

# Functions Added to Sample Project File for SP5000 Wide Model



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# 1. Outline

This document describes the functions added to the sample project file for SP5000 Series wide models.

## 2. Target Model

Table 2-1 Target Model

No	Manufacturer	Series	Model	Note
1	Digital Electronics Corp.	SP5000 series		WVGA and WXGA models only

For details on the target models, refer to the instruction manual and visit our website.

- Additional functions are supported by SP Series wide models only.

Table 2-2 Required Software and Version

No	Manufacturer	Name	Model	Note
1	Digital Electronics Corp.	GP-Pro EX	PFXEXEDV40	Ver.4.00.00

GP-Pro EX Ver.4.00.00 is used for this sample project file.

If the version you use is lower than Ver.4.00.00, update is necessary.

## 3. Additional Screens and Functions

### 3.1. Screen Image



Figure 3-1 Additional Functions


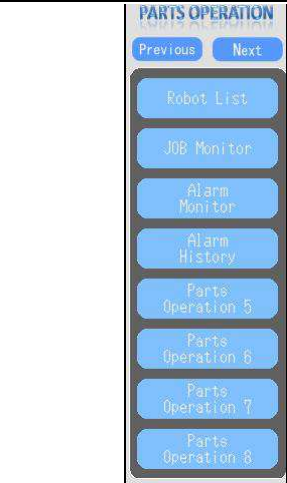

Function buttons are added to the location enclosed with a red frame (see above) for the sample project file for SP5000 Series wide model.

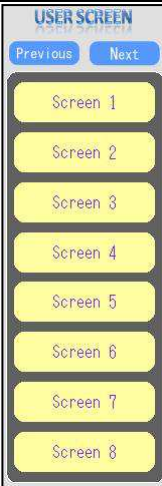

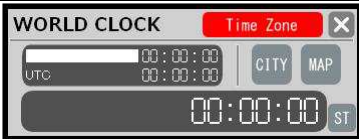

The function buttons of 4 categories as shown below are prepared.



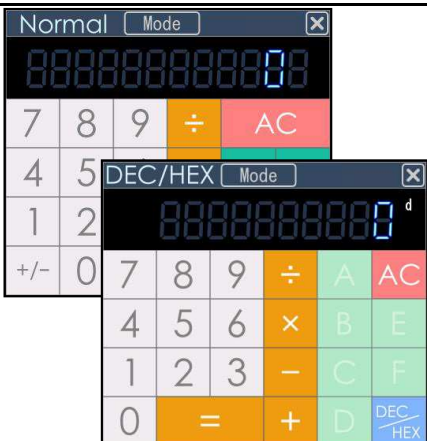
- Parts Operation
- System Operation
- User Screen
- Utility

## 3.2. Additional Screens

Table 3-1 Additional Screens

Screen No.	Screen Title	Screen Image	Description
B7900	WORLD CLOCK		Indicates a base screen displayed in WORLD CLOCK.
W1800	PARTS OPERATION		Indicates the PARTS OPERATION function switch used for easily moving to main screens of the sample project file.  No function is allocated to each button. Interlocking is activated at the time of startup.
W1801	SYSTEM OPERATION		Indicates the SYSTEM OPERATION function switch used for easily changing the settings on the system.  Buttons for changing the language are provided for the sample project file. ·Japanese ·English  No function is allocated to each button. Interlocking is activated at the time of startup.

Screen No.	Screen Title	Screen Image	Description
W1802	USER SCREEN		<p>Indicates the USER SCREEN function switch used for easily moving to a user-created screen.</p> <p>No function is allocated to each button. Interlocking is activated at the time of startup.</p>
W1803	UTILITY		<p>Indicates the UTILITY function switch used for easily moving to a screen having a convenient function.</p> <p>The following two functions are provided as standard functions.</p> <ul style="list-style-type: none"> <li>· World Clock</li> <li>· Calculator</li> </ul> <p>No function is allocated to each button. Interlocking is activated at the time of startup.</p>
W1810	WORLD CLOCK Main		Indicates a main window of WORLD CLOCK which is one of the functions in Utility. Indicates the standard time, the time in the selected time zone, and the time in the selected city.
W1811	WORLD CLOCK Selection		<p>Indicates a window used for selecting a city whose time you want to display with the World Clock function from the list.</p> <p>Select the city whose time you want to display from the list.</p>

