

Thank you for purchasing this RKC product. In order to achieve maximum performance and ensure proper operation of the instrument, carefully read all the instructions in this manual. Please place the manual in a convenient location for easy reference. This manual describes basic key operations of the PZ400/900/401/901.

For detailed handling procedures and key operations, refer to separate **PZ400/PZ900/PZ401/PZ901 Instruction Manual**.  
The manual can be downloaded from the official RKC website:  
<https://www.rkcinst.co.jp/english/download-center/>

### Notes for the display

- See the following legends for the key operations described in this manual.  
Legend  
X: Press X key once  
X (n times): Press X key n times  
X (n seconds): Press and hold X key for n seconds or more.  
X+Y: Press X and Y keys simultaneously  
X+Y (n seconds): Press and hold X and Y keys simultaneously for n seconds or more

- In this manual a number in gray means that it is flashing.  
The flashing digit indicates which digit can be set. Press **◀MODE** key to go to a different digit.

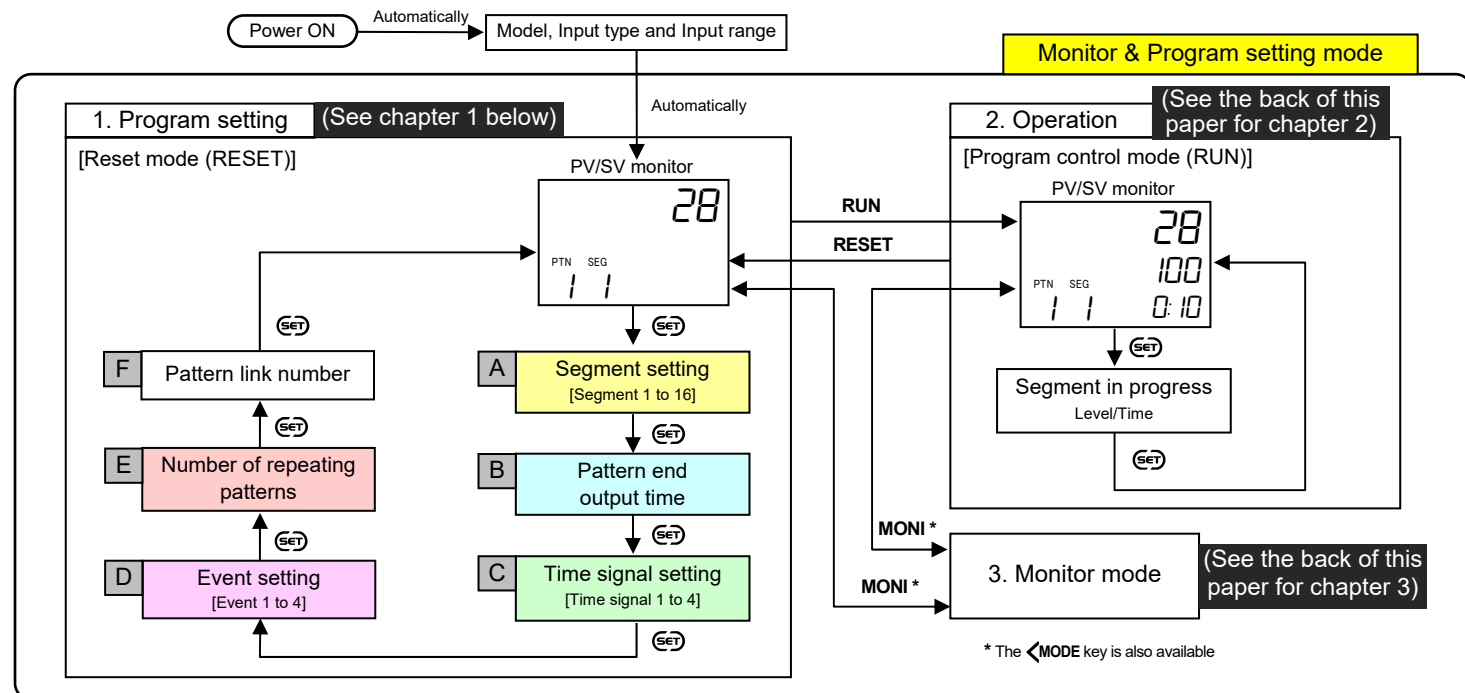
88888 ← Flashing (gray)

- The PV/SV monitor screen in the Monitor and Program setting mode is the base screen of this instrument. The PV/SV monitor screen can be reached from any screens by any of the following operations.

