

27 | Using Logic Functions

This chapter explains what you can do using the GP-Pro EX Logic Feature. Please start by reading "27.1 Setup Menu" (page 27-2) and then turn to the corresponding page.

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27.1 Setup Menu

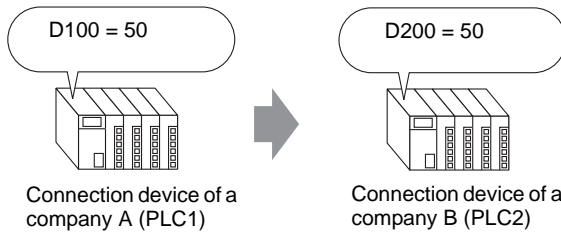
By using logic functions and performing easy to use Windows operations, you can create a logic program that conforms to international standard IEC61131-3. The logic program you write downloads and runs on the GP. Also, variables created in your logic can be shared with other screen functions (such as switches and lamps).

Switching Screens Using a Logic Program	
<p>When the alarm A bit turns ON...</p> <p>Displays screen number 3.</p>	<p>☞ "27.2 Switching Screens Using a Logic Program" (page 27-4)</p>
Generating a Pulse at One Second Intervals	
<p>Using the counter, you can create a circuit that counts up every 1 second.</p>	<p>☞ "27.3 Generating a Pulse at One Second Intervals" (page 27-5)</p>
Entering the Timer Value on the Screen	
<p>A numeric keypad appears and the numeric values can be changed.</p>	<p>☞ "27.4 Entering the Timer Value on the Screen" (page 27-6)</p>

Moving Data Between Connection Devices

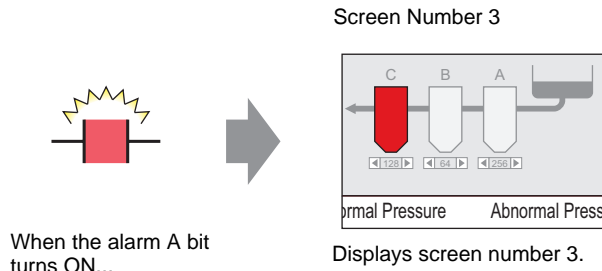
You can specify the device address for a connection device using the logic program.

☞ "27.5 Moving Data Between Connection Devices" (page 27-7)



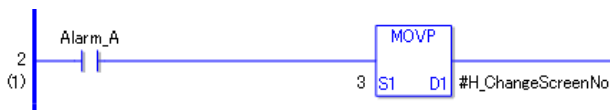
27.2 Switching Screens Using a Logic Program

27.2.1 Detail



■ Complete Logic Program

In the following example of a Logic program, a trigger sets up a MOV P command to store the screen value in a system variable (#H_ChangeScreenNo)



NOTE

- For more information on commands, refer to the following.
 "29.5.10 Operation (Transfer)" (page 29-201)

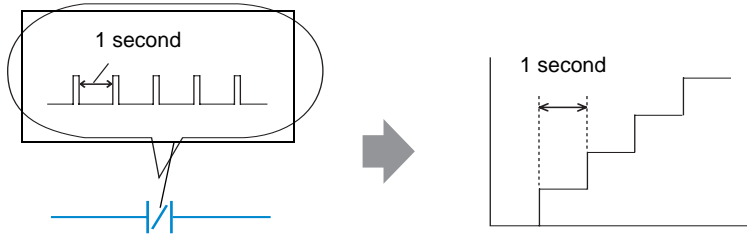
■ Function Summary

You can change the screen on the GP by storing the number of the screen you want to display in the system variable #H_ChangeScreenNo.

1. When the "alarm A" bit turns ON, "3" is stored in #H_ChangeScreenNo.
2. The display changes to screen number 3.

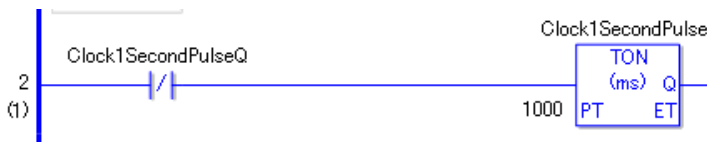
27.3 Generating a Pulse at One Second Intervals

27.3.1 Detail



■ Complete Logic Program

In the following example logic program, there is a normally closed contact set to "timer variable.Q" and a timer instruction set to 1 second (1000 ms).



