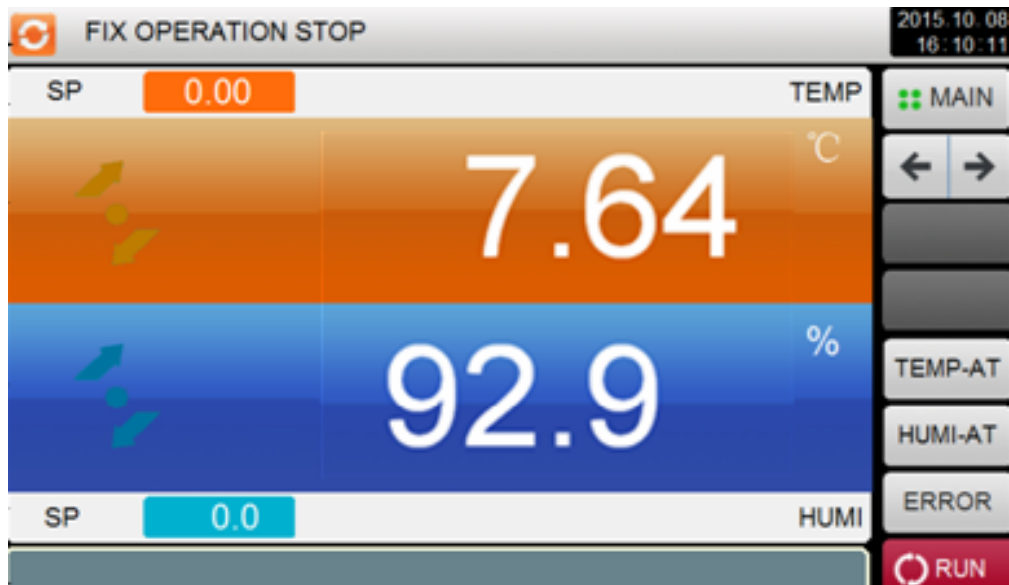


TK8070-SERIES



OPERATION MANUAL

TEMPERATURE & HUMIDITY
PROGRAMMABLE CONTROLLER

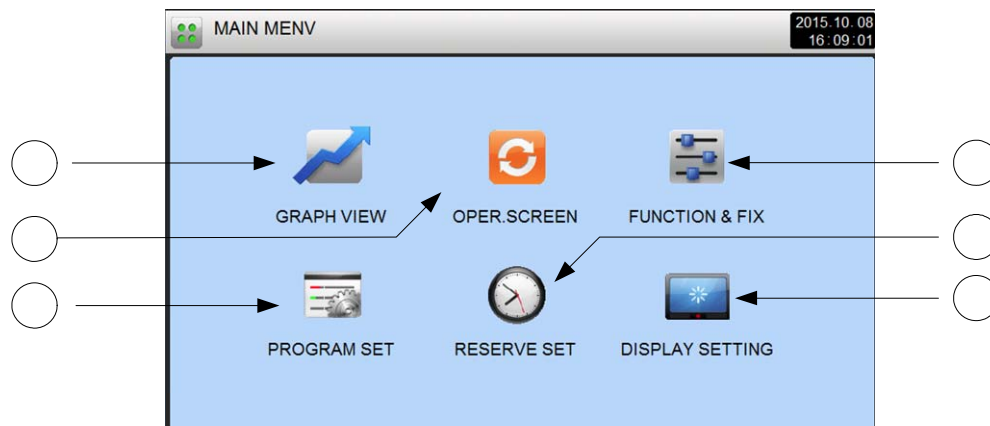
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1. OPERATION SETTING

1.1 MAIN MENU SCREEN

- ▶ MAIN MENU screen is organized into six sections. This MAIN MENU screen is the central gate way screen to move into lower parameter section.
- ▶ Press the (MAIN) button to move to this MAIN MENU screen.



[Figure 1-1] MAIN MENU screen

No.	Instructions	Description
①	GRAPH VIEW	Section for display recoding data graph and its setting for SD card operation.
②	OPER SCREEN	Operation status section to start, display and set main operation parameters.
③	FUNCTION& FIX	Function section to set parameters for additional operation function and mode
④	PROGRAM SET	Program setting section organized into 6 groups
⑤	PESERVE SET	Time section to set current time and scheduled operation.
⑥	DISPLAY SET	Display section to set screen and sound concerned parameters.