- MONI
- RESET (When in control, the instrument will stop)
- SET+◀MODE
- No key operated for 60 seconds.

## Monitor & Program setting mode

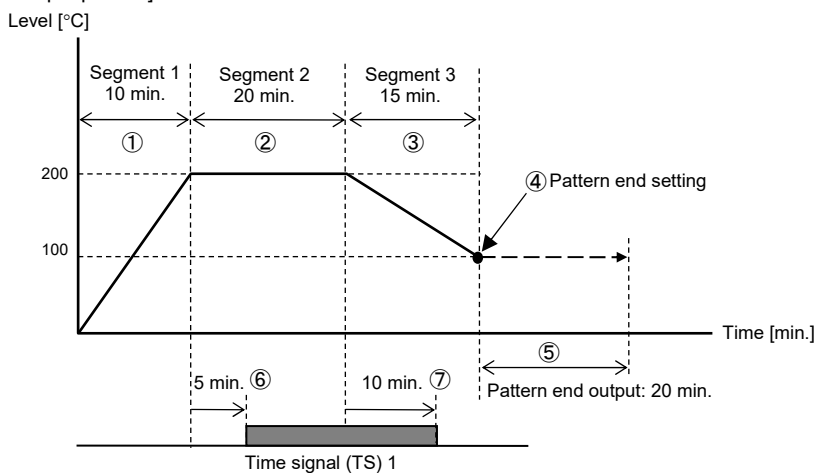
After the instrument is powered on, the model, the input type, and the input range are automatically displayed, followed by the "Monitor and Program setting mode."  
Setting a program and/or monitoring an operation status can be basically achieved in this mode. Below is an outline of the menu structure. (The displayed screens may be different depending on the specification and the setting.)



## 1. Program setting

A program setting procedure is shown below using the example pattern. The screens shown below are examples. Displayed screens may be different depending on the specification and the setting.

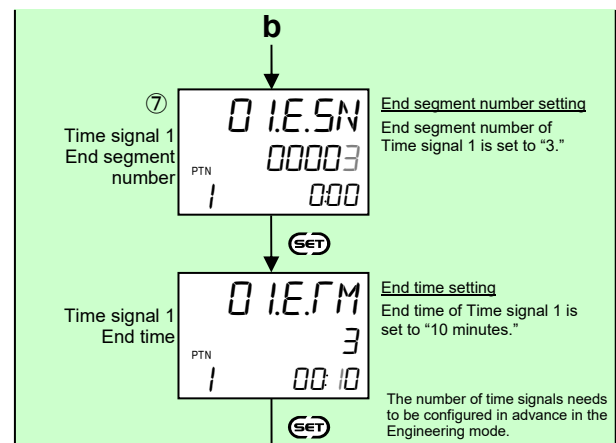
### [Example pattern]



