

# **U-8226S-ACCU1**

**Cold thermoshock test controller**

**Instruction Manual**

**DRAFT**

## For Safety Using

Thank you for purchasing our U-8226 cooling and heating shock Controller. For proper and effective use of full functions of this instrument, please read and understand this instruction manual well before use.

To ensure safety in handling the instrument, please be sure to observe the following warnings/cautions as well as the precautions in this manual.	
 <b>Warning</b>	
General	To prevent an electric shock, be sure to disconnect this instrument from the main power supply when wiring it.
Protective grounding	(1) To prevent an electric shock, be sure to provide protective grounding before providing power supply to this instrument. (2) Do not cut off the protective grounding conductor or disconnect protective grounding.
Power supply	Check that the power supply voltage of this instrument matches that of the supply source. Rated power voltage range : 100-240VAC Rated power frequency : 50/60Hz
Environment	Do not operate this instrument in atmosphere containing inflammable, explosive or corrosive gas, or in environments where water or steam may be splashed on the product.
Input/output wiring	To prevent electric shock, be sure to provide wiring after turning off the power.
 <b>caution</b>	
Input/output wiring	Do not use the open terminals for other purposes such as relay.
Inside of instrument	Do not disassemble the inside of the main unit.

***[caution]***

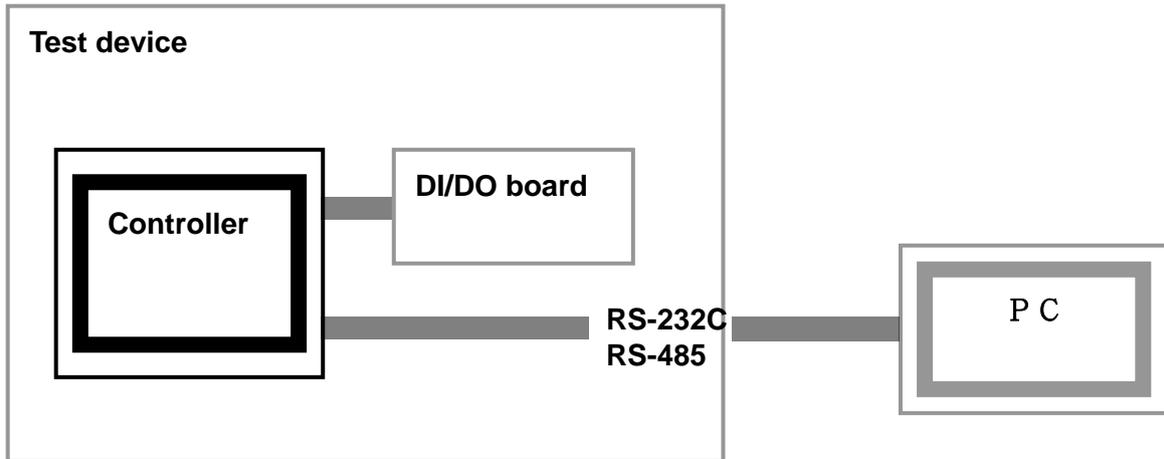
Instruction manual	<p>(1) Please deliver this instruction manual to the final user.</p> <p>(2) Be sure to read this instruction manual before handling the instrument.</p> <p>(3) If you find any questions, errors or omissions, please inform our sales representative.</p> <p>(4) When you have read this instruction manual, store it safely near the instrument.</p> <p>(5) If it is lost, stained or damaged by accident, please inform our dealer where you purchased the instrument or our sales representative.</p> <p>(6) It is forbidden to reprint or copy all or part of this instruction manual without permission.</p>
Installation	<p>(1) Please be sure to attach to a panel so that the operator who operates it cannot touch the back of this instrument.</p> <p>(2) Please attach to the point distant from what burns easily. Please do not install what burns especially easily under an instrument base.</p> <p>(3) When installing this instrument, put on a protective gear such as safety shoes, helmet, etc. for your safety.</p> <p>(4) Do not put your foot on the installed instrument or get on it, because it is dangerous.</p>
Maintenance	<p>(1) It is prohibited to remove or disassemble the unit, printed circuit board, etc. by anyone except our serviceman or persons with our approval.</p> <p>(2) When protection against dust and waterproofing performance are not needed, and when not making shakiness between an inner unit and a case into a problem, there is no problem on the performance even if it removes packing between an inner unit and a case.</p>
Disposal	To dispose of this instrument, consign to the special agent as an industrial waste.
Cleaning	<p>(1) Clean the surface of this instrument with a dry cloth.</p> <p>(2) Do not use organic solvents.</p> <p>(3) Cleaning the instrument after turning off the power.</p>
Revisions	This instruction manual may be revised without prior notice.