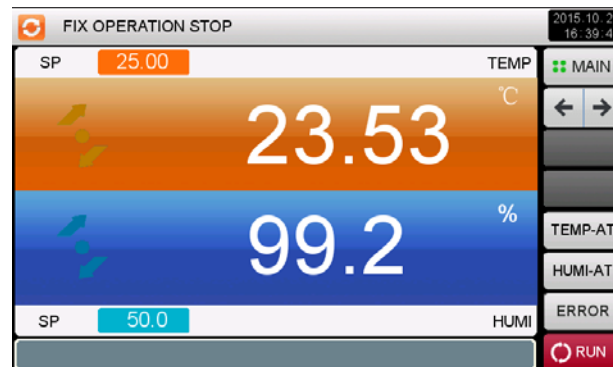
1

2

4

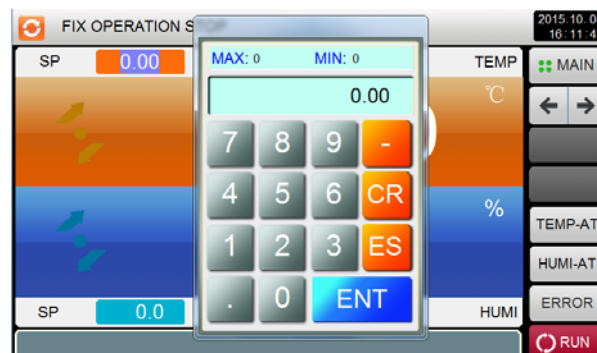
1.2 FIX Operation

1.2.1 FIX STOP SCREEN



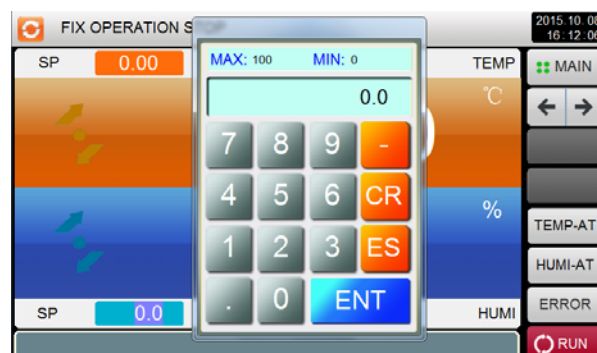
[Figure 1-2] FIX STOP screen

- ▶ Target Set Point of temperature for FIX operation can be set through below.



[Figure 1-3] Input Keypad for temperature Set Point

- ▶ Press the red button on the left upper hand corner to pop up numeric Input Keypad [Figure 1-3].
- ▶ Target Set Point of humidity for FIX operation can be set through below.



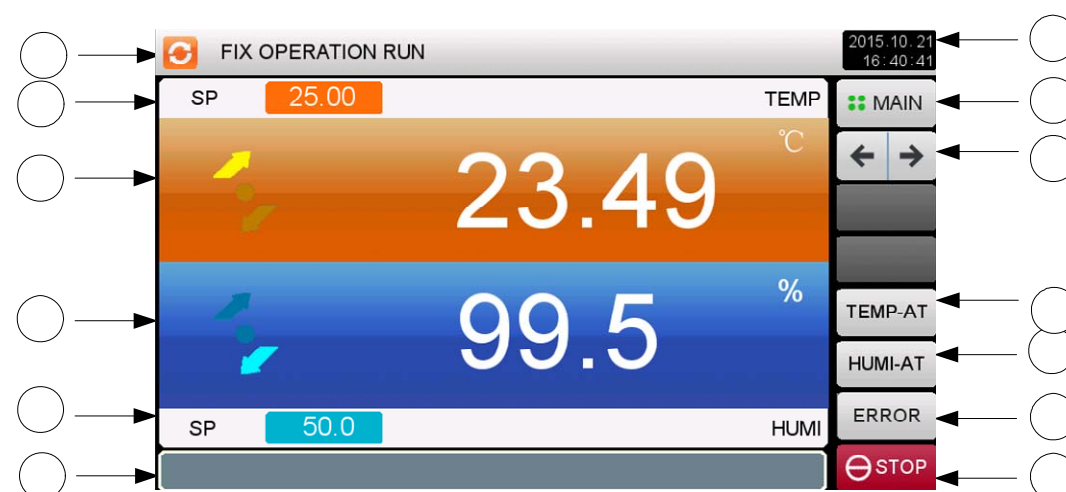
[Figure1-4] Input Keypad for humidity Set Point

- ▶ Press the blue button on the left lowerhand corner to pop up numeric Input Keypad [Figure 1-4].
- ▶ Press the (RUN) button at the lower right corner to start operation, after complete to input Set Point for temperature and humidity.

