



Add: NO.16, Shuijiao Gongye Road, Lichuan, Dongcheng,
Dongguan City 523000, Guangdong CHINA

Operating Instructions Temperature And Humidity Chamber



Read before Operation

Before operation this machine, please read this manual thoroughly, and keep a copy with the machine for future reference. This manual is to be considered part of your machine.

Model: NG-TH44



Catalog

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I. Product introduction:

1. Product name: Temperature and Humidity Test Chamber

2. Application industry: photoelectricity, semiconductor industry, electronics-related parts industry, household appliances, electronic gifts, stationery gifts auto parts industry and computer-related industries, etc.

3. Product introduction:

1. Simulation of industrial parts, major accessories, semi-finished products, such as: electronic parts, automotive parts, notebook computers, etc. ... in the climate environment temperature and humidity combined conditions (high and low temperature operation, storage, temperature cycle, high temperature and high humidity, low temperature and low humidity, condensation test, etc.), test the product itself and the ability to adapt to the characteristics of whether the change and reliability and temperature and humidity environment test

2. Meet the requirements of international standards (IEC, JIS, GB, MIL ...) to achieve international consistency in measurement procedures (including test procedures, conditions, methods) to avoid cognitive differences and reduce the range of measurement uncertainty factors occur.

4. Product Model:

5. Machine dimensions:

1. Inner box size: 400*400*280 mm (W×H×D)

6. Temperature and humidity range:

1. Temperature range: -40℃～+150℃ (can be set arbitrarily)
2. Humidity range: 20%～98%RH (set according to the temperature and humidity curve)

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7. Machine precision:

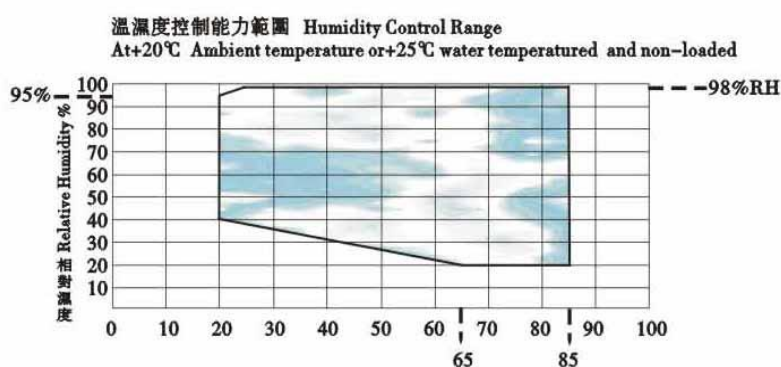
1. Resolution accuracy:
Temperature: $\pm 0.1^{\circ}\text{C}$ Humidity: $\pm 0.1\%$
2. Control Stability:
Temperature: $\pm 0.5^{\circ}\text{C}$ Humidity: $\pm 2.0\% \text{RH}$
3. Distribution uniformity
Temperature: $\pm 2.0^{\circ}\text{C}$ Humidity: $\pm 3.0\% \text{RH}$
4. Temperature limit
Maximum temperature: $+150^{\circ}\text{C}$ Minimum temperature: 0°C

8. Raising and lowering temperature speed:

Temperature rise rate : $3^{\circ}\text{C}/\text{min}$ (from 0°C to 30°C about 10 minutes) non-linear no-load

Cooling speed: $1^{\circ}\text{C}/\text{min}$ (from 30°C to 0°C for about 30 minutes) non-linear no-load

9. Temperature and humidity control capability range chart :



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II. Product illustration introduction



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III. Product installation requirements:

The machine uses the power supply:Single-phase 220V ± 10% 50HZ

Total power: 4KW

Equipment performance to ensure that the ambient temperature requirements: 0 °C ~ 30 °C

Humidifying water: Pure or distilled water must be used

***Note:** Try to ensure that this water source is as pure as possible! Groundwater is prohibited!

Fault 1	Broken Phase and Inverted Phase	①Check whether the three phases are missing or the phase sequence is wrong
Fault2	Temperature overtemperature	①Check if the fan in the box is running ②Check the alarm system
Fault 3	Humidity over temperature	①stop, open the control board to check whether the humidification bucket has water②check whether the water cup has water③ Check whether the water circuit is blocked
Fault 5	Class 1 compressor overload	① Stop the machine and check whether the condenser heat sink is blocked ②Whether the condenser fan is running well ③Check if the ambient temperature is over 30℃
Fault 6	2-stage compressor overload	①Check whether the heat dissipation is good ②Whether the 1-stage cooling is good
Fault 8	Water shortage	①Check whether the water tank has water ②Whether the water pump is working properly

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IV. Fault description:

Troubleshooting	Cause	Treatment Method
Turn on the power machine does not move	Lack of phase; power supply is not normal	Check re-powering
	No output from controller	Check if the controller PC board is working
	Control power insurance burned out	Check the cause to replace the insurance
	False operation of safety protection device	Check safety protection measures and reset manually
Can't cool down or slow to cool down	Refrigeration compressor is broken	Renew or send for repair
	Snow leak	Notify our company or ask a professional to repair
	Wind motor does not rotate or reverses	Check the cause or update
	Compressor's electromagnetic switch is broken	Check the cause Update
	Condenser sticky dust	High-pressure air nozzle blow dry net
	Poor heat dissipation of the unit	Poor installation position, repositioning installation
Temperature can not do or out of control	Temperature over-temperature protection action	Reset
	Temperature SSR damage	Inspection and replacement
	Temperature electric heating tube bad	Inspection and replacement
	Bad temperature contactor	Inspection and replacement
	Refrigeration system failure	Notify our company or ask a professional to repair
Humidity can not do or out of control	Humidity SSR damage	Check for new
	Humidity heating tube bad	Check for new
	Wet cloth does not absorb water well	Get a new one
	Water pan water level too high or too low	Adjustment of water level
	Bad humidity contactor	Check the cause for a new one
	Temperature over humidity protection action	Reset
Controller cannot be	The button does not work	Notification to the Company

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controlled	No power input	Check re-powering
	I/O board does not work	Wiring row loose re-insert good
	No display on control panel	Check the power supply or notify the company

2. The main picture

2.1 Introduction to the system main screen

The main picture of the boot and entry system is shown in the figure.