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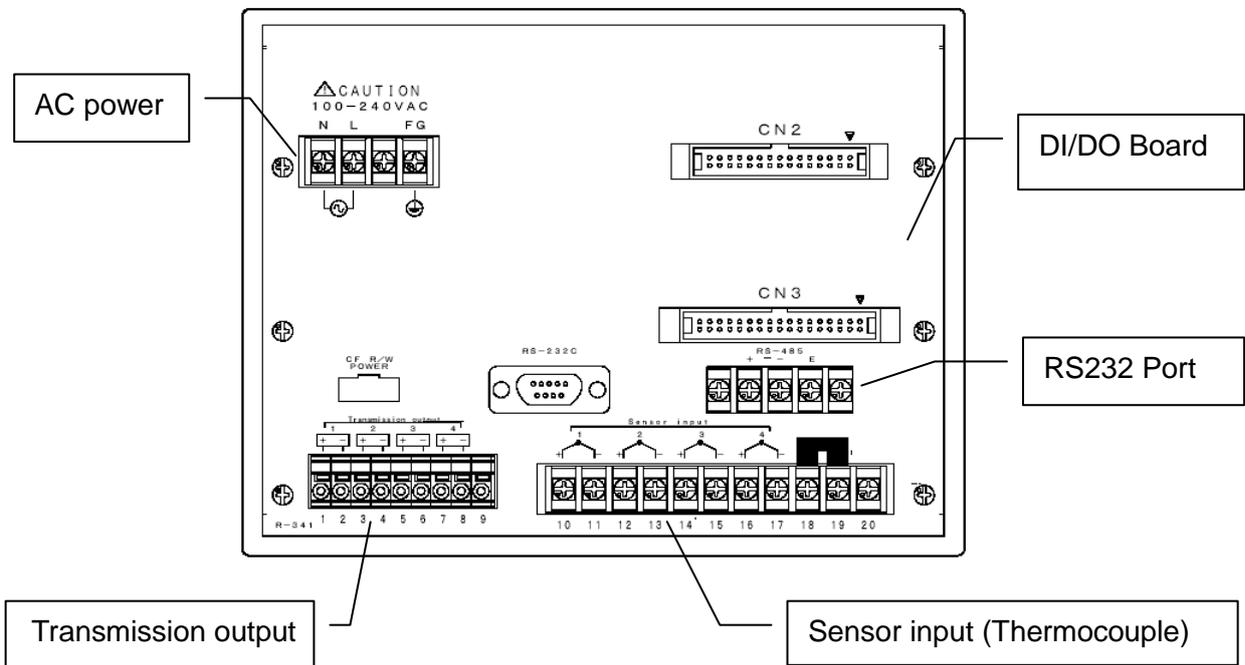
# 1. Installation

