



Programmable Terminal NB Series

Setup Guide Temperature Controller E5□C Screen Template

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1. Template and Targeted NB-Designer

1.1. Targeted NB-Designer

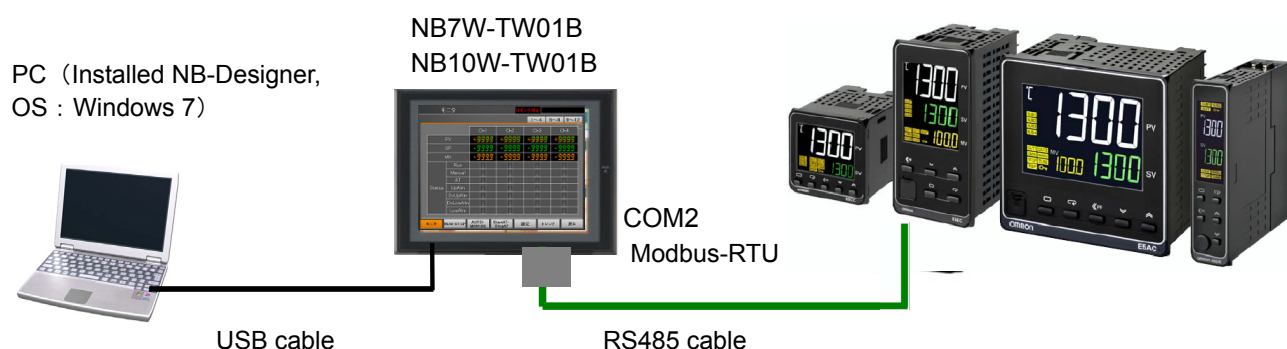
In order to use the Template, the following NB-Designer and NB Unit are necessary.

Manufacturer	Name	Model	Version
OMRON	NB-Designer	—	Ver.1.22 or more
OMRON	NB Unit	NB7W-TW01B NB10W-TW01B	kernel : 1458 or more Rootfs : 1517 or more

1.2. Device Configuration

1.2.1. Configuration for Template Validation Device

This Template is validated with the devices configured as follows.



Manufacturer	Name	Model	Version
OMRON	NB Unit	NB7W-TW01B NB10W-TW01B	Kernel: 1458 Rootfs: 1517
OMRON	NB-Designer	—	Ver.1.22
-	※ ¹ RS485 cable	—	
-	PC (OS: Windows7)	—	
-	USB cable (Conforms to USB2.0 A-B type)	—	
-	NB power supply (24 VDC 25W)	—	
OMRON	Digital Controller (RS485 with the Communications function)	E5_C-□□ E5DC-□□	

*1: For the details of wiring RS485 cable, refer to the *NB Series Host Connection Manual*.

1.2.2. Setting of the Communications at the NB in Template

This section provides settings for the Communications of this Template at the NB (COM2) as follows.

Type	RS485	PLC Communication Time Out	3
Baud Rate	9600	Protocol Time Out 1 (ms)	3
Data Bit	8	Protocol Time Out 2 (ms)	3
Parity Check	none	Max interval of word block pack	2
Stop Bit	1	Max interval of bit block pack	8
<input type="checkbox"/> Broadcast	65535	Max word block package size	16
		Max bit block package size	64
Use Default Setting			

1.2.3. Settings of Digital Controller

Specify the following items in Digital Controller.

[Adjusting level]*¹

Communications writing: ON (write permission)*Default is OFF (write protect)

[Communications settings level] *¹

Protocol selection : Modbus

*Default is CompoWay/F

Baud rate : 9.6kbps

*Default is 9.6 kbps

Communications parity : --

*Default is an even number.

*1: For the methods for adjusting level and Communications setting level of Digital Controller, refer to the Digital Controller E5CC/E5EC User's Manual (H174-E1)



Reference

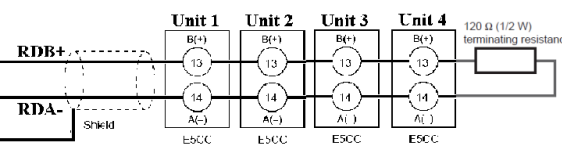


For changing the Baud rate at the NB, refer to the *Programmable Terminal NB Series Host Connection Manual (V108-E1)*.

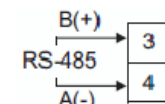
Specify the Baud rate exactly same as that of the Digital Controller.

NB-RSEXT-2M	
NBT	
9 PIN	
1	SDB+
2	SD
3	RD
4	Terminal R1
5	Terminal R2
6	RDB+
7	SDA-
8	RDA-
9	SG
Shell	FG

Wiring from the NB COM2 to the E5CC Controller with RS485








(Wiring from the NB COM2 to the E5DC Controller with RS485)

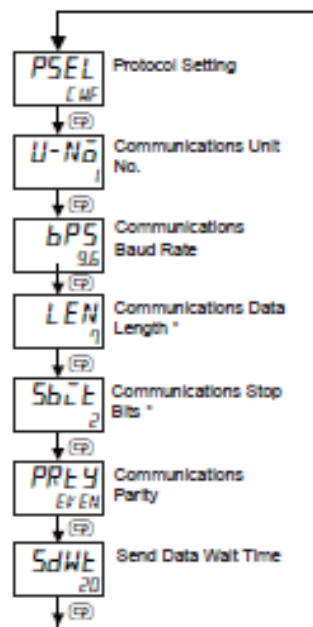


When changing the communication setting level of E5□C, Refer to the following explanation.

1) Method to modify the Communications settings

The following procedure allows the communications setting to be modified. For the details, refer to the *Communications Manual (H175-E1)*.

- (1) Press the  Key for at least three seconds to move from the "operation level" to the "initial setting level."
- (2) Press the  Key for less than one second to move from the "initial setting level" to the "communications setting level."
- (3) Select the parameters as shown below by pressing the  Key.
- (4) Use the  or  Keys to change the parameter set values.



Change to the following Communication Settings:

Protocol Setting = Mod

Communication Unit = 1 (or 2 thru 4 if using 4 Controllers)

Baud Rate = 9.6

Data Length = 8

Stop Bits = 1

Parity = None

Wait = 20

* Displayed only when the Protocol Setting parameter is set to CompoWayiF.



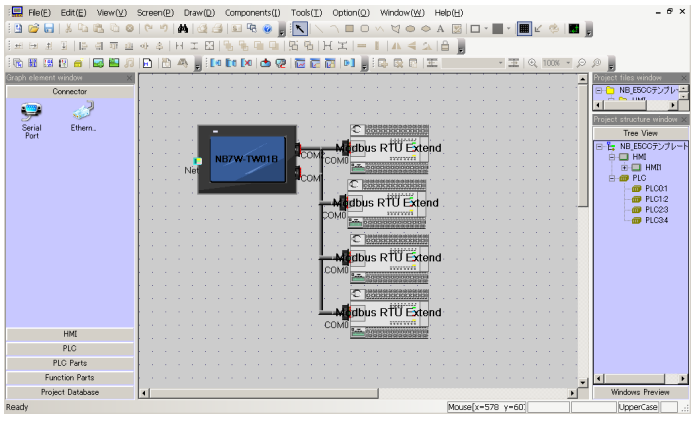
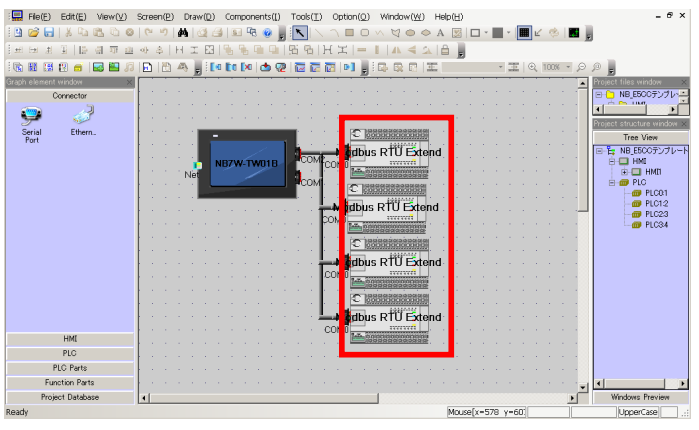
Reference

To modify settings of the Communication writing, perform it with panel operation or setting tools of the Digital Controller.