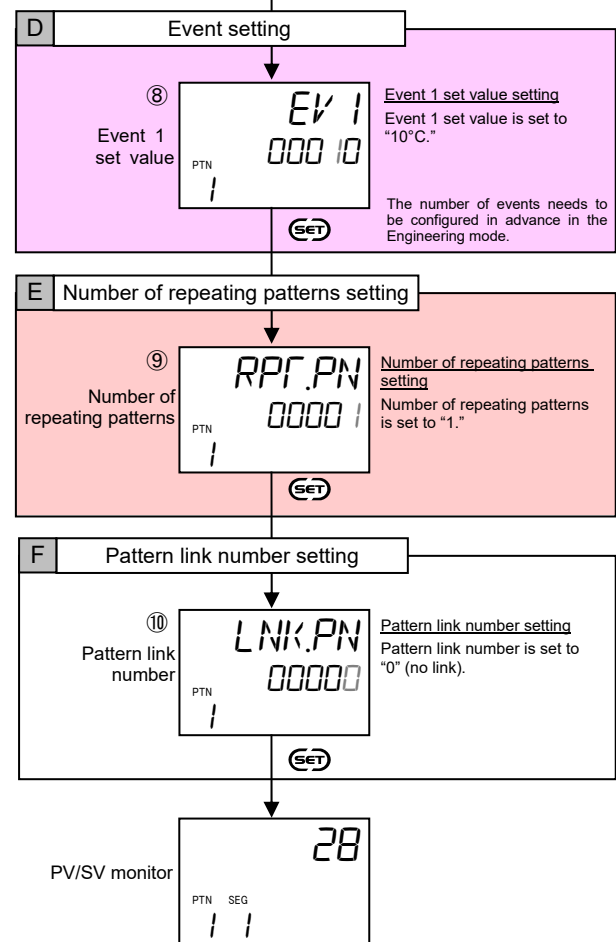
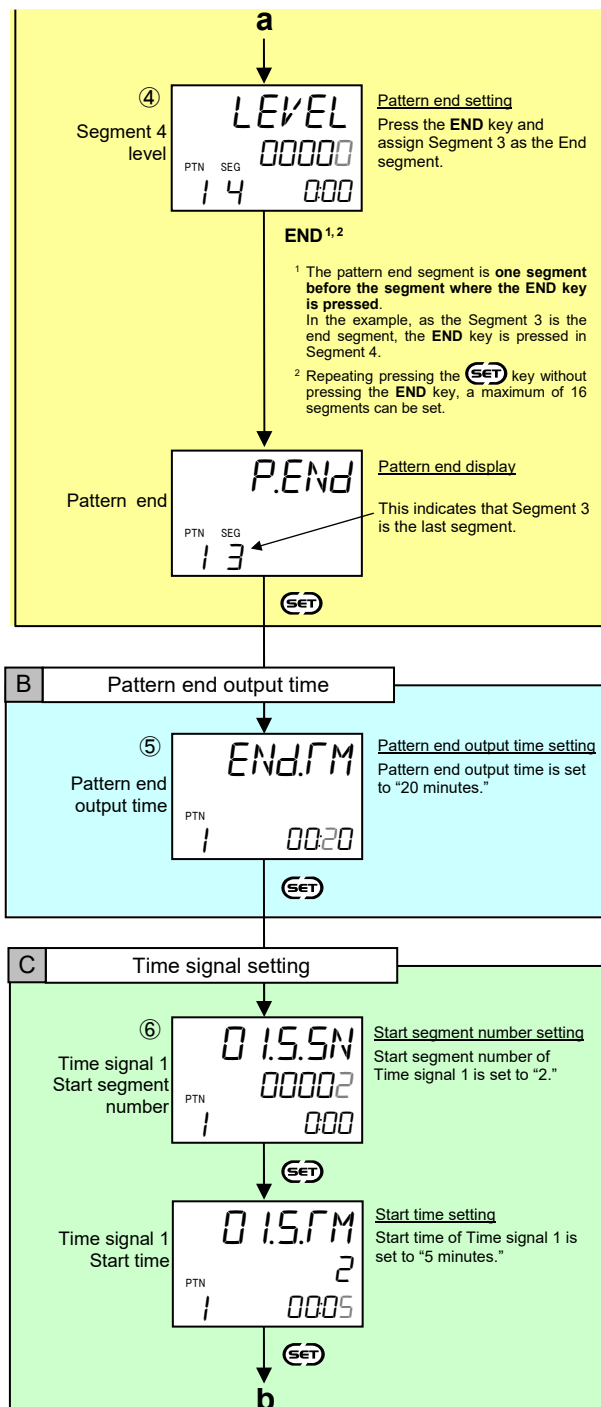
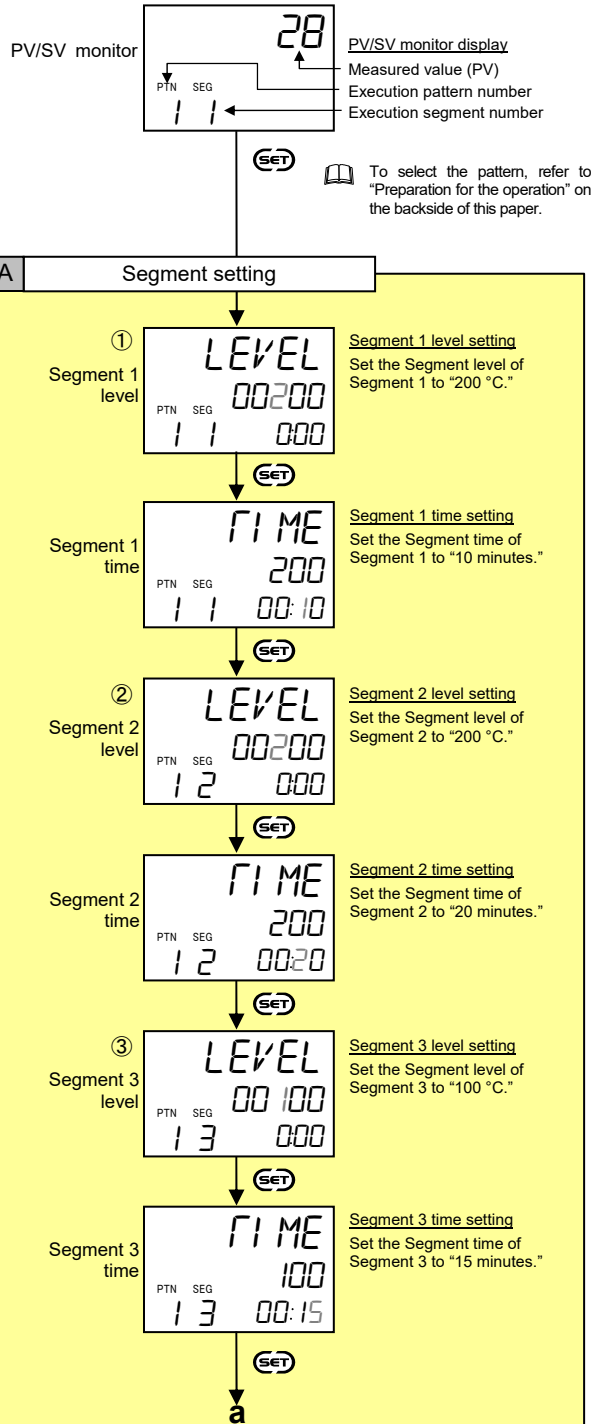
⑧	Event 1 set value [°C] *	10
⑨	Number of repeating patterns	1
⑩	Pattern link number	0 (No link)

