

## CHAPTER 5

# BUTTONS AND SWITCHES

|   |           |
|---|-----------|
| <b>5.1. Changing Bit State Using Bit Buttons .....</b>                | <b>1</b>  |
| 5.1.1. Basic Operations.....  | 1         |
| 5.1.2. Operation Options.....   | 2         |
| 5.1.3. Settings .....   | 3         |
| 5.1.4. General Settings.....  | 4         |
| <b>5.2. Toggling Bit State Using Toggle Switches.....</b>             | <b>6</b>  |
| 5.2.1. Settings .....   | 6         |
| 5.2.2. General Settings.....  | 7         |
| <b>5.3. Changing Screens Using Screen Buttons.....</b>                | <b>9</b>  |
| 5.3.1. Basic Operations.....  | 9         |
| 5.3.2. Operation Options.....   | 9         |
| 5.3.3. Settings .....   | 10        |
| 5.3.4. General Settings.....  | 11        |
| <b>5.4. Performing Built-in Function Using Function Buttons .....</b> | <b>14</b> |
| 5.4.1. Basic Operations.....  | 14        |
| 5.4.2. Operation Options.....   | 17        |
| 5.4.3. Settings .....   | 18        |
| 5.4.4. General Settings.....  | 19        |
| <b>5.5. Selecting Word Value Using Slide Switches .....</b>           | <b>21</b> |
| 5.5.1. Basic Operations.....  | 21        |
| 5.5.2. Operation Options.....   | 22        |
| 5.5.3. Settings .....   | 22        |
| 5.5.4. General Settings.....  | 23        |
| <b>5.6. Setting Word Value Using Word Buttons.....</b>                | <b>25</b> |
| 5.6.1. Basic Operations.....  | 25        |
| 5.6.2. Operation Options.....   | 25        |
| 5.6.3. Settings .....   | 26        |
| 5.6.4. General Settings.....  | 26        |

|  |           |
|--|-----------|
| <b>5.7. Selecting Work Value Using Multi-state Switches.....</b>               | <b>28</b> |
| 5.7.1. Basic Operations.....   | 28        |
| 5.7.2. Operation Options.....  | 29        |
| 5.7.3. Settings .....  | 30        |
| 5.7.4. General Settings.....   | 31        |
| <b>5.8. Setting Word State Using Radio Button Groups.....</b>                  | <b>33</b> |
| 5.8.1. Basic Operations.....   | 33        |
| 5.8.2. Operation Options.....  | 33        |
| 5.8.3. Settings .....  | 34        |
| 5.8.4. General Settings.....   | 34        |
| <b>5.9. Customizing the Keypad Using Keypad Buttons .....</b>                  | <b>36</b> |
| 5.9.1. Operation Options.....  | 36        |
| 5.9.2. Settings .....  | 36        |
| 5.9.3. General Settings.....   | 37        |
| 5.9.4. Creating your own keypads .....   | 38        |
| <b>5.10. Scrolling Object Content Using Scroll Button Groups.....</b>          | <b>40</b> |
| 5.10.1. Basic Operations.....  | 40        |
| 5.10.2. Operation Options.....   | 41        |
| 5.10.3. Settings .....   | 41        |
| 5.10.4. General Settings.....  | 42        |
| <b>5.11. Scrolling Object Content Using Scroll Bars.....</b>                   | <b>43</b> |
| 5.11.1. Basic Operations.....  | 43        |
| 5.11.2. Operation Options.....   | 44        |
| 5.11.3. Settings .....   | 44        |
| 5.11.4. General Settings.....  | 45        |
| <b>5.12. Stepping Through Word State Using Step Buttons .....</b>              | <b>46</b> |
| 5.12.1. Basic Operations.....  | 46        |
| 5.12.2. Operation Options.....   | 46        |
| 5.12.3. Settings .....   | 47        |
| 5.12.4. General Settings.....  | 47        |
| <b>5.13. Displaying Window Screen as Information Page Using Page Selectors</b> | <b>50</b> |
| 5.13.1. Basic Operations.....  | 50        |
| 5.13.2. Settings .....   | 50        |
| 5.13.3. General Settings.....  | 51        |

## 5.1. Changing Bit State Using Bit Buttons

You can touch a bit button to change the state of the specified bit.

### 5.1.1. Basic Operations

A bit button can be configured to perform the following operations:

| Operation     | Description  |
|---------------|--|
| Set ON        | Sets the specified bit to On when the button is pressed.   |
| Set OFF       | Sets the specified bit to Off when the button is pressed.  |
| Set ON Pulse  | Sets the specified bit to On when the button is pressed and then sets the bit to Off to generate a positive pulse with the specified pulse width.  |
| Set OFF Pulse | Sets the specified bit to Off when the button is pressed and then sets the bit to On to generate a negative pulse with the specified pulse width.  |
| Momentary ON  | Sets the specified bit to On when the button is pressed and sets the bit to Off when the button is released.<br><b>Note:</b> Pressing and releasing a momentary button quickly might generate a pulse that is too short to be detected by the controller. To avoid this problem, specify a sufficient minimum pulse width for the operation; so the setting of the bit to Off is delayed if necessary to generate a pulse that is always detectable. |
| Momentary OFF | Sets the specified bit to Off when the button is pressed and sets the bit to On when the button is released.<br><b>Note:</b> See the note above.   |
| Invert        | Inverts the state of the specified bit when the button is pressed.   |

**Note:** You can configure a bit button to operate a bit of a word or a bit of a double-word. In these instances, you need to specify the number of the bit to be operated.

### 5.1.2. Operation Options

The following operation options can be selected for a bit button to make it more informative, secure, and useful. You need to select and set those options in the Bit Button property sheet.

| Option                  | Description   |           |          |           |        |   |  |         |  |   |              |   |  |               |  |   |              |   |   |               |   |   |        |  |  |
|-------------------------|---|-----------|----------|-----------|--------|---|--|---------|--|---|--------------|---|--|---------------|--|---|--------------|---|---|---------------|---|---|--------|--|--|
| Monitor                 | The bit button can be configured to monitor a bit. When this option is selected, the state of the button is controlled by the monitored bit. With the monitored bit, you can control the color and label of the bit button.   |           |          |           |        |   |  |         |  |   |              |   |  |               |  |   |              |   |   |               |   |   |        |  |  |
| ON Macro, OFF Macro     | <p>An ON Macro is a macro that is run when the associated button is activated to set a bit to 1 (On). An OFF Macro, on the contrary, is a macro that is run when the associated button is activated to set a bit to 0 (Off). The following table shows the macros that each bit button operation can support.</p> <table><tr><th>Operation</th><th>ON Macro</th><th>OFF Macro</th></tr><tr><td>Set ON</td><td>●</td><td></td></tr><tr><td>Set OFF</td><td></td><td>●</td></tr><tr><td>Set ON Pulse</td><td>●</td><td></td></tr><tr><td>Set OFF Pulse</td><td></td><td>●</td></tr><tr><td>Momentary ON</td><td>●</td><td>●</td></tr><tr><td>Momentary OFF</td><td>●</td><td>●</td></tr><tr><td>Invert</td><td></td><td></td></tr></table> <p>Select these options in the General Page. Specify and edit the ON macro in the ON Macro page. Specify and edit the OFF macro in the OFF Macro page.</p> <p><b>Note:</b> When an ON macro or OFF macro is specified, the associated bit setting operation is not performed until the macro is completely executed. Therefore, it is important to keep ON and OFF macros as short as possible so as not to delay the bit setting operation.</p> | Operation | ON Macro | OFF Macro | Set ON | ● |  | Set OFF |  | ● | Set ON Pulse | ● |  | Set OFF Pulse |  | ● | Momentary ON | ● | ● | Momentary OFF | ● | ● | Invert |  |  |
| Operation               | ON Macro  | OFF Macro |          |           |        |   |  |         |  |   |              |   |  |               |  |   |              |   |   |               |   |   |        |  |  |
| Set ON                  | ●   |           |          |           |        |   |  |         |  |   |              |   |  |               |  |   |              |   |   |               |   |   |        |  |  |
| Set OFF                 |   | ●         |          |           |        |   |  |         |  |   |              |   |  |               |  |   |              |   |   |               |   |   |        |  |  |
| Set ON Pulse            | ●   |           |          |           |        |   |  |         |  |   |              |   |  |               |  |   |              |   |   |               |   |   |        |  |  |
| Set OFF Pulse           |   | ●         |          |           |        |   |  |         |  |   |              |   |  |               |  |   |              |   |   |               |   |   |        |  |  |
| Momentary ON            | ●   | ●         |          |           |        |   |  |         |  |   |              |   |  |               |  |   |              |   |   |               |   |   |        |  |  |
| Momentary OFF           | ●   | ●         |          |           |        |   |  |         |  |   |              |   |  |               |  |   |              |   |   |               |   |   |        |  |  |
| Invert                  |   |           |          |           |        |   |  |         |  |   |              |   |  |               |  |   |              |   |   |               |   |   |        |  |  |
| Touch Operation Control | The touch operation can be enabled or disabled either by a specified bit or by the current user level. Select and set this option in the Advanced page.   |           |          |           |        |   |  |         |  |   |              |   |  |               |  |   |              |   |   |               |   |   |        |  |  |
| Minimum Hold Time       | The touch operation of the button will not be activated until the button is pressed and held down for the specified time period (Minimum Hold Time). Set this option in the Advanced page.  |           |          |           |        |   |  |         |  |   |              |   |  |               |  |   |              |   |   |               |   |   |        |  |  |
| Operator Confirmation   | <p>This option is available for the following bit button operations:<br/>Set ON, Set OFF, Set ON Pulse, Set OFF Pulse, and Invert.</p> <p>The Confirmation box will display when the button is touched. If the operator selects “Yes” in the Confirmation box, the button will proceed to perform its operation. If the operator selects “No” or the operator does not respond within the specified time period (Maximum Waiting Time), the button will stop performing its operation.</p> <p>Select and set this option in the Advanced page.</p>  |           |          |           |        |   |  |         |  |   |              |   |  |               |  |   |              |   |   |               |   |   |        |  |  |
| Notification            | The button can be configured to notify a bit upon completion of the bit setting operation when the button is pressed. Select and set this option in the Advanced page.  |           |          |           |        |   |  |         |  |   |              |   |  |               |  |   |              |   |   |               |   |   |        |  |  |
| Operation Logging       | Each touch operation of the button can be recorded in the operation log. Select and set this option in the Advanced page.   |           |          |           |        |   |  |         |  |   |              |   |  |               |  |   |              |   |   |               |   |   |        |  |  |
| Invisible               | The button can be invisible and still touch operable. Select this option in the Visibility page.  |           |          |           |        |   |  |         |  |   |              |   |  |               |  |   |              |   |   |               |   |   |        |  |  |
| Visibility Control      | The button can be shown or hidden either by a specified bit or by the current user level. Select and set this option in the Visibility page.  |           |          |           |        |   |  |         |  |   |              |   |  |               |  |   |              |   |   |               |   |   |        |  |  |