Figure [2-1] Boot-up screen

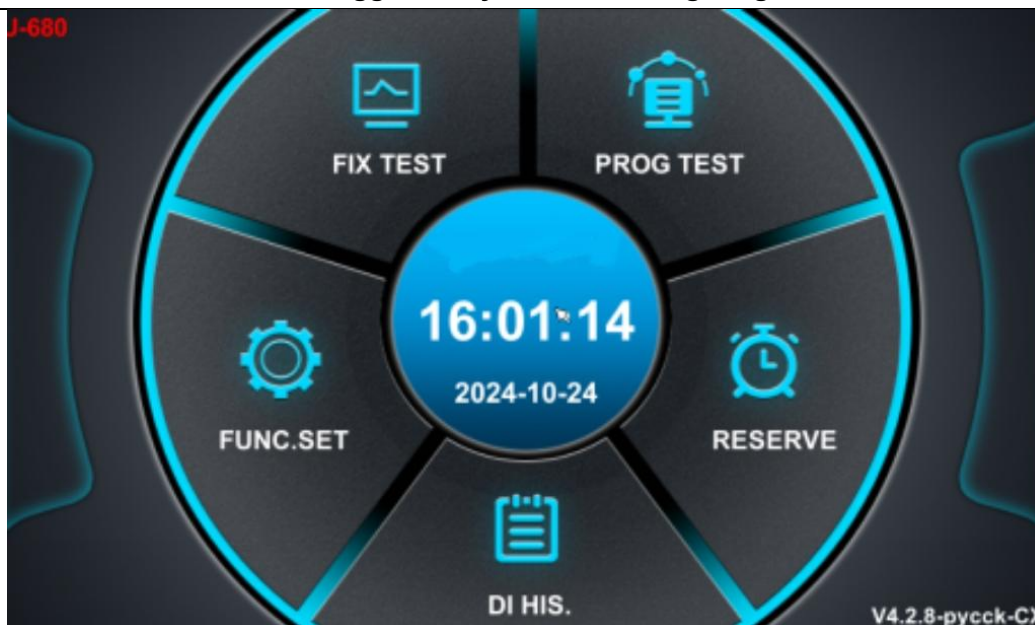
Figure [2-2], the system main screen

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name	explain
Fixed value test	Monitoring screen and test setting of fixed value test.
Program test	Program test monitoring screen and program test setting.
Operation setting	It includes six parts: language selection, startup mode, backlight time, lock button, user password, and touch screen calibration.
version number	Version number shows.
Appointm ent Settings	System time setting and reservation time setting.
failure logging	View the historical fault information.
System time	Displays the time of the current system (👉 can be modified at the reservation setting).

3. Fixed value (FIX) test

3.1 Main screen of fixed value test

Fixed value test: During the test, the set temperature and humidity will not change after the target reaches.