► Table 1-1. Temperature, Humidity SP Parameters

Parameter	Range	Unit	Default
Temperature SP	T.EU(-100.00~200.00)	T.EU	T.EU(25.00)
Humidity SP	H.EU(0.0~100.0)	H.EU	H.EU (50.0)

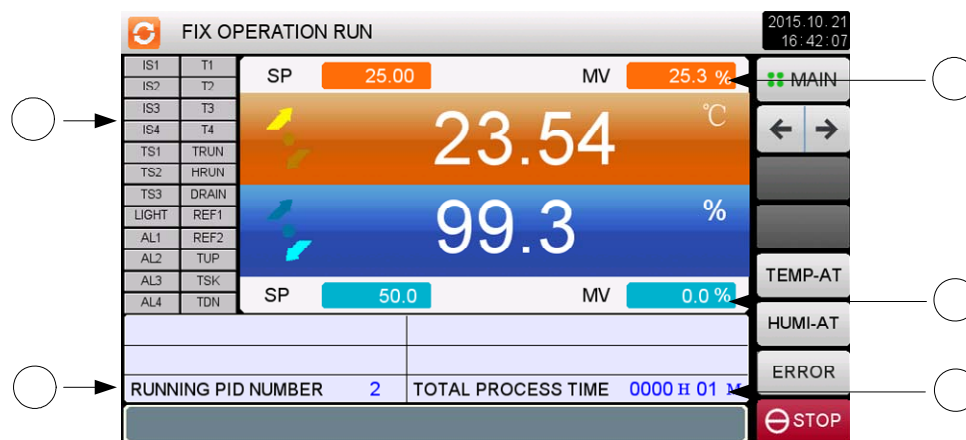
1.2.2 The 1st FIX RUN SCREEN

[Figure 1-5] The 1st FIX RUN screen

- ① Displays current operation status (FIX operation RUN).
 - ② Displays and Setting button for target Set Point of temperature.
 - ③ Displays Present Value of temperature.
 - ④ Displays Present Value of humidity.
 - ⑤ Displays and Setting button for target Set Point of humidity.
 - ⑥ Displays fault information.
 - ⑦ STOP button to stop FIX RUN operation.
- ☞ (RUN) button is displayed, when FIX STOP state.
- ⑧ The switch to the fault query screen.
 - ⑨ Button to carry out Auto-Tuning process for humidity by target Set Point at ⑤.
- ☞ To remove this tuning button from this screen, refer to [10. PID GROUP] on [Installation Manual].
- ⑩ Button to carry out Auto-Tuning process for temperature by target Set Point at ②.
- ☞ To remove this tuning button from this screen, refer to [10. PID GROUP] on [Installation Manual].
- 4
 - Button to move to the next / previous screen.
 - Button to move to the MAIN MENU screen.
 - Displays current date/time.
- ※ The ⑨, ⑩ buttons are inactive in the FIX stop screen.

1.2.3 The 2nd FIX RUN SCREEN

- Command value, setting value, control output value display screen operation state.



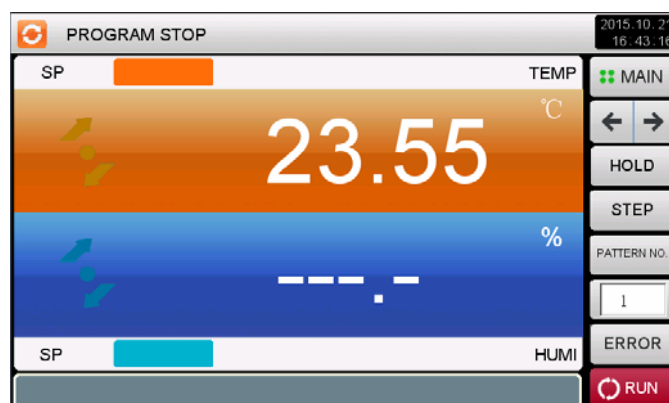
[Figure 1-6] The 2nd FIX RUN screen

- ① Displays DO signal status. Active RED Lamp indicates activating signal and relay ON state.
☞ To select different DO signal display list on this screen, refer to [13.2 Status Display Lamp] on [Installations Manual].
- ② Displays the current running PID ZONE number.
☞ Refer to [PID GROUP] in [SYSTEM SETTING] for more information of current PID ZONE.
- ③ Displays percentage control output, Manipulate Value (MV) of temperature..
- ④ Displays percentage control output, Manipulate Value (MV) of humidity.
- ⑤ Displays total process time.