\* Event 1 type: Deviation high

- This instrument allows setting up to 16 patterns and 16 segments.
- A maximum of up to 4 events are settable. Configuration of the events (with or without, type) can be made in the Engineering mode.
- The Pattern end output is provided over a set period after the completion of the program pattern.
- The Pattern end output when repeat is specified is produced after the execution of the last program pattern.
- When patterns are linked, the time signal setting remains unchanged and valid. In this case, the available pattern end output is the setting of the last link.



### Monitor & Program setting mode (Reset mode)

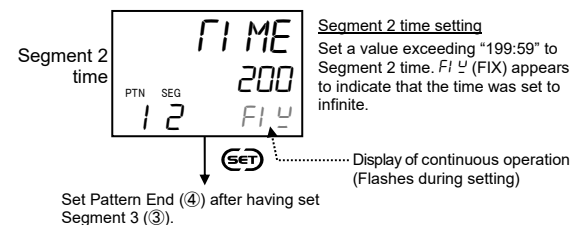


### ★ To set Segment time to infinite

Soak segment (where temperature is kept constant) can be set to infinite. Unless the program is reset or stepped, continuous control continues at the segment level set for continuous operation.

### [Setting example]

In the above example, Segment 2 is a soak segment and Segment 2 time should be set to infinite.



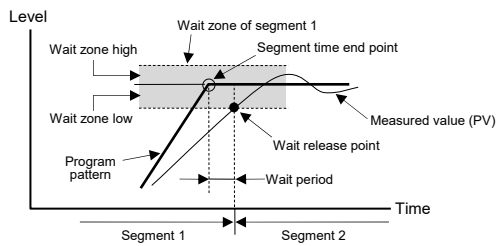
- There are the following two ways to abort the continuous operation.
- Press the **RESET** key. The instrument enters the Reset mode (RESET) and the program control is stopped.
- Press the **STEP** key for two seconds or more. The program advances to the next segment and the infinite time operation is stopped.

## Program control related functions

### Wait

#### ● Wait function

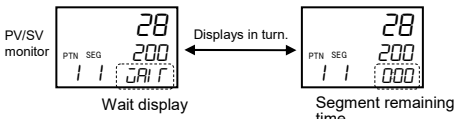
When Measured value (PV) does not follow the progress of the program during the Program control operation, the program will be on standby state at Segment time end point until the Measured value (PV) reaches the Wait zone.



#### ● Wait display

Alternates displaying "WAIT" and Segment remaining time (0:00) when the program is in Wait state.