2. Method to specify the Communication Unit No. of Digital Controller

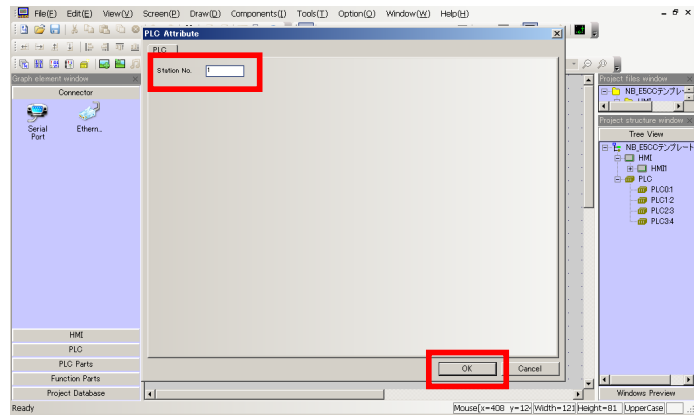
This Template has been created to have “1”, “2”, “3”, or “4” as the communication Unit No. to four Digital Controllers. NB10_1Zone_E5CC_Template_E_Rev100c is designed for 1 Controller and NB10_4Zone_E5CC_Template_E_Rev100c for 4 Controllers. If the communication unit No. is other number than “1”, “2”, “3”, or “4”, modify the communications unit No. in the Template following the procedure as below.

2.1. Method to specify the Communications unit No. of Digital Controller in Template

1	Start NB-Designer and open E5CC Template window.	
2	Double-click a Digital Controller which should be changed with the communications unit No. and open setting dialog.	

3

Enter the communications unit No. which should be modified and press “OK”.

**4**

That's the end of the procedure to specify the communications unit No. of the Digital Controller.

3. Method to control E5□C Template screen

This section provides the method of controlling E5□C Template screen.

3.1. E5□C Template

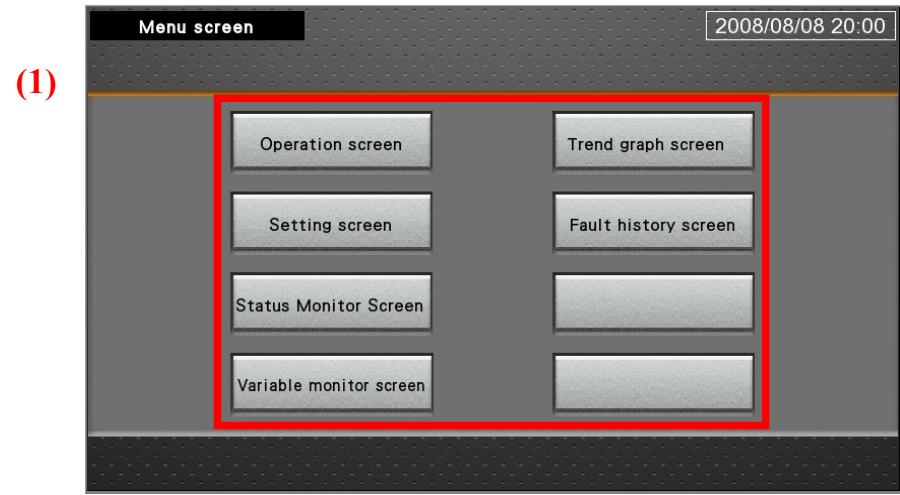
3.1.1. Common Template for Each Screen

The following display is common to every screen but “Menu Screen”.



No.	Description
(1)	Screen title The current screen title is displayed.
(2)	State indication lamp The current operation status is indicated. RUN,AUTO,AT: lit in green ERR : lit in red
(3)	Current time is displayed.
(4)	Switching the communications unit No. Present screen is indicated in orange.
(5)	Display switch The current screen is indicated in orange.

3.1.2. Menu Screen



No.	Description
(1)	Screen switch. Switching to each screen.

3.1.3. Operation screen

A screen allows present values and manipulated variable to be monitored and targeted values to be entered.

Also you can refer to the contents of the alarm which is currently occurred.

NB7 Screen (#1)

(1)

Operation screen

RUN AUTO AT ERR 2008/08/08 20:00

#1 #2 #3 #4

PV SP MV(heating) MV(cooling)

PID P I D

Alarm value setting

ON/OFF control

Dead band Hysteresis(heating) Hysteresis(cooling)

Execute Stop

MV upper limit MV lower limit

Alarm value 1 Upper-limit 1 Lower-limit 1 Alarm value 2 Upper-limit 2 Lower-limit 2 Alarm value 3 Upper-limit 3 Lower-limit 3

(2)

Operation screen Setting screen Status Monitor Screen Variable monitor screen

Trend graph screen Fault history screen

NB7 Screen (#2)

Operation screen

RUN AUTO AT ERR 2008/08/08 20:00

#1 #2 #3 #4

PV SP MV(heating) MV(cooling)

PID P I D

Alarm value setting

ON/OFF control

Dead band Hysteresis(heating) Hysteresis(cooling)

Execute Stop

MV upper limit MV lower limit

Alarm value 1 Upper-limit 1 Lower-limit 1 Alarm value 2 Upper-limit 2 Lower-limit 2 Alarm value 3 Upper-limit 3 Lower-limit 3

Operation screen Setting screen Status Monitor Screen Variable monitor screen

Trend graph screen Fault history screen

NB7 Screen (#3)

The screenshot shows the 'Operation screen' for NB7 Screen (#3). At the top, there are status indicators for RUN (green), AUTO (green), AT (grey), and ERR (grey), along with a timestamp '2008/08/08 20:00'. Below this is a navigation bar with tabs #1, #2, #3 (selected), and #4. The main area is divided into several sections: 'PV' (Process Variable) with a green numeric display; 'SP' (Set Point) with a green numeric display; 'MV(heating)' and 'MV(cooling)' with green numeric displays; 'ON/OFF control' with buttons for Dead band, Hysteresis(heating), and Hysteresis(cooling); 'PID' control with parameters P, I, and D, each with a green numeric display; 'Alarm value setting' with three rows of Alarm value, Upper-limit, and Lower-limit, each with a green numeric display; and 'Execute' and 'Stop' buttons. At the bottom, there is a navigation bar with tabs for Operation screen (selected), Setting screen, Status Monitor Screen, and Variable monitor screen, and a row of Trend graph screen, Fault history screen, and two empty tabs.

NB7 Screen (#4)

The screenshot shows the 'Operation screen' for NB7 Screen (#4). It has the same layout as the previous screen, but the selected tab is #4. The status indicators at the top show RUN (green), AUTO (green), AT (grey), and ERR (grey), with the same timestamp '2008/08/08 20:00'. The navigation bar at the bottom shows the 'Operation screen' tab as selected.

