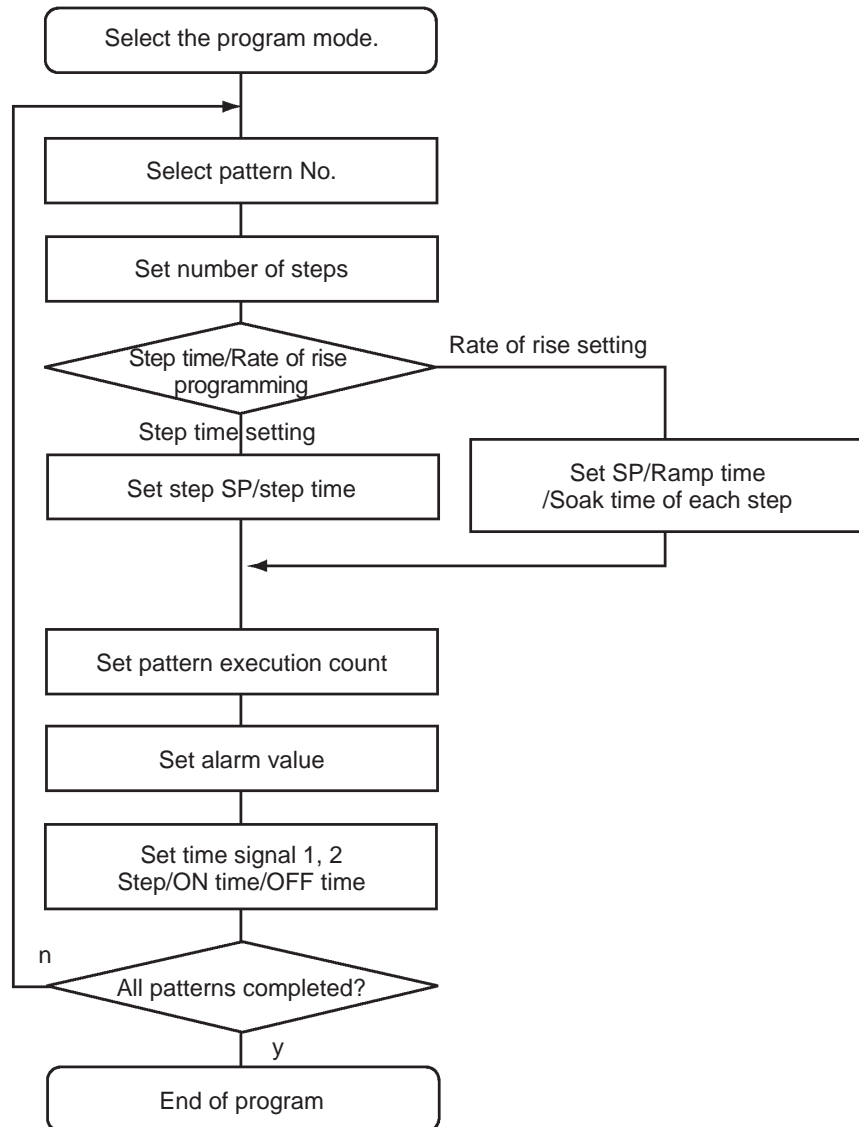


# Setting Patterns

If you want to set parameters in the program mode during controller operation, you must first stop operation. Operation may continue only in special instances, for example, to change SP during controller operation.

- Parameters that you use frequently for programming can be set in the “program mode.” The flow below shows the parameters that are available in the program mode and the order in which they are set.



This chapter describes the basic operation of programming. For details on the following parameters, refer to Chapter 4 Applied Operation:

“Step time/Rate of rise programming”, “Pattern execution count”, “Time signal 1, 2”

## Pattern No.

Plrn

- This parameter cannot be changed during controller operation.
- Set the desired pattern No. Step SP, step time, alarms and other parameters that follow this parameter are set for the pattern that is set in this parameter.
- Set within the range 0 to 7 (pattern 0 to 7). Default is “0”.

## Number of steps

5-nā

- Set the number of steps for the pattern that you specified in the “pattern No.” parameter.
- Set within the range 1 to 16 (step). Default is “8”.