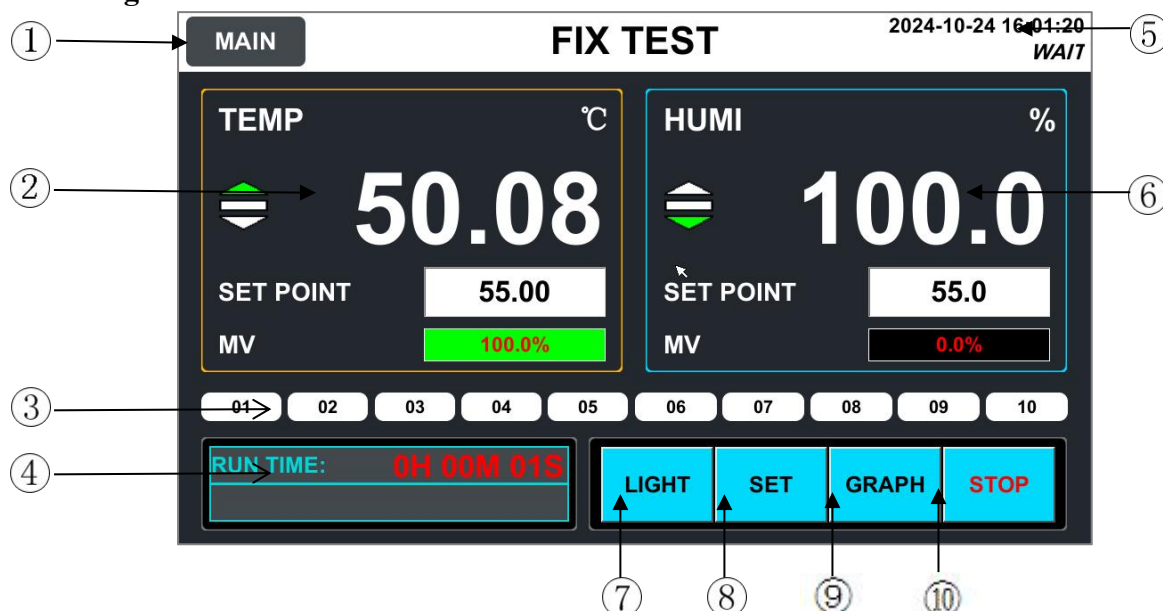


Figure [3-1] Main screen of constant test

numb er	Indicate the content	Content description
①	catalogue	Switch to the main screen.
②	temperatur e	Temperature: Display the current temperature value. Set point: Temperature Set point (setting). Power value: displays the output power of the current temperature.
③	actuating signal	Display the current test run signal. If the number turns red indicates the running signal (corresponding relay action)
④	performan ce period	Displays the running time of the current trial.

⑤	System time	Show the current system date and time.
⑥	humidity	Humidity: Display the current humidity value. Set point: Humidity Set point (setting). Power value: displays the output power of the current humidity.
⑦	lighting	Lighting buttons. Click the (lighting) key, the set relay will act.
⑧	set up	Click to enter the fixed value setting screen. See the [3-2] for specific settings
⑨	curve	Click to enter the curve setting screen. See the [3-3] for specific settings
⑩	cease	Stop / run the key.

3.2 Fixed value setting screen

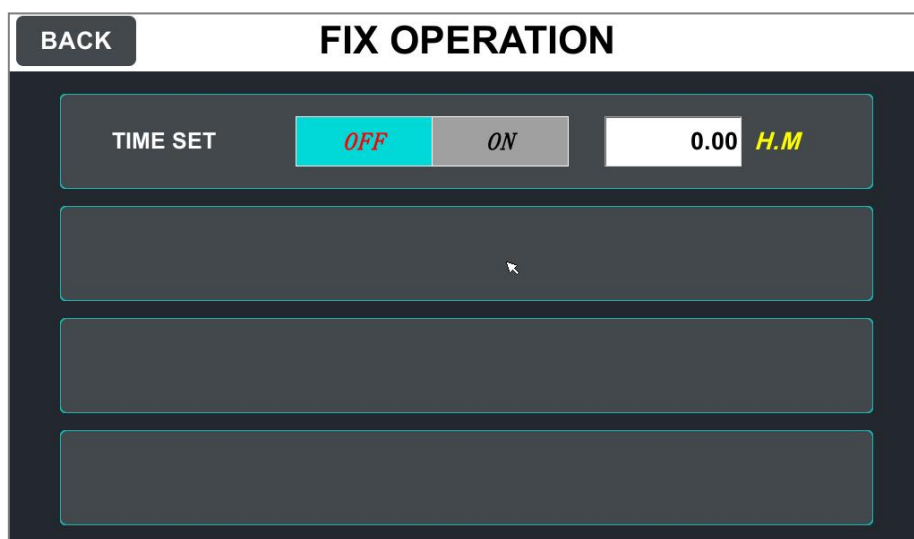


Figure [3-2] Fixed value setting

name	explain
Regular operation	The closed state value test is always running, and click the test to stop to finish the value test; The open state must be set time, if the set time is "4.00", the fixed value test will be completed after 4 hours of the fixed value test run.

3.3 Fixed value test curve screen

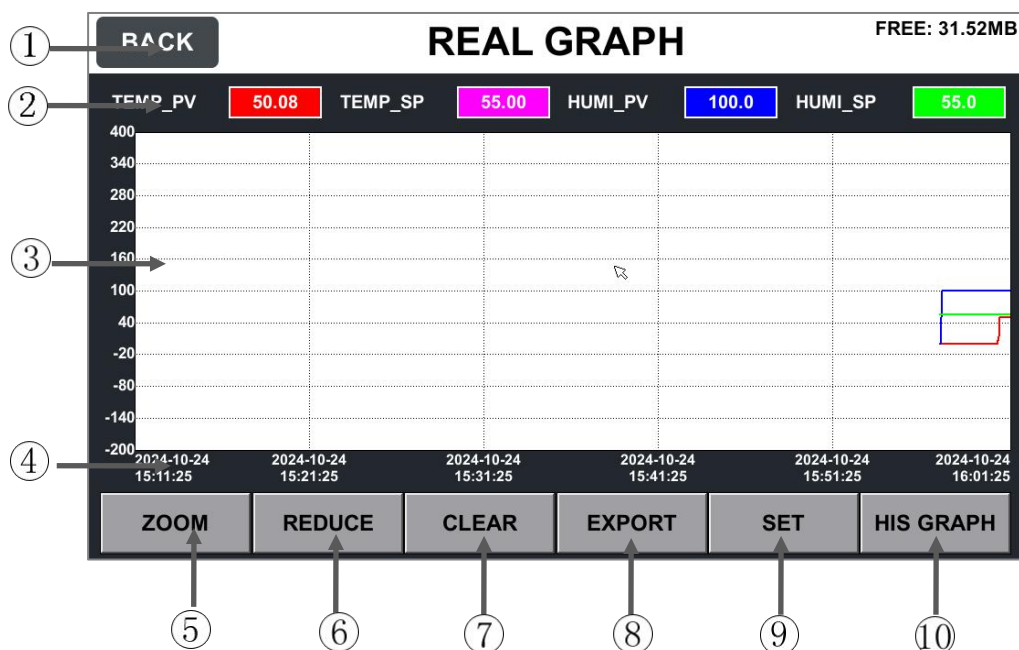


Figure [3-4] Value test curve screen

project	name	explain
①	return	Return to the test screen.
②	Temperature, humidity	Display the temperature measurement value, and the temperature setting value. Display the humidity measurement value and the humidity setting value. Note: The color of the displayed values is consistent with the color of the curve.
③	Curve scale	Display the temperature and humidity curve scale.(The scale range can be set up in the ⑨.)
④	time scale	Temperature and humidity time scale is displayed.
⑤	amplify	Click to enlarge the curve.
⑥	reduce	Click to shrink the curve.
⑦	clean up	Click to clear the current curve.
⑧	derived curve	derived curve.(This function can only be operated after U disk insertion)