### 5.1.3. Settings

You can complete all the settings of a bit button in the Bit Button property sheet. This sheet contains the following seven pages. Some of the pages appear only when they are needed.

- **General**

Described in [Section 5.1.4.](#)

- **Label**

Described in [Section 4.3.5.](#)

- **Advanced**

Described in [Section 4.4.5.](#)

- **Visibility**

Described in [Section 4.4.6.](#)

- **External Label**

Described in [Section 4.3.8.](#)

- **On Macro**

Described in [Section 14.2.6.](#)

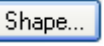



- **OFF Macro**

Described in [Section 14.2.6.](#)





### 5.1.4. General Settings

This section describes how to define the general settings for the bit buttons in the General page of the Bit Button property sheet. The following is an example of the General page.

The following table describes each property in the General page.

| Property   | Description   |
|--|---|
| ID   | The object's identifier. It is generated when the object is created. The identifier is unique within the screen where the object is located. The format of the IDs for the bit buttons is BBnnnn.   |
| Note   | You can type a note for the bit button.   |
| Shape settings   | For details about the following properties, see <a href="#">Section 4.3.4 Setting up the Shape of an Object</a> .<br>Picture Shape,  , VFTA,  , Border Color, Pattern, FG Color, BG Color |
| External Label   | Check this option if you want the bit button to have an external label. Set up the external label in the External Label page.   |
|  | Click this button to change the object state to 1 (On) so you can view and set the object appearance for state 1 (On).  |
|  | Click this button to change the object state to 0 (Off) so you can view and set the object appearance for state 0 (Off).  |

Continued

| Property                                   |   | Description  |               |             |     |                                 |      |   |             |   |
|--|---|--|---------------|-------------|-----|---------------------------------|------|---|-------------|---|
| Operation                                  |   | Select the operation for the bit button. There are 7 choices: Set ON, Set OFF, Set ON Pulse, Set OFF Pulse, Momentary ON, Momentary OFF, and Invert.<br>For details, see <a href="#">Section 5.1.1 Basic Operations</a>  |               |             |     |                                 |      |   |             |   |
| Address Type                               |   | <div>Specifies the type of variable in the Write Address field. The bit buttons support the following three variable types:</div> <table><tr><th>Variable Type</th><th>Description</th></tr><tr><td>Bit</td><td>The variable is a bit variable.</td></tr><tr><td>Word</td><td>The variable is a word variable. You need to specify which bit of the word variable is to be operated. Specify the bit number (0~15) in the Bit Number field.</td></tr><tr><td>Double-word</td><td>The variable is a double-word variable. You need to specify which bit of the double-word variable is to be operated. Specify the bit number (0~31) in the Bit Number field.</td></tr></table> | Variable Type | Description | Bit | The variable is a bit variable. | Word | The variable is a word variable. You need to specify which bit of the word variable is to be operated. Specify the bit number (0~15) in the Bit Number field. | Double-word | The variable is a double-word variable. You need to specify which bit of the double-word variable is to be operated. Specify the bit number (0~31) in the Bit Number field. |
| Variable Type                              | Description   |  |               |             |     |                                 |      |   |             |   |
| Bit  | The variable is a bit variable.   |  |               |             |     |                                 |      |   |             |   |
| Word                                       | The variable is a word variable. You need to specify which bit of the word variable is to be operated. Specify the bit number (0~15) in the Bit Number field.               |  |               |             |     |                                 |      |   |             |   |
| Double-word                                | The variable is a double-word variable. You need to specify which bit of the double-word variable is to be operated. Specify the bit number (0~31) in the Bit Number field. |  |               |             |     |                                 |      |   |             |   |
| Write Address                              | Write Address   | <div>Specifies the bit variable to be operated when the Address Type is Bit.</div> <div>Specifies the word variable that contains the bit to be operated when the Address Type is Word.</div> <div>Specifies the double-word variable that contains the bit to be operated when the Address Type is Double-word.</div>   |               |             |     |                                 |      |   |             |   |
|  |    | Click this icon to bring up the Address Input Keypad and specify the desired address for the Write Address field.  |               |             |     |                                 |      |   |             |   |
|  |    | Click this icon to bring up the Select Tag dialog box and select the desired tag for the Write Address field.  |               |             |     |                                 |      |   |             |   |
|  | Bit Number  | Specifies which bit of the variable specified in the Write Address field is to be operated. The field is available only when the address type is Word and Double Word.   |               |             |     |                                 |      |   |             |   |
| Minimum Pulse Width                        |   | The minimum width of the pulse that the Momentary ON and Momentary OFF operations must generate. There are six choices available: 0.05, 0.1, 0.2, 0.3, 0.4, and 0.5 second.  |               |             |     |                                 |      |   |             |   |
| Pulse Width                                |   | The width of the pulse generated by the Set ON Pulse and Set OFF Pulse operations. There are six choices available: 0.05, 0.1, 0.2, 0.3, 0.4, and 0.5 second.  |               |             |     |                                 |      |   |             |   |
| Monitor                                    |   | Check this option if you want the bit button to monitor a specified bit and display its state.   |               |             |     |                                 |      |   |             |   |
| Monitor Address identical to Write Address |   | Specifies that the Monitor Address is identical to the Write Address. With this item checked, you don't need to specify the Monitor Address again. This item is available when the Monitor option is checked.  |               |             |     |                                 |      |   |             |   |
| Monitor Address                            | Monitor Address   | <div>Specifies the bit variable to be monitored when the Address Type is Bit.</div> <div>Specifies the word variable that contains the bit to be monitored when the Address Type is Word.</div> <div>Specifies the double-word variable that contains the bit to be monitored when the Address Type is Double-word.</div>  |               |             |     |                                 |      |   |             |   |
|  |    | Click this icon to bring up the Address Input Keypad and specify the desired address for the Monitor Address field.  |               |             |     |                                 |      |   |             |   |
|  |    | Click this icon to bring up the Select Tag dialog box and select the desired tag for the Monitor Address field.  |               |             |     |                                 |      |   |             |   |
|  | Monitored Bit Number  | Specifies which bit of the variable specified in the Monitor Address field is to be operated. The field is available only when the address type is Word and Double Word.   |               |             |     |                                 |      |   |             |   |
| ON Macro                                   |   | Check this option if you want the button to have an ON macro. Specify and edit the ON macro in the ON Macro page. This option is available when the bit button operation is Set ON, Set ON Pulse, Momentary ON, or Momentary OFF.  |               |             |     |                                 |      |   |             |   |
| OFF Macro                                  |   | Check this option if you want the button to have an OFF macro. Specify and edit the OFF macro in the OFF Macro page. This option is available when the bit button operation is Set OFF, Set OFF Pulse, Momentary ON, or Momentary OFF.   |               |             |     |                                 |      |   |             |   |
| Key  |   | The hard key that is used to operate the bit button. This item is available only when the target panel has hard keys.  |               |             |     |                                 |      |   |             |   |

## 5.2. Toggling Bit State Using Toggle Switches

You can touch a toggle switch to toggle the state of the specified bit.

The difference between a toggle switch and a bit button performing the Invert operation is described below:

- 1) A toggle switch performs the toggle operation by writing the inverse state of the monitored bit to the destination bit.
- 2) A bit button performs the Invert operation by inverting the destination bit directly, regardless of the monitored bit.

### 5.2.1. Settings

You can complete all the settings of a toggle switch in the Toggle Switch property sheet. This sheet contains the following seven pages. Some of the pages appear only when they are needed.