## 1.1 System diagram

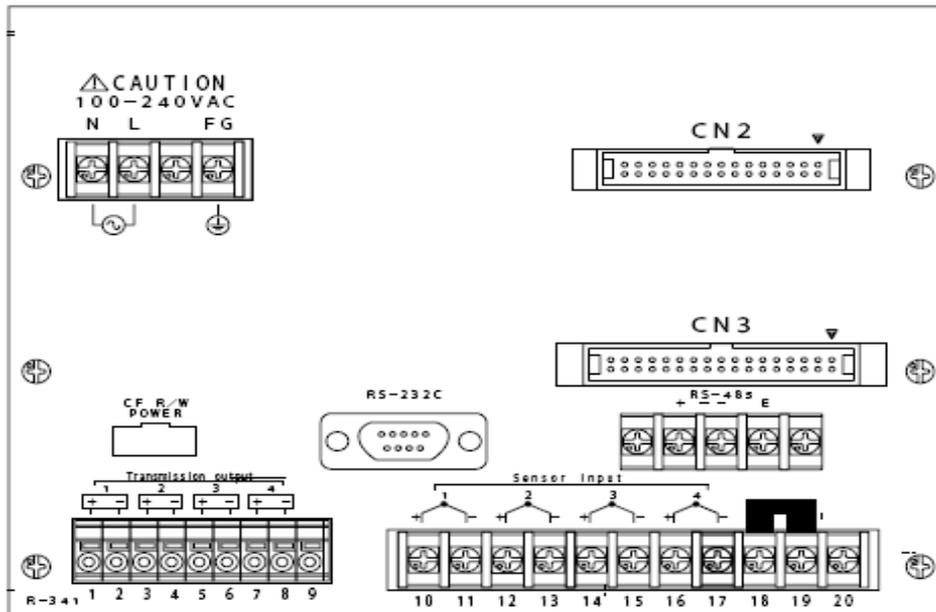


1. Controller body connect to DI/DO board.
2. Com port connect to PC.

## 1.2 Wiring



### 1.3 Relay board wiring



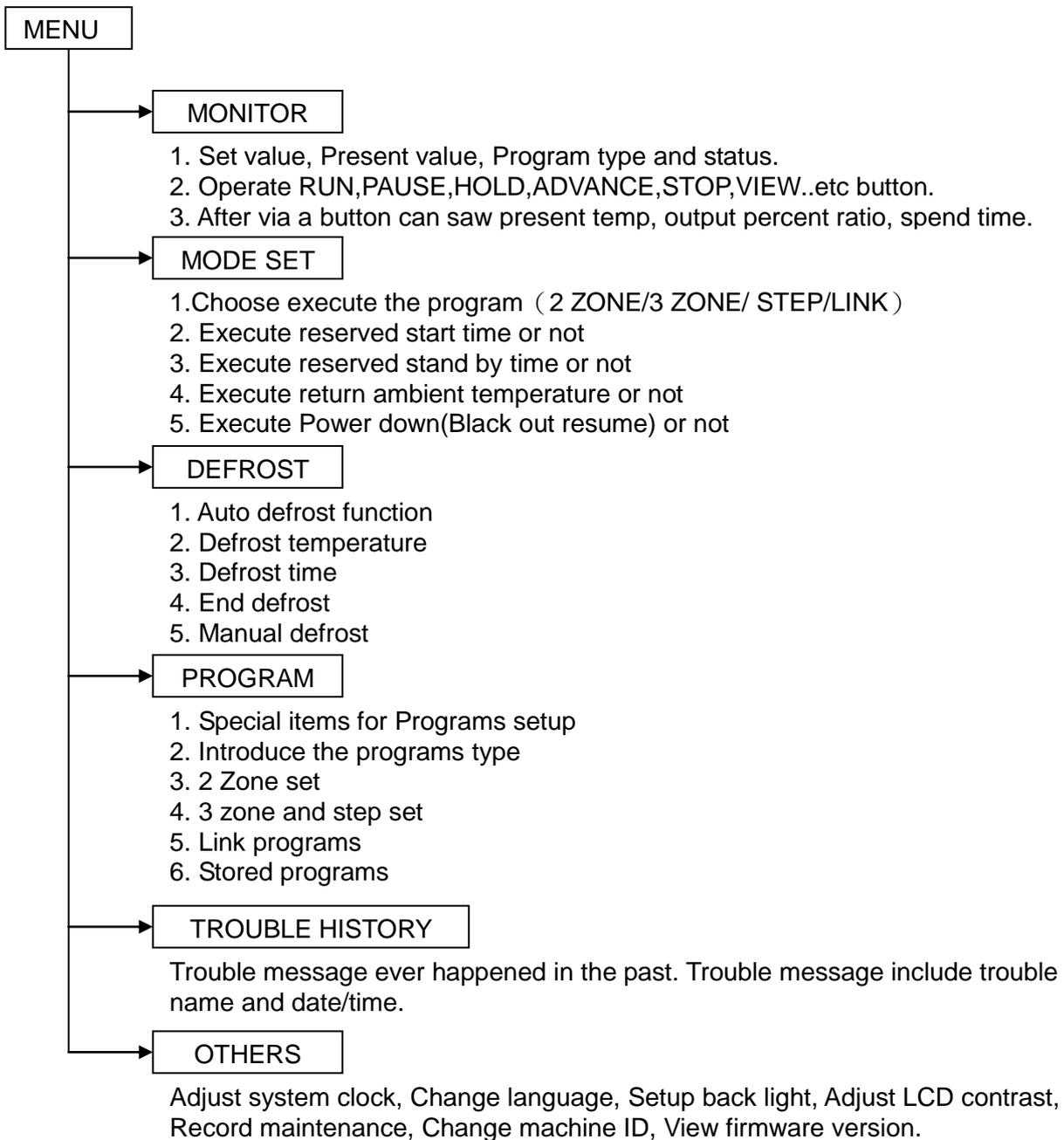
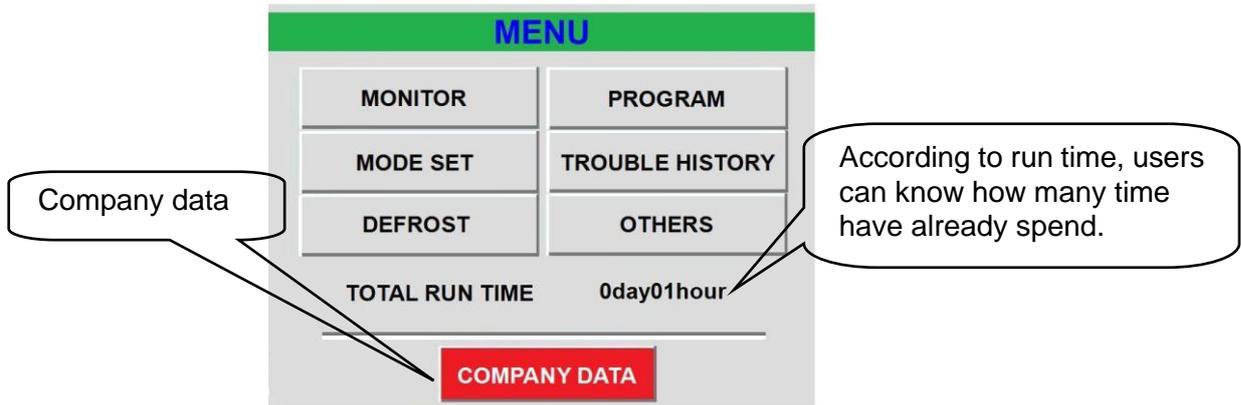
Number	CN2
	COM
1	TROUBLE1
2	TROUBLE2
3	TROUBLE3
4	TROUBLE4
5	TROUBLE5
6	TROUBLE6
7	TROUBLE7
8	TROUBLE8
9	TROUBLE9
10	TROUBLE10
11	TROUBLE11
12	TROUBLE12
13	TROUBLE13
14	TROUBLE14
15	TROUBLE15
16	TROUBLE16
17	H.DAMP. OP
18	H.DAMP. CL
19	R.DAMP. OP
20	R.DAMP. CL
21	L.DAMP. OP
22	L.DAMP. CL
23	RUN
24	STOP

Number	CN3
	COM
1	H.DUMP. OP
2	H.DUMP. CL
3	R.DUMP. OP
4	R.DUMP. CL
5	L.DUMP. OP
6	L.DUMP. CL
7	H.FAN
8	R.FAN
9	L.FAN
10	TS1
11	TS2
12	CONT
13	REF.1
14	REF.2
15	N2 GAS
16	WINDOW
17	DEFROST
18	TROUBLE
19	RUN
20	END
21	EXHAUST
22	NONE
23	L.CONTORL
24	H.CONTORL

Number		Back side of product
1	(+)	H.ROOM CONV
2	(-)	-2~3.2VDC
3	(+)	L.ROOM CONV
4	(-)	-2~3.2VDC
5	(+)	T.ROOM CONV
6	(-)	-2~3.2VDC
7		NC
8		
9		
10	(+)	H. ROOM
11	(-)	TEMP(T)
12	(+)	L. ROOM
13	(-)	TEMP(T)
14	(+)	TEST ROOM
15	(-)	TEMP(T)
16	(+)	REF.
17	(-)	TEMP(T)
18		After adjust TC, it's short in a short bar.
19		
20		NC