		 Export the data as an EXCEL document.
⑨	set up	Click to enter the curve setting screen. See [2.2.1] for specific settings
⑩	Historical curve	Click to enter the historical historical curve screen.

3.3.1 Curve setting screen

BACK
GRAPH SET

DISPLAY RANGE

-200.0

-

400.0

SAMPLING TIME

60

S

Figure [3-5] Fixed value test curve setting screen

name	explain
return	Return the value test curve screen.
indication range	The curve scale range can be set.
period of sampling	Set the sampling time of the test data sampler, measured in seconds.



4. Program (PROGRAM) test

4.1 Main screen of program test

Program test: Change the target setting temperature and humidity for each stage during the test.

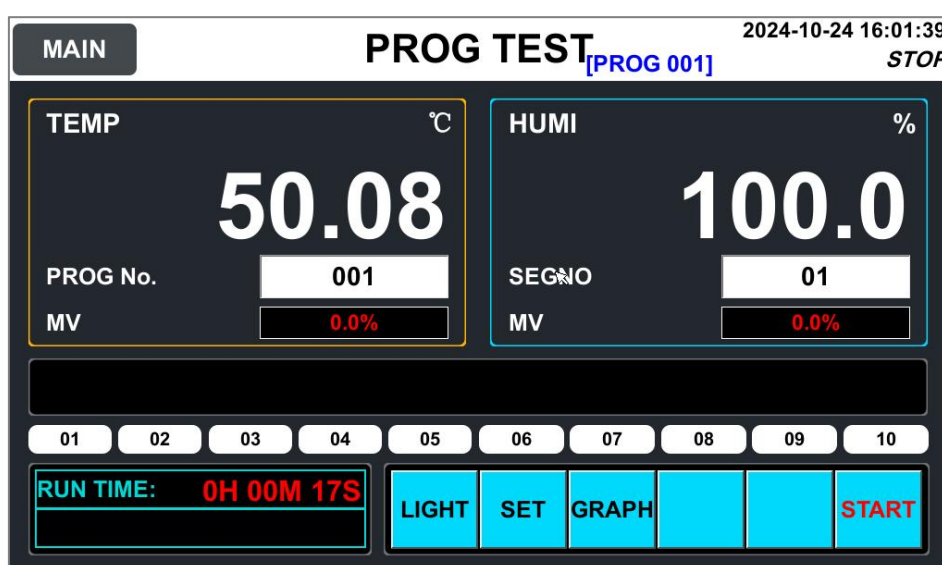


Figure [4-1] Program stop picture

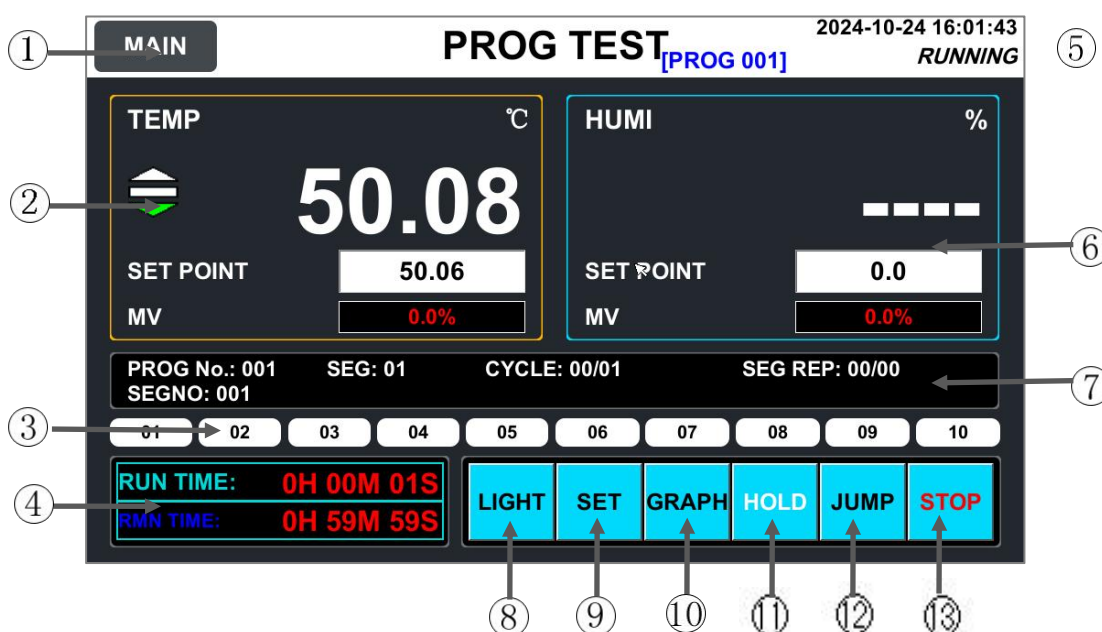


Figure [4-2] Program running picture

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project	name	explain
①	catalogue	Switch to the main screen.
②	temperature	Temperature: displays the current temperature measurement value. Set point: displays the current temperature settings. Power value: displays the output power of the current temperature.
③	Run the signal	Display the current test run signal. ☞ If the number turns red indicates the running signal (corresponding relay action)
④	performance period remaining time	Displays the running time of the current trial. Shows the time remaining for the current trial period.
⑤	System time	Show the current system date and time. Test run: It means that the current test is in operation. Trial stop: indicates that the current trial is being stopped.
⑥	humidity	Humidity: Display the current humidity value. Set point: displays the current humidity settings. Power value: displays the output power of the current humidity.
⑦	Program status is shown	Program number: It displays the currently selected program number. Segment number: displays the number of the current segment. Number of cycles: displays the number of current cycles. Number of segments cycles: displays the number of cycles of the current segment.
⑧	lighting	Lighting buttons. ☞ Click the lighting key and the window light is on (the status font displays red).
⑨	edit	Click to enter the edit screen. See [3.1] for specific settings
⑩	curve	Click to enter the curve screen. See [3.2] for specific settings
⑪	keep	Maintain the current program status.
⑫	Jump section	Jump to the next routine.
⑬	Run / Stop	White font shows the run- -indicates the trial stop state. Red font shows the stop- -indicates the test run state.