- **General**

Described in [Section 5.2.2.](#)

- **Label**

Described in [Section 4.3.5.](#)

- **Advanced**

Described in [Section 4.4.5.](#)

- **Visibility**

Described in [Section 4.4.6.](#)

- **External Label**

Described in [Section 4.3.8.](#)

- **On Macro**

Described in [Section 14.2.6.](#)

- **OFF Macro**

Described in [Section 14.2.6.](#)



## 5.2.2. General Settings







This section describes how to define the general settings for a toggle switch.

The above is an example of the General page of the Toggle Switch property sheet.

The following table describes each property in the General page.

| Property       | Description   |
|----------------|---|
| ID             | The object's identifier. It is generated when the object is created. The identifier is unique within the screen where the object is located. The format of the IDs for toggle switches is TSnnnn.   |
| Note           | You can type a note for the object.   |
| Shape settings | For details about the following properties, see <a href="#">Section 4.3.4 Setting up the Shape of an Object.</a><br>Picture Shape, <a href="#">Shape...</a> , VFTA, <a href="#">Test VFTA</a> , Border Color, Pattern, FG Color, BG Color |
| External Label | Check this option if you want the object to have an external label. Set up the external label in the External Label page.   |

Continued

| Property   |   | Description   |
|--|---|---|
|  |   | Click this button to change the object state to 1 (On) so you can view and set the object appearance for state 1 (On).  |
|  |   | Click this button to change the object state to 0 (Off) so you can view and set the object appearance for state 0 (Off).  |
| Write Address  | Write Address   | Specifies the bit variable to be operated.  |
|  |  | Click this icon to bring up the Address Input Keypad and specify a bit address for the Write Address field.   |
|  |  | Click this icon to bring up the Select Tag dialog box and select a bit tag for the Write Address field.   |
| Monitor Address identical to Write Address                                       |   | Specifies that the Monitor Address is identical to the Write Address. With this item checked, you don't need to specify the Monitor Address again. This item is available when the Monitor option is checked. |
| Monitor Address  | Monitor Address   | Specifies the bit variable to be monitored.   |
|  |  | Click this icon to bring up the Address Input Keypad and specify a bit address for the Monitor Address field.   |
|  |  | Click this icon to bring up the Select Tag dialog box and select a bit tag for the Monitor Address field.   |
| ON Macro   |   | Check this option if you want the button to have an ON macro. Specify and edit the ON macro in the ON Macro page.   |
| OFF Macro  |   | Check this option if you want the button to have an OFF macro. Specify and edit the OFF macro in the OFF Macro page.  |
| Key  |   | The hard key that is used to operate the object. This item is available only when the target panel has hard keys.   |

## 5.3. Changing Screens Using Screen Buttons

You can touch a screen button to open or close a screen.

### 5.3.1. Basic Operations

A screen button can be configured to perform one of the following screen switching operations:

| Operation           | Description   |
|---------------------|---|
| Open Screen         | Opens the specified screen.   |
| Previous Screen     | Closes the current main screen and opens the previous main screen.<br><b>Note:</b> The panel can display many window screens but only one normal screen at a time, so a normal screen is also called a main screen. The panel can remember up to 32 previously opened main screens. |
| Close & Open Screen | Closes the window screen where the screen button is located and opens the specified screen.   |
| Close Screen        | Closes the window screen where the screen button is located.  |

### 5.3.2. Operation Options

The following operation options can be selected for a screen button to make it more informative, secure, and useful. You need to select and set these options in the Screen Button property sheet.

| Options                        | Description  |
|--------------------------------|--|
| Change User Level              | The button can be configured to change the current user level.   |
| Acknowledge Alarm              | The button can be configured to acknowledge the associated alarm on the screen where it is located. You can configure an alarm to display an (alarm) screen. The alarm is then the screen's associated alarm.  |
| Indicate Screen Already Opened | The button can be configured to indicate that a specified screen is opened. The indication is done by exchanging the button's FG color with its text color.  |
| Macro                          | You can specify a macro that will run when the screen button is activated to perform its operation. Select this option in the General page. Specify and edit the macro in the Macro page.<br><b>Note:</b> The screen switching operation will not be performed until the macro is completely executed. Therefore, it is important to keep the macro as short as possible so as not to delay the operation. |
| Touch Operation Control        | The touch operation can be enabled or disabled either by a specified bit or by the current user level. Select and set this option in the Advanced page.  |
| Minimum Hold Time              | The touch operation of the button will not be activated until the button is pressed and held down for the specified time period (Minimum Hold Time). Select and set this option in the Advanced page.  |
| Notification                   | The screen button can be configured to notify a bit of the completion of the screen switching operation. Select and set this option in the Advanced page.  |
| Operation Logging              | Each touch operation of the button can be recorded in the operation log. Select and set this option in the Advanced page.  |
| Invisible                      | The button can be invisible and still touch operable. Select this option in the Visibility page.   |
| Visibility Control             | The button can be shown or hidden either by a specified bit or by the current user level. Select and set this option in the Visibility page.   |

### 5.3.3. Settings

You can complete all the settings of a screen button in the Screen Button property sheet. This sheet contains the following six pages. Some of the pages appear only when they are needed.

- **General**

Described in [Section 5.3.4.](#)

- **Label**

Described in [Section 4.3.5.](#)

- **Advanced**

Described in [Section 4.4.5.](#)

- **Visibility**

Described in [Section 4.4.6.](#)

- **External Label**

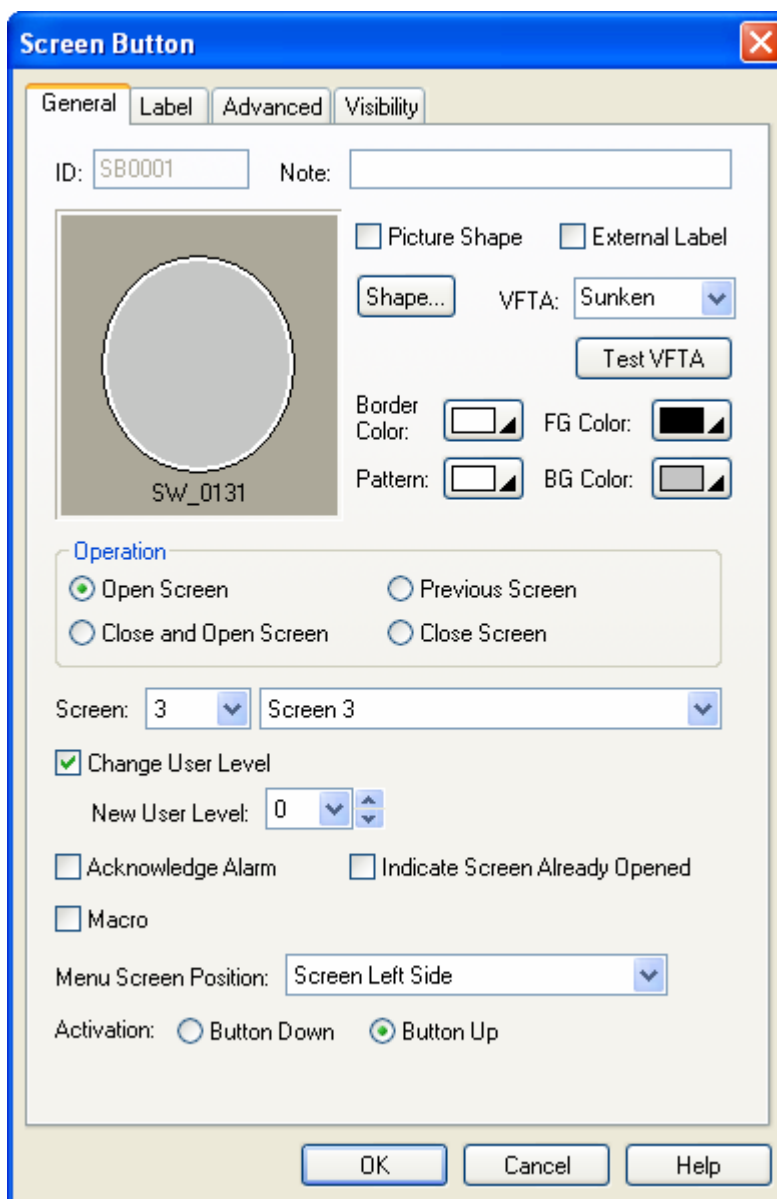
Described in [Section 4.3.8.](#)

- **Macro**

Described in [Section 14.2.6.](#)

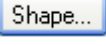
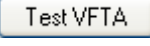
### 5.3.4. General Settings

This section describes how to define the general settings for a screen button.