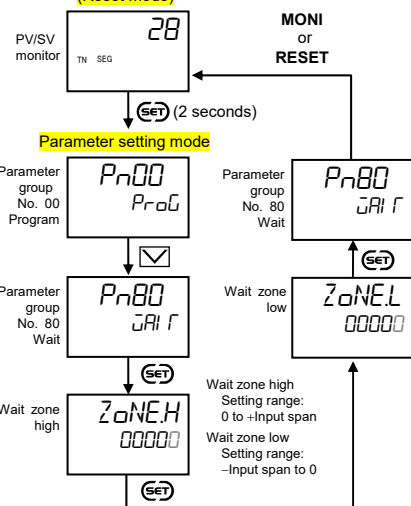
#### Monitor & Program setting mode (Reset mode)



#### ● Setting of Wait zone

Wait zone (high/low) is set in the Parameter setting mode.

#### Monitor & Program setting mode (Reset mode)



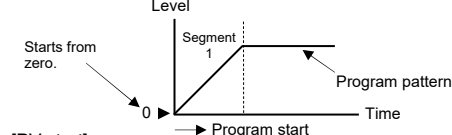
## Program control start selection

Segment level at the start of the program control can be selected.

#### ● Start type

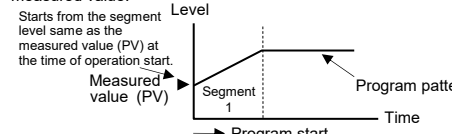
##### [Zero start]

Set the segment level at the start of the program control to "0."



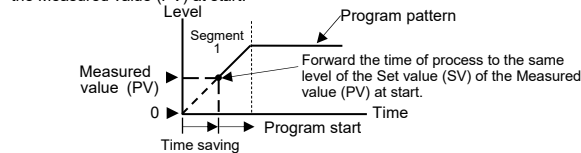
##### [PV start]

Set the segment level at the start of the program control to "the measured value."



##### [PV start (time saving)]

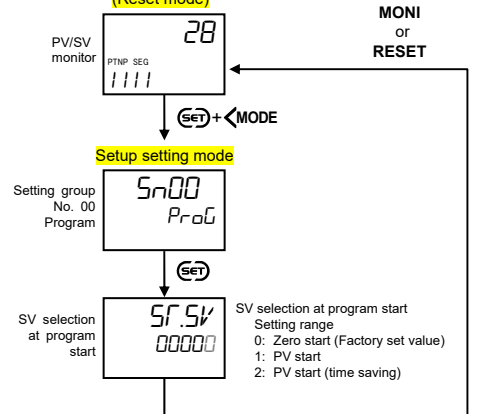
Forward the time of process to the same level of the Set value (SV) of the Measured value (PV) at start.



#### ● SV selection at program start

The segment level at the start of the program control can be set in SV selection at program start in the Setup setting mode.

#### Monitor & Program setting mode (Reset mode)



## 2. Operation

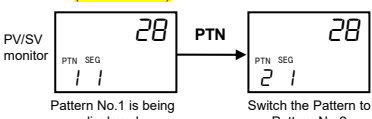
### Preparation before operation

Before starting the program control, select a pattern to be used in the program control. Patterns can be switched in the Reset mode (RESET).

#### ● Switch patterns one by one

When the PTN key is pressed in Reset mode (RESET), the pattern number increases one by one. The pattern number cannot be changed while Segment level/Segment time are being modified.

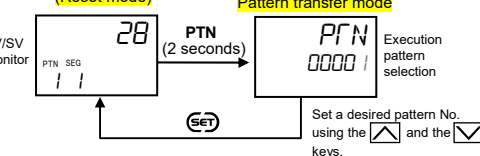
#### Monitor & Program setting mode (Reset mode)



#### ● Switching to a desired pattern

Press the PTN key for 2 seconds or more to enter the Pattern switching mode. The pattern number cannot be changed while Segment level/Segment time are being modified.

#### Monitor & Program setting mode (Reset mode)



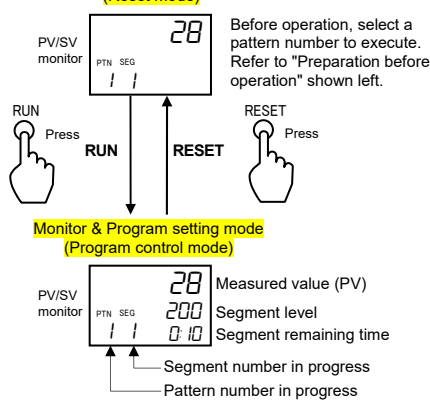
### Start/Stop (Reset) of program control

To start the program, switch the mode to Program control mode (RUN).