4.2 program editing

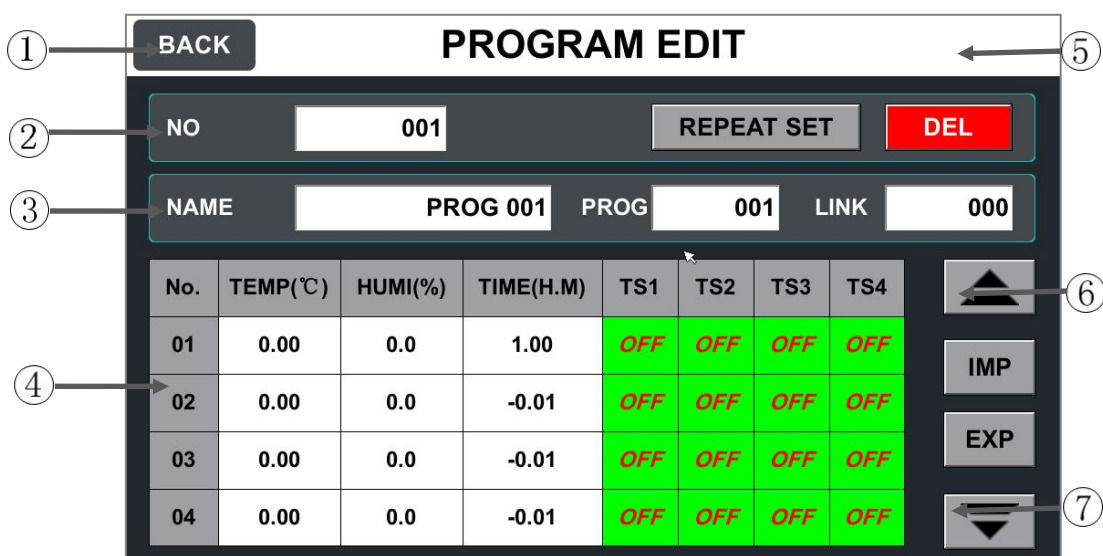


Figure [4-3] program editing screen

proje ct	name	explain
①	return	Return to the program test screen.
②	Program number	Program Number: Enter the number for the setup group.(120 maximum support groups) Partial Cycle Settings: Click to enter Partial Cycle Settings. Refer to [3-2-1] for specific settings Delete: Delete the segment. (Please select a segment before the operation, and after the execution, the selection segment will be deleted)
③	Program name	Program Name: Edit the program name. Cycle: Set the total cycle. Connection: You can set the connector program number. (If the connection is set to 003, indicating that after the current 001 program operation is completed, connect to the 003 program operation)

④	Program editor	No. No: Segment number. Temperature: Target temperature setting value for the segment. Humidity: the target humidity set value of the segment. Time: the execution time of the period.(☞ Settings-0.01 does not run this segment)
⑤	await the opportune moment	Click on Enter "Standby Settings".☞ Refer to [3-2-1] for specific settings
⑥		Click up to turn the page.
⑦		Click down to turn the page.

4.2.1 Section cycle setting

BACK

PROG REPEAT SET

No.	No.1	No.2	No.3	No.4
START SEGMENT	0	0	0	0
END SEGMENT	0	0	0	0
REPEAT	0	0	0	0

Figure [4-4] Section loop setting

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content	Content description
Set the program number	Set the program number required to perform the cycle run.
Start the number of segments	Set the programmed segment that starts a partial loop running.
End section number	Set the segment in the programmed program.
cycle index	Set the number of cycles in the program.

Note when setting up the partial cycles:

- (1) Start, the end segment number cannot exceed the maximum segment number in the current program.
- (2) The start segment number cannot be greater than or equal to the end segment number.
- (3) If the end segment number is not 0, the start segment number cannot be set to 0.
- (4) If this loop is not used, set the start and end segment number to 0 and the number of cycles is 0.
- (5) If this part cycle is used, the start and end number is not 0, and the minimum number is set to 1

give an example:

1. If the partial cycle is set as follows:

Partial cycle (No.1): Start: 02, end: 03, cycle: 02

Partial cycle (No.2): Start: 01, end: 04, cycle: 02

Partial cycle execution effect: 0102030203010202030401020304...