No.	Description
(1)	<p>(Specify component></p> <ul style="list-style-type: none"> Numeric object <ul style="list-style-type: none"> Touching numeric object displayed in yellow allows each input popup screen to be displayed and the values to be specified or modified. Numeric object displayed in green is only for monitoring and the value is not subjected to be specified or to be modified. PID control lamp <ul style="list-style-type: none"> RUN, AUTO: When Relevant status is OFF, lit in green. STOP, MANU: When RUN status is ON, lit in green. Execution: When Execution status is ON, lit in green. Quit: When execution status is OFF, lit in yellow.
(2)	<p>Display Alarm</p> <p>An alarm which is currently occurred is displayed.</p>

3.1.4. Setting Screen

A screen allows each parameter to be specified or modified.

When you modify parameters, switch over to default setting level or high functioning level in advance at E5□C. Mind that if the parameters are modified without switching over to the default setting level or the high functioning level, the modification is invalid. For the method to switch over the default setting level or the high functioning setting level, refer to the *Digital Controller E5CC/E5EC User's Manual* (H174-E1) .

Parameter (#1)

The screenshot shows the 'Setting screen 1' interface. At the top, there are status indicators for RUN, AUTO, AT, and ERR, along with a date and time display (2008/08/08 20:00). Below this, there are four tabs labeled #1, #2, #3, and #4, with #1 being the active tab. The main area is divided into two columns. The left column lists parameters such as Input type, Temp unit, Direct/reverse operation, PID/OnOff, Standard or heating and cooling, Control period(heat), Control period(cool), Alarm 1 type, Alarm 2 type, and Alarm 3 type. Each parameter has a 'Change' button next to it. The right column displays the current values for these parameters, such as P(1), °C, Reverse, ON/OFF, Standard, 0.5, 0.5, Function off, Function off, and Function off. A red box highlights the right column, and a red circle with the number (1) is placed next to it. At the bottom, there are four buttons: Operation screen, Setting screen, Status Monitor Screen, and Variable monitor screen. The Setting screen button is highlighted.

(1)

Touching mass setting button allows specification to be modified in a popup window.

Communications setting (#1)

The screenshot shows the 'Setting screen 2' interface. At the top, there are status indicators for RUN, AUTO, AT, and ERR, along with a date and time display (2008/08/08 20:00). Below this, there are four tabs labeled #1, #2, #3, and #4, with #1 being the active tab. The main area is divided into two columns. The left column lists communication settings such as Comm unit No., Comm baud rate, Comm data length, Comm stop bits, Comm parity, Protocol setting, and Send data wait time. Each setting has a 'Change' button next to it. The right column displays the current values for these settings, such as 9.6k, 7, 1, None, CompoWay/F, and 9.6k. A red box highlights the right column, and a red circle with the number (1) is placed next to it. At the bottom, there are four buttons: Operation screen, Setting screen, Status Monitor Screen, and Variable monitor screen. The Setting screen button is highlighted.

(1)

Mind that if the communications setting is modified, a communication error may be occurred at the NB.

Parameter (#2)

Setting screen 1 RUN AUTO AT ERR 2008/08/08 20:00

#1 #2 #3 #4

Parameter Change

Input type	Pt(1)	Decimal point position	#	MV at PV error	####.#
Temp unit	°C	Scaling upper limit	#####	Alarm 1 hysteresis	###.#
Direct/reverse operation	Reverse	Scaling lower limit	#####	Alarm 2 hysteresis	###.#
PID/OnOff	ON/OFF	SP upper limit	####.#	Alarm 3 hysteresis	###.#
Standard or heating and cooling	Standard	SP lower limit	####.#		
Control period(heat)	0.5	HB 1 detection	##.#		
Control period(cool)	0.5	HB 2 detection	##.#		
Alarm 1 type	Function off	HS alarm 1	##.#		
Alarm 2 type	Function off	HS alarm 2	##.#		
Alarm 3 type	Function off	MV at stop	####.#		

Setting screen 2

Operation screen Setting screen Status Monitor Screen Variable monitor screen

Trend graph screen Fault history screen

Communications setting (#2)

Setting screen 2 RUN AUTO AT ERR 2008/08/08 20:00

#1 #2 #3 #4

Comm setting

Comm unit No.	##				
Comm baud rate	9.6k	9.6k	19.2k	38.4k	57.6k
Comm data length	7	7	8		
Comm stop bits	1	1	2		
Comm parity	None	None	Even	Odd	
Protocol setting	CompoWay/F	CompoWay/F	Modbus		
Send data wait time	##				

Setting screen 1

Operation screen Setting screen Status Monitor Screen Variable monitor screen

Trend graph screen Fault history screen

Parameter (#3)

Setting screen 1 RUN AUTO AT ERR 2008/08/08 20:00

#1 #2 #3 #4

Parameter Change

Input type	Pt(1)	Decimal point position	#	MV at PV error	####.#
Temp unit	°C	Scaling upper limit	#####	Alarm 1 hysteresis	###.#
Direct/reverse operation	Reverse	Scaling lower limit	#####	Alarm 2 hysteresis	###.#
PID/OnOff	ON/OFF	SP upper limit	####.#	Alarm 3 hysteresis	###.#
Standard or heating and cooling	Standard	SP lower limit	####.#		
Control period(heat)	0.5	HB 1 detection	##.#		
Control period(cool)	0.5	HB 2 detection	##.#		
Alarm 1 type	Function off	HS alarm 1	##.#		
Alarm 2 type	Function off	HS alarm 2	##.#		
Alarm 3 type	Function off	MV at stop	####.#		

Setting screen 2

Operation screen Setting screen Status Monitor Screen Variable monitor screen

Trend graph screen Fault history screen

Communications setting (#3)

Setting screen 2 RUN AUTO AT ERR 2008/08/08 20:00

#1 #2 **#3** #4

Comm setting

Comm unit No. ##

Comm baud rate 9.6k 9.6k 19.2k 38.4k 57.6k

Comm data length 7 7 8

Comm stop bits 1 1 2

Comm parity None None Even Odd

Protocol setting CompoWay/F CompoWay/F Modbus

Send data wait time ##

Setting screen 1

Operation screen **Setting screen** Status Monitor Screen Variable monitor screen

Trend graph screen Fault history screen

Parameter (#4)

Setting screen 1 RUN AUTO AT ERR 2008/08/08 20:00

#1 #2 #3 **#4**

Parameter Change

Input type Pt(1) Decimal point position # MV at PV error ###. #

Temp unit °C Scaling upper limit ##### Alarm 1 hysteresis ###. #

Direct/reverse operation Reverse Scaling lower limit ##### Alarm 2 hysteresis ###. #

PID/OnOff ON/OFF SP upper limit ###. # Alarm 3 hysteresis ###. #

Standard or heating and cooling Standard SP lower limit ###. #

Control period(heat) 0.5 HB 1 detection ###. #

Control period(cool) 0.5 HB 2 detection ###. #

Alarm 1 type Function off HS alarm 1 ###. #

Alarm 2 type Function off HS alarm 2 ###. #

Alarm 3 type Function off MV at stop ###. #

Setting screen 2

Operation screen **Setting screen** Status Monitor Screen Variable monitor screen

Trend graph screen Fault history screen

Communications setting (#4)

