Temperature and Humidity Controller

US-9256P-ACCU1

Instruction Manual

This is the instruction manual for this controller unit,please store it properly. Please read manual before operation.

応用電子工業株式会社

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1.Introduction

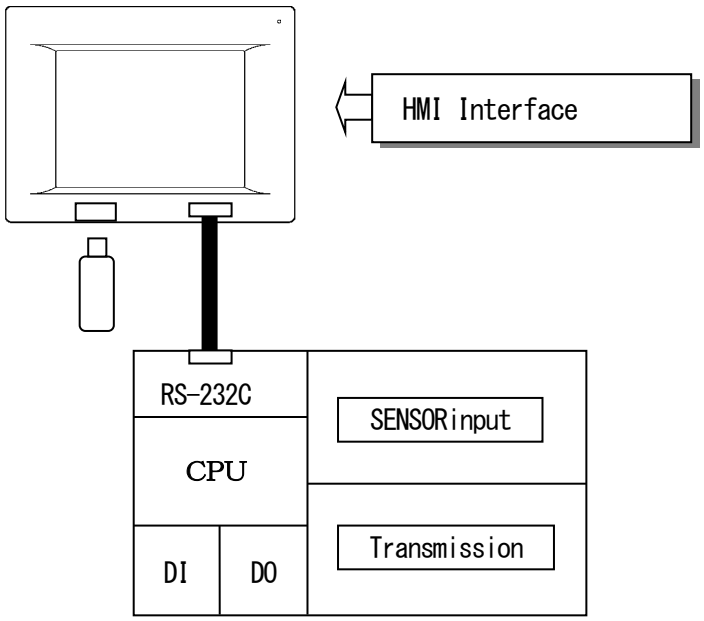
Thank you for purchasing our US-9256P-ACCU1Temperature and humidity controller. To ensure accurate and proper usage of this equipment, please read and understand this instruction manual before operation.

Please observe the following warnings/ cautions before the operation of this device.

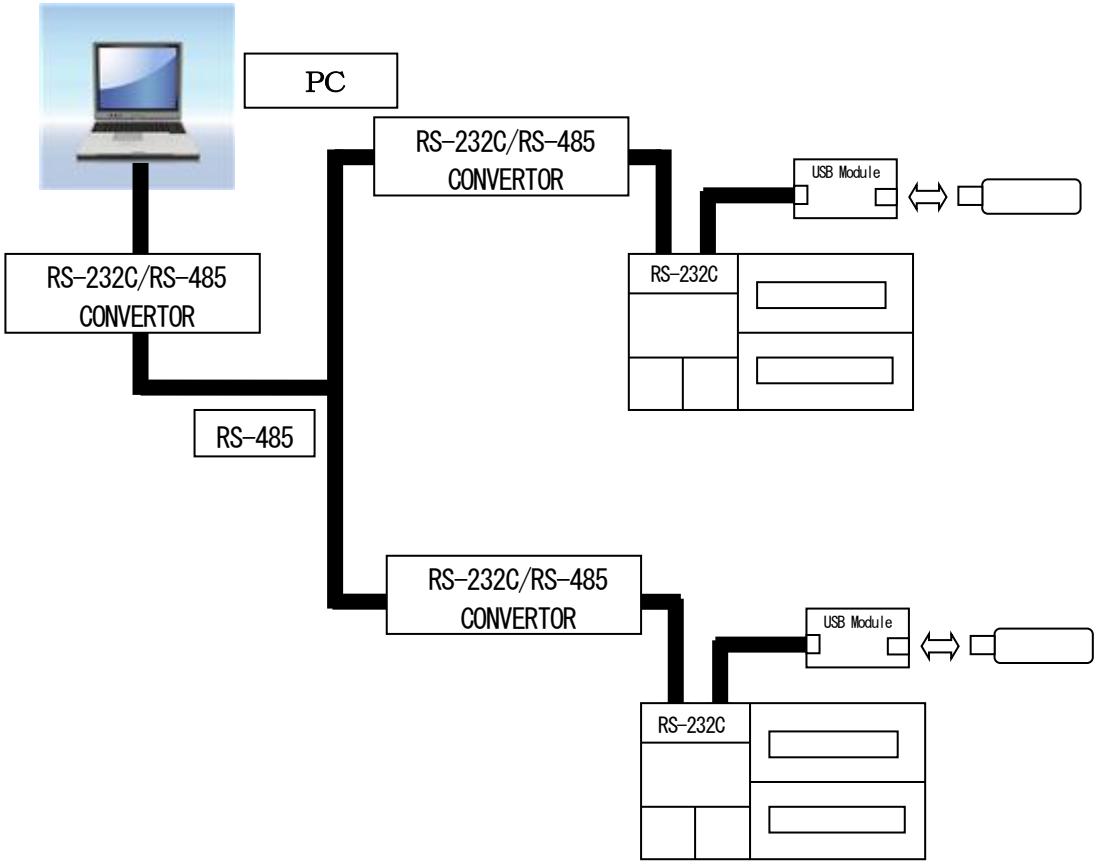
To ensure safety in handling the instrument, please be sure to observe the following warnings/cautions as well as the precautions in this manual.	
⚠ ***Warning***	
General	To prevent an electric shock, be sure to disconnect this instrument from the main power supply when wiring it.
Protective grounding	(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 come in contact with the product
Input/output wiring	To prevent electric shock, be sure to provide wiring after turning off the power.
⚠ ***caution***	
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.