#### ● Execution method

Press the RUN key in the Reset mode (RESET). The operation starts. Pressing the RESET key in the Program control mode (RUN) stops the operation.

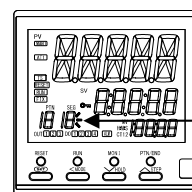
#### Monitor & Program setting mode (Reset mode)



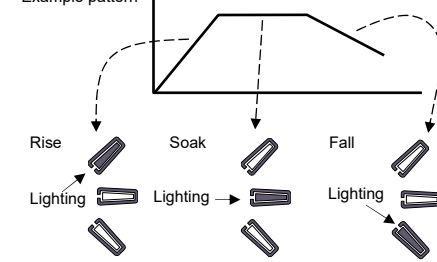
### Display during program control

#### ● Checking pattern status (Up/Down)

The pattern status now in execution can be checked by the ramp status lamp on the instrument front panel.



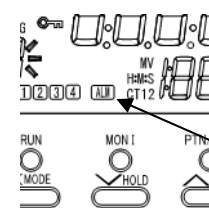
#### Example pattern



#### ● Function of ALM lamp

ALM lamp lights when any of the following occurs.

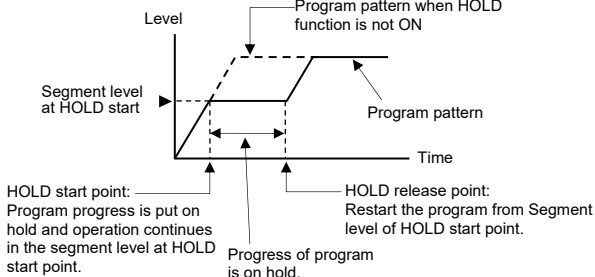
- Event 1 to 4
- Heater break alarm (HBA) 1 or 2
- Control loop break alarm (LBA)
- Input error



Refer to "Comprehensive event state" in "3. Monitor mode" for the meaning of alarm occurrence.

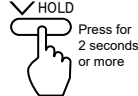
### Suspending program progress (HOLD)

The Hold (HOLD) function is used to suspend the program progress during the program control.



#### ● Execution method

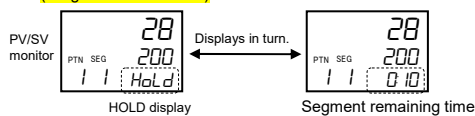
To enter the HOLD status, press the HOLD key for 2 seconds or more during the Program control. Pressing the HOLD key for 2 seconds or more during the HOLD state releases the hold state and the Program control resumes.



#### ● HOLD display

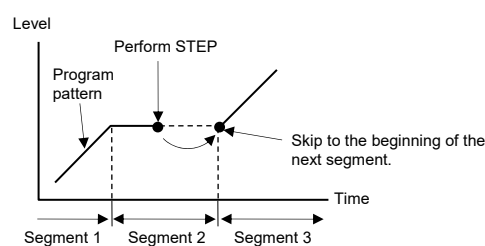
In HOLD state, "Hold (HOLD)" and the Segment remaining time will alternate on TIME display.

#### Monitor & Program setting mode (Program control mode)



### Moving one segment forward (STEP)

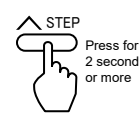
The Step (STEP) function is used to move the program process one segment forward.



#### ● Execution method

To perform STEP function, press and hold the STEP key for 2 seconds or more during the Program control operation.

STEP function is not operative when the program is in HOLD state.



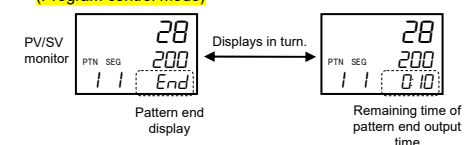
### Ending the Program

When the program ends and the instrument enters the Pattern end state, such a screen as shown below is displayed.

#### ● Pattern end display

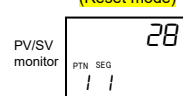
When Pattern end is reached, "End (End)" is displayed on the TIME display. When Pattern end output is produced, the remaining time of Pattern end output and "End" are displayed alternately.

#### Monitor & Program setting mode (Program control mode)



Press the RESET key to return the Reset mode (RESET).

#### Monitor & Program setting mode (Reset mode)



## 3. Monitor mode