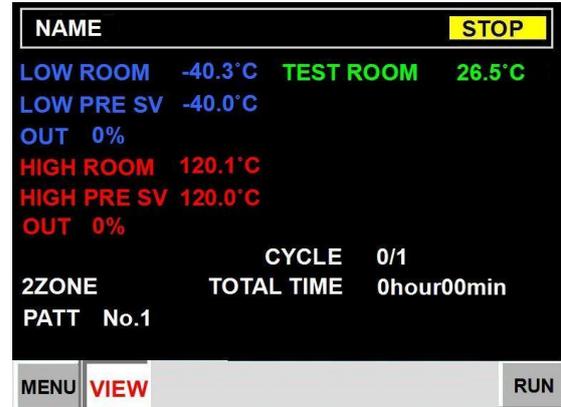
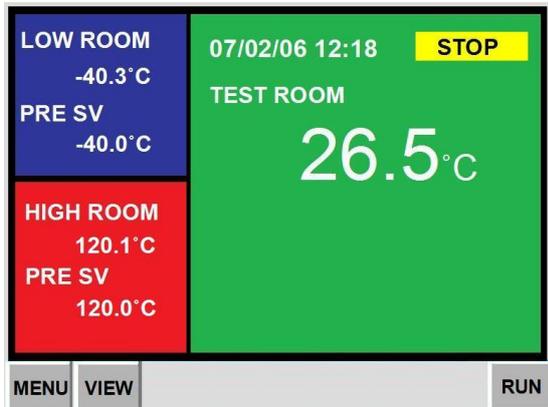
## 2. Menu Overview

The menu provides all basic operation and setting, It is convenient to choose any function that users need.



### 3. MONITOR screen explaining

When users have already setup program, the monitor screen provide users to (RUN),(STOP),(ADVANCE), (PAUSE),(HOLD) the programs. The users can see three areas, It includes Low room, High room, Test room. Also can see the present output percent ratio and more the others details.

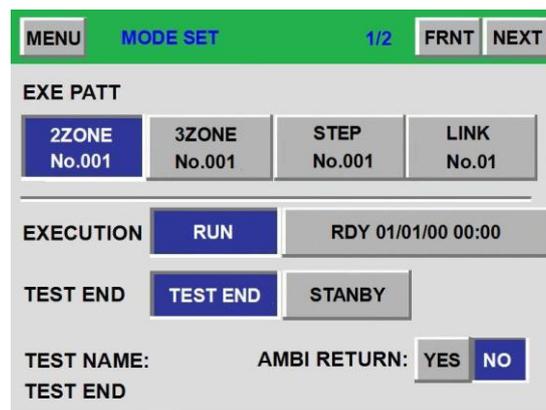


### 4. MODE SET Screen explaining

When users have setup the programs function, MODE SET screen provide the others detail settings for users. Such as execute reserved start time or not, execute reserved stand by time or not, execute return ambient temperature or not, power down( Black out resume)or not. Remember to choose execute patterns(programs).

#### 4.1 Choose execute pattern

Before setup mode set , must choose execute pattern, such as 2 zone, 3 zone, step, link. then continue next setup.



## 4.2 Execute reserved start time or not

There have two execute methods in reserved start time.

**RUN:** Normal setting, give up reserved start time.

**Ready:** Reserved start time, Month/Day/Hour/Minute.

The screenshot shows the 'MODE SET' menu with the following options:

- EXE PATT:** 2ZONE No.001, 3ZONE No.001, STEP No.001, LINK No.01
- EXECUTION:** RUN (selected), RDY 01/01/00 00:00
- TEST END:** TEST END (selected), STANBY
- TEST NAME:** TEST END
- AMBI RETURN:** YES (selected), NO

## 4.3 Execute reserved stand by time or not

When a program have finished running , users can choose **TEST END** or **STANBY** . If a user choose **TEST END** ,when a program have finish running, then a program will test end. If a users choose **STANBY** , when a program have finish running, then a program will stand by, after stand by time, a program will turn off. Time setup range:00hr00min~99hr59min.

The screenshot shows the 'MODE SET' menu with the following options:

- EXE PATT:** 2ZONE No.001, 3ZONE No.001, STEP No.001, LINK No.01
- EXECUTION:** RUN, RDY 01/01/00 00:00
- TEST END:** TEST END (selected), STANBY
- TEST NAME:** TEST END
- AMBI RETURN:** YES, NO (selected)

The screenshot shows the 'MODE SET' menu with the following options:

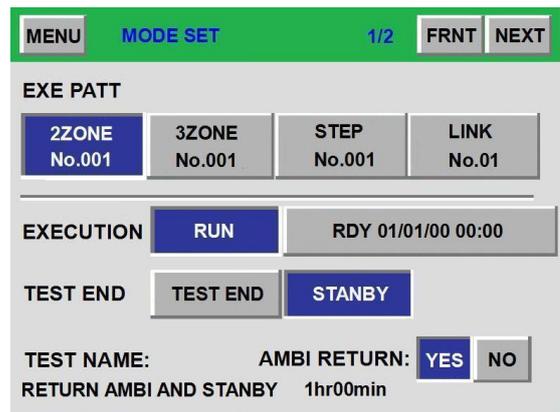
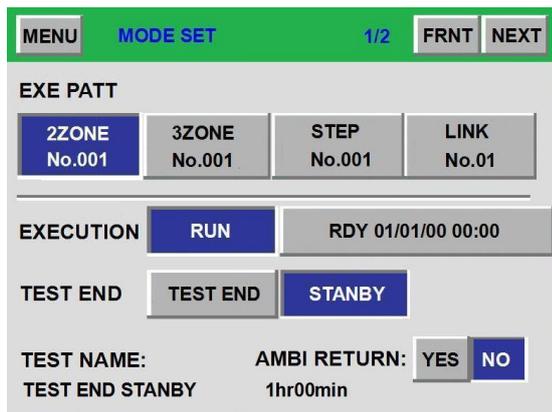
- EXE PATT:** 2ZONE No.001, 3ZONE No.001, STEP No.001, LINK No.01
- EXECUTION:** RUN, RDY 01/01/00 00:00
- TEST END:** TEST END, STANBY (selected)
- TEST NAME:** TEST END STANBY
- AMBI RETURN:** YES, NO
- TEST END STANBY:** 1hr00min