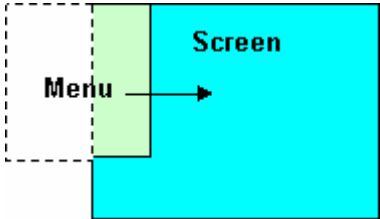
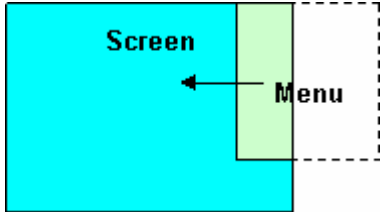
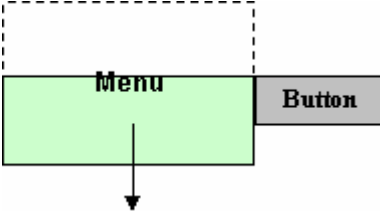
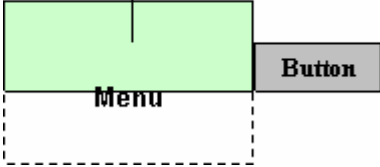
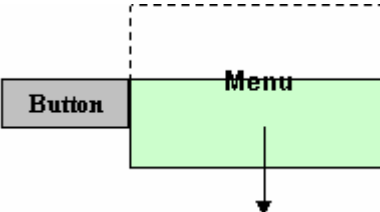
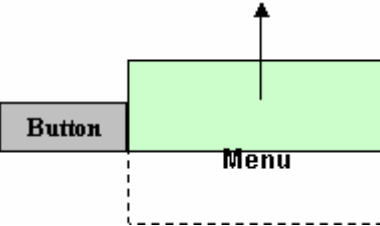


The above is an example of the General page of the Screen Button dialog box.

The following table describes each property in the General page.

| Property                       |   | Description   |
|--------------------------------|---|---|
| ID                             |   | The object's identifier. It is generated when the object is created. The identifier is unique within the screen where the object is located. The format of the IDs for screen buttons is SBnnnn.  |
| Note                           |   | You can type a note for the object.   |
| Shape settings                 |   | For details about the following properties, see <a href="#">Section 4.3.4 Setting up the Shape of an Object</a> . Picture Shape,  , VFTA,  , Border Color, Pattern, FG Color, BG Color |
| External Label                 |   | Check this option if you want the object to have an external label. Set up the external label in the External Label page.   |
| Operation                      |   | Specifies the operation that you want the screen button to perform. There are four choices: Open Screen, Previous Screen, Close and Open Screen, and Close Screen. For details, see <a href="#">Section 5.3.1 Basic Operations</a> .  |
| Screen                         |   | Specifies the screen to be opened.  |
| Change User Level              | <Check Box>   | Check this option if you want the button to change the current user level.  |
|                                | New User Level  | The new user level to replace the current user level.   |
| Acknowledge Alarm              |   | Check this option if you want the button to acknowledge the associated alarm of the screen where the button is located. You can configure an alarm to display an (alarm) screen. The alarm is then the screen's associated alarm.   |
| Indicate Screen Already Opened |   | Check this option if you want the button to indicate the specified screen is already open.  |
| Macro                          |   | Check this option if you want the button to have a macro. Specify and edit the macro in the Macro page.   |
| Activation                     | Button Down   | Specifies that the touch operation is activated when the button is pushed.  |
|                                | Button Up   | Specifies that the touch operation is activated when the button is released.  |
| Key                            | The hard key that is used to operate the object. This item is available only when the target panel has hard keys. |   |

Continued

| Property             | Description  |   |
|----------------------|--|---|
| Menu Screen Position | Select one of the following 6 positions for the specified menu screen to be displayed. This field will be displayed only when the specified screen is a menu screen. |   |
|                      | Position   | Description   |
|                      | Screen Left Side   | <p>The menu screen slides into view horizontally from the left side of the screen.</p>           |
|                      | Screen Right Side  | <p>The menu screen slides into view horizontally from the right side of the screen.</p>          |
|                      | Button Left Side & Downward  | <p>The menu screen appears on the left side of the button and slides downward into view.</p>    |
|                      | Button Left Side & Upward  | <p>The menu screen appears on the left side of the button and slides upward into view.</p>     |
|                      | Button Right Side & Downward   | <p>The menu screen appears on the right side of the button and slides downward into view.</p>  |
|                      | Button Right Side & Upward   | <p>The menu screen appears on the right side of the button and slides upward into view.</p>    |

## 5.4. Performing Built-in Function Using Function Buttons

You can touch a function button to perform the specified built-in function provided by the target panel.

### 5.4.1. Basic Operations

| Category   | Operation                     | Description   |  |             |              |  |                      |  |                       |  |        |                            |        |
|--|-------------------------------|---|--|-------------|--------------|--|----------------------|--|-----------------------|--|--------|----------------------------|--------|
| Setting up Panel   | Increase Brightness/Contrast  | Increases either the brightness or the contrast of the display depending on the target panel. Not all target panels support this operation. Check the hardware manual for details.            |  |             |              |  |                      |  |                       |  |        |                            |        |
|  | Decrease Brightness/Contrast  | Decreases either the brightness or the contrast of the display depending on the target panel. Not all target panels support this operation. Check the hardware manual for details.            |  |             |              |  |                      |  |                       |  |        |                            |        |
|  | Save Brightness/Contrast      | Saves the setting of either the brightness or the contrast of the display depending on the target panel. Not all target panels support this operation. Check the hardware manual for details. |  |             |              |  |                      |  |                       |  |        |                            |        |
|  | Enter Panel Setup Mode        | Exits the application and enters the panel setup mode.  |  |             |              |  |                      |  |                       |  |        |                            |        |
|  | End Transparent Communication | Ends the transparent communication.   |  |             |              |  |                      |  |                       |  |        |                            |        |
|  | Show Real Time Clock          | Displays the settings of the Real Time Clock so you can change the settings.  |  |             |              |  |                      |  |                       |  |        |                            |        |
|  | Turn Backlight Off            | Turns off the backlight of the display. To turn on the backlight, touch the screen. Not all target panels support this operation. Check the hardware manual for details.                      |  |             |              |  |                      |  |                       |  |        |                            |        |
| Setting up Application   | Log In                        | Displays the password keypad so you can enter a password to change the current user level.  |  |             |              |  |                      |  |                       |  |        |                            |        |
|  | Log Out                       | Changes the current user level to 0.  |  |             |              |  |                      |  |                       |  |        |                            |        |
|  | Show Password Table           | Displays the password table so you can change the passwords. The password table only lists the passwords whose user level is equal to or less than the current user level.                    |  |             |              |  |                      |  |                       |  |        |                            |        |
|  | Acknowledge Alarm             | Acknowledges the associated alarm of the screen that the button is located.   |  |             |              |  |                      |  |                       |  |        |                            |        |
|  | Change Language               | Change the current language to the specified language.  |  |             |              |  |                      |  |                       |  |        |                            |        |
|  | Show File Selection Box       |   | Displays the File Selection box for the specified purpose. The following table lists the five purposes:  |             |              |  |                      |  |                       |  |        |                            |        |
|  |                               |   | Purpose  | Description | Open to Read | Open the specified file for reading. The file must exist.* | Open/create to Write | Open the specified file for reading. A new file is created when the specified file does not exist. If the specified file exists, it will be over written.* | Open/create to Append | Open the specified file for appending data. A new file is created when the specified file does not exist.* | Delete | Delete the specified file. | Rename |
| Purpose  |                               |   | Description  |             |              |  |                      |  |                       |  |        |                            |        |
| Open to Read   |                               |   | Open the specified file for reading. The file must exist.*   |             |              |  |                      |  |                       |  |        |                            |        |
| Open/create to Write   |                               |   | Open the specified file for reading. A new file is created when the specified file does not exist. If the specified file exists, it will be over written.* |             |              |  |                      |  |                       |  |        |                            |        |
| Open/create to Append  |                               |   | Open the specified file for appending data. A new file is created when the specified file does not exist.*   |             |              |  |                      |  |                       |  |        |                            |        |
| Delete   |                               |   | Delete the specified file.   |             |              |  |                      |  |                       |  |        |                            |        |
| Rename   |                               |   | Rename the specified file.   |             |              |  |                      |  |                       |  |        |                            |        |
| You can specify the File Extension Name that will limit the File Selection Box to list only the files of the specified type. The specified extension name can only have ASCII characters and at most 3 characters.   |                               |   |  |             |              |  |                      |  |                       |  |        |                            |        |
| <b>Note:</b> You need to specify the File I/O Control Block Address, an internal variable that receives the result of the file open operation. You can specify a macro that will run when the specified file is opened successfully. It is important to close an opened file with the macro command CLOSE_FILE when you finish the operation, or the file data will be lost. |                               |   |  |             |              |  |                      |  |                       |  |        |                            |        |