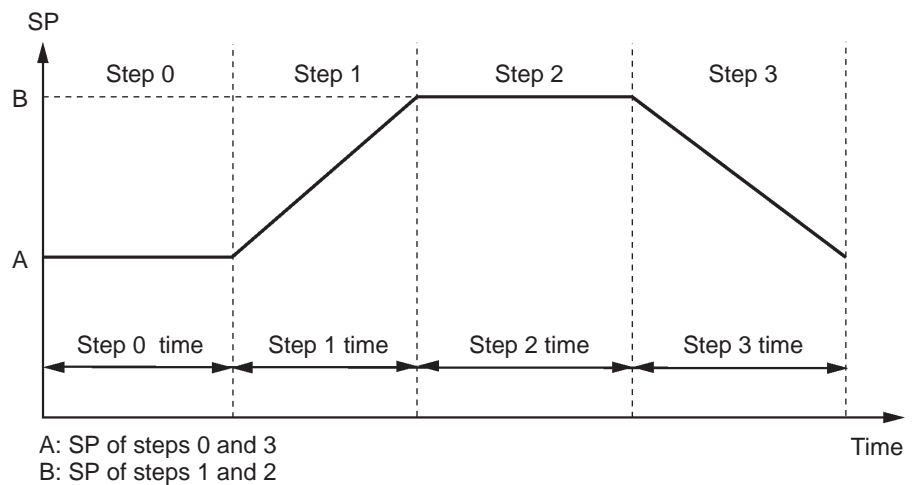
## Step SP/Step time

SP \*

LC \*

\* : 0 to 15

- Set only the number of steps used in the program in order from step 0, as “step 0 SP”, “step 0 time”, “step 1 SP”, “step 1 time” and so forth.
- Set within the range from set point lower limit to set point upper limit for step SP. Default is “0”.
- Set within the range 0.00 to 99.59 (hours:minutes or minutes:seconds). Default is “0.00”.



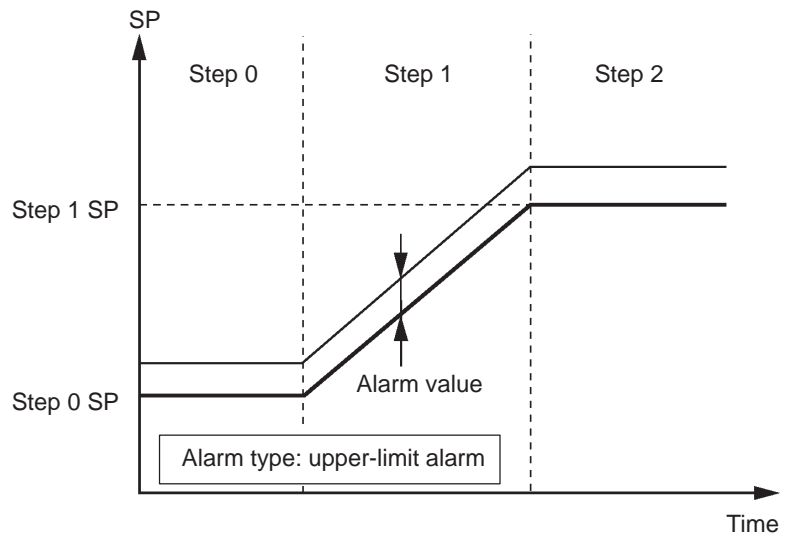
- As shown in the above figure, step 0 is a fixed value, so when ramp operation is started, set the “step 0 time” parameter to “0.00” to configure the program so that ramp operation starts from step 1.

