixed gear	
Fan 1st gear output time (FS1)	Fan 1st gear (L gear) output time	60 (30-FS2 ms)
Fan 2nd gear output time (FS2)	Fan 2nd gear (M gear) output time	130 (FS1-170 ms)

6.9.4 Input and output



Figure-19

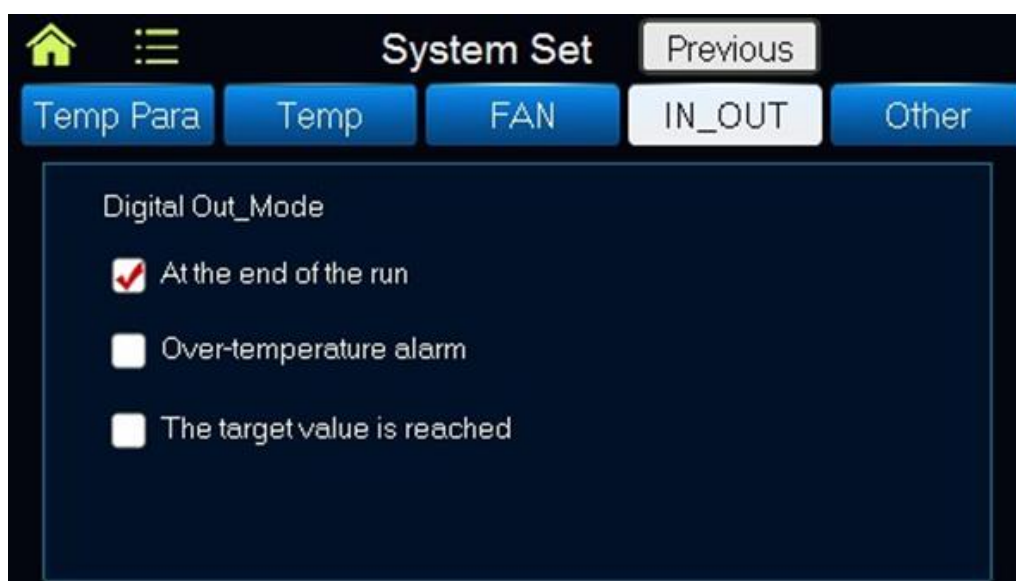


Figure-20

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Name	Function	Initial value (set range)
Switching input function	0: None, 1: Alarm, 2: Alarm and cut off heating, 3: Door control function;	(0-3) 0
Switch input alarm name	When the switch input function is 1 or 2, users can input the alarm name themselves (input is only effective when there is no alarm signal)	Switching input alarm
Switching input effective signal	When the switch input function is turned on, 0: Low level is a valid signal; 1: High level is a valid signal	(0-1) 0
Door opening delay	When the switch input function is the door control function, if the duration of the door opening exceeds this value, a door opening timeout alarm will be generated	(1-360 minutes) 5
Switching output mode	0: There is a switch output at the end of the operation. 1: When there is an over-temperature alarm, there is a switch output. 2: When reaching the target value, there is a switch output.	(0-2) 2

6.9.5 Other parameters



Figure-21

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Name	Function	Initial value (set range)
Language selection	Other/English	English
Printer selection	Thermal printer/ribbon printer	Thermal printer
Export file format	0: CSV (Excel). 1: PDF;	(0-1) 0
485 communication address	485 remote communication address	(1-32) 1
Backup parameters	Backing up all parameters to the backup area requires careful operation	
Restore parameters	Read parameters from the backup area to the save area with caution	

6.10 USB program update function

When users need to update the control board program, they no longer need to remove the control board from the device to update the program, which takes up time and delays the progress of the project. Users only need a USB flash drive to update the program on-site. The specific operation method is as follows:

- 1) Need to update the program file.
- 2) Place the program files in the root directory of the USB drive.
- 3) Click on the **"Running Status"** character for 3 seconds above the main interface, and then enter the password **8888** to enter the program update interface.
- 4) Click to start the program update.
- 5) Check the update progress. Once the update is completed, the interface will prompt that the update is complete, and the buzzer will sound twice.

Note: Before using this product, carefully read the manual for proper use. Keep this manual safe for reference at any time.

7. Accessories

Optional Accessories

S. No	Accessory Name
1	Independent temperature control and alarming system to provide dual protections and stop working in case of over-temperature
2	Inert gas port
3	Inert gas flow meter



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