The screenshot shows the 'STANBY TIME' input screen with the following options:

- EXE PATT:** 2ZONE No.001, 3ZONE No.001, STEP No.001, LINK No.01
- EXECUTION:** RUN, RDY 01/01/00 00:00
- STANBY TIME:** 01hr00min
- Keypad:** 0-9, ., ←, ↓, ESC

#### 4.4 Execute return ambient temperature or not

When a program have finished running , depend on a user demand, back to ambient temp or not.  
 Ambient temp setup range:0~50°C.Factory default:15~35°C.



#### 4.5 Execute Power down(Black out resume) or not

When a controller is running a program, because unknown factors then a controller power off, after restarting, there are three situations can be selected.

**STOP:** When users turn on the power, appear RST button, then push it. The program is stop.

**COLD:** When users turn on the power, the system give up normal process, return back to the first process.

**HOT:** When users turn on the power, a controller continue the present process.



## 5. DEFROST screen explaining

Setup auto defrost function, defrost temperature, defrost time, end defrost.

Notice: Auto defrosts or manual defrost is only exist in high temp.

### 5.1 Auto defrost function

**Cycle:** Calculate auto defrost by cycle. **Time** : Calculate auto defrost by time. **Off** : Turn off auto defrost function. Suggest auto defrost select cycle will be great, 120 cycle is maximum, if cycles is too more, low temp performance will be bad.

MENU DEFROST 1/2 NEXT

AUTO DEF. MODE **CYC.** TIME OFF

START CYCLE EVERY 0010cycle 0/10

DEF. TEMP 10°C

DEF. TIME 10min

MENU DEFROST 1/2 NEXT

AUTO DEF. MODE CYC. **TIME** OFF

START TIME EVERY 0010hour 0/10

DEF. TEMP 10°C

DEF. TIME 10min

MENU DEFROST 1/2 NEXT

AUTO DEF. MODE CYC. TIME **OFF**

DEF. TEMP 10°C

DEF. TIME 10min

### 5.2 Defrost temperature

Setup defrost temperature more high, it need more time to finish defrost. Suggest temperature will be 10°C.

MENU DEFROST 1/2 NEXT

AUTO DEF. MODE **CYC.** TIME OFF

START CYCLE EVERY 0010cycle 0/10

DEF. TEMP 10°C

DEF. TIME 10min

### 5.3 Defrost time

When defrosts the temperature to arrive, defrosts the delay time only then to start to calculate, generally suggested that the time is 5~10 minutes.

MENU DEFROST 1/2 NEXT

AUTO DEF. MODE **CYC.** TIME OFF

START CYCLE EVERY 0010cycle 0/10

DEF. TEMP 10°C

DEF. TIME 10min

### 5.4 End defrost

Users may suppose when the settled experiment ended, whether needs once more to carry out one time to defrost the movement.

MENU DEFROST 2/2 NEXT

END DEF. YES NO

### 5.5 Manual defrost

In the low temperature area, if users have a demand, they can choose manual defrost, this screen only exist when a program is running.

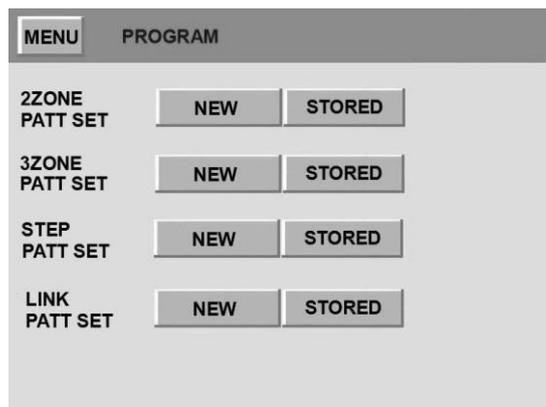
MENU DEFROST 2/2 NEXT

END DEF. YES NO

MANUAL DEF. RUN STOP

## 6. PROGRAM screen explaining

There are four kinds of program to be selected. such as 2Zones,3Zones,Step,Link.



Program screen

### 6.1 Special items for Programs setup

**6.1.1** When a program is running, get into stored program can't change a running program(Red color).

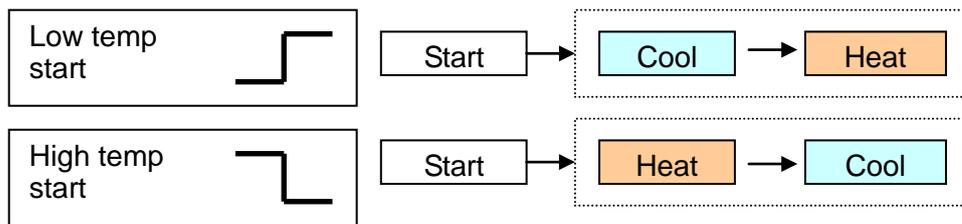
**6.1.2** After setup a new program, remember back to MODE SET screen, setup all of function that you need.