Screen No.	Screen Title	Screen Image	Description
W1812- W1817	WORLD CLOCK Map		Indicates a window in which you select a city whose time you want to display with the WORLD CLOCK function from the map.  When a green point indicating the location of a city is touched, the time of the touched city is displayed.
W1820	Time Zone Setting		Indicates a window in which you select a time zone with the WORLD CLOCK function.  The selected city is displayed on the main screen of WORLD CLOCK as a time zone.
W1828	Calc Normal		Indicates a window in which a calculator function is provided.

## 3.3. Function Descriptions

### 3.3.1. Function Window

Function switches are displayed on the right of the screen.

The settings of each function switch can be changed by users. Customize the switches as you like.

For details on screen editing (e.g. Setting of a switch), refer to the Reference Manual for GP ProEX.

### 3.3.2. World Clock

This is the function allocated as one of the Utility function switches.

When the function switch (indicated with “(1)”) of World Clock in Figure 3-1 is touched, the “WORLD CLOCK” window is displayed.

The time zone (Tokyo) and the standard time are displayed as default settings.

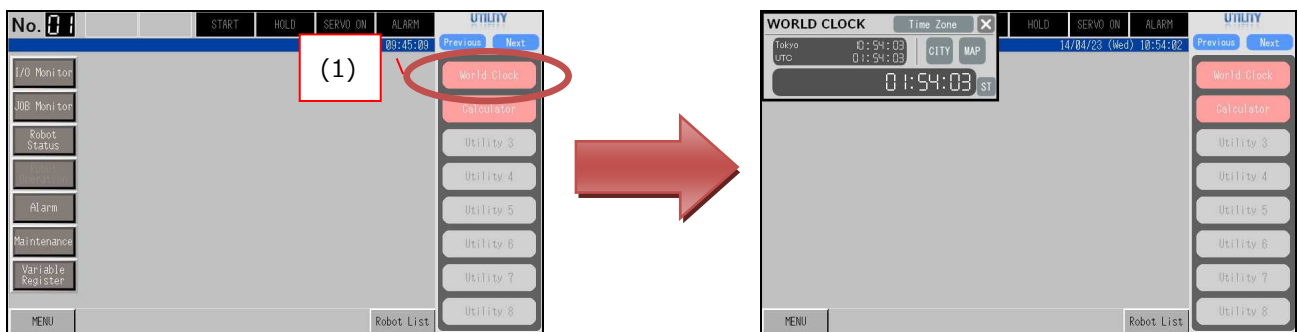


Figure 3-1 World Clock Startup

When the time zone switch (indicated with “(1)”) in Figure 3-2 is clicked, the window to set the time zone is displayed.

Select the desired time zone and press “OK” (indicated with “(2)”) in Figure 3-2. Then, the time zone is changed to a new one.

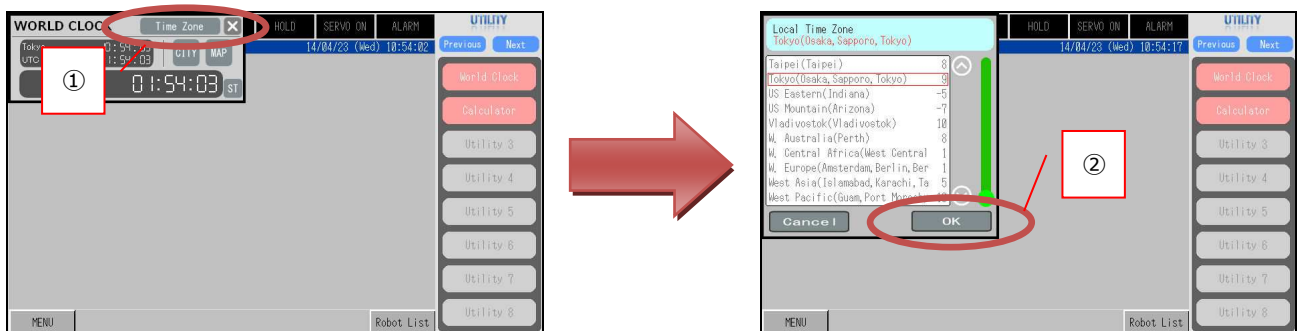


Figure 3-2 Time Zone Change



Moreover, the target city whose time you want to display can be selected in the World Clock screen using one of the following 2 ways:

- Selecting the target city from the list

When you touch the CITY button (indicated with “(1)”) in Figure 3-3, the list having cities is displayed.

When you touch the target city (indicated with “(2)”) in Figure 3-3, the lamp of the touched city is turned on, and the time of the touched city is displayed.

The list display disappears when touching the “CITY” button once again.

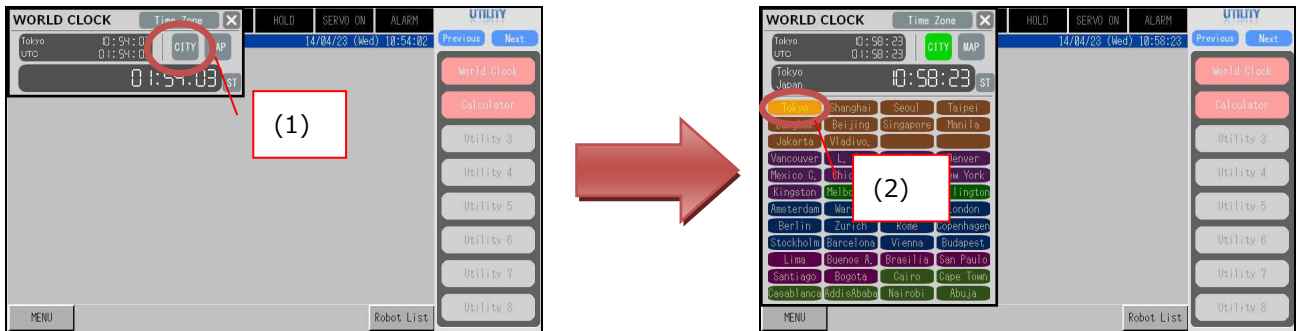


Figure 3-3 City Selection (List Selection)

- Selecting the target city from the map

When you touch the MAP button (indicated with “(1)”) in Figure 3-4, the map is displayed.

When you touch the map region change world button (indicated with “(2)”) in Figure 3-4, the map of the touched region is displayed.

When you touch the green lamp on the map (indicated with “(3)”) in Figure 3-4, the time of the touched city is displayed.

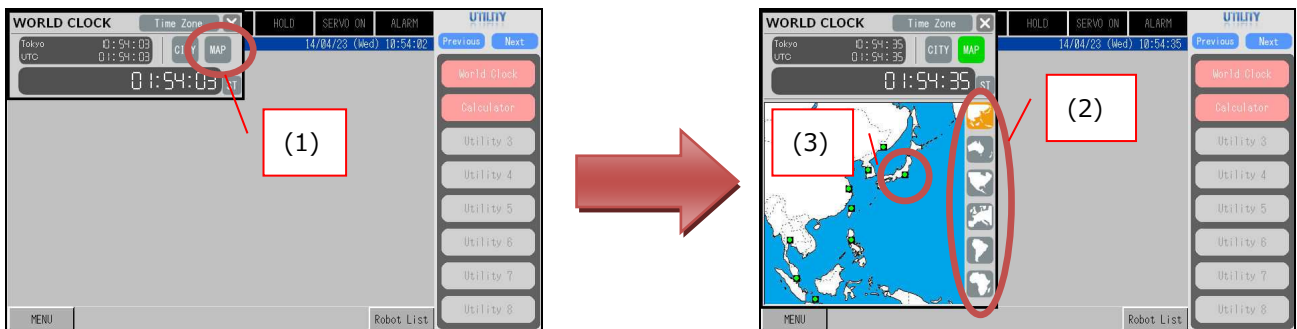


Figure 3-4 City Selection (Map Selection)

### 3.3.3. Calculator

This is the function allocated as one of the Utility function switches.