2. If partial cycles is set as follows:

Partial cycle (No.1): Start: 01, end: 04, cycle: 02

Partial cycle (No.2): start: 02, end: 03, cycle: 02

Effect of partial cycle execution: 01 02 03 04 01 02 03 04 02 03 02 03.....

3. If partial cycles is set as follows:

Part cycle (1): start: 01, end: 03, cycle: 02

Part cycle (2): start: 02, end: 06, cycle: 02

Part of the cycle execution effect: 01 02 03 01 02 03 02 03 04 05 06 02 03 04 05 06.....

4.2.2 Program curve setting

☞ Refer to 3.3 value curve



5. Operation Settings

5.1 Operation setting screen

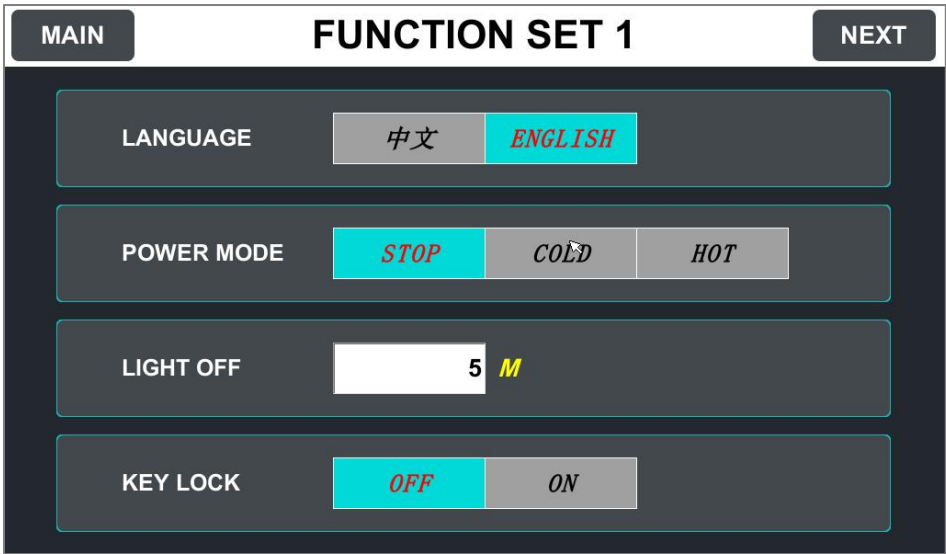


Figure [5-1] Operation Settings 1

content	Content description
language selection	Choose from Chinese or English.
starting mode	Set the power-on operation after the power failure. ☞ Stop: the operation to restore the state to the operation stop state when the power supply is restored. ☞ Cold start: restart the operation when the power supply is restored. ☞ Hot start: after the operation is interrupted, restore the power supply to restore the state to the state before the power failure.
Back lit time	Back backlight time is set, where 0 is never extinguished.
User password	Set the user parameter password.
Lock the button	When locked on, all parameters (PARAMETER) settings are not available.

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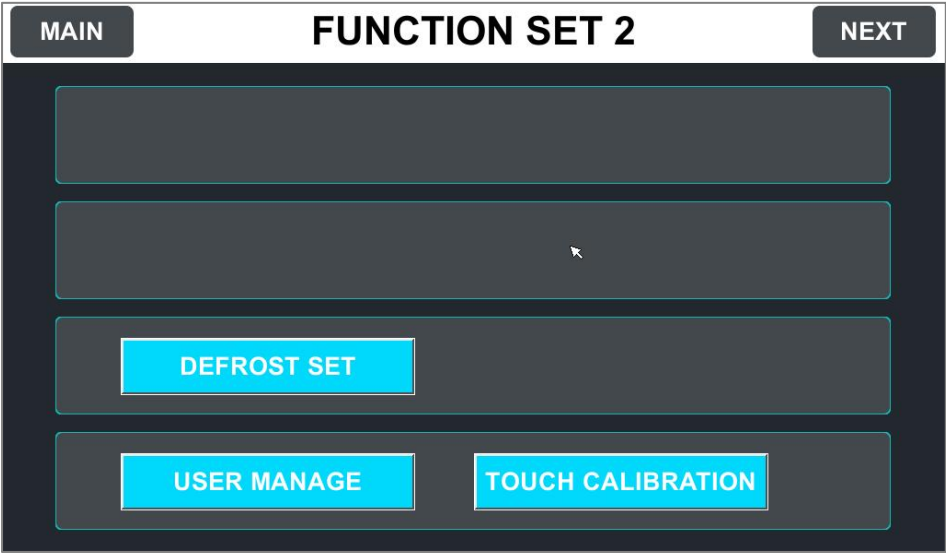


Figure [5-2] Operation Settings 2

content	Content description
Removal frost setting	Click to enter the defrosting setting interface.
user management	Click to enter the password to enter the user management interface.
Touch screen calibration	Click to enter the touch screen calibration.