Setting screen 2 RUN AUTO AT ERR 2008/08/08 20:00

#1 #2 #3 **#4**

Comm setting

Comm unit No. ##

Comm baud rate 9.6k 9.6k 19.2k 38.4k 57.6k

Comm data length 7 7 8

Comm stop bits 1 1 2

Comm parity None None Even Odd

Protocol setting CompoWay/F CompoWay/F Modbus

Send data wait time ##

Setting screen 1

Operation screen **Setting screen** Status Monitor Screen Variable monitor screen

Trend graph screen Fault history screen

No.	Description
(1)	<p>(Screen Switch button “to Setting screen_2”, “to Setting screen_1”) Touching the screen switch button allows switching displays between parameter system and the communication system.</p> <p>(Setting part) Touching numeric object allows input popup window of each item to be displayed and then the value can be specified or modified. Also the item of "Communications setting" in green can be specified or modified touching each type setting button on the right of the item.</p>



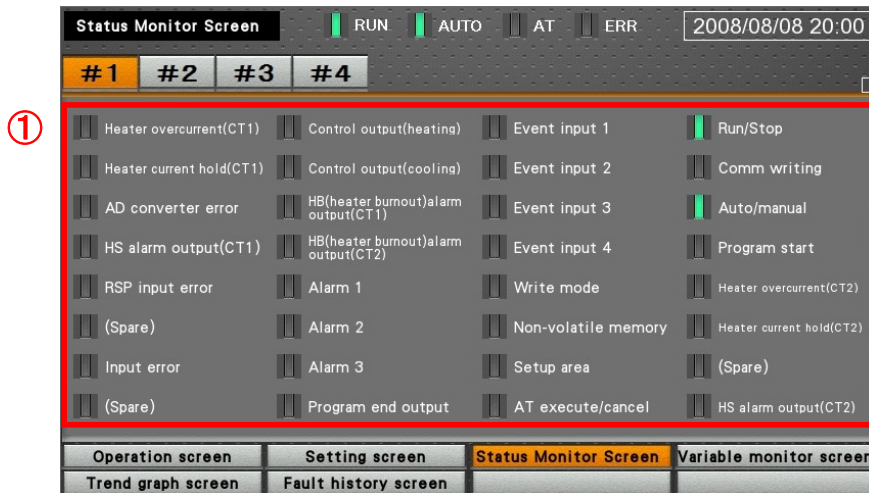
Caution on usage

After changing parameters, if you should start the operation, firstly make sure that there is no problem even if you switch over the operation level and then switch over to the operation level.

3.1.5. Status Monitor Screen

A screen displays the state of each status.

Status Screen (#1)



Status Screen (#2)



Status Screen (#3)



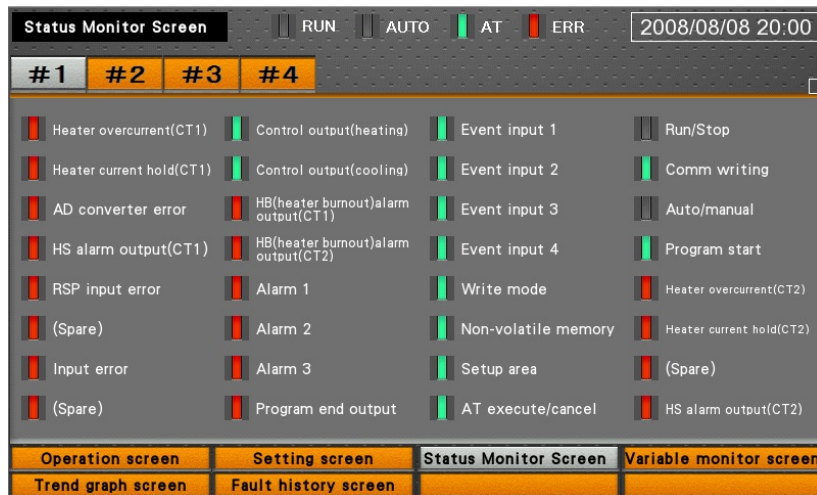
Status Screen (#4)



No.	Description
(1)	<p>Status Indicator</p> <p>It indicates the state of each status. If each status bit is ON, the relevant lamp is lit.</p> <p>However, if the bits of "Run/Stop" and "Auto/Manual" are turned to OFF, the lamp is lit.</p> <p>If it is normal, it is lit in green. If abnormal, it is lit in red.</p>

The screen as below shows the state that each status is “1”.

Status screen (#1)



3.1.6. Variable Monitor Screen

A screen displays present value for each variable type.

Variable Monitor Screen_1 (#1)

Variable monitor screen_1 RUN AUTO AT ERR 2008/08/08 20:00

#1 #2 #3 #4

①

Multi-SP No.	#	Manual reset value	###.##	Wait band	###.##
Status2	FFFF	SP ramp time unit	EU/s	Remote SP Input Shift	###.##
Decimal point position	#	SP ramp set value	###.##	Remote SP Input Slope Coefficient	###.##
Operation/adjustment protect	#	MV change rate limit	###.##	Input digital filter	###.##
Initial setting/comm protect	#	Process Value Slope Coefficient	###.##	Moving Average Count	OFF
Setup change protection	OFF	Heater current 1 value	###.##	Extraction of square root low-cut point	###.##
PF Key Protect	OFF	Leakage current value 1	###.##	SP0	###.##
Move protect level	###.##	Process Value Input Shift	###.##	SP1	###.##
Parameter mask enable	OFF	Heater current 2 value	###.##	SP2	###.##
Displaying Changed Parameters	OFF	Leakage current value 2	###.##	SP3	###.##
Manual MV	###.##	Soak time remain	###.##		
Remote SP Monitor	###.##	Soak time	###.##		

Next

Operation screen Setting screen Status Monitor Screen Variable monitor screen

Trend graph screen Fault history screen

Variable Monitor Screen_2 (#1)

Variable monitor screen_2 RUN AUTO AT ERR 2008/08/08 20:00

#1 #2 #3 #4

SP4	###.##	Minimum Output ON/OFF Band	###.##	Auxiliary Output 2 assignment	Not assigned
SP5	###.##	Transfer output type	OFF	Auxiliary Output 3 assignment	Not assigned
SP6	###.##	Transfer output signal type	4-20mA	Auxiliary Output 4 assignment	Not assigned
SP7	###.##	Control output 1 assignment	Not assigned	Transfer output upper limit	###.##
Remote SP Upper-limit	###.##	Control output 2 assignment	Not assigned	Transfer output lower limit	###.##
Remote SP Lower-limit	###.##	Event input assignment 1	None	Extraction of square root enable	OFF
PV decimal point display	OFF	Event input assignment 2	None	Alarm 1 latch	OFF
Control Output 1 Signal	4-20mA	Event input assignment 3	None	Alarm 2 latch	OFF
Control Output 2 Signal	4-20mA	Event input assignment 4	None	Alarm 3 latch	OFF
ST	OFF	Event input assignment 5	None	Standby sequence reset	Condition A
Program pattern	OFF	Event input assignment 6	None		
Remote SP Input type	4-20mA	Auxiliary Output 1 assignment	Not assigned		

Previous Next

Operation screen Setting screen Status Monitor Screen Variable monitor screen

Trend graph screen Fault history screen

Variable Monitor Screen_3 (#1)