1.3 PROGRAM OPERATION

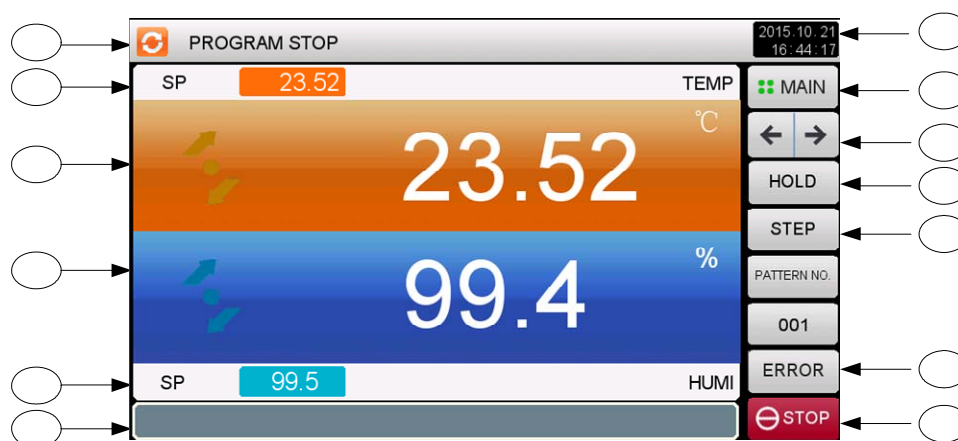
1.3.1 PROGRAM STOP SCREEN

- Under setting 'PROG' operation at 'OPERATION MODE' on [2. FUNCTION & FIX OPERATION setting], when you press [OPER. SCREEN] section on the MAIN MENU screen, this PROGRAM STOP screen will appear.
- For program settings, refer to [3. Program PATTERN].
- Press the (RUN) button on [Figure 1-7 PROGRAM STOP screen] to start running operation and move to [Figure 1-8 The 1st PROGRAM Screen].



[Figure 1-7] PROGRAM STOP Screen

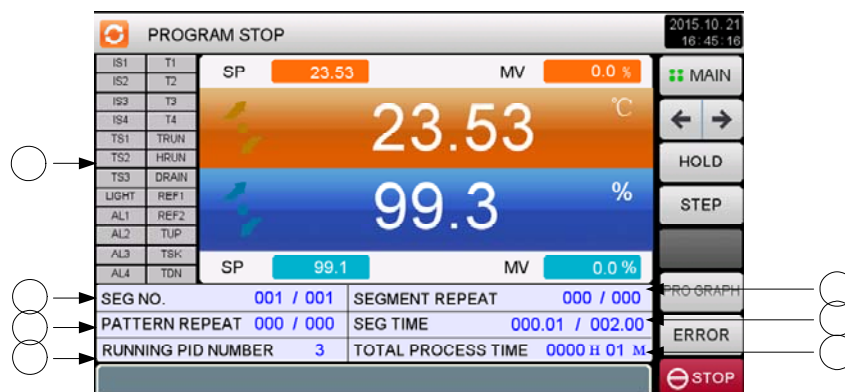
1.3.2 The 1st PROGRAM RUN SCREEN

[Figure 1-8] The 1st PROGRAM RUN Screen

- ① Displays current operation status (PROG operation RUN).
- ② Displays current Set Point of temperature that will be reaching the target SP of current segment.
- ③ Displays Present Value of temperature.
- ④ Displays Present Value of humidity.
- ⑤ Displays current Set Point of humidity that will be reaching the target SP of current segment.
- ⑥ Displays fault information.
- ⑦ STOP button to stop PROGRAM operation.
- ⑧ The switch to the fault query screen.
- ⑨ Button to step forward to next segment by skip current operating segment by force.
- ⑩ HOLD button to keep control with staying current Set Point of temperature and humidity.
- ⑪ Button to move to the next / previous screen.
- ⑫ Button to move to the MAIN MENU screen.
- ⑬ Displays current date/time.

1.3.3 The 2nd PROGRAM RUN SCREEN

- Command value, setting value, control output value display screen operation state.



[Figure 1-9] The 2nd PROGRAM RUN screen

① Displays DO signal status. Active RED Lamp indicates activating signal and relay ON state.

② Displays the current operating pattern / segment number.

③ Displays pattern repeat status.

☞ [Pattern Repeat status : 000/000] The front number indicates total number for repeat process and the back number indicates completed repeat process number.

④ Displays the current running PID ZONE number.

⑤ Displays segment repeat status.

☞ [Segment Repeat status : 000/000] The front number indicates total number for repeat process and the back number indicates completed repeat process number.

⑥ Displays the running process time / total process time.

⑦ Displays total process time.