## Alarm value



\* : 0 to 3

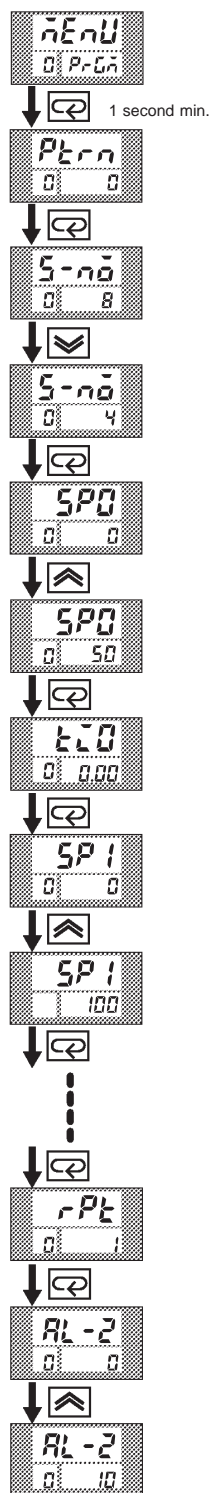
- Alarm values can be set only for alarms that have been assigned as output.
- When a deviation alarm is assigned as output, the alarm value is set with respect to SP. The following example shows the relationship between the SP and alarm value when the alarm type is set to “upper limit.”



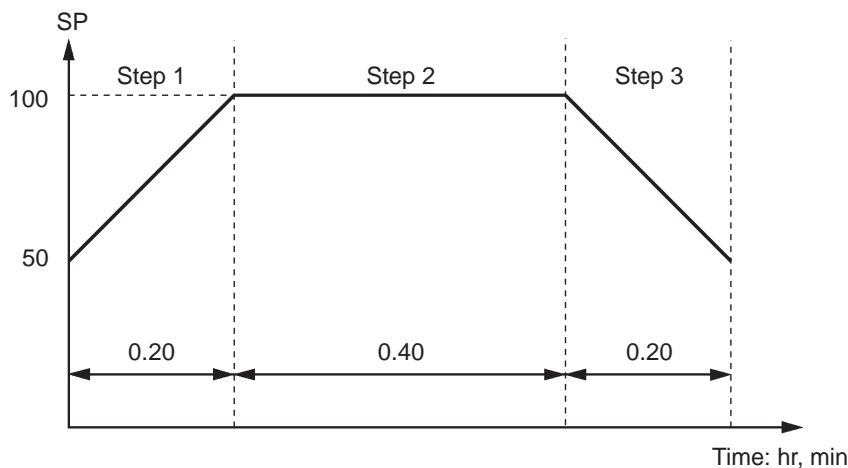
About the Alarm  
Value Point  
Decimal

The decimal point of the alarm value conforms to the setting of the “decimal point” parameter.

## Setting Example






In this example, let's set the next program to pattern 0.



	SP	Time (hr, min.)	Alarm value 2
Step 0	50	0.00	10
Step 1	100	0.20	10
Step 2	100	0.40	10
Step 3	50	0.20	10

- Pattern execution count "1"
- Time signals are not used.

- (1) Select the menu display, and select "P-r-n : program" pressing the or keys. For details on selecting the menu display, see page 1-10.
- (2) Press the key to enter the program mode. The top parameter in the program mode "P-t-r-n : pattern" is displayed. Default is "0 : pattern 0".
- (3) As the setting "0: pattern 0" in this example is to be left as it is, press the key. The display changes to the [S-n] ("number of steps" parameter). Default is "8".
- (4) Set the parameter to "4" pressing the or keys.
- (5) When you press the key, the display changes to the [SP] ("step 0 SP" parameter). Default is "0".
- (6) Set the parameter to "50" pressing the or keys.
- (7) When you press the key, the display changes to the [t-t] ("step 0 time" parameter). Default is "0.00".
- (8) As the setting "0.00: 0 minutes" in this example is to be left as it is, press the key. The display changes to the [SP 1] ("step 1 SP" parameter). Default is "0".
- (9) Set the parameter to "100" pressing the or keys.
- (10) In the same way, set the "t-t 1 : step 1 time", "SP 2 : step 2 SP", "t-t 2 : step 2 time", "SP 3 : step 3 SP", "t-t 3 : step 3 time" parameters, in that order.
- (11) When you have finished setting the step SPs and times press the key. The [r-P-t] ("pattern execution count" parameter, is displayed. Default is "1".)

- (12) As the setting in this example is to be left as it is, set the alarm value. Press the  key until [AL-2] (“alarm 2” parameter) is displayed. Default is “0”.
- (13) Set the parameter to “10: 10 seconds” pressing the  or  keys.