Variable monitor screen_3 ☒ RUN ☒ AUTO ☐ AT ☐ ERR 2008/08/08 20:00

#1 #2 #3 #4

Auxiliary output 1 open in alarm	Close in alarm	Automatic display return time	##	Monitor/Setting item 3	Disabled
Auxiliary output 2 open in alarm	Close in alarm	Display refresh period	OFF	Monitor/Setting item 4	Disabled
Auxiliary output 3 open in alarm	Close in alarm	IPV/SP2/Display selection	Nothing displayed	Monitor/Setting item 5	Disabled
Auxiliary output 4 open in alarm	Close in alarm	Display Brightness	#	SP Tracking	OFF
Alarm 1 ON delay	###	MV display	OFF	Cold function compensation method	OFF
Alarm 2 ON delay	###	Protect level move time	##	Integral/Derivative time unit	1s
Alarm 3 ON delay	###	Auto/manual switching display addition	OFF	α	0.##
Alarm 1 OFF delay	###	PV status display function	OFF	Manual output method	HOLD
Alarm 2 OFF delay	###	SV status display function	OFF	Manual MV initial value	####.#
Alarm 3 OFF delay	###	PF setting	Disabled		
IPV/SP1/Display selection	Nothing displayed	Monitor/Setting item 1	Disabled		
MV display selection	Heating	Monitor/Setting item 2	Disabled		

Previous Next

Operation screen Setting screen Status Monitor Screen **Variable monitor screen**

Trend graph screen Fault history screen

Variable Monitor Screen_4 (#1)

Variable monitor screen_4 ☒ RUN ☒ AUTO ☐ AT ☐ ERR 2008/08/08 20:00

#1 #2 #3 #4

AT calculated gain	###.#	RT	OFF
AT Hysteresis	####.#	HS alarm	OFF
Limit cycle MV amplitude	###.#	LBA detection time	####
HB latch	OFF	LBA level	###.#
HB hysteresis	###.#	LBA band	###.#
HS alarm latch	OFF	Soak time units	min
HS alarm hysteresis	###.#	Alarm SP selection	Ramp SP
Number of Multi-SP Points	#	Remote SP enable	OFF
HB ON/OFF	OFF	Manual MV limit enable	OFF
Integrated alarm assignment	###	PV rate of change calculation period	###
MV at Stop and Error Addition	OFF	Heating/Cooling tuning method	Same as heating control
ST stable range	####.#		

Previous

Operation screen Setting screen Status Monitor Screen **Variable monitor screen**

Trend graph screen Fault history screen

Variable Monitor Screen_1 (#2)

Variable monitor screen_1 ☒ RUN ☒ AUTO ☐ AT ☐ ERR 2008/08/08 20:00

#1 #2 #3 #4

Multi-SP No.	#	Manual reset value	####.#	Wait band	####.#
Status2	FFFF FFFF	SP ramp time unit	EU/s	Remote SP Input Shift	####
Decimal point position	#	SP ramp set value	####	Remote SP Input Slope Coefficient	###.###
Operation/adjustment protect	#	MV change rate limit	####	Input digital filter	####.#
Initial setting/comm protect	#	Process Value Slope Coefficient	###.###	Moving Average Count	OFF
Setup change protection	OFF	Heater current 1 value	###.#	Extraction of square root low-cut point	####.#
PF Key Protect	OFF	Leakage current value 1	###.#	SP0	####
Move protect level	####	Process Value Input Shift	####	SP1	####
Parameter mask enable	OFF	Heater current 2 value	###.#	SP2	####
Displaying Changed Parameters	OFF	Leakage current value 2	###.#	SP3	####
Manual MV	####.#	Soak time remain	####		
Remote SP Monitor	####	Soak time	####		

Next

Operation screen Setting screen Status Monitor Screen **Variable monitor screen**

Trend graph screen Fault history screen

Variable Monitor Screen_2 (#2)

Variable monitor screen_2 RUN AUTO AT ERR 2008/08/08 20:00

#1 #2 #3 #4

SP4	■■■■■■■■	Minimum Output ON/OFF Band	■■■■.■■	Auxiliary Output 2 assignment	Not assigned
SP5	■■■■■■■■	Transfer output type	OFF	Auxiliary Output 3 assignment	Not assigned
SP6	■■■■■■■■	Transfer output signal type	4-20mA	Auxiliary Output 4 assignment	Not assigned
SP7	■■■■■■■■	Control output 1 assignment	Not assigned	Transfer output upper limit	■■■■■■■■
Remote SP Upper-limit	■■■■■■■■	Control output 2 assignment	Not assigned	Transfer output lower limit	■■■■■■■■
Remote SP Lower-limit	■■■■■■■■	Event input assignment 1	None	Extraction of square root enable	OFF
PV decimal point display	OFF	Event input assignment 2	None	Alarm 1 latch	OFF
Control Output 1 Signal	4-20mA	Event input assignment 3	None	Alarm 2 latch	OFF
Control Output 2 Signal	4-20mA	Event input assignment 4	None	Alarm 3 latch	OFF
ST	OFF	Event input assignment 5	None	Standby sequence reset	Condition A
Program pattern	OFF	Event input assignment 6	None		
Remote SP Input type	4-20mA	Auxiliary Output 1 assignment	Not assigned		

Previous Next

Operation screen Setting screen Status Monitor Screen Variable monitor screen

Trend graph screen Fault history screen

Variable Monitor Screen_3 (#2)

Variable monitor screen_3 RUN AUTO AT ERR 2008/08/08 20:00

#1 #2 #3 #4

Auxiliary output 1 open in alarm	Close in alarm	Automatic display return time	■■■■	Monitor/Setting item 3	Disabled
Auxiliary output 2 open in alarm	Close in alarm	Display refresh period	OFF	Monitor/Setting item 4	Disabled
Auxiliary output 3 open in alarm	Close in alarm	IPV/SP2)Display selection	Nothing displayed	Monitor/Setting item 5	Disabled
Auxiliary output 4 open in alarm	Close in alarm	Display Brightness	■■■■	SP Tracking	OFF
Alarm 1 ON delay	■■■■■■■■	MV display	OFF	Cold function compensation method	OFF
Alarm 2 ON delay	■■■■■■■■	Protect level move time	■■■■	Integral/Derivative time unit	1s
Alarm 3 ON delay	■■■■■■■■	Auto/manual switching display addition	OFF	α	■■■■.■■
Alarm 1 OFF delay	■■■■■■■■	PV status display function	OFF	Manual output method	HOLD
Alarm 2 OFF delay	■■■■■■■■	SV status display function	OFF	Manual MV initial value	■■■■■■■■
Alarm 3 OFF delay	■■■■■■■■	PF setting	Disabled		
IPV/SP1)Display selection	Nothing displayed	Monitor/Setting item 1	Disabled		
MV display selection	Heating	Monitor/Setting item 2	Disabled		

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Operation screen Setting screen Status Monitor Screen Variable monitor screen

Trend graph screen Fault history screen

Variable Monitor Screen_4 (#2)

Variable monitor screen_4 RUN AUTO AT ERR 2008/08/08 20:00

#1 #2 #3 #4

AT calculated gain	■■■■.■■	RT	OFF
AT Hysteresis	■■■■.■■	HS alarm	OFF
Limit cycle MV amplitude	■■■■.■■	LBA detection time	■■■■■■■■
HB latch	OFF	LBA level	■■■■.■■
HB hysteresis	■■■■.■■	LBA band	■■■■.■■
HS alarm latch	OFF	Soak time units	min
HS alarm hysteresis	■■■■.■■	Alarm SP selection	Ramp SP
Number of Multi-SP Points	■■	Remote SP enable	OFF
HB ON/OFF	OFF	Manual MV limit enable	OFF
Integrated alarm assignment	■■■■■■■■	PV rate of change calculation period	■■■■
MV at Stop and Error Addition	OFF	Heating/Cooling tuning method	Same as heating control
ST stable range	■■■■.■■		

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Operation screen Setting screen Status Monitor Screen Variable monitor screen