3

1.4 DI ERROR

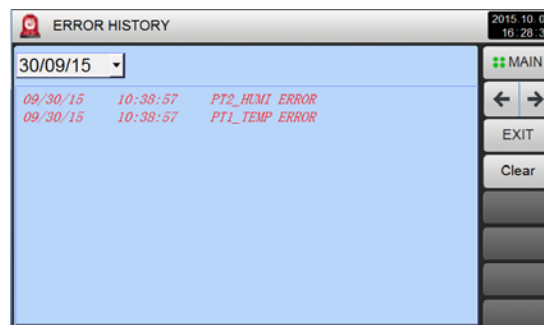
4

1.4.1 DI ERROR REAL TIME



[Figure 1-10] DI ERROR REAL TIME screen

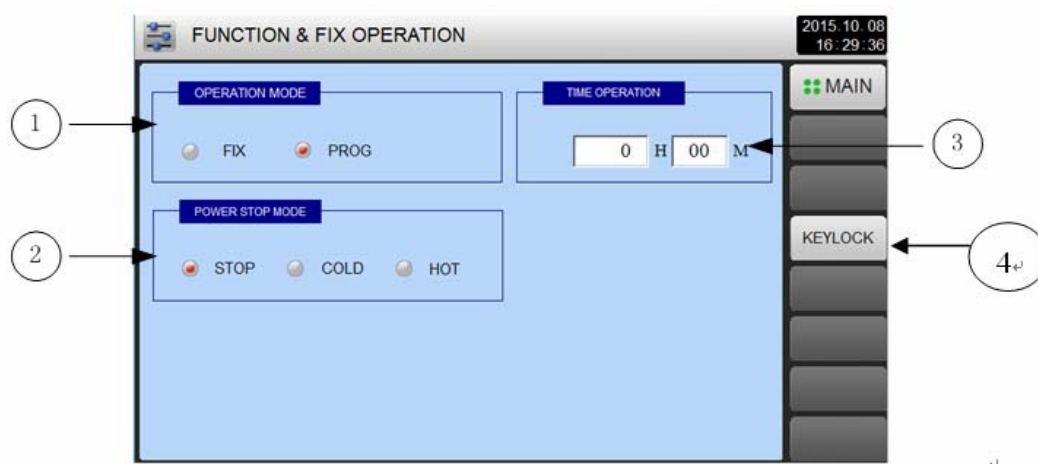
1.4.2 DI ERROR HISTORY



[Figure 1-11] DI ERROR HISTORY screen

2.FUNCTION & FIX OPEARTIONS ETTING

- ▶ Press [FUNCTION&FIX] button on MAIN MENU screen to enter into this function section.
- ▶ This screen is to set parameters concerned additional function for general operation and FIX operation.



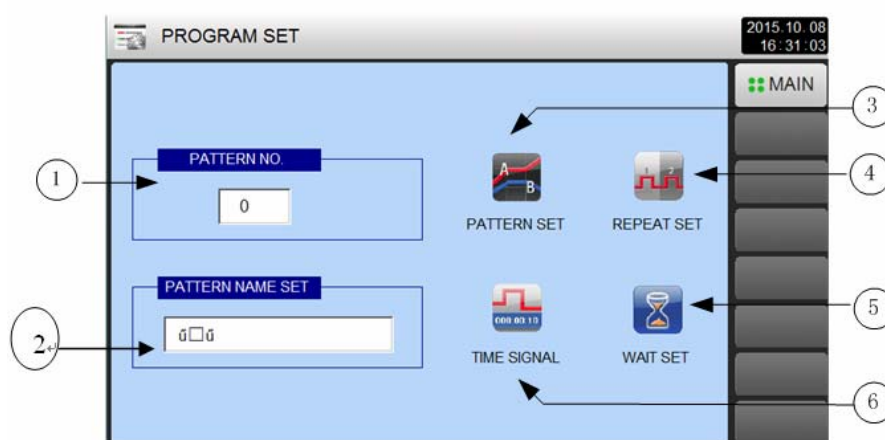
[Image 2-1] Operation Settings Screen

- ① Setup box to set Operation Mode. (PROGRAM / FIX Operation).
- ② Setup box to set Power Stop Mode.
 - ☞ Power Stop Mode is the function to set how to operate after power recovery from failure.
 - ☞ STOP : Operation will stay STOP state after power recovery, and 'OPERATION STOP' will display.
 - ☞ COLD : Same operation before power failure will re-start after recovery power recovery.
- ③ The fixed value of the running time setting.
- ④ KEYLOCK button to prevent from any of unauthorized parameter setting. Every setting operation will be denied if the (KEY LOCK) button is currently being activated.
 - ☞ Screen transition and key unlock are still active.