When you touch the function switch (indicated with “(1)”) of Calculator in Figure 3-5, the calculator is displayed.

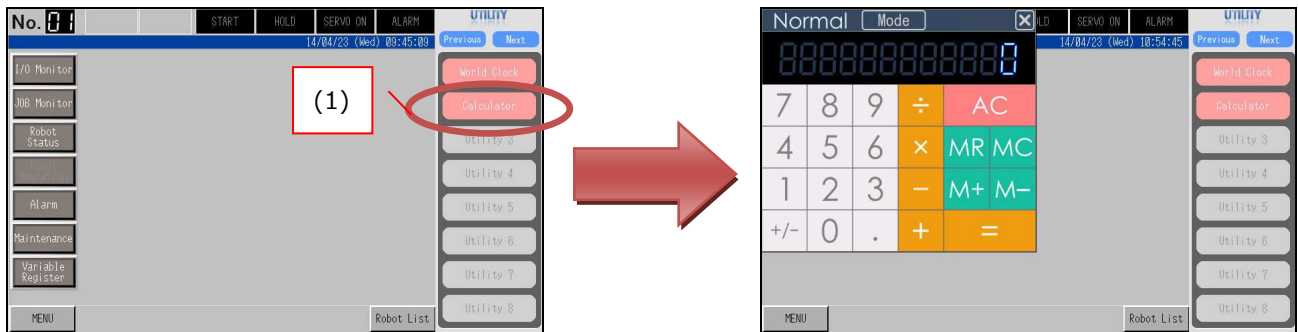


Figure 3-5 Calculator

When you touch the Mode button (indicated with “(2)”) in Figure 3-6, the calculator modes (Normal/DEC/HEX) are switched.

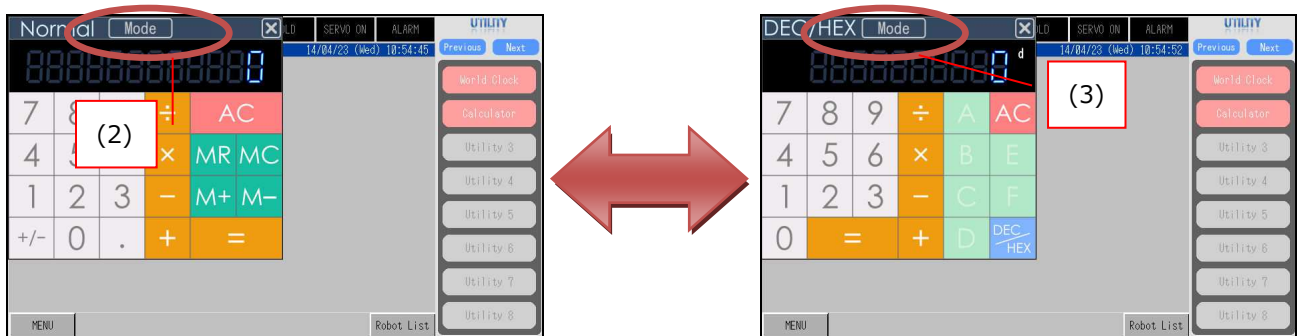


Figure 3-6 Calculator Mode

## 4. Important Notes and Restrictions

### 4.1. For WORLD CLOCK

- The number of the Time Zone regions is limited due to the production reasons.
- All major cities in the world are not covered as cities which can be selected. Add a city, if necessary.
- There is no function to automatically determine and display the Summer Time in the script. For the display time, add "1" (hour) by pressing the "ST" button.
- The window display position is not specified. Specify it, if necessary.  
Window Display Position  
\_W\_Time\_Window [2]: X coordinates  
\_W\_Time\_Window [3]: Y coordinates
- Main variables are backed up. Even when power is turned off and turned on again, the previous setting values are stored.  
When screens are transferred again and power is turned off due to low battery, the settings are initialized. In that case, re-setting is required.
- The clock of the GP series must be adjusted to the time of the region where the GP series is used in advance.