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Variable Monitor Screen_1 (#3)

Variable monitor screen_1		RUN	AUTO	AT	ERR	2008/08/08 20:00
#1	#2	#3	#4			
Multi-SP No.	#	Manual reset value	###.##	Wait band	###.##	
Status2	FFFF FFFF	SP ramp time unit	EU/s	Remote SP Input Shift	#####	
Decimal point position	#	SP ramp set value	#####	Remote SP Input Slope Coefficient	###.###	
Operation/adjustment protect	#	MV change rate limit	#####	Input digital filter	#####	
Initial setting/comm protect	#	Process Value Slope Coefficient	###.###	Moving Average Count	OFF	
Setup change protection	OFF	Heater current 1 value	#####	Extraction of square root low-cut point	#####	
PF Key Protect	OFF	Leakage current value 1	#####	SP0	#####	
Move protect level	#####	Process Value Input Shift	#####	SP1	#####	
Parameter mask enable	OFF	Heater current 2 value	#####	SP2	#####	
Displaying Changed Parameters	OFF	Leakage current value 2	#####	SP3	#####	
Manual MV	#####	Soak time remain	#####			
Remote SP Monitor	#####	Soak time	#####			
Operation screen		Setting screen		Status Monitor Screen		Variable monitor screen
Trend graph screen		Fault history screen				

Variable Monitor Screen_2 (#3)

Variable monitor screen_2		RUN	AUTO	AT	ERR	2008/08/08 20:00
#1	#2	#3	#4			
SP4	#####	Minimum Output ON/OFF Band	###.##	Auxiliary Output 2 assignment	Not assigned	
SP5	#####	Transfer output type	OFF	Auxiliary Output 3 assignment	Not assigned	
SP6	#####	Transfer output signal type	4-20mA	Auxiliary Output 4 assignment	Not assigned	
SP7	#####	Control output 1 assignment	Not assigned	Transfer output upper limit	#####	
Remote SP Upper-limit	#####	Control output 2 assignment	Not assigned	Transfer output lower limit	#####	
Remote SP Lower-limit	#####	Event input assignment 1	None	Extraction of square root enable	OFF	
PV decimal point display	OFF	Event input assignment 2	None	Alarm 1 latch	OFF	
Control Output 1 Signal	4-20mA	Event input assignment 3	None	Alarm 2 latch	OFF	
Control Output 2 Signal	4-20mA	Event input assignment 4	None	Alarm 3 latch	OFF	
ST	OFF	Event input assignment 5	None	Standby sequence reset	Condition A	
Program pattern	OFF	Event input assignment 6	None			
Remote SP Input type	4-20mA	Auxiliary Output 1 assignment	Not assigned			
Operation screen		Setting screen		Status Monitor Screen		Variable monitor screen
Trend graph screen		Fault history screen				

Variable Monitor Screen_3 (#3)

Variable monitor screen_3		RUN	AUTO	AT	ERR	2008/08/08 20:00
#1	#2	#3	#4			
Auxiliary output 1 open in alarm	Close in alarm	Automatic display return time	##	Monitor/Setting item 3	Disabled	
Auxiliary output 2 open in alarm	Close in alarm	Display refresh period	OFF	Monitor/Setting item 4	Disabled	
Auxiliary output 3 open in alarm	Close in alarm	IPV/SP2/Display selection	Nothing displayed	Monitor/Setting item 5	Disabled	
Auxiliary output 4 open in alarm	Close in alarm	Display Brightness	#	SP Tracking	OFF	
Alarm 1 ON delay	#####	MV display	OFF	Cold junction compensation method	OFF	
Alarm 2 ON delay	#####	Protect level move time	##	Integral/Derivative time unit	1s	
Alarm 3 ON delay	#####	Auto/manual switching display addition	OFF	α	###.###	
Alarm 1 OFF delay	#####	PV status display function	OFF	Manual output method	HOLD	
Alarm 2 OFF delay	#####	SV status display function	OFF	Manual MV initial value	#####	
Alarm 3 OFF delay	#####	PF setting	Disabled			
IPV/SP1/Display selection	Nothing displayed	Monitor/Setting item 1	Disabled			
MV display selection	Heating	Monitor/Setting item 2	Disabled			
Operation screen		Setting screen		Status Monitor Screen		Variable monitor screen
Trend graph screen		Fault history screen				

Variable Monitor Screen_4 (#3)

Variable monitor screen_4 RUN AUTO AT ERR 2008/08/08 20:00

#1 #2 **#3** #4

AT calculated gain	00.0	RT	OFF
AT Hysteresis	000.0	HS alarm	OFF
Limit cycle MV amplitude	00.0	LBA detection time	0000
HB latch	OFF	LBA level	000.0
HB hysteresis	00.0	LBA band	000.0
HS alarm latch	OFF	Soak time units	min
HS alarm hysteresis	00.0	Alarm SP selection	Ramp SP
Number of Multi-SP Points	0	Remote SP enable	OFF
HB ON/OFF	OFF	Manual MV limit enable	OFF
Integrated alarm assignment	0000	PV rate of change calculation period	0000
MV at Stop and Error Addition	OFF	Heating/Cooling tuning method	Same as heating control
ST stable range	0000.0		

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Operation screen Setting screen Status Monitor Screen **Variable monitor screen**

Trend graph screen Fault history screen

Variable Monitor Screen_1 (#4)

Variable monitor screen_1 RUN AUTO AT ERR 2008/08/08 20:00

#1 #2 **#3** #4

Multi-SP No.	0	Manual reset value	000.0	Wait band	000.0
Status2	FFFF	SP ramp time unit	EU/s	Remote SP Input Shift	00000
Decimal point position	0	SP ramp set value	0000	Remote SP Input Slope Coefficient	0.000
Operation/adjustment protect	0	MV change rate limit	000.0	Input digital filter	000.0
Initial setting/comm protect	0	Process Value Slope Coefficient	0.000	Moving Average Count	OFF
Setup change protection	OFF	Heater current 1 value	00.0	Extraction of square root low-cut point	000.0
PF Key Protect	OFF	Leakage current value 1	00.0	SP0	00000
Move protect level	00000	Process Value Input Shift	00000	SP1	00000
Parameter mask enable	OFF	Heater current 2 value	00.0	SP2	00000
Disabling Changed Parameters	OFF	Leakage current value 2	00.0	SP3	00000
Manual MV	0000.0	Soak time remain	0000		
Remote SP Monitor	00000	Soak time	0000		

Next

Operation screen Setting screen Status Monitor Screen **Variable monitor screen**

Trend graph screen Fault history screen

Variable Monitor Screen_2 (#4)

Variable monitor screen_2 RUN AUTO AT ERR 2008/08/08 20:00

#1 #2 **#3** #4

SP4	00000	Minimum Output ON/OFF Band	00.0	Auxiliary Output 2 assignment	Not assigned
SP5	00000	Transfer output type	OFF	Auxiliary Output 3 assignment	Not assigned
SP6	00000	Transfer output signal type	4-20mA	Auxiliary Output 4 assignment	Not assigned
SP7	00000	Control output 1 assignment	Not assigned	Transfer output upper limit	00000
Remote SP Upper-limit	00000	Control output 2 assignment	Not assigned	Transfer output lower limit	00000
Remote SP Lower-limit	00000	Event input assignment 1	None	Extraction of square root enable	OFF
PV decimal point display	OFF	Event input assignment 2	None	Alarm 1 latch	OFF
Control Output 1 Signal	4-20mA	Event input assignment 3	None	Alarm 2 latch	OFF
Control Output 2 Signal	4-20mA	Event input assignment 4	None	Alarm 3 latch	OFF
ST	OFF	Event input assignment 5	None	Standby sequence reset	Condition A
Program pattern	OFF	Event input assignment 6	None		
Remote SP input type	4-20mA	Auxiliary Output 1 assignment	Not assigned		