Table 2-1. PROGRAM STOP Screen Parameters

Parameters	Range	Units	Default
OPERATION MODE	PROG, FIX	ABS	Pattern
POWER STOP MODE	STOP, COLD, HOT	ABS	STOP
TIME OPERATION	0.00 ~ 300.00	HH.MM	0.00

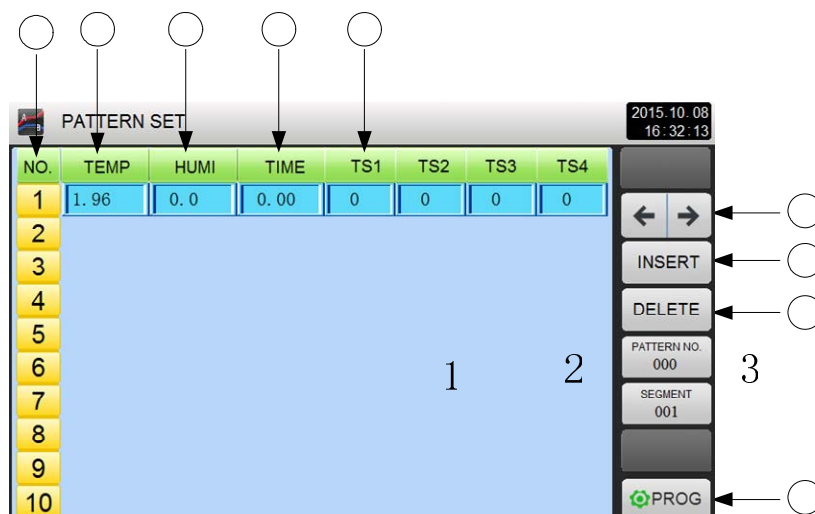
3. PROGRAM SETTING



[Figure 3-1] PROGRAM SET screen

No.	Instructions	Description
①	PATTERN NO	SET 100 groups
②	PATTERN NAME SET	Group to input the name of each pattern
③	PATTERN SET	Pattern / Segment setting group
④	REPEAT SET	Pattern / Segment repeat operation setting group
⑤	WAIT SET	Group to set WAIT function settings
⑥	TIME SIGNAL	TIME SIGNAL setting group

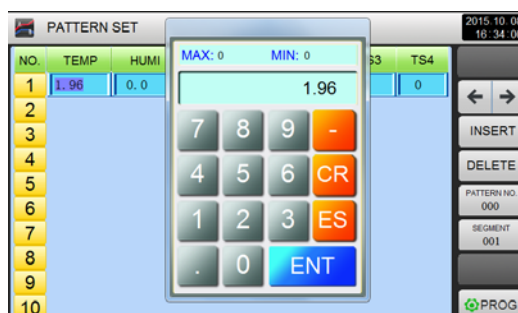
3.1 Program PATTERN SETTING



[Figure 3-2] PATTERN SET screen

- ① pattern number.
- ② Setup box to input Target Set Point for each segment of temperature.
- ③ Setup box to input Target Set Point for each segment of humidity.
- ④ Setup box to input process time for each segment.
- ⑤ Setup box to input Time Signal number to use for each segment.
- ⑥ Button display next / previous.
- ⑦ Segment insert button (INSERT) Press the (INSERT) button, and the activated segment will be inserted into the pattern.
- ⑧ Segment delete button. Press the (DELETE) button, and activated segment will be deleted.
- ⑨ Button to move back to PRORAM SET menu screen.

► Press setup box, and Input Keypad for TEMP will appear.



► Press setup box, and Input Keypad for HUMI will appear.



- Press setup box, and Input Keypad for TIME will appear.



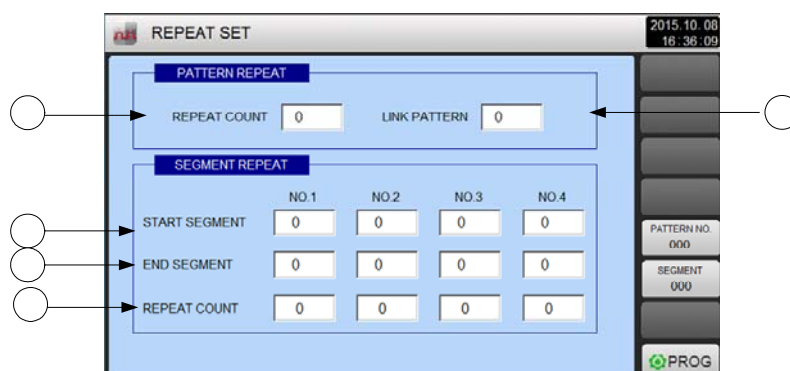
- Press setup box, and Input Keypad for TIME SIGNAL will appear.