Then back to Program screen to push (RUN) button. If you neglect MODE SET screen, push(RUN)button directly, it's also fine, all setup according to your demand.

## 6.2 Introduce the program type

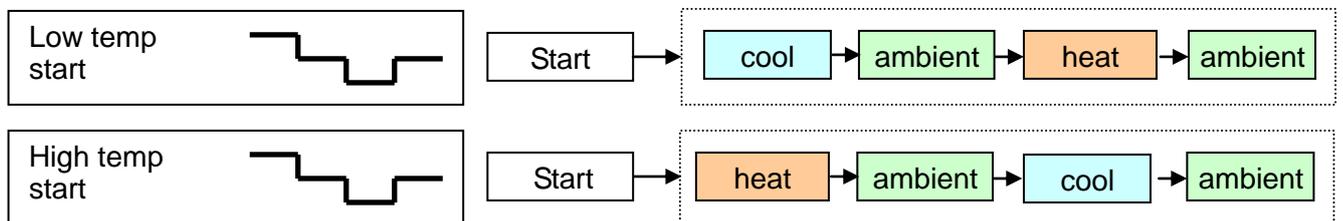
### 6.2.1 2 ZONE Pattern(Program)

When test condition between heating and cooling, please choose 2ZONE Pattern(Program).



### 6.2.2 3 ZONE Pattern(Program)

When test condition between heating and ambient temp and cooling, please choose 3ZONE Pattern(Program).



### 6.2.3 Step Pattern (Program)

Users can setup program flexibly, no limit.

### 6.2.4 Link Pattern(Program)

Link pattern combine 2 zone, 3zone,step.It provide users more flexibility.

## 6.3 2 Zone set

When test condition between heating and cooling.

The screenshot shows the '2ZONE SET' menu. At the top, there's a 'MENU' button and the title '2ZONE SET'. Below that, a 'TEST NAME' field is empty. To its right, there's a 'WAIT' section with 'H L' and '-00 +00' options. The 'PATT' is 'No001', 'CYCLE' is '0001', and 'START TEST' is set to 'HIGH'. Below this is a table with columns: STEP, TEST, TEMP, TIME, PRE, WAIT, SIG. The first row (STEP 1) is highlighted in yellow and shows 'HIGH', '0000.0', '000H00M', '0000.0', '--', '--'. The second row (STEP 2) is highlighted in blue and shows 'LOW', '0000.0', '000H00M', '0000.0', '--', '--'. At the bottom, there are buttons for 'RUN', 'DELETE', 'SET', and navigation arrows.

2Zone setup

### 6.3.1 Test name type in

Users can type in any test name that they like. Test name make a program easy to remember.

This screenshot is identical to the one above, but the 'TEST NAME' field is highlighted in grey, indicating it is the active input field.

This screenshot shows the character input screen. At the top, there's a 'MENU' button and a 'BACK' button. Below them, there's a yellow bar. A row of function keys includes 'SPCE', left arrow, right arrow, 'INS', 'DEL', 'QUIT', and 'OK'. The main area is a yellow box containing the text 'Half' and a list of characters: '!"#\$%&'()\*+,-./0123456789;:<=>?', '@ ABCDEFGHIJKLMNOPQRSTUVWXYZ [¥]^\_`', and ' abcdefghijklmnopqrstuvwxyz{ }~'. On the right side, there are up and down arrow buttons and a return key.

### 6.3.2 Patterns number

Choose Patten number before others setup, because pattern number is different, then setup will be different. Each type of programs can setup 120 programs. so it mean that will be 120 number can be choose.

This screenshot shows the '2ZONE SET' menu with the 'PATT' field highlighted in blue and containing '001'. A numeric keypad overlay is shown at the bottom, with buttons for digits 0-9, a decimal point, a left arrow, and an 'ESC' key. The keypad is arranged in a grid with a return key on the right side.

### 6.3.3 Patterns cycle

Pattern cycle that mean how many times in running, range limit in 1~9999.

STEP	TEST	TEMP	TIME	PRE	WAIT	SIG
1	HIGH	0000.0	000H00M	0000.0	--	--
2	LOW	0000.0	000H00M	0000.0	--	--

### 6.3.4 Start test from...

Start according to the demand by high temperature or low temperature starts to test.

STEP	TEST	TEMP	TIME	PRE	WAIT	SIG
1	HIGH	0000.0	000H00M	0000.0	--	--
2	LOW	0000.0	000H00M	0000.0	--	--

### 6.3.5 Wait temp

Setup wait temp in high temp or low temp, when temp achieve wait temp, a controller will get into wait mode. Range:1~99°C.

STEP	TEST	TEMP	TIME	PRE	WAIT	SIG
1	HIGH	0000.0	000H00M	0000.0	--	--
2	LOW	0000.0	000H00M	0000.0	--	--

### 6.3.6 Delete a pattern

Delete a pattern according to user's demand.



### 6.3.7 setup a pattern operate condition

Setup pattern operate condition, it include test temperature, spend time, pre wait range, waiting mode on/off ,time signal on/off.