Previous Next

Operation screen Setting screen Status Monitor Screen **Variable monitor screen**

Trend graph screen Fault history screen

Variable Monitor Screen_3 (#4)

Variable monitor screen_3 RUN AUTO AT ERR 2008/08/08 20:00

#1 #2 #3 **#4**

Auxiliary output 1 open in alarm	Close in alarm	Automatic display return time	##	Monitor/Setting item 3	Disabled
Auxiliary output 2 open in alarm	Close in alarm	Display refresh period	OFF	Monitor/Setting item 4	Disabled
Auxiliary output 3 open in alarm	Close in alarm	IPV/SR2)Display selection	Nothing displayed	Monitor/Setting item 5	Disabled
Auxiliary output 4 open in alarm	Close in alarm	Display Brightness	##	SP Tracking	OFF
Alarm 1 ON delay	##	MV display	OFF	Cold function compensation method	OFF
Alarm 2 ON delay	##	Protect level move time	##	Integral/Derivative time unit	1s
Alarm 3 ON delay	##	Auto/manual switching display addition	OFF	α	##
Alarm 1 OFF delay	##	PV status display function	OFF	Manual output method	HOLD
Alarm 2 OFF delay	##	SV status display function	OFF	Manual MV initial value	##
Alarm 3 OFF delay	##	PF setting	Disabled		
IPV/SR1)Display selection	Nothing displayed	Monitor/Setting item 1	Disabled		
MV display selection	Heating	Monitor/Setting item 2	Disabled		

Previous Next

Operation screen Setting screen Status Monitor Screen **Variable monitor screen**

Trend graph screen Fault history screen

Variable Monitor Screen_4 (#4)

Variable monitor screen_4 RUN AUTO AT ERR 2008/08/08 20:00

#1 #2 #3 **#4**

AT calculated gain	##.##	RT	OFF
AT Hysteresis	##.##	HS alarm	OFF
Limit cycle MV amplitude	##.##	LBA detection time	##
HB latch	OFF	LBA level	##.##
HB hysteresis	##.##	LBA band	##.##
HS alarm latch	OFF	Soak time units	min
HS alarm hysteresis	##.##	Alarm SP selection	Ramp SP
Number of Multi-SP Points	##	Remote SP enable	OFF
HB ON/OFF	OFF	Manual MV limit enable	OFF
Interated alarm assignment	##	PV rate of change calculation period	##
MV at Stop and Error Addition	OFF	Heating/Cooling tuning method	Same as heating control
ST stable range	##.##		

Previous

Operation screen Setting screen Status Monitor Screen **Variable monitor screen**

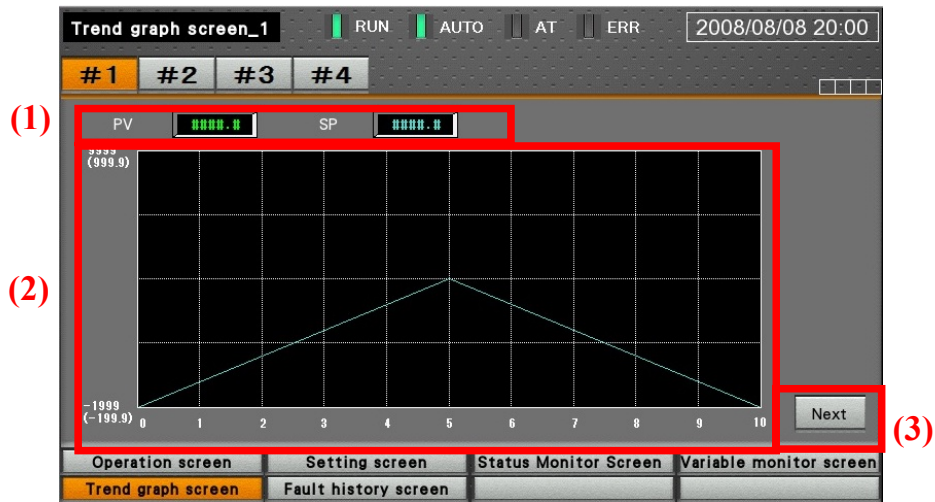
Trend graph screen Fault history screen

No.	Description
(1)	<p>(Display Variable)</p> <p>Setting items for each variable type are displayed.</p> <p>This numeric object is only for monitoring and the value is not subjected to be specified or to be modified.</p> <p>(Display Switch “Next”, “Previous”)</p> <p>Switch to the next screen or the previous screen from variable monitor screen.</p>

3.1.7. Trend graph screen

A screen monitors the trend graph of the present value and manipulated variable.

Present value Trend graph_1 (#1)



Manipulated variable Trend graph_2 (#1)



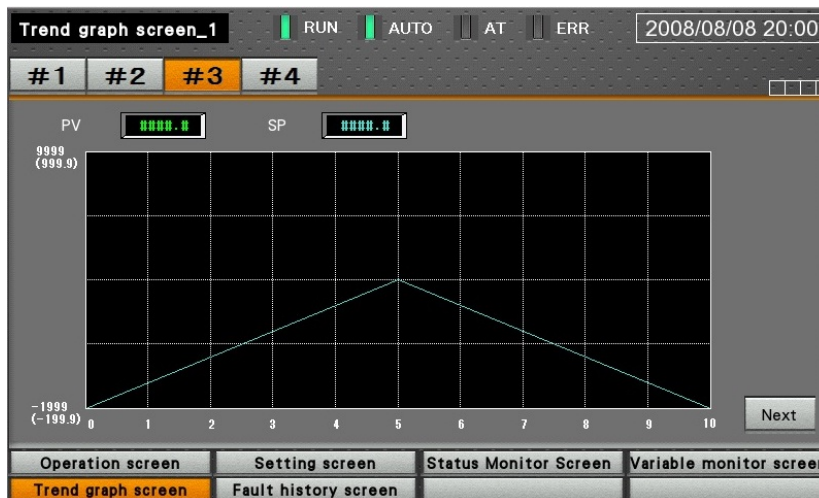
Present value Trend graph_1 (#2)



Manipulated variable Trend graph_2 (#2)



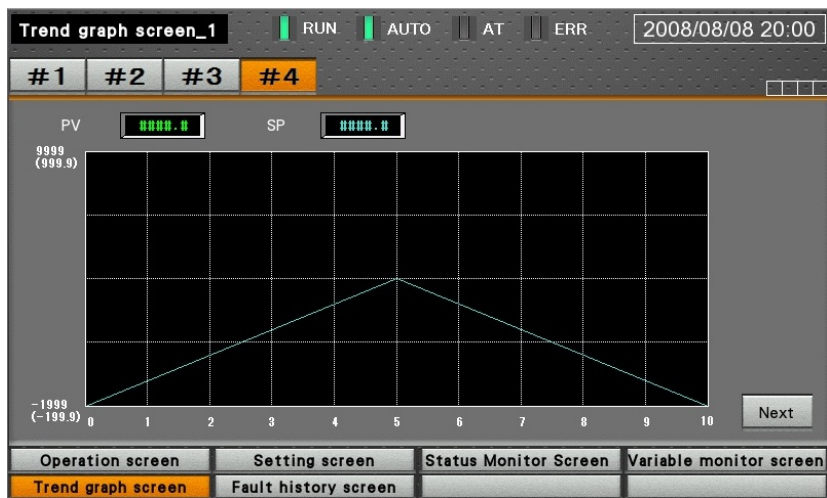
Present value Trend graph_1 (#3)