Continued



| Category               | Operation                                       | Description  |
|------------------------|---|--|
| Saving Data to File    | Save Recipe Data (.txt file)                    | Saves the data of the specified recipe block in a text file. The file can be read by any text editor, Microsoft Excel, and the target panel.   |
|                        | Save Recipe Data (.prd file)                    | Saves the data of the specified recipe block in a file using the PRD format. The file can be read by the RecipeEditor and the target panel.  |
|                        | Save Logged Data (.txt file)                    | Saves the data collected by the specified data logger in a text file. The file can be read by any text editor, Microsoft Excel, and the target panel.  |
|                        | Save Logged Data (.ldf file)                    | Saves the data collected by the specified data logger in an LDF file. The file can be read by the target panel only.   |
|                        | Save Alarm History (.txt file)                  | Saves the alarm history in a text file. The file can be read by any text editor, Microsoft Excel, and the target panel.  |
|                        | Save Alarm Counts (.txt file)                   | Saves the alarm counts in a text file. The file can be read by any text editor, Microsoft Excel, and the target panel.   |
|                        | Save Operation History (.txt file)              | Saves the operation history in a text file. The file can be read by any text editor, Microsoft Excel, and the target panel.  |
|                        | Save Line Chart Data (.txt file)                | Saves the data collected by the specified line chart in a text file. The file can be read by any text editor, Microsoft Excel, and the target panel.   |
|                        | Save Scatter Chart Data (.txt file)             | Saves the data collected by the specified scatter chart in a text file. The file can be read by any text editor, Microsoft Excel, and the target panel.  |
|                        | Save Application Configuration Data (.plf file) | Saves the application configuration data that was downloaded to the target panel previously in a PLF file. The file can be used by the software.   |
|                        | Save System and Application to File (.prp file) | Saves the system programs and the application runtime data in a PRP file. The file can be used by the software and compatible target panels.   |
|                        |   |  |
| Loading Data from File | Load Recipe Data (.txt file)                    | Loads the data of the specified recipe block from a text file.   |
|                        | Load Recipe Data (.prd file)                    | Loads the data of the specified recipe block from a PRD file.  |
|                        | Load Logged Data (.ldf file)                    | Loads the data of the specified data logger from a LDF file.   |
|                        | Load Line Chart Data (.txt file)                | Loads the data of the specified line chart from a text file.   |
|                        | Load Scatter Chart Data (.txt file)             | Loads the data of the specified scatter chart from a text file.  |
| Transferring Data      | Write Recipe to Controller                      | Writes the current recipe, which is determined by the current recipe block and the current recipe number, to the specified controller. The controller and the destination address are specified in the settings of the recipe block.                   |
|                        | Read Recipe from Controller                     | Updates the current recipe, which is determined by the current recipe block and the current recipe number, by reading a recipe from the specified controller. The controller and the source address are specified in the settings of the recipe block. |
|                        | Save Recipe Data to Flash ROM                   | Saves the data of the specified recipe block to the target panel's flash ROM. The option "Need space in flash ROM to save backup" must be selected in the settings of the recipe block to make this operation available.                               |
|                        | Load Recipe Data from Flash ROM                 | Loads the data of the specified recipe block from the target panel's flash ROM. The option "Need space in flash ROM to save backup" must be selected in the settings of the recipe block to make this operation available.                             |

Continued

| Category                | Operation                                      | Description   |
|-------------------------|--|---|
| Printing Screen         | Print Screen                                   | Prints the screen where the button is located. The printed area is specified in the settings of the screen properties.  |
|                         | Print Screen to File (256-color .bmp)          | Prints the screen where the button is located to a file with the BMP format of 256 colors. The printed area is specified in the settings of the screen properties.  |
|                         | Print Screen to File (64K-color .bmp)          | Prints the screen where the button is located to a file with the BMP format of 64K colors. The printed area is specified in the settings of the screen properties.  |
|                         | Print Screen to File (True-color .bmp)         | Prints the screen where the button is located to a file with the BMP format. The color resolution is the same as the target panel's display. The printed area is specified in the settings of the screen properties.            |
|                         | Print Screen to File (.jpg)                    | Prints the screen where the button is located to a file with the JPG format. The printed area is specified in the settings of the screen properties.  |
| Clearing Data           | Clear Logged Data                              | Clears the data of the specified data logger.   |
|                         | Clear Logged Data (All)                        | Clears the data of all the data loggers.  |
|                         | Clear Alarm History                            | Clears the alarm history.   |
|                         | Clear Alarm Counts                             | Resets the alarm counts to 0.   |
|                         | Clear Operation History                        | Clears the operation history.   |
| Running Application     | Restart Application                            | Restarts the application.   |
|                         | Update System and Application From File (.prp) | Updates the system programs and the application runtime data from a PRP file. The original system programs and the application runtime data are replaced by the new ones.   |
|                         | Boot from File (.prp)                          | Loads-and-runs the system programs and the application runtime data from a PRP file. The original system programs and runtime data remain intact. The loaded system programs and the runtime data will be lost after power off. |
| Multimedia              | Play Sound                                     | Plays the specified sound file.   |
|                         | Stop Playing Sound                             | Stops playing the current sound file  |
|                         | Take Picture                                   | Takes a picture with the specified USB camera.  |
| Adjusting Viewing Range | Zoom In  | Makes the viewing range of the associated object half the size so the object shows less content but with more detail.   |
|                         | Zoom Out                                       | Makes the viewing range of the associated object twice the size so the object shows more content but with less detail.  |
|                         | Restore to Normal View                         | Restores the viewing range to the original setting.   |
| Scrolling Content       | Scroll Left                                    | Scrolls the content displayed by the associated object to the left.   |
|                         | Scroll Right                                   | Scrolls the content displayed by the associated object to the right.  |
|                         | Scroll Up                                      | Scrolls the content displayed by the associated object to the top.  |
|                         | Scroll Down                                    | Scrolls the content displayed by the associated object to the bottom.   |
|                         | Scroll Page Left                               | Scrolls the content displayed by the associated object to the left by a page.   |
|                         | Scroll Page Right                              | Scrolls the content displayed by the associated object to the right by a page.  |
|                         | Scroll Page Up                                 | Scrolls the content displayed by the associated object to the top by a page.  |
|                         | Scroll Page Down                               | Scrolls the content displayed by the associated object to the bottom by a page.   |
|                         | Scroll to Left End                             | Scrolls the content displayed by the associated object to the left end.   |
|                         | Scroll to Right End                            | Scrolls the content displayed by the associated object to the right end.  |
|                         | Scroll to Bottom End                           | Scrolls the content displayed by the associated object to the bottom end.   |
|                         | Scroll to Top End                              | Scrolls the content displayed by the associated object to the top end.  |

Continued

| Category      | Operation                         | Description   |
|---------------|-----------------------------------|---|
| Changing Data | Select Next Data Entry Object     | Selects the next data entry object on the screen where the button is on.  |
|               | Select Previous Data Entry Object | Selects the previous data entry object on the screen where the button is on.  |
|               | Increase Value by One             | Activates the selected data entry object to set its specified variable to the value obtained by increasing the value of its monitored variable by one. The operation is available for multi-state buttons whose property "Activation" is set to "Indirect". The operation is available for numeric entries whose property "Data Entry" is set to "On-screen Keypad and/or Function Keys". |
|               | Decrease Value by One             | Activates the selected data entry object to set its specified variable to the value obtained by decreasing the value of its monitored variable by one. The operation is available for multi-state buttons whose property "Activation" is set to "Indirect". The operation is available for numeric entries whose property "Data Entry" is set to "On-screen Keypad and/or Function Keys". |

### 5.4.2. Operation Options

The following operation options can be added to a function button to make it more informative, secure, and useful. You need to select and set these options in the Function Button property sheet.

| Options                 | Description  |
|-------------------------|--|
| Macro                   | You can specify a macro that will be run when a file is successfully opened. Select this option in the General page. Specify and edit the macro in the Macro page.   |
| Touch Operation Control | The touch operation can be enabled and disabled either by a specified bit or by the current user level. Select and set this option in the Advanced page.   |
| Minimum Hold Time       | The touch operation of the button will not be activated until the button is pressed and held down for the specified time period (Minimum Hold Time). Set this option in the Advanced page.   |
| Operator Confirmation   | The Confirmation box will be displayed when the button is touched. If the operator selects "Yes" in the Confirmation box, the button will proceed to perform its operation. If the operator selects "No" or the operator does not respond within the specified time period (Maximum Waiting Time), the button will stop performing its operation. Select and set this option in the Advanced page. |
| Notification            | The button can be configured to notify a bit when the specified operation is performed successfully. Select and set this option in the Advanced page.  |
| Operation Logging       | Each touch operation of the button can be recorded in the operation log. Select and set this option in the Advanced page.  |
| Invisible               | The button can be invisible and still touch operable. Select this option in the Visibility page.   |
| Visibility Control      | The button can be shown or hidden either by a specified bit or by the current user level. Select and set this option in the Visibility page.   |

### 5.4.3. Settings

You can complete all the settings of a function button in the Function Button property sheet. This sheet contains the following five pages. Some of the pages appear only when they are needed.