2.System Configuration

2-1. Mode 1



2-2. Mode 2



3. Operation Menu

This device works on a touch-screen panel for operation and control. All function can be selected from 「Menu Selection」

Operation Menu

Monitor

1. Set Present Value, Control mode and Operate status
2. For RUN, PAUSE, HOLD, ADVANCE, STOP, VIEW function
3. "VIEW" icon is to view the present DRY/WET value, the output percentage, The output condition and the running time ; RUN, STOP, ADVANCE, HOLD can operate under such circumstance
4. when in control mode, the 「Set」 button allows you to set the control value
5. The 「Curve」 button allows you to view, set and operate the PV and SV graph for both present and historical data
6. Ability to store data related to the PV and SV graph

Mode Setting

1. Control panel (Fixed／Programmable)
2. Operation Control (Instant／Pre-program)
3. Operation Function (Functionable／Non-functionable)
4. Operation Resume (cut off／cold start／warm start)

Program setting

1. Content editing
2. Testing program file name editing
3. Time control Setting
4. Cycle condition setting
5. Standby Control Setting

Trend graph

1. PV, SV graph and historical event record
2. Temperature/Humidity/Time

assistant setting

1. Date/ Time setting
2. Program Setting (Able to Set ／Unable to Set)
3. Controller Unit Version

Event History

For viewing of past event record

Authorisation

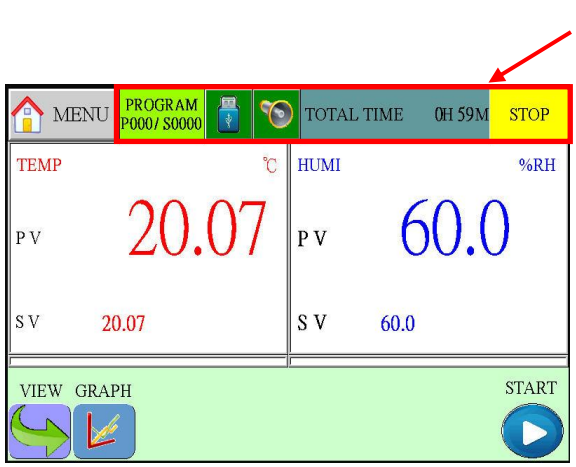
User authorization setting

Equipment Information

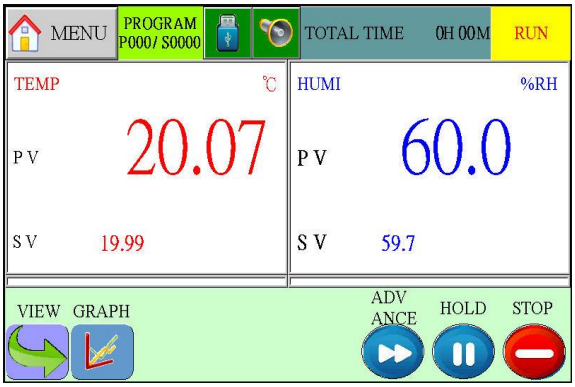
For Equipment specification and manufacturer information

4.「Transmit Display」operation instruction

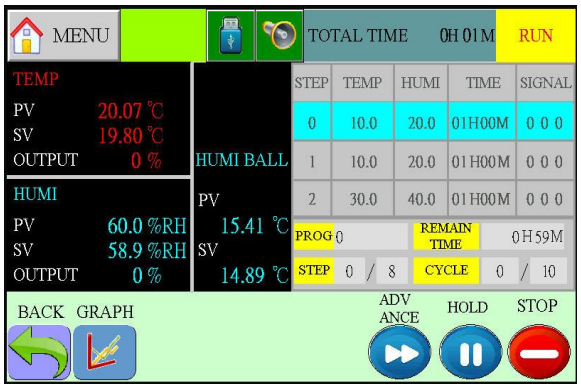
4.1 Control Mode＝「Program control」:



Program-Stop



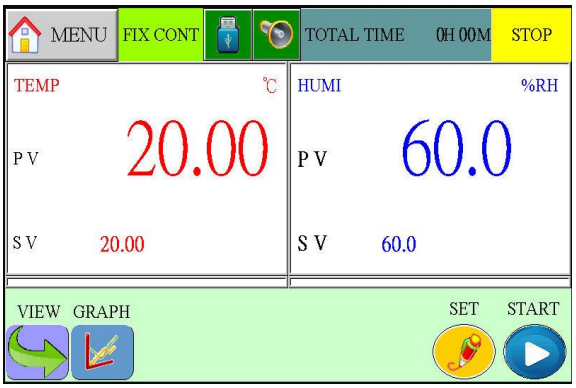
Program-In Operation



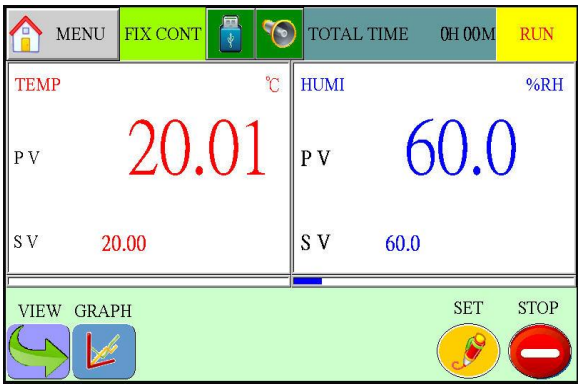
Program-Data entry

4-1-1. Top Right hand corner「transmit」means the unit is under control
4-1-2. Top Left hand corner「Directory menu」to return to the menu selection page
4-1-3. Bottom Left hand corner「Graph」, to check, view, set present and past record of PV and SV graph
4-1-4. Bottom corner「Page」to check and view current humidty bulb value, input/ output, current status, and transfer time Ability to stop, pause, resume and continue operation of this function.
4-1-5. Top icon to perform and delete curves data and records.
(icon will turn to red when USB flash disk reading)
Automatic and manual storage of data；**Auto mode for every 3hours save into USB card.**
4-1-6. Bottom icon「Skip」to skip to the next step(Standby mode to be depressed twice to skip to the next step)
4-1-7. Bottom icon「Pause」to temporary stop the operation.
4-1-8. Top icon「Transfer」for data transmission, depress once to confirm crease operation of the controller
4-1-9. Top icon shows current D/I alarm status.(icon will turn red after alarm happened)

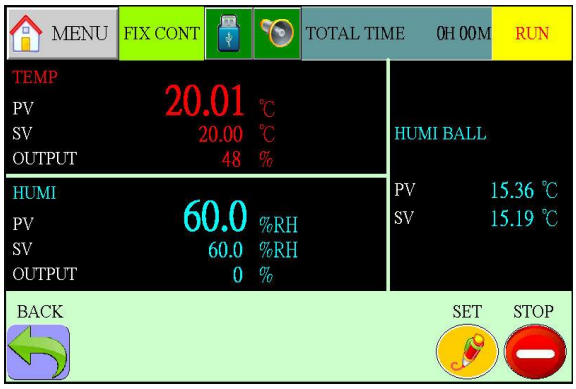
4-2. Control Mode＝「Setting」:



Fix-In: Stop



Fix-In: Progress



Output : Fix

4-2-1. In theTop Right hand corner「Run」show that the unit is current in operation

4-2-2. In the Top Left hand corner「Menu to return to the main menu screen

4-2-3.「View」is used to monitor present Dry/ Wt value, the output percentage, the output condition and the running time: RUN, STOP, ADVANCE, HOLD can be used in this function as well

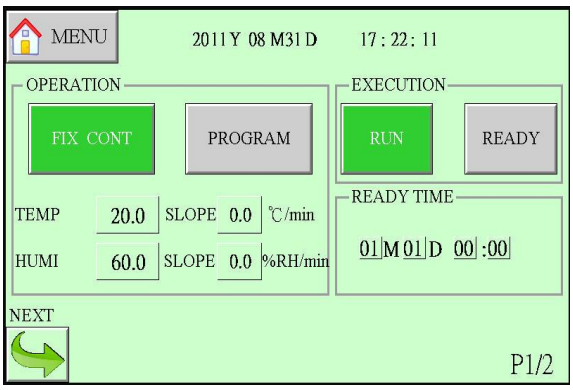
4-2-4. Botton icon「Set」to set the control value for wet and dry、slope、continuous transmitting/operating time Standby with option of ON/OFF

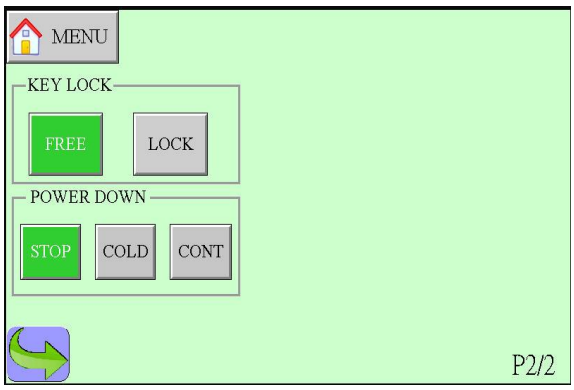
4-2-5. Bottom icon「Transmit」to control the transmitting of the data.「Stop」to stop the transmitting operation

4-2-6.**Top icon** **to execute data display and save/ delete action.** (icon will turn to red when USB flash disk reading). There are two of data saving mode-manual and auto. It will be saved every 3 hour when choosing auto saving mode.