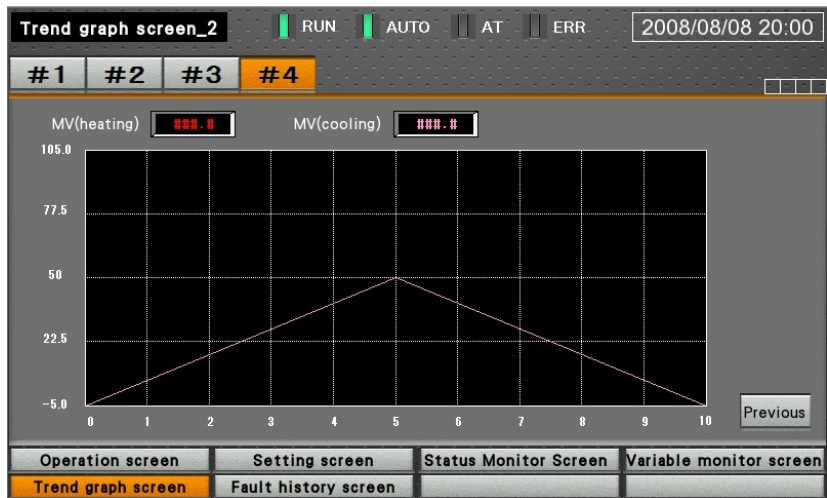
Manipulated variable Trend graph_2 (#3)



Present value Trend graph_1 (#4)



Manipulated variable Trend graph_2 (#4)



No.	Description
(1)	<p>■Displaying present value The present value and targeted value of the monitoring data are displayed in numeric.</p> <p>■Displaying manipulated variable The manipulated variable (heating) and the one (cooling) of the monitoring data are displayed in numeric.</p>
(2)	<p>Displaying Trend graph The values indicated in (1) are displayed in Trend graph.</p> <p>·The logging period is 1 sec.</p> <p>·Logging the following points with calculating one second as one point.</p> <p>·NB7W: 600 points (for 10 min.)</p> <p>■Displaying present value Present value: displayed in green Targeted value: displayed in light blue</p> <p>■Displaying manipulated variable Heating: displayed in red Cooling: displayed in purple</p>
(3)	<p>Switch between present value and manipulated variable Switching between present value and manipulated variable.</p>

3.1.8. Fault History screen

A screen displays fault history such as an error currently occurring or the other one removed.

Fault History screen (#1)



Fault History screen (#2)



Fault History screen (#3)



Fault History screen (#4)



No.	Description
(1)	<p>Fault History Display</p> <p>The fault occurrence time, the fault removal time, and the fault details are displayed.</p> <p>The fault currently occurring is displayed in red. The fault and removed is displayed in green.</p>
(2)	<p>Scroll Button</p> <p>This button allows the screed to be scrolled.</p>

This Template indicates the statuses of Digital Controller as below in Fault History screen.

Address	Message
4X_9223.00	Heater overcurrent(CT1)
4X_9223.01	Heater current hold(CT1)
4X_9223.02	AD converter error
4X_9223.03	HS alarm output(CT1)
4X_9223.04	RSP input error
4X_9223.06	Input error
4X_9223.10	HB(heater burnout)alarm output(CT1)
4X_9223.11	HB(heater burnout)alarm output(CT2)
4X_9223.12	Alarm 1
4X_9223.13	Alarm 2
4X_9223.14	Alarm 3
4X_9224.12	Heater overcurrent(CT2)
4X_9224.13	Heater current hold(CT2)
4X_9224.15	HS alarm output(CT2)

3.1.9. Mass modifying screen (popup screen)

Touching popup screen (mass modifying screen) in 3.1.4 Parameter setting screen allows the popup screen to be displayed.

The setting values are possible to be specified and modified.

Mass modifying (#1),(#2),(#3),(#4)

(1)

Input type Pt(1)										Close
Pt(1)	Pt(2)	Pt(3)	JPt(1)	JPt(2)	K(1)	K(2)	J(1)	J(2)	T(1)	
T(2)	E	L	U(1)	U(2)	N	R	S	B	W	
PL II	K140/60	K240/120	K280/140	K440/220	4~20mA	0~20mA	1~5V	0~5V	0~10V	
Temp unit °C		Direct/reverse operation Reverse		PID/OnOff ON/OFF		Standard of heating and cooling Standard				
°C °F		Reverse Direct		ON/OFF PID		Standard Heating cooling				
Control period(heat) 0.5 1~99s					Control period(cool) 0.5 1~99s					
0.1s 0.2s 0.5s ##					0.1s 0.2s 0.5s ##					
Alarm 1 type Function off			Alarm 2 type Function off			Alarm 3 type Function off				
Alarm function off	Low-limit alarm with standby sequence	SP abs-val up-limit alarm	Alarm function off	Low-limit alarm with standby sequence	SP abs-val up-limit alarm	Alarm function off	Low-limit alarm with standby sequence	SP abs-val up-limit alarm		
Up&low-limit alarm	Abs-val up-limit alarm	SP abs-val low-limit alarm	Up&low-limit alarm	Abs-val up-limit alarm	SP abs-val low-limit alarm	Up&low-limit alarm	Abs-val up-limit alarm	SP abs-val low-limit alarm		
Up-limit alarm	Abs-val low-limit alarm	MV abs-val up-limit alarm	Up-limit alarm	Abs-val low-limit alarm	MV abs-val up-limit alarm	Up-limit alarm	Abs-val low-limit alarm	MV abs-val up-limit alarm		
Low-limit alarm	Abs-val up-limit alarm with standby sequence	MV abs-val low-limit alarm	Low-limit alarm	Abs-val up-limit alarm with standby sequence	MV abs-val low-limit alarm	Low-limit alarm	Abs-val up-limit alarm with standby sequence	MV abs-val low-limit alarm		
Up&low-limit range alarm	Abs-val low-limit alarm with standby sequence	RSP abs-val up-limit alarm	Up&low-limit range alarm	Abs-val low-limit alarm with standby sequence	RSP abs-val up-limit alarm	Up&low-limit range alarm	Abs-val low-limit alarm with standby sequence	RSP abs-val up-limit alarm		
Up&low limit alarm with standby sequence	LBA	RSP abs-val low-limit alarm	Up&low limit alarm with standby sequence	LBA	RSP abs-val low-limit alarm	Up&low limit alarm with standby sequence	LBA	RSP abs-val low-limit alarm		
Up-limit alarm with standby sequence	PV change rate alarm		Up-limit alarm with standby sequence	PV change rate alarm		Up-limit alarm with standby sequence	PV change rate alarm			

(2)

No.	Description
	(Display present setting value) Present setting value of each item is displayed.(color of present setting value: green)
(1)	(Modify Setting Button) Touching the setting button of each item allows settings to be modified. (Control period (heating), control period (cooling) setting method) When specifying the setting values of control period (heating) and control period (cooling) to between 1 and 99 seconds, touch the numeric part (displayed in yellow) and then enter the setting values with numeric keypad.
(2)	Close the popup screen.

4. Revision History

Revision No.	Revision Date	Reason/Page
Original	2013/05/12	First edition for E5_C Template_E_V1.00
A	2014/02/04	Add E5DC setup information V2.00a

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