- **General**

Described in [Section 5.4.4.](#)

- **Label**

Described in [Section 4.3.5.](#)

- **Advanced**

Described in [Section 4.4.5.](#)

- **Visibility**

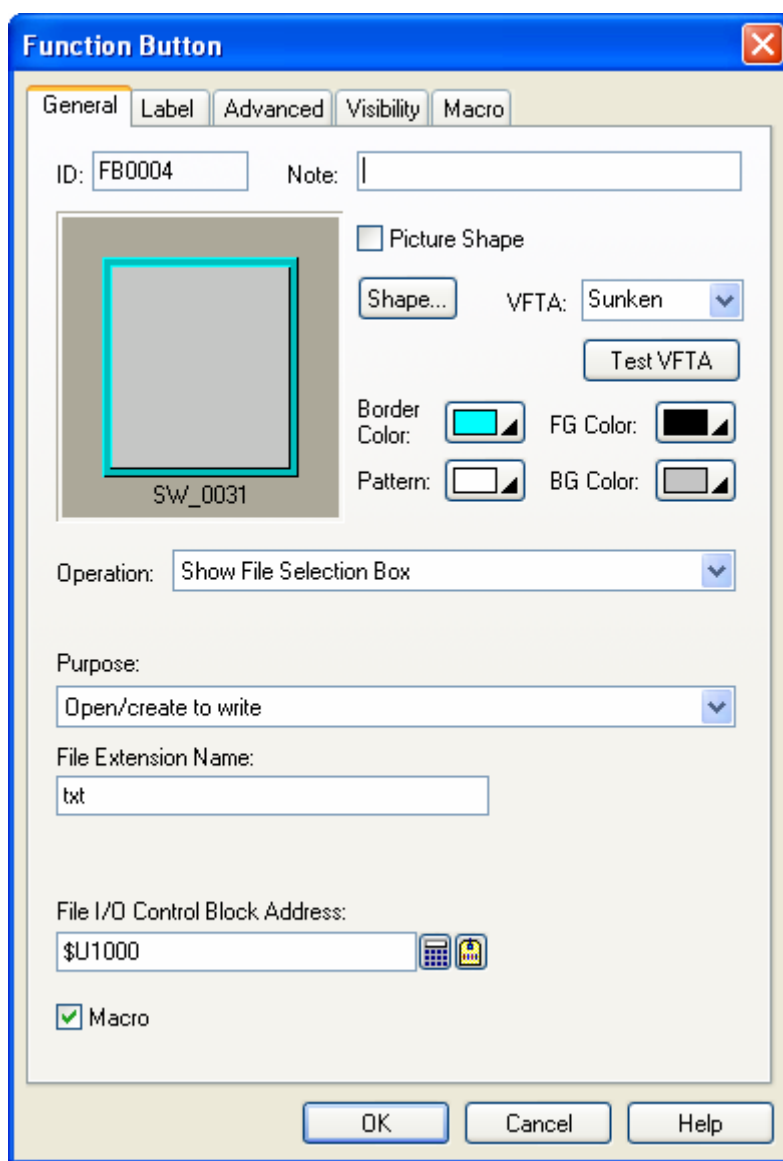
Described in [Section 4.4.6.](#)

- **Macro**

Described in [Section 14.2.6.](#)

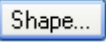
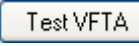
### 5.4.4. General Settings

This section describes how to define the general settings for a function button.





The above is an example of the General page of the Function Button dialog box.

The following table describes each property in the General page.

| Property       | Description   |
|----------------|---|
| ID             | The object's identifier. It is generated when the object is created. The identifier is unique within the screen where the object is located. The format of the ID's for function buttons is FBnnnn.   |
| Note           | You can type a note for the object.   |
| Shape settings | For details about the following properties, see <a href="#">Section 4.3.4 Setting up the Shape of an Object</a> . Picture Shape,  , VFTA,  , Border Color, Pattern, FG Color, BG Color |

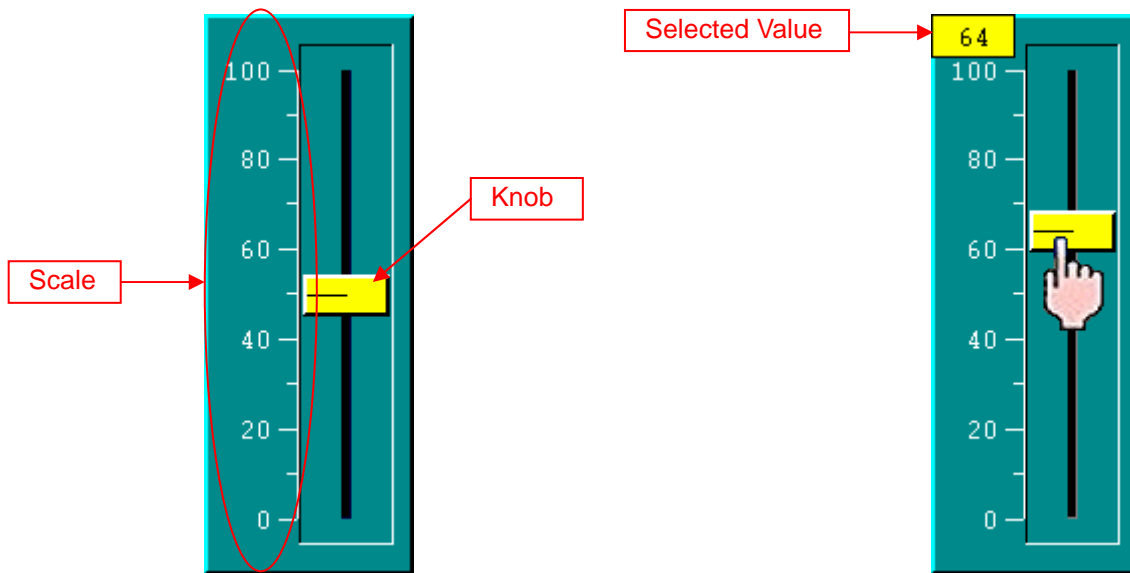
Continued

| Property  |   | Description  |   |             |     |   |     |   |      |  |
|---|---|--|---|-------------|-----|---|-----|---|------|--|
| External Label  |   | Check this option if you want the object to have an external label. Set up the external label in the External Label page.  |   |             |     |   |     |   |      |  |
| Operation   |   | Specifies the operation that you want the function button to perform. About the available operations, see <a href="#">Section 5.4.1 Basic Operation</a> .  |   |             |     |   |     |   |      |  |
| ID, Purpose, or Language  | Associated Object ID  | The ID of the object associated with the selected operation.   |   |             |     |   |     |   |      |  |
|   | Data Logger   | The ID of the data logger associated with the selected operation.  |   |             |     |   |     |   |      |  |
|   | Line Chart  | The ID of the line chart associated with the selected operation.   |   |             |     |   |     |   |      |  |
|   | Recipe Block  | The ID of the recipe block associated with the selected operation.   |   |             |     |   |     |   |      |  |
|   | Scatter Chart   | The ID of the scatter chart associated with the selected operation.  |   |             |     |   |     |   |      |  |
|   | Purpose   | The purpose for the Show File Selection Box operation.   |   |             |     |   |     |   |      |  |
|   | Language  | The language for the Change Language operation.  |   |             |     |   |     |   |      |  |
|   | Sound   | The ID of the sound for the Play Sound operation.  |   |             |     |   |     |   |      |  |
|   | Camera ID & Picture Type  | The camera ID and the picture file type for the Take Picture operation.  |   |             |     |   |     |   |      |  |
| Filename, Extension name, Method  | Default Filename  | The default filename for the selected operation. The name can only have ASCII characters and at most 80 characters.  |   |             |     |   |     |   |      |  |
|   | File Extension Name   | The file extension name for the selected operation. The name can only have ASCII characters and at most 3 characters.  |   |             |     |   |     |   |      |  |
|   | Method  | The method for the Play Sound operation.   |   |             |     |   |     |   |      |  |
| Filename Selectable   |   | Check this item so the File Selection box will display for the operator to select a file. The selected file will be used for the selected operation.   |   |             |     |   |     |   |      |  |
| File I/O Control Block Address  | <Edit Box>  | Specifies the internal variable to receive the result of the file open operation. The memory block requires 44 words.  |   |             |     |   |     |   |      |  |
|   |   | <table><tr><th>Word</th><th>Description</th></tr><tr><td>0,1</td><td>A 32-bit word to store the handle of an opened file</td></tr><tr><td>2,3</td><td>A 32-bit word to store the size (in byte) of the file</td></tr><tr><td>4-43</td><td>A byte array to store the filename and the extension name of the opened file; the maximum length of the filename and the extension name is 80 characters</td></tr></table> | Word  | Description | 0,1 | A 32-bit word to store the handle of an opened file | 2,3 | A 32-bit word to store the size (in byte) of the file | 4-43 | A byte array to store the filename and the extension name of the opened file; the maximum length of the filename and the extension name is 80 characters |
|   |   | Word   | Description   |             |     |   |     |   |      |  |
|   |   | 0,1  | A 32-bit word to store the handle of an opened file |             |     |   |     |   |      |  |
|   | 2,3   | A 32-bit word to store the size (in byte) of the file  |   |             |     |   |     |   |      |  |
|   | 4-43  | A byte array to store the filename and the extension name of the opened file; the maximum length of the filename and the extension name is 80 characters   |   |             |     |   |     |   |      |  |
|  | Click this icon to bring up the Address Input Keypad and specify an internal address for this property. |  |   |             |     |   |     |   |      |  |
|  | Click this icon to bring up the Select Tag dialog box and select an internal tag for this property.     |  |   |             |     |   |     |   |      |  |
| Macro   |   | Check this option if you want the button to have a macro. Specify and edit the macro in the Macro page.  |   |             |     |   |     |   |      |  |
| Key   |   | The hard key that is used to operate the object. This item is available only when the target panel has hard keys.  |   |             |     |   |     |   |      |  |

## 5.5. Selecting Word Value Using Slide Switches

You can touch the knob of a slide switch and move the knob to select a desired value. The selected value is written to the specified variable when you release the knob.

### 5.5.1. Basic Operations



The above are two examples of slide switches. The right one shows a slide switch whose knob is being touched.

You specify the variable to be controlled, the minimum of the variable, and the maximum of the variable for a slide switch. The variable is monitored, and its value combined with the specified minimum and maximum determines the knob position of the slide switch. You can touch and move the knob to select a desired value. The selected value is shown when the knob is being held. When you release the knob, the selected value is written to the specified variable.