4-2-7. Top icon shows current D/I alarm status.(icon will turn red after alarm happened)

5.「Operate Setting」menu instruction





Bottom Left corner「Page」to switch to the next page（total of 2page，interchangable）
Top Left corner「Menu selection」to return to the main menu selection

5-1. Control Mode（ Fixed／ Program）options

To decide the control mode between fixed or programmable option
When in Fixed mode, able to set between wet/ dry target temperature and slope requirement
When in Program mode, to set the number of segment and group

5-2. Operate Mode（ Instant／ Preset 01/01 00:00 ）options

For control of immediate operation（「Transmit」to set transmitting）or to pre-set operation time
(Press「transmit」icon for setting of preset operation mode
※ Pre-set format as Month/ Day Hours / Minutes

5-3. Operate Instruction（ Functionable／Non-functionable）options

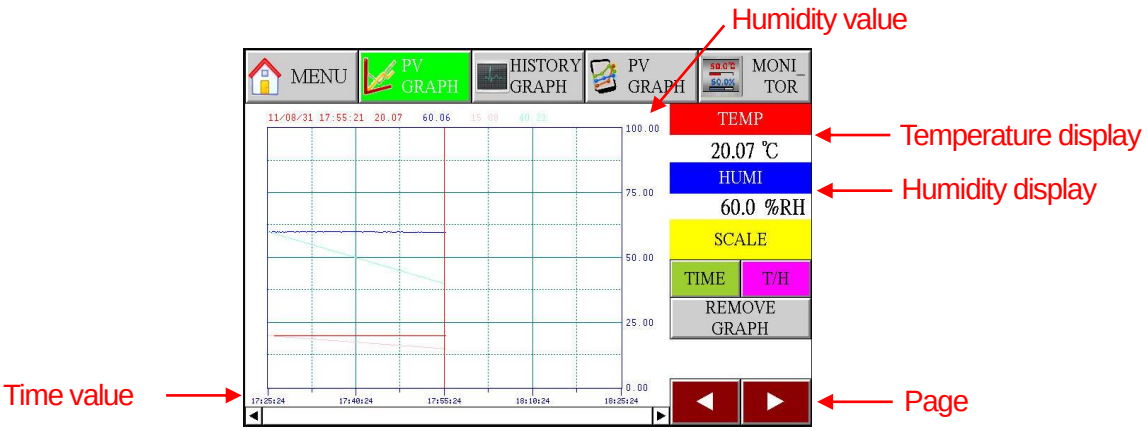
To decide to ability to transmit data
Functionable: to transmit
Non-Functionable: unable to transmit（The「transmit」icon will not appear on screen

5-4. Resume operation（ Stop ／ Cold Start／ Warm Start ）options

Stop：To interrupt power reset function（To prevent machine from auto-resume, please select this function）
Cold Start：To resume operation from the beginning stage
Warm Start：To resume operation from where it has been interrupted

6.「PV graph」Operation menu

6-1. PV graph



Top Left corner「menu selection」to return to the main selection pag；Top Right corner「Transmit display」to return to transmiting page

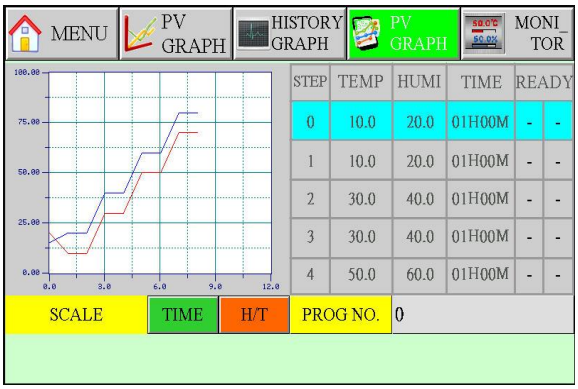
Right corner「Humidity」to set the humidity value range（biggest range: -200~250）

Right corner「Time」to select the timing range（biggest range: 1~3 hr）

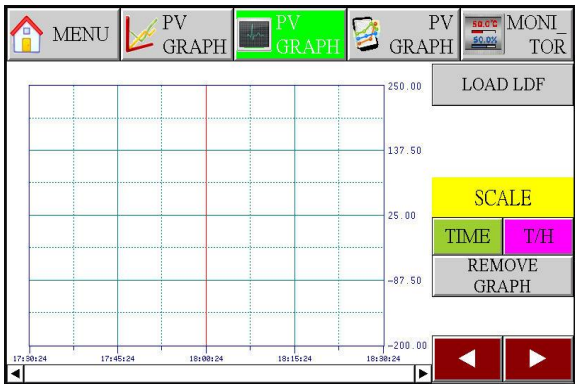
Humidity curve in the form of line to represent current situation and status；if the data exceed 1 page, switch page to continue viewing

When the controller stop transmitting, the curve display will disappear

6-2. Curve setting and historical records



Setting curve



History curve

Top Left corner「menu selection」to return to the main selection page；Top Right corner「Transmit」to return to the transmitting page

On the right hand of the screen to set the curve of the program

Right corner「Humidity」to set the temperature humidty range（biggest range: -200~250）

Right Corner「Time」to set the timing range（Setting curve：1~100 hr，History curve：1~3 hr）。