### 4.2. For CALCULATOR

- An error occurs in the Normal calculator mode when the sum of the digits (except for the fraction digits) of a multiplicand and a multiplier is 10 or larger in multiplication.
- An error also occurs in the Normal calculator mode when the sum of the digits obtained after taking the calculation steps (1) and (2) shown below is 10 or larger.
  - (1) A difference (between an augend and an addend in addition, between a minuend and a subtrahend in subtraction, between a dividend and a divisor in division) in the fraction digits is calculated.
  - (2) The calculated difference is added to the digit number of the value having a smaller digit number (compared between an augend and an addend in addition, between a minuend and a subtrahend in subtraction, between a dividend and a divisor in division) in the fraction digits.
- When the divisor is 0 in division, an error is displayed.
- Overflow is not considered in operation of the four rules of arithmetic in the Dec/Hex calculator mode. The lower 32 bits of the operation result are displayed.
- A continuous operation (e.g.  $a \times b \times c$ ) cannot be made. Input as follows:  
"a×b" → "=" → "×c"
- The AC button resets all information other than the memory function.

- Data stored by the memory function is deleted when power is turned off.
- All numerical values during DEC display in the Dec/Hex calculator mode are treated as a positive (+) values.
- The window display position is not specified. Specify it, if necessary.  
Window Display Position  
\_C\_Cal\_Window [2]: X coordinates  
\_C\_Cal\_Window [3]: Y coordinates

## 5. Remarks

### 5.1. Setting/Cancellation of Interlock Address

Interlock is set to each function switch beforehand.

Interlock is set with "Function\_Interlock" of the user-defined function.

To cancel the interlock of the function switch, specify "0" for the interlock address to be a target in the function.

To set the interlock of the function switch, specify "1" for the interlock address.

The interlock address of each button is set as follows.

Table 4-1 Parts Operation Interlock Address

	Switch Name	Interlock Address
1	Robot List	_F_PO_Interlock[0]
2	Job Monitor	_F_PO_Interlock[1]
3	Alarm Monitor	_F_PO_Interlock[2]
4	Alarm History	_F_PO_Interlock[3]
5	Parts Operation 5	_F_PO_Interlock[4]
6	Parts Operation 6	_F_PO_Interlock[5]
7	Parts Operation 7	_F_PO_Interlock[6]
8	Parts Operation 8	_F_PO_Interlock[7]

Table 4-2 System Operation Interlock Address

	Switch Name	Interlock Address
1	Japanese	_F_SO_Interlock[0]
2	English	_F_SO_Interlock[1]
3	System Operation 3	_F_SO_Interlock[2]
4	System Operation 4	_F_SO_Interlock[3]
5	System Operation 5	_F_SO_Interlock[4]
6	System Operation 6	_F_SO_Interlock[5]
7	System Operation 7	_F_SO_Interlock[6]
8	System Operation 8	_F_SO_Interlock[7]

Table 4-3 User Screen Interlock Address

	Switch Name	Interlock Address
1	User Screen 1	_F_US_Interlock[0]
2	User Screen 2	_F_US_Interlock[1]
3	User Screen 3	_F_US_Interlock[2]
4	User Screen 4	_F_US_Interlock[3]
5	User Screen 5	_F_US_Interlock[4]
6	User Screen 6	_F_US_Interlock[5]
7	User Screen 7	_F_US_Interlock[6]
8	User Screen 8	_F_US_Interlock[7]

Table 4-4 Utility Interlock Address

	Switch Name	Interlock Address
1	World Clock	_F_Util_Interlock[0]
2	Calcurator	_F_Util_Interlock[1]
3	Utility 3	_F_Util_Interlock[2]
4	Utility 4	_F_Util_Interlock[3]
5	Utility 5	_F_Util_Interlock[4]
6	Utility 6	_F_Util_Interlock[5]
7	Utility 7	_F_Util_Interlock[6]
8	Utility 8	_F_Util_Interlock[7]