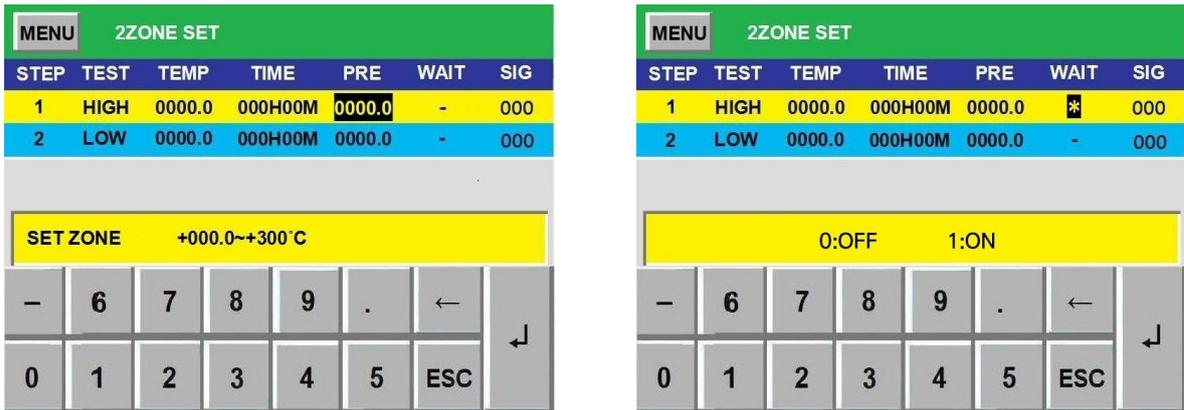
Setting step 1 : set temperature SV of testing, please confirm the range of SV and input value by on-screen keyboard



(Fig 6-1 )

Setting step 2 : set the testing period of program(Fig 6-1 )

Setting step 3 : set the pre wait range, please confirm the range of pre wait temperature and input value by on-screen keyboard



(Fig 6-2)

Setting step 4 : set waiting mode of program(Fig 6-2)

(-) means waiting mode off (\*) means waiting mode on

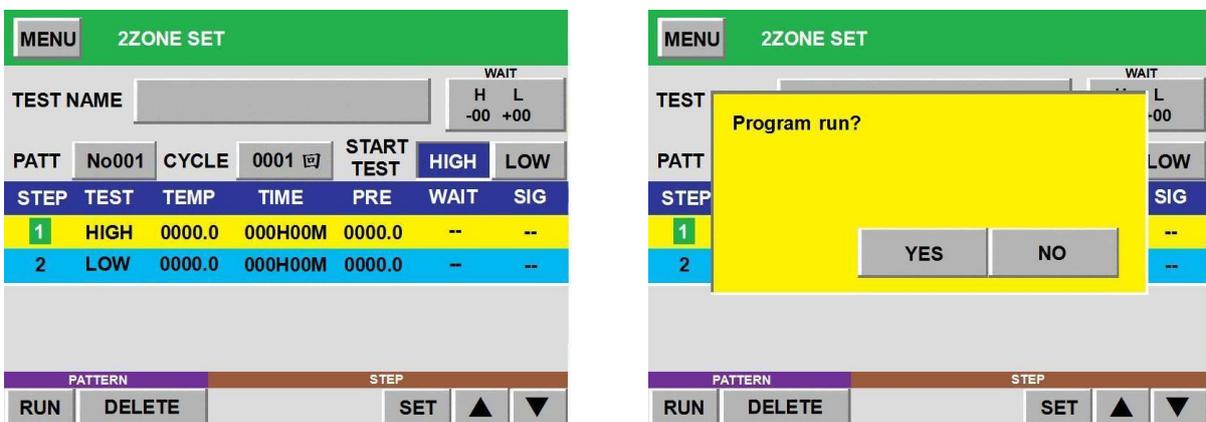
Setting step 5 : set time signal number of program.



- ※ time signal 3 work when choosing the “output relay No. setting”
- ※ the contact output setting of time signal can be set at sub-setting screen
- ※ waiting mode number(No.0~No.9) can be set at “time signal control setting”
- ※ 3 time signal (time signal 1/2/3) share 10 units of waiting mode number °
- ※ it is available to choose pattern number by using up/down cursor °

### 6.3.8 Running a pattern

After setup all the others settings, then push RUN button, the screen will jump to MONITOR screen, start running a program.



## 6.4 3 Zone and step set

Because 3Zone and Step, their setup are the same with 2Zone, so we don't explain them in here, only show photos in below.

STEP	TEST	TEMP	TIME	PRE	WAIT	SIG
1	HIGH	0000.0	000H00M	0000.0	--	--
2	ROOM	#####	000H00M	#####	#	--
3	LOW	0000.0	000H00M	0000.0	--	--

3Zone setup

STEP	TEST	TEMP	TIME	PRE	WAIT	SIG
1						

Step setup

## 6.5 Link programs

Link programs combine 2 zone, 3zone, step. In Link programs screen have six block, provide users to input 2 zone, 3zone, step programs. Test name may input by users.

## 6.6 Stored programs

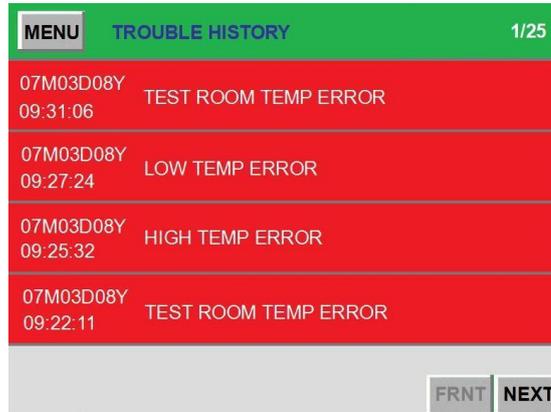
Each type of programs have their stored programs, all stored in system memory, users can change or view programs that have already be created.