You can choose one of the following four directions for a slide switch:

| Direction | Description  |
|-----------|--|
| Upward    | The knob can move vertically. The knob is at the top end when the variable value is equal to or greater than the specified maximum. The knob is at the bottom end when the variable value is equal to or less than the specified minimum. When the variable value is between the maximum and minimum, the knob is at a proportional position between the top end and the bottom end.   |
| Downward  | The knob can move vertically. The knob is at the bottom end when the variable value is equal to or greater than the specified maximum. The knob is at the top end when the variable value is equal to or less than the specified minimum. When the variable value is between the maximum and minimum, the knob is at a proportional position between the bottom end and the top end.   |
| Leftward  | The knob can move horizontally. The knob is at the left end when the variable value is equal to or greater than the specified maximum. The knob is at the right end when the variable value is equal to or less than the specified minimum. When the variable value is between the maximum and minimum, the knob is at a proportional position between the left end and the right end. |
| Rightward | The knob can move horizontally. The knob is at the right end when the variable value is equal to or greater than the specified maximum. The knob is at the left end when the variable value is equal to or less than the specified minimum. When the variable value is between the maximum and minimum, the knob is at a proportional position between the right end and the left end. |

### 5.5.2. Operation Options

The following operation options can be added to a slide switch to make it more informative, secure, and useful. You need to select and set these options in the Slide Switch dialog box.

| Options                 | Description  |
|-------------------------|--|
| Scale                   | The switch can have a scale. Select and set this option in the Scale page.   |
| Touch Operation Control | The touch operation can be enabled and disabled either by a specified bit or by the current user level. Select and set this option in the Advanced page. |
| Notification            | The switch can be configured to notify a bit when a change to the specified variable is performed. Select and set this option in the Advanced page.      |
| Operation Logging       | Each change to the specified variable can be recorded in the operation log. Select and set this option in the Advanced page.                             |
| Visibility Control      | The switch can be shown or hidden either by a specified bit or by the current user level. Select and set this option in the Visibility page.             |

### 5.5.3. Settings

You can complete all the settings of a slide switch in the Slide Switch dialog box. This dialog box contains the following five pages. Some of the pages appear only when they are needed.

- **General**

Described in [Section 5.5.4.](#)

- **Scale**

Described in [Section 4.4.4.](#)

- **Advanced**

Described in [Section 4.4.5.](#)

- **Visibility**

Described in [Section 4.4.6.](#)

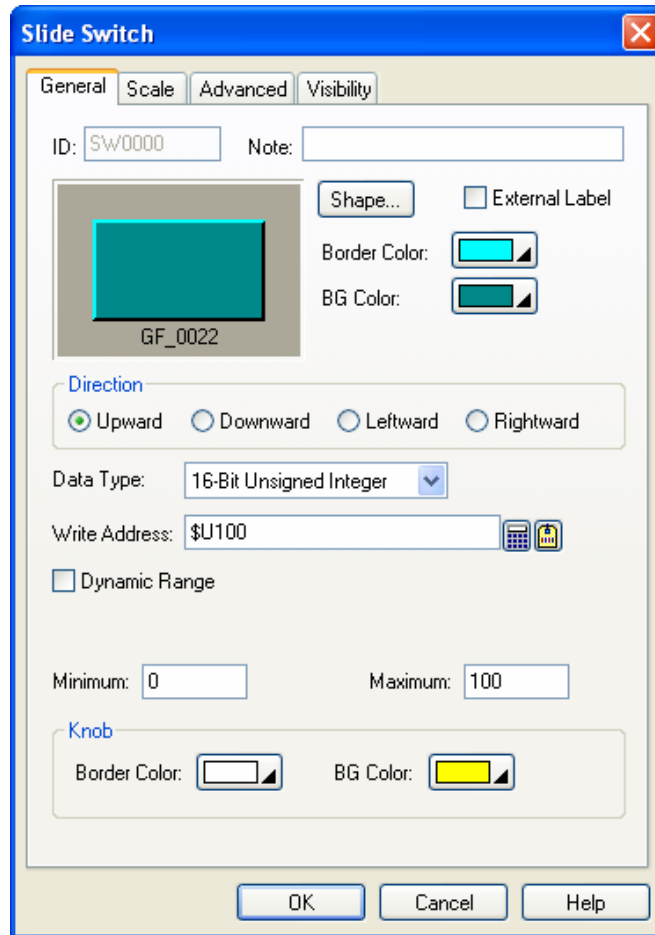
- **External Label**

Described in [Section 4.3.8.](#)



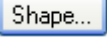


### 5.5.4. General Settings

This section describes how to define the general settings for a slide switch.





The above is an example of the General page of the Slide Switch dialog box.

The following table describes each property in the General page.

| Property       |   | Description  |
|----------------|---|--|
| ID             |   | The object's identifier. It is generated when the object is created. The identifier is unique within the screen where the object is located. The format of the IDs for slide switches is SWnnnn.                               |
| Note           |   | You can type a note for the object.  |
| Shape settings |   | For details about the following properties, see <a href="#">Section 4.3.4 Setting up the Shape of an Object</a> .  , Border Color, BG Color |
| External Label |   | Check this option if you want the object to have an external label. Set up the external label in the External Label page.  |
| Direction      |   | Specifies the direction of the slide switch. For details, <a href="#">see 5.5.1 Basic Operation</a> .  |
| Data Type      |   | The data type of the variable to be controlled by the object.  |
| Write Address  | Write Address   | Specifies the variable to be controlled by the object.   |
|                |  | Click this icon to bring up the Address Input Keypad and specify an address for this field.  |
|                |  | Click this icon to bring up the Select Tag dialog box and select a tag for this field.   |