Table 3-1. PATTERN SET Parameters

Parameter	Range	Unit	Default
PATTERN NUMBER	1 ~ 100	ABS	1
TEMP SP of Segment	T.EU (-100.00 ~ 200.00)	T.EU	T.EU (0.00)
HUMI SP of Segment	H.EU (0.0 ~ 100.0)	H.EU	H.EU (0.0)
Process Time of Segment	0.00 ~ 99.59 (H.M)	H.M	0.00
TIME SIGNAL 1 to 4 of	0 ~ 7	ABS	0

3.2 REPEAT FUNCTION



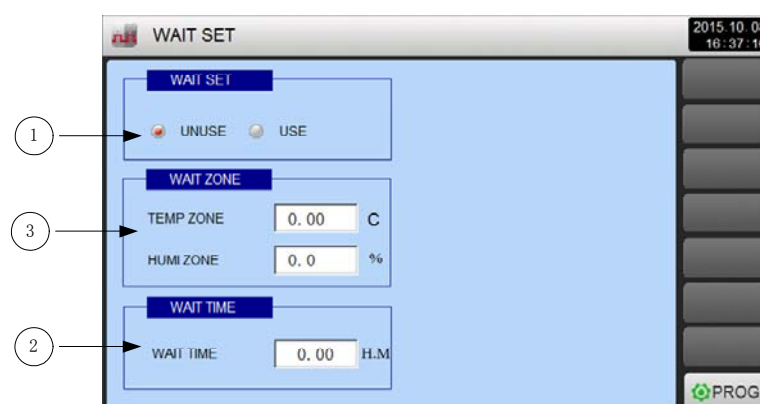
[Figure 3-3] REPEAT SET screen

- ① Setup box to input count number for current entire pattern repeat.
- ② Setup box to input start segment number for partial repeat operation.
- ③ Setup box to input end segment number for partial repeat operation.
- ④ Setup box to input count number for partial repeat operation.
- ⑤ Setup box to input next pattern number to run continually after complete of current operation.

Table 3-2. REPEAT SET Parameters

Parameter	Range	Unit	Default
REPEAT COUNT	0~999	ABS	1
LINK	0 ~ 100	ABS	0
START	0 ~ 100	ABS	0
END	0 ~ 100	ABS	0
REPEAT COUNT	0 ~ 99	ABS	0

3.3 WAIT FUNCTION



[Figure 3-4] WAIT SET scree

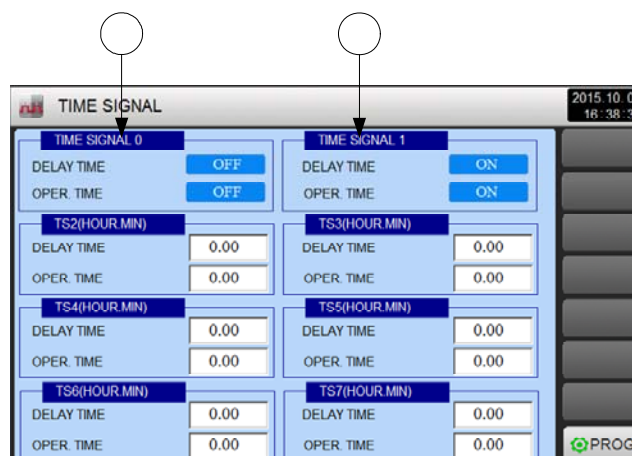
- ① Setup box to set whether or not using WAIT Function.
- ② WAIT TIME setup box to establish the time the program will wait for the PV of

temperature and humidity to enter the WAIT ZONE before starting the next program segment.

☞ When 00.00 default value of WAIT TIME, WAIT operation will be pending infinitely until released.

③ Setup box to establish temperature and humidity WAIT ZONE to release WAIT Operation.

3.4 TIME SIGNAL



[Figure 3-5] Time setting screen

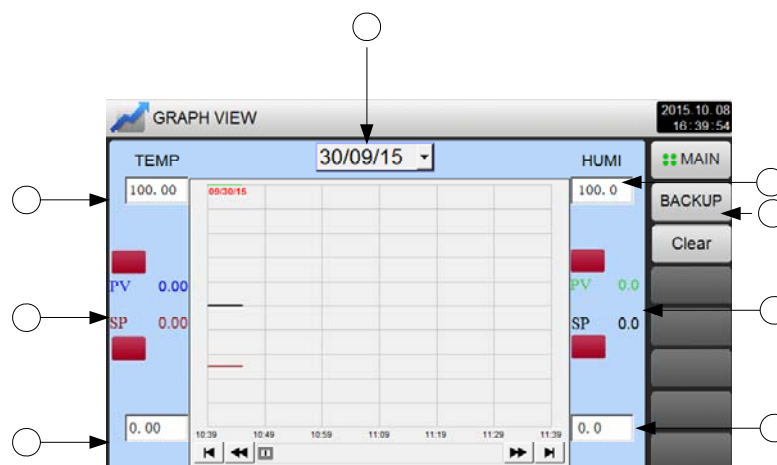
① 'TIME SIGNAL 0' is used for 'OFF', not generating TS output duration of the program segment. 1

② 'TIME SIGNAL 1' is used for 'ON', generating TS output duration of the program segment.