NOTE

- For more information on commands, refer to the following.
 ☞ "29.5.4 Timer Instruction" (page 29-81)

■ Function Summary

The basic operation of the timer instruction (TON) is to repeatedly turn on "timer variable.Q" after the defined time has elapsed.

1. After 1 second (1000ms), the TON command "Clock1SecondPulse.Q" turns on.
2. Upon the next scan, the TON command will be reset after the normally closed contact turns on.
3. When TON command is reset, the normally closed contact will be turned off and the TON command will return to a conducting state.

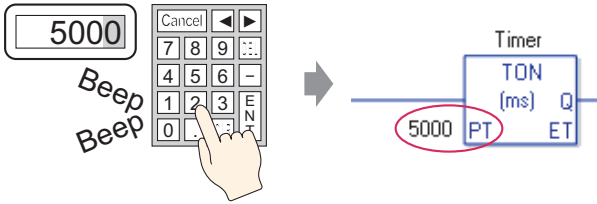
As a result, the normally closed contact "Clock1SecondPulse.Q" repeatedly turns OFF for one second and turns ON upon the next scan.

- ☞ "Chapter 29 Ladder Instructions" (page 29-1)

27.4 Entering the Timer Value on the Screen

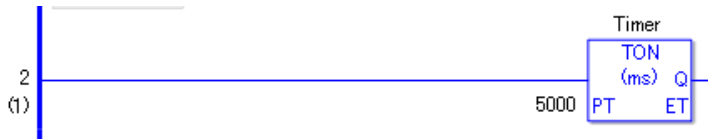
27.4.1 Detail

A numeric keypad appears and the numeric values can be changed.



■ Complete Logic Program

The following example of a logic program uses a timer instruction set to five seconds, or 5000 milliseconds.

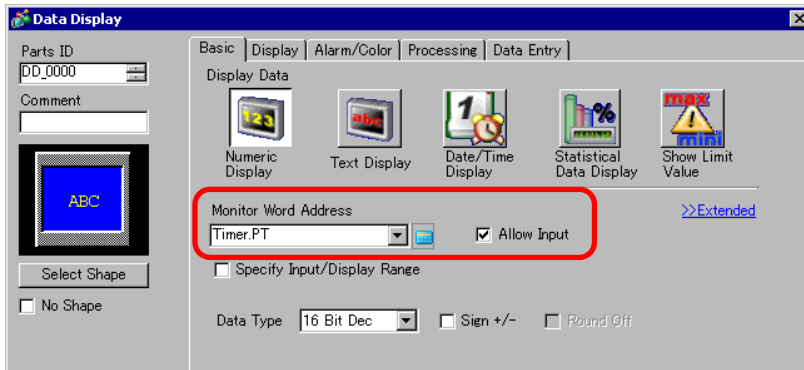


NOTE

- For more information on commands, refer to the following.
 ☞ "29.5.4 Timer Instruction" (page 29-81)

■ Screen Settings Example

In the Data Display [Monitor Address], enter "Timer.PT". Select the [Data Entry] check box. "Timer.PT" stores the timer preset time of five seconds. You can change the value using the Data Display.

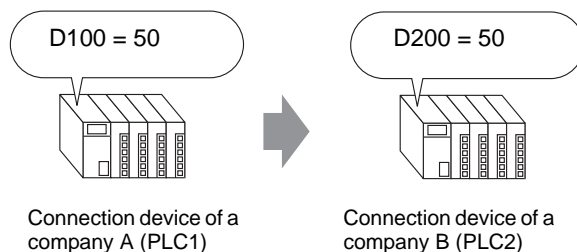


■ Function Summary

When you use the Data Display to enter a value, it changes the timer preset time "Timer.PT".

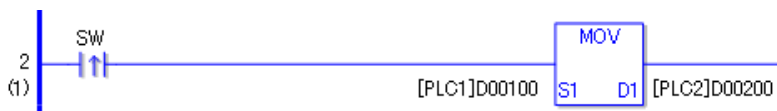
27.5 Moving Data Between Connection Devices

27.5.1 Detail




■ Complete Logic Program

In the following example of a logic program, the MOV instruction copies data between connection devices.



NOTE

- For more information on commands, refer to the following.
 "29.5.10 Operation (Transfer)" (page 29-201)

■ Function Summary

When turning on the bit that initiates the write operation, data in [PLC1]D0100 is stored in [PLC2]D0200.