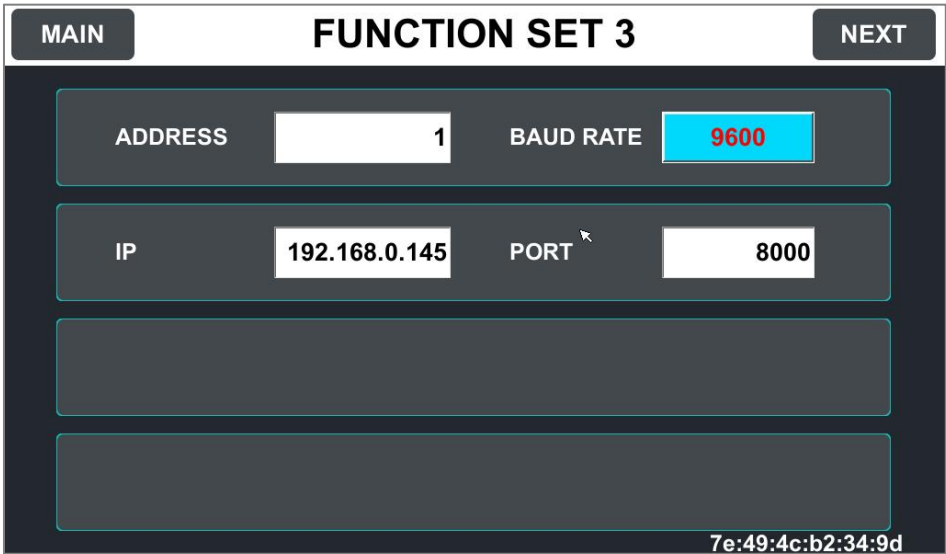


Figure [5-3] Operation Settings 3

6. Historical curve

6.1 Historical Curve

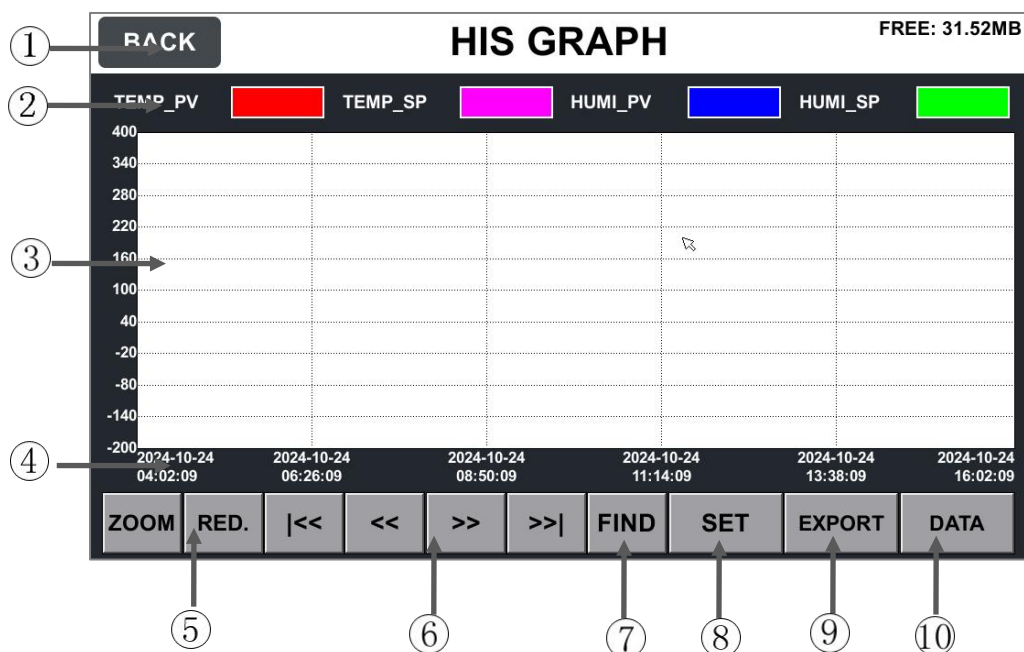


Figure [6-1] History curve

proje ct	name	explain
①	return	Return to the test screen.
②	Temperature, humidity	Display the temperature measurement value, and the temperature setting value. Display the humidity measurement value and the humidity setting value. Note: The color of the displayed values is consistent with the color of the curve.
③	Curve scale	Display the temperature and humidity curve scale.(The scale range can be set up in the ⑨.)
④	time scale	Temperature and humidity time scale is displayed.
⑤	amplify	Click to zoom in on / out of the curve.

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⑥	shuffling	The left and right movement operation of the picture is made.
⑦	seek	Find the curve.
⑧	Set up	Click to enter the curve setting screen.
⑨	derived curve	derived curve.(This function can only be operated after U disk insertion) 👉 Export the data as an EXCEL document.
⑩	Data view	Click to enter the data view screen.

6.2 Data display

BACK		HISTORY GRAPH DATA					TOTAL: 121 FIND DEL EXP
No.	DATE	TIME	TEMP_PV	TEMP_SP	HUMI_PV	HUMI_SP	
1	2024-10-24	16:01:41	50.08	55.00	100.0	55.0	
2	2024-10-24	16:01:18	50.08	55.00	100.0	55.0	
3	2024-10-24	15:54:55	50.08	50.08	100.0	100.0	
4	2024-10-24	15:54:09	50.08	55.00	100.0	55.0	
5	2024-10-23	17:14:50	50.09	39.25	----	----	
6	2024-10-23	17:13:50	50.09	40.09	----	----	
7	2024-10-23	17:12:50	50.09	40.92	----	----	
8	2024-10-23	17:11:50	50.09	41.76	----	----	
9	2024-10-23	17:10:50	50.09	42.59	----	----	
10	2024-10-23	17:09:50	50.09	43.43	----	----	

The Figure [6-2] data are shown

content	Content description
table	Display area of the data.
seek	Look for a certain history.
leading-out	Export a certain history record.
delete	Delete the history.