Table 3-3. TIME SIGNAL setting Parameters

Parameter	Range	Units	Default
DELAY TIME	0.00 (OFF) ~ 100.00	HH.MM	0.00
OPER TIME	0.00 (OFF) ~ 100.00	HH.MM	0.00

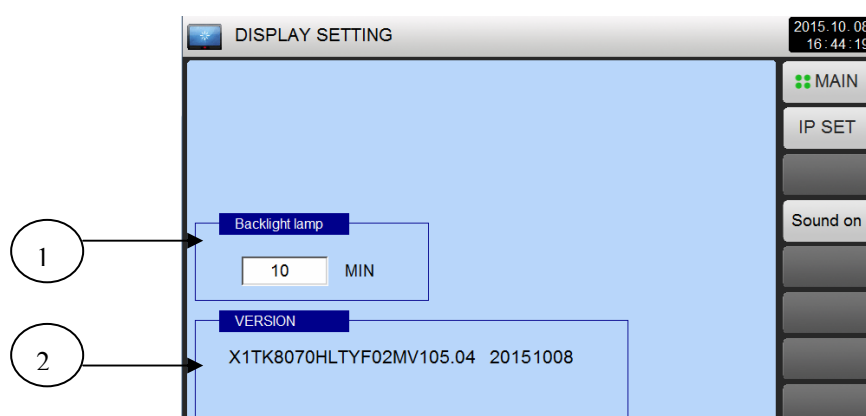
4. GRAPH & REC. SETTING



[Figure 6-1] PATTERN GRAPH VIEW-GRP.SET

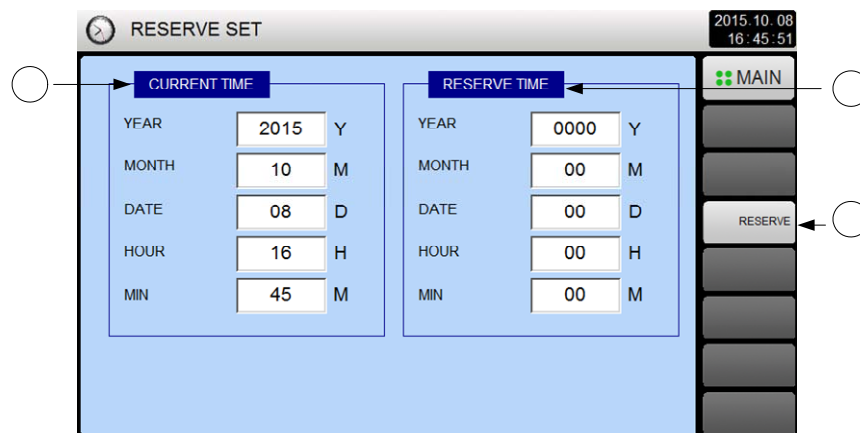
- ① Temperature curve shows the upper limit value.
- ② Temperature display and setting temperature display.
- ③ Temperature curve display lower limit value.
- ④ The view of historical time curve.
- ⑤ The humidity curve shows the upper limit value.
- ⑥ The current humidity display and set humidity display.
- ⑦ The humidity curve shows the lower limit value.
- ⑧ The curve of computer data backup.

5. SCREEN DISPLAY SETTING 2



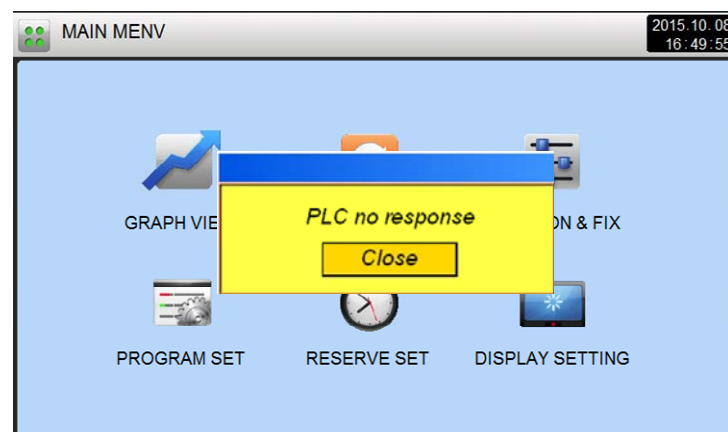
- ① Backlight time setting.
- ② The controller software program number.

6. RESERVE OPERATION SETTING



- ① Set the current year, month, day and time.
- ② Set the appointment, month, day and time, click¹ on the "reservation" button, can be set at the time of operation.
- ③ Setup box for the starting time of RESERVE Operation.

7.COMMUNICATION ERROR MESSAGE



※ Factors for Communication Error

- ① Defect Communication Cable.
- ② Connection error with communication cable.