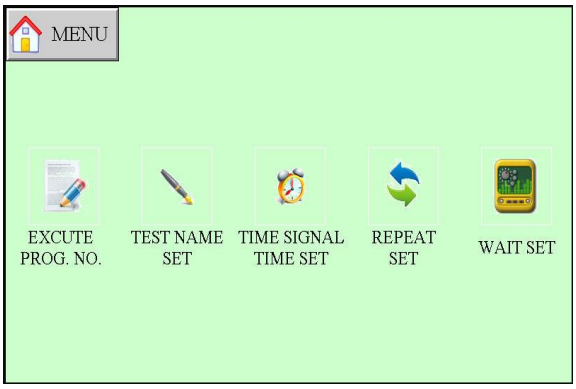
Right corner「Clear graph」to delete and clear the graph display screen

Right corner「Read LDF」to select recorded graph data

Temperature/ Humidity curve in the form of line to represent current situation and status；if the data exceed 1 page, switch page to continue viewing (Temperature: Red　Humidity: Blue）

7.「Program Setting」Instruction Menu

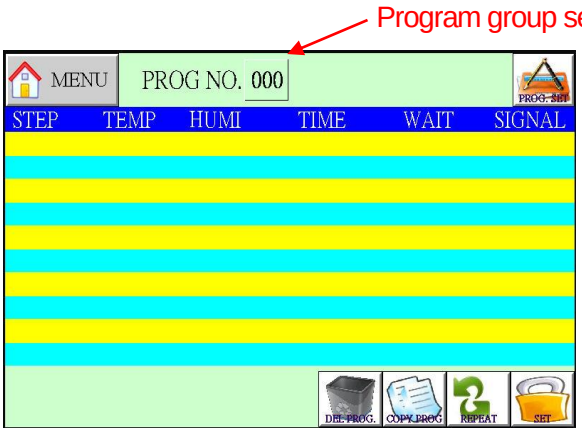
Top Left corner「menu selection」to return to the main selection page



7-1. Program Edit

Program for Temperature/ Humidity/ time/ Standby/ message/ Cycle data canbe edited and stored according in this program individually.

Enter as below：



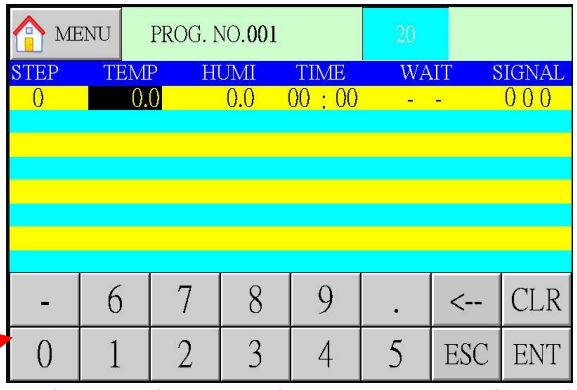
※ If 「SET」disappear from the screen, it represent that the program as been locked, please contact your distributor.

A total of 150 group（No.000~No.149）can be set

Segment contains a total of 1500（No.0000~No.1499）that can be set；

1500 segments can be combined with all other programs/ mode

Setting Procedure 1：Right corner「Set」to change page, Press「Set」to begin setting mode



after press set button, please touch temperature setting column again and start to set program parameter

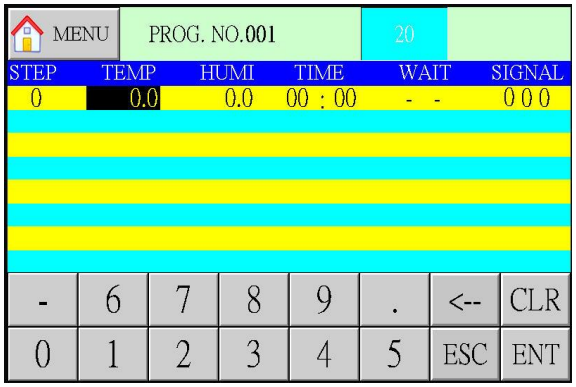
「Program cycle」to enter into selection cycle mode

「Program duplicate」to copy data to other program

「Program Delete」to delete the program file and content

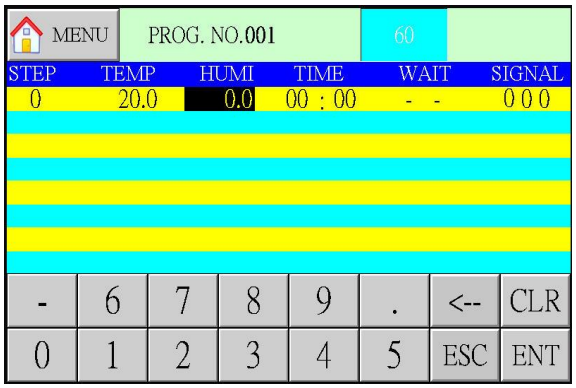
Setting Procedure 2：The NO to set program content, according to temperature, humidity ,timing, standby mode （A totalof 3 groups）。

Seting Procedure 3：To set temperature value, please follow as below:



※ Range：- 200.0~250.0℃

Setting Procedure 4：To set humidity value, please follow as below:

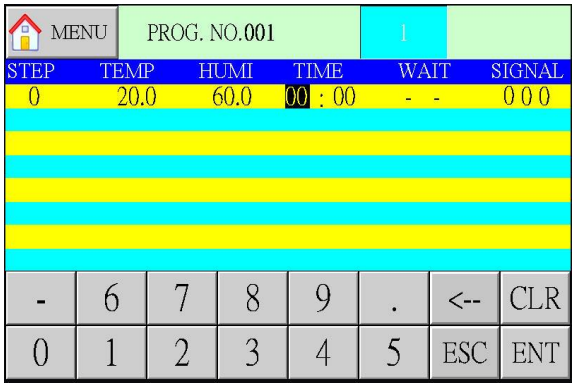


※ Range：0.0~99.9%RH

※ If the temperature value set exceed the initial pre-set value（below 0℃ or above 100℃）, And humidity cannot be set, the cursor will jump automatically to the time position

※ If the humidity value is 0，「Transmit display」will disappear from the screen（Not for humidity program）。

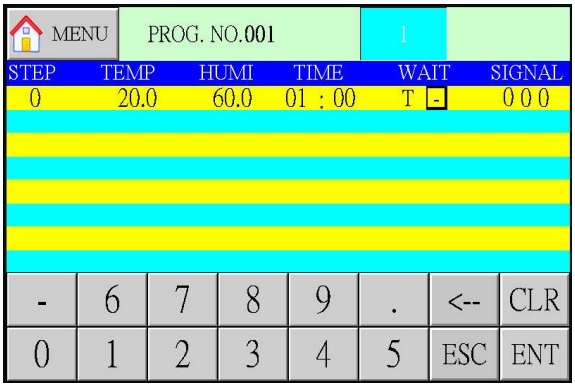
Setting Procedure 5：To set time



※ Range：00H00M ~ 99H59M

※ If the time is pre-set（Time shown is not 0），after transmiting, the temperature/ humidity will be set at（SV）and increase/ decrease according

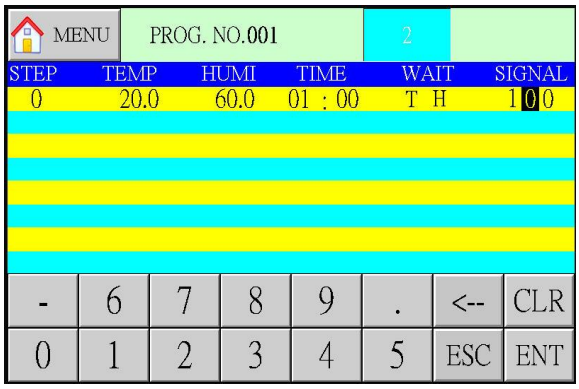
Setting Procedure 6：To set program segment and temperature/ humidity standby mode



※ Able to set Temperature/ humidity under standby；「program standby」to set standby mode

※ Enter「0」to show「-」represent that the controller is not on standby mode；Enter「1」to show「T」to represent that the temperature is on standby mode，「H」to represent humidity is on standby mode

Setting Procedure 7：This is to set the time signal 1/time signal 2/time signal / 3 for Action



※ Standby content of（NO.0~NO.9）「time signal Setting」for adjustment

※ Time signal 1/time signal 2/time signal 3 for a total of 10 Standby group（NO.0~NO.9）。

Setting Procedure 8：The same method to be used for setting of all segment and file contents

Additional note：「**Cycle Set**」**interpretation**

Following example to show you how to set part of a program group and cycle

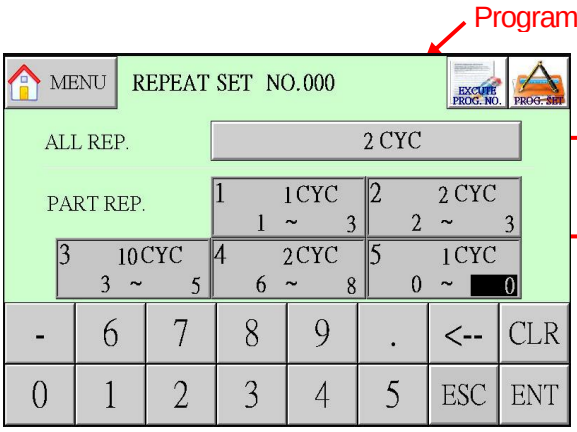


Diagram 8.2.5

According to diagram 8.2.5 for setting，NO.000 program（if there is a total of 12 steps）the actual operation should be as follows:

step0 → step1 → step2 → step3 → step2 → step3 → step4

step5 → step3 → step4 → step5 → step3 → step4 → step5

step3 → step4 → step5 → step3 → step4 → step5 → step3

step4 → step5 → step3 → step4 → step5 → step3 → step4

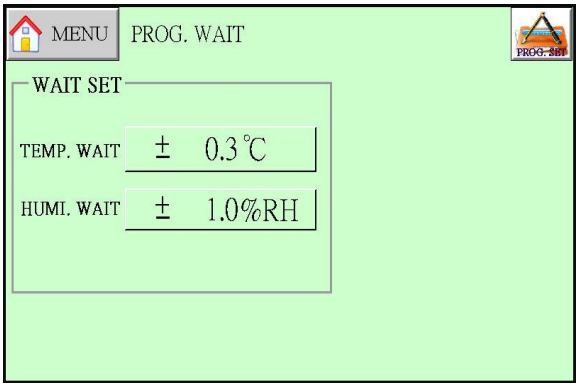
step5 → step3 → step4 → step5 → step3 → step4 → step5

step6 → step7 → step8 → step6 → step7 → step8 → step9

step10 → step11 → Repeat the above procedure one more time

7-2. Program on Standby mode

「Program Standby」to display the following:



The setting range of temperature and humidity is ±0.0~9.9。

The purpose of this setting:

According to different system set-up, every unit's temperature and humidity measuring range can be different. When the setting critical (Temperature/ Humidity/ Time seting value) are not compatible, standby mode is a must

E.g.：1min temperature increase to 100 °C, if it is unattainable and assuming 「Standby temperature」 as ±0.5℃, then the program will not achieve at 1 min to proceed onto the next segment. It will have to wait till the temperature raise to 99.5℃before proceeding to the next segment, this will result in inaccurate measurement.

7-3. Time Signal/ Time Control Screen

There are ten terms (0-9) in "Time signal time set" screen. NO.0 represent OFF；and NO.1 represent ON，NO.0 and NO.1 cannot be altered；NO.2-NO.9 can be set according to requirement. Explaination as below:

※ ON DELAY：time signal act after segment counting started and（ON DELAY TIME）period passed。

E.g.：Time Signal Model NO.2 with ON DELAY＝1hour, if program time setting is 2 hours, and you choose time signal mode no.2 in this segment..

The result of procedure：after program started, 1 hour before signal as OFF，1hour later as ON。

※ CUT ON/OFF：use CUTmode or not（CUT TIME setting enable after using Cut mode ）。

E.g.：Time Signal Model NO.2 with ON DELAY＝1hour and CUT TIME＝30min，if program time setting is 2 hours, and you choose time signal mode no.2 in this segment

The result of procedure：after program started, 1hour before as OFF，in the midst of 30mins as ON，the last 30mins as OFF。

Setting Step 1. 「Time Signal」to show as diagram 7.3.1:

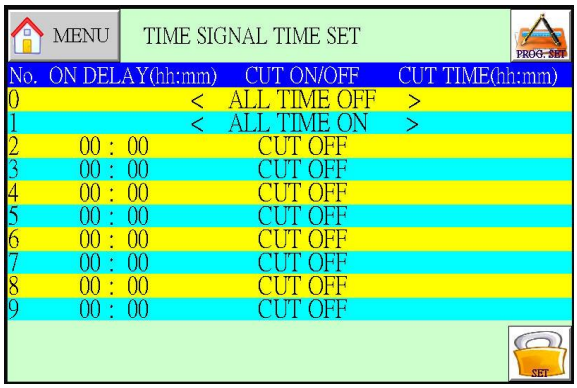


Diagram 7.3.1

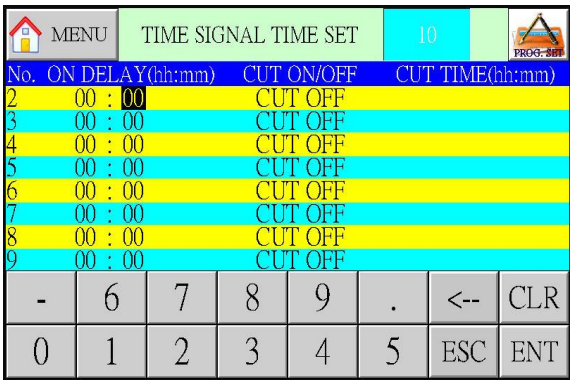


Diagram 7.3.2

Setting Step 2. Press「Enter」, to show as diagram 7.3.2 for setting
Setting Step 3. Press「CUT OFF」to show as diagram 7.3.3

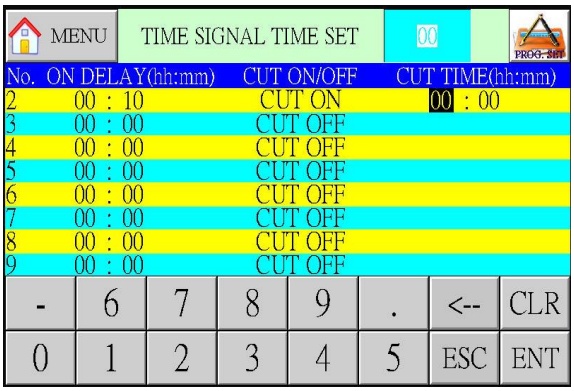


Diagram 7.3.3

Setting Step 4. use「←」、「CRL」、「ENT」to move the cursor or direct point to set and enter the value, after entry, Press「ESC」to leave this screen

※ Diagram 7.3.3，Setting unable to record when choosing the CUT ON/OFF option「CUT OFF」

7-4. Program name Setting

Program test name can record up to 20 files (within 2 pages). Select「 」to switch to page 2 content (Diagram 7.4.1)。