7. Fault record

Click the fault record in the main screen to reach the second screen and view the DI history record.

MAIN		ALARM HISTORY		NEXT	
No.	ALARM NAME	START TIME	END TIME	TOTAL: 1 FIND EXP DEL	
1	TROUBLE 1	2024-10-18 10:24:04	2024-10-18 10:26:59		
2					
3					
4					
5					
6					
7					
8					
9					
10					

Figure [7-1] DI fault record

content	Content description
No	Fault record number.
The name of the alarm	Displays the fault name.
start time	Displays the time when the failure was started.
terminal time	Displays the time when the failure has ended.
seek	Look for a certain history.
leading-out	Export a certain history record.
delete	Delete the history.

8. Appointment Settings

MAIN

RESERVE

SYSTEM TIME

2024

Y

10

M

24

D

16

H

02

M

31

S

RESERVE TIME

2025

Y

01

M

01

D

00

H

00

M

00

S

RESERVE MODE

OFF

ON

Figure [8-1] Appointment setting

content	Content description
System time	Set the system time.
appointment time	Appointment time setting
Appointment Settings	Whether to use the reservation function setting.

MAIN

FIX TEST

2024-10-24 16:02:36
STOP

TEMP

°C

50.08

SET POINT

55.00

MV

0.0%

HUMI

%

100.0

SET POINT

55.0

MV

0.0%

01

02

03

04

05

06

07

08

09

10

RUN TIME:

0H 00M 05S

RESERVE TIME:

2025-01-01 00:00:00

LIGHT

SET

GRAPH

START



Figure [8-2] Appointment display screen

9. Communication failure

- The "—————" screen will appear when the connection control board is abnormal.

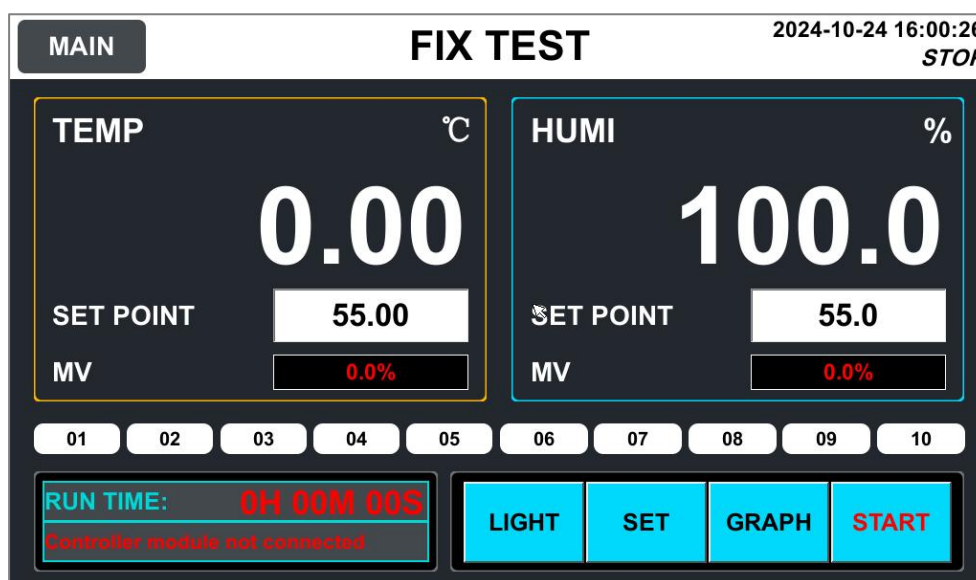


Figure [9-1] Communication failure screen

※ Cause of communication interruption phenomenon:

- ① Poor communication connection
- ② The connection status of the communication line is bad



10. Appendix

① Digital input dedicated box

PROG No. [1 - 120]							
0	1	2	3	4	+/-	←	ESC
5	6	7	8	9	.	CLR	ENT

② Set the input box of the program experiment name and the DI fault name

NAME									
PROG 001									
q	w	e	r	t	y	u	i	o	p
a	s	d	f	g	h	j	k	l	
Caps	z	x	c	v	b	n	m	←	
123/SYM	EN	,		.	ESC	OK			

③ When when beyond the set range

PROG No. [1 - 200]								INPUT ERROR	
0	1	2	3	4	+/-	←	ESC		
5	6	7	8	9	.	CLR	ENT		

④ Pop-up box

START	
NO	YES



Quality Assurance

I 、 The guarantee period is 12 months (consumer goods and travel cost are not included).

II 、 The main quality warranty maintenance certificate.

- (1) Please keep this guarantee letter, if you lost it, please connect with us in a month.
- (2) If this guarantee letter has been altered or it has no our stamp, it is useless.

III、 The following conditions need to pay reasonably even in the assurance period.

- (1) Natural reasons
- (2) Operating mistakes
- (3) Voltage is not fit for our operation instruction
- (4) Repack it without our guides
- (5) Damaged for borrowing to others
- (6) Damaged for authorized machine modification
- (7) Damaged for authorized calibration
- (8) Authorized transshipment mistake
- (9) Serve for long distance area

IV、 Notes:

- (1) Where the original in Guangdong province installation of our products, if the product moved to outside Guangdong-area use, whether or not within the effective warranty period, the transportation and travel expenses of the service personnel should be paid by the client.
- (2) All customers outside of Guangdong province, whether or not in the warranty period, the service of transportation and travel expenses paid by the customer.