Program setup

Stored program

## 7.TROUBLE HISTORY screen explaining

In the screen, you can see trouble message that ever happen in the past. Trouble message include trouble name and date/time. When a controller has an error, it will appear a trouble message, and then users can push RST button back to normal system. That trouble message will save to trouble history.

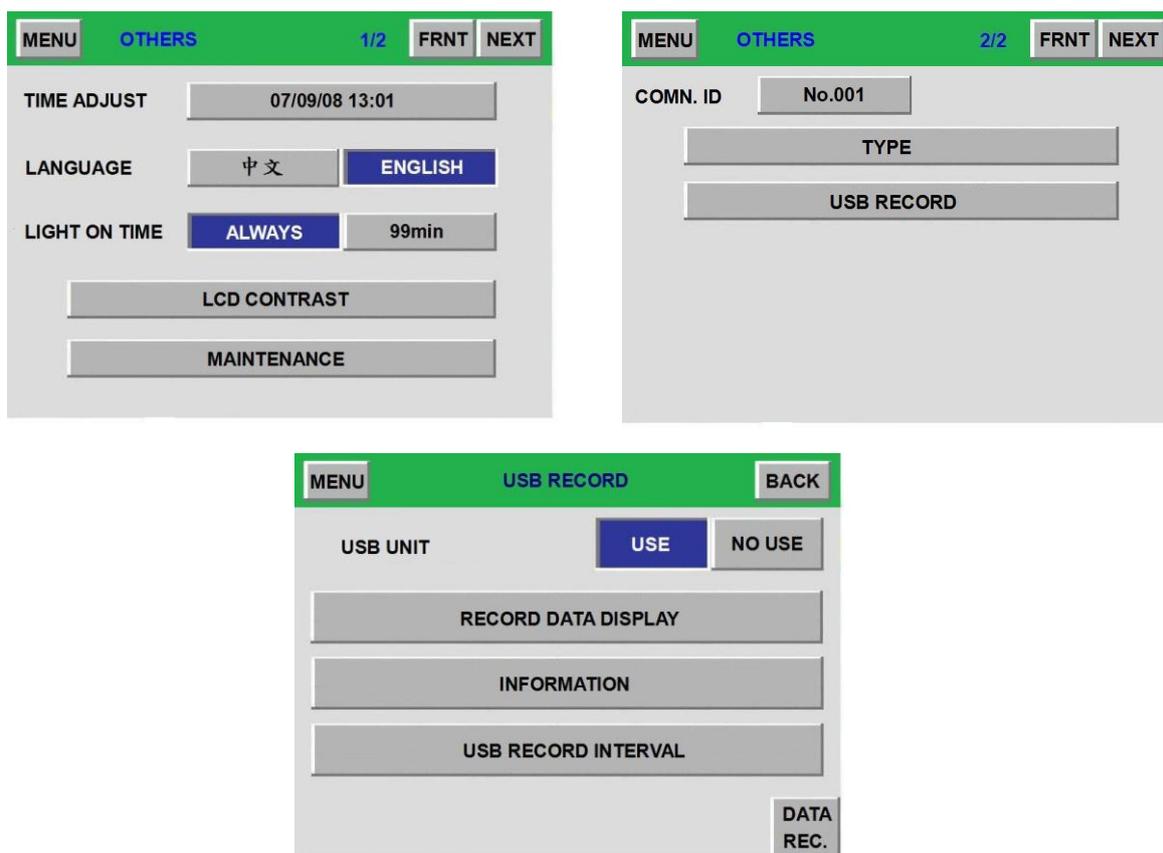


The screenshot displays a user interface for 'TROUBLE HISTORY'. At the top, there is a green header bar with a 'MENU' button on the left, the title 'TROUBLE HISTORY' in the center, and '1/25' on the right. Below the header, there is a list of four error messages, each on a red background. The messages are: '07M03D08Y 09:31:06 TEST ROOM TEMP ERROR', '07M03D08Y 09:27:24 LOW TEMP ERROR', '07M03D08Y 09:25:32 HIGH TEMP ERROR', and '07M03D08Y 09:22:11 TEST ROOM TEMP ERROR'. At the bottom of the screen, there is a grey bar with 'FRNT' and 'NEXT' buttons.

Time	Message
07M03D08Y 09:31:06	TEST ROOM TEMP ERROR
07M03D08Y 09:27:24	LOW TEMP ERROR
07M03D08Y 09:25:32	HIGH TEMP ERROR
07M03D08Y 09:22:11	TEST ROOM TEMP ERROR

## 8.OTHERS screen explaining

This screen provide users to adjust system clock, change language, setup back light, adjust LCD contrast, record maintenance, change machine ID, view firmware version.



### 8.1 Time adjust

Adjust a system clock, YY/MM/DD/HH/MM. Suggest adjust this function in system STOP.

### 8.2 Language change

Change language between Chinese and English.

### 8.3 Back Light on

Back light means if users don't touch panel too long time, the screen will get into dark. This function will protect a controller . Always means the light always open. Action range:0~99minutes.

### 8.4 LCD contrast

Adjust LCD contrast to the best display,16 level.

### 8.5 Maintenance

Maintenance message can be recored everyday. When users push RSET button, it will record date/time immediatly.

### 8.6 Machine ID

You can define different machine ID for communication, ID range:1~247.

### 8.7 Type

This screen provides product type, firmware version, character version.

**NOTE:**USB RECORD only appear when you have already setup in initial period setup 6.