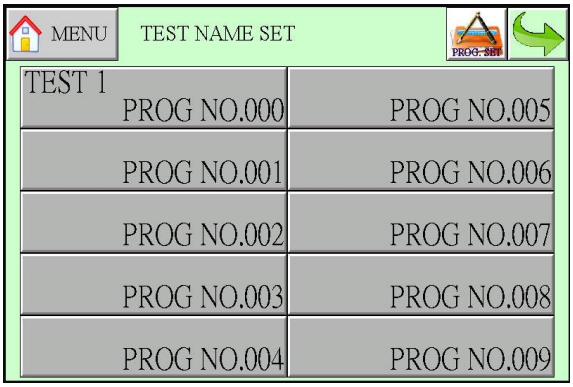


Diagram 7.4.1

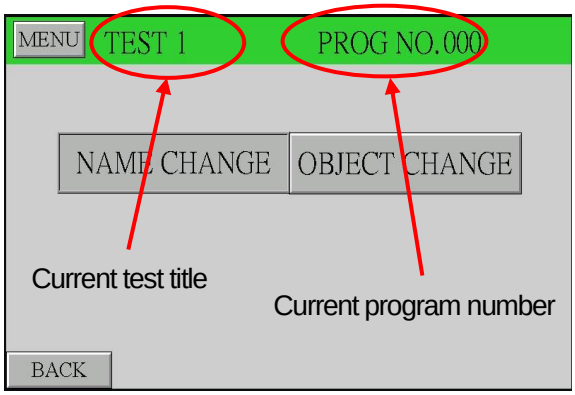
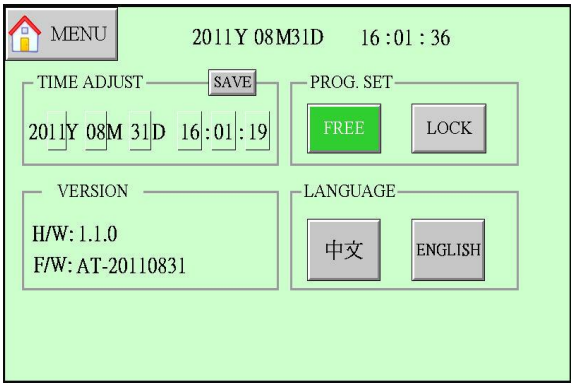


Diagram 7.4.2

Diagram 7.4.2 will appear upon selection of program
To amend Program test name：Changes can be done under NO.000 to other name
Edit Program：To change the program file name or to other program number
※ Suggestion to use date as program name for easy indentification
※ When there are no program contents or numbering,「End」will be show during transmittion

8. General Setting

General setting instruction for this unit



Date/ Time Settings

Month/ Day/ Year, Hours:Minutes Format for timing pre-set

Program Settings

To Set：Program can be set

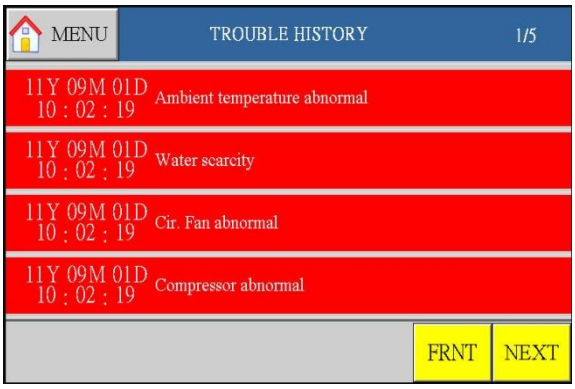
Unable to Set：Program cannot be edit（To lock a function）

Controller Version

Indicate the current hardware(H/W) and firmware(F/W) version of this controller unit

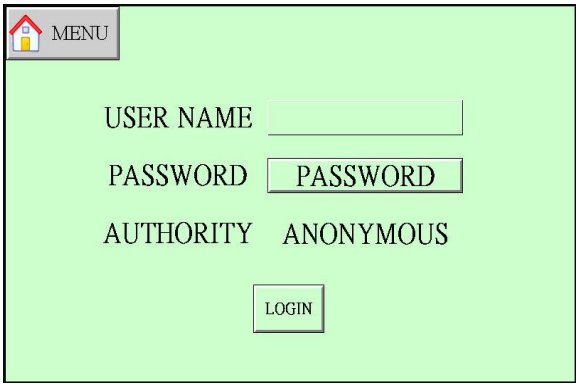
9. Event Record History

This screen list down all the malfunction and maintenance records. A total of 20 events in 5 pages can be stored



10. Authorisation Setting

When user want to operate the controller, they need to log in after authorization fuction opend. Authorization setting could prevent instrument fail and test material broken after operation error.



1. User：input account number of operator.
2. Password：input password of operarator.
3. Authorisation：Administrator and User account can be set:
   Administrator has the full operation authorization
   Right User are only authorize to view and operate program accordingly

※ When in Edit mode, please ensure that the setting control is under ON to take effect.
15 users can be pre-set for operation of this device.
Please contact supplier if you have any question.

11. Equipment Information

In this page, you can set equipment name, model, temperature and humidity range. Power supply and dimensions will be shown. Company information can be shown on this page for end user contact purpose.