Continued

| Property      |  | Description   |      |           |   |                             |   |                             |      |           |   |                             |   |                             |      |  |      |  |      |           |      |                             |      |                             |      |           |      |                             |      |                             |      |  |      |
|---------------|--|---|------|-----------|---|-----------------------------|---|-----------------------------|------|-----------|---|-----------------------------|---|-----------------------------|------|--|------|--|------|-----------|------|-----------------------------|------|-----------------------------|------|-----------|------|-----------------------------|------|-----------------------------|------|--|------|
| Dynamic Range | Dynamic Range  | Check this option so the minimum and maximum of the variable will be specified at runtime. When this option is selected, the minimum and maximum of the marks for the scale of the slide switch can be specified at runtime as well. The data that specifies the above two ranges should be set and arranged correctly in a memory block called the dynamic range parameter block. You need to specify the dynamic range parameter block for the slide switch in the Dynamic Range Parameter Block field.   |      |           |   |                             |   |                             |      |           |   |                             |   |                             |      |  |      |  |      |           |      |                             |      |                             |      |           |      |                             |      |                             |      |  |      |
|               | Dynamic Range Parameter Block                                | <p>Specifies the variable that stores the dynamic range parameter block for the slide switch when Dynamic Range is selected.</p> <p>Click  to enter an address for this field. Click  to select a tag for this field.</p> <p>The following table shows the data arrangement of the parameter block when the data type is 16-bit and the scale of the slide switch is not dynamic.</p> <table><tr><th>Word</th><th>Parameter</th></tr><tr><td>0</td><td>The minimum of the variable</td></tr><tr><td>1</td><td>The maximum of the variable</td></tr></table> <p>The following table shows the data arrangement of the parameter block when the data type is 16-bit and the scale of the slide switch is dynamic.</p> <table><tr><th>Word</th><th>Parameter</th></tr><tr><td>0</td><td>The minimum of the variable</td></tr><tr><td>1</td><td>The maximum of the variable</td></tr><tr><td>2, 3</td><td>The minimum of the mark for the scale; 32-bit integer number</td></tr><tr><td>4, 5</td><td>The maximum of the mark for the scale; 32-bit integer number</td></tr></table> <p>The following table shows the data arrangement of the parameter block when the data type is 32-bit and the scale of the slide switch is not dynamic.</p> <table><tr><th>Word</th><th>Parameter</th></tr><tr><td>0, 1</td><td>The minimum of the variable</td></tr><tr><td>2, 3</td><td>The maximum of the variable</td></tr></table> <p>The following table shows the data arrangement of the parameter block when the data type is 32-bit and the scale of the slide switch is dynamic.</p> <table><tr><th>Word</th><th>Parameter</th></tr><tr><td>0, 1</td><td>The minimum of the variable</td></tr><tr><td>2, 3</td><td>The maximum of the variable</td></tr><tr><td>4, 5</td><td>The minimum of the mark for the scale; 32-bit integer number</td></tr><tr><td>6, 7</td><td>The maximum of the mark for the scale; 32-bit integer number</td></tr></table> | Word | Parameter | 0 | The minimum of the variable | 1 | The maximum of the variable | Word | Parameter | 0 | The minimum of the variable | 1 | The maximum of the variable | 2, 3 | The minimum of the mark for the scale; 32-bit integer number | 4, 5 | The maximum of the mark for the scale; 32-bit integer number | Word | Parameter | 0, 1 | The minimum of the variable | 2, 3 | The maximum of the variable | Word | Parameter | 0, 1 | The minimum of the variable | 2, 3 | The maximum of the variable | 4, 5 | The minimum of the mark for the scale; 32-bit integer number | 6, 7 |
| Word          | Parameter  |   |      |           |   |                             |   |                             |      |           |   |                             |   |                             |      |  |      |  |      |           |      |                             |      |                             |      |           |      |                             |      |                             |      |  |      |
| 0             | The minimum of the variable                                  |   |      |           |   |                             |   |                             |      |           |   |                             |   |                             |      |  |      |  |      |           |      |                             |      |                             |      |           |      |                             |      |                             |      |  |      |
| 1             | The maximum of the variable                                  |   |      |           |   |                             |   |                             |      |           |   |                             |   |                             |      |  |      |  |      |           |      |                             |      |                             |      |           |      |                             |      |                             |      |  |      |
| Word          | Parameter  |   |      |           |   |                             |   |                             |      |           |   |                             |   |                             |      |  |      |  |      |           |      |                             |      |                             |      |           |      |                             |      |                             |      |  |      |
| 0             | The minimum of the variable                                  |   |      |           |   |                             |   |                             |      |           |   |                             |   |                             |      |  |      |  |      |           |      |                             |      |                             |      |           |      |                             |      |                             |      |  |      |
| 1             | The maximum of the variable                                  |   |      |           |   |                             |   |                             |      |           |   |                             |   |                             |      |  |      |  |      |           |      |                             |      |                             |      |           |      |                             |      |                             |      |  |      |
| 2, 3          | The minimum of the mark for the scale; 32-bit integer number |   |      |           |   |                             |   |                             |      |           |   |                             |   |                             |      |  |      |  |      |           |      |                             |      |                             |      |           |      |                             |      |                             |      |  |      |
| 4, 5          | The maximum of the mark for the scale; 32-bit integer number |   |      |           |   |                             |   |                             |      |           |   |                             |   |                             |      |  |      |  |      |           |      |                             |      |                             |      |           |      |                             |      |                             |      |  |      |
| Word          | Parameter  |   |      |           |   |                             |   |                             |      |           |   |                             |   |                             |      |  |      |  |      |           |      |                             |      |                             |      |           |      |                             |      |                             |      |  |      |
| 0, 1          | The minimum of the variable                                  |   |      |           |   |                             |   |                             |      |           |   |                             |   |                             |      |  |      |  |      |           |      |                             |      |                             |      |           |      |                             |      |                             |      |  |      |
| 2, 3          | The maximum of the variable                                  |   |      |           |   |                             |   |                             |      |           |   |                             |   |                             |      |  |      |  |      |           |      |                             |      |                             |      |           |      |                             |      |                             |      |  |      |
| Word          | Parameter  |   |      |           |   |                             |   |                             |      |           |   |                             |   |                             |      |  |      |  |      |           |      |                             |      |                             |      |           |      |                             |      |                             |      |  |      |
| 0, 1          | The minimum of the variable                                  |   |      |           |   |                             |   |                             |      |           |   |                             |   |                             |      |  |      |  |      |           |      |                             |      |                             |      |           |      |                             |      |                             |      |  |      |
| 2, 3          | The maximum of the variable                                  |   |      |           |   |                             |   |                             |      |           |   |                             |   |                             |      |  |      |  |      |           |      |                             |      |                             |      |           |      |                             |      |                             |      |  |      |
| 4, 5          | The minimum of the mark for the scale; 32-bit integer number |   |      |           |   |                             |   |                             |      |           |   |                             |   |                             |      |  |      |  |      |           |      |                             |      |                             |      |           |      |                             |      |                             |      |  |      |
| 6, 7          | The maximum of the mark for the scale; 32-bit integer number |   |      |           |   |                             |   |                             |      |           |   |                             |   |                             |      |  |      |  |      |           |      |                             |      |                             |      |           |      |                             |      |                             |      |  |      |
| Minimum       |  | The minimum of the variable to be controlled.   |      |           |   |                             |   |                             |      |           |   |                             |   |                             |      |  |      |  |      |           |      |                             |      |                             |      |           |      |                             |      |                             |      |  |      |
| Maximum       |  | The maximum of the variable to be controlled.   |      |           |   |                             |   |                             |      |           |   |                             |   |                             |      |  |      |  |      |           |      |                             |      |                             |      |           |      |                             |      |                             |      |  |      |
| Knob          | Border Color   | The border color of the knob. To specify the color, click the corresponding Color icon and select a color from the Color palette.   |      |           |   |                             |   |                             |      |           |   |                             |   |                             |      |  |      |  |      |           |      |                             |      |                             |      |           |      |                             |      |                             |      |  |      |
|               | BG Color   | The color inside the border. To specify the color, click the corresponding Color icon and select a color from the Color palette.  |      |           |   |                             |   |                             |      |           |   |                             |   |                             |      |  |      |  |      |           |      |                             |      |                             |      |           |      |                             |      |                             |      |  |      |

## 5.6. Setting Word Value Using Word Buttons

You can touch a word button to set a value to the specified variable.

### 5.6.1. Basic Operations

A word button can be configured to perform one of the following operations:

| Operation      | Description   |
|----------------|---|
| Set Constant   | Writes the specified constant to the specified variable.  |
| Enter Value    | Allows you to enter a value to change the specified variable.<br>The Numeric Keypad displays when the button is pressed and released. After a value is entered with the keypad, the button checks if the value is within the range of the specified minimum and maximum. If the value is valid, the button writes the entered value to the specified variable. If the value is invalid, the operator has to enter another value or quit the operation.  |
| Enter Password | Allows you to enter a value to change the specified variable. The keypad shows the input with a string of asterisks so others cannot know the input value.<br>The Numeric Keypad displays when the button is pressed and released. The keypad shows the operator input with a string of asterisks so others do not know the input value. After a value is entered with the keypad, the button checks if the value is within the range of the specified minimum and maximum. If the value is valid, the button writes the entered value to the specified variable. If the value is invalid, the operator has to enter another value or quit the operation. |
| Add            | Increases the specified variable by the specified constant. If the result of the increase is greater than the specified maximum, the variable is set to the maximum.  |
| Subtract       | Decreases the specified variable by the specified constant. If the result of the decrease is less than the specified minimum, the variable is set to the minimum.   |

### 5.6.2. Operation Options

The following operation options can be added to a word button to make it more informative, secure, and useful. You need to select and set these options in the Word Button dialog box.

| Options                 | Description   |
|-------------------------|---|
| Touch Operation Control | The touch operation can be enabled or disabled either by a specified bit or by the current user level. Select and set this option in the Advanced page.   |
| Minimum Hold Time       | The touch operation of the button will not be activated until the button is pressed and held down for the specified time period (Minimum Hold Time). Set this option in the Advanced page.  |
| Operator Confirmation   | The Confirmation box will be displayed when the button is touched. If the operator selects "Yes" in the Confirmation box, the button will proceed to perform its operation. If the operator selects "No" or the operator does not respond within the specified time period (Maximum Waiting Time), the button will stop performing its operation.<br>Select and set this option in the Advanced page.<br><b>Note:</b> that this option is not available for the Enter Password operation. |
| Notification            | The button can be configured to notify a bit upon the completion of the specified operation. Select and set this option in the Advanced page.   |
| Operation Logging       | Each touch operation of the button can be recorded in the operation log. Select and set this option in the Advanced page.   |
| Invisible               | The button can be invisible and still touch operable. Select this option in the Visibility page.  |
| Visibility Control      | The button can be shown or hidden either by a specified bit or by the current user level. Select and set this option in the Visibility page.  |

### 5.6.3. Settings

You can complete all the settings of a word button in the Word Button property sheet. This sheet contains the following five pages. Some of the pages appear only when they are needed.

- **General**

Described in [Section 5.6.4.](#)

- **Label**

Described in [Section 4.3.5.](#)

- **Advanced**

Described in [Section 4.4.5.](#)

- **Visibility**

Described in [Section 4.4.6.](#)

- **External Label**

Described in [Section 4.3.8.](#)

### 5.6.4. General Settings

This section describes how to define the general settings for a word button.





The screenshot shows the 'Word Button' dialog box with the 'General' tab selected. The dialog has a title bar with a close button (X). Inside, there are four tabs: 'General', 'Label', 'Advanced', and 'Visibility'. The 'General' tab contains the following fields and controls:

- ID:** A text box containing 'WB0000'.
- Note:** An empty text box.
- Picture Shape:** A checkbox that is unchecked.
- External Label:** A checkbox that is unchecked.
- Shape...:** A button to open a shape selection dialog.
- VFTA:** A dropdown menu set to 'Sunken'.
- Test VFTA:** A button to test the VFTA setting.
- Border Color:** A color selection button showing a white box.
- FG Color:** A color selection button showing a black box.
- Pattern:** A pattern selection button showing a white box.
- BG Color:** A color selection button showing a gray box.
- Function:** A group box containing five radio buttons: 'Set Constant', 'Enter Value', 'Enter Password' (selected), 'Add', and 'Subtract'.
- Data Type:** A dropdown menu set to '32-Bit Unsigned Int'.
- Write Address:** A text box containing '\$U800' with a calculator icon and a memory icon to its right.
- Minimum:** A text box containing '0'.
- Maximum:** A text box containing '4294967295'.
- Total Digits:** A spin box set to '10'.
- Fractional Digits:** A spin box set to '0'.
- Activation:** Two radio buttons: 'Button Down' and 'Button Up' (selected).

At the bottom of the dialog are three buttons: 'OK', 'Cancel', and 'Help'.

The above is an example of the General page of the Word Button property sheet.

The following table describes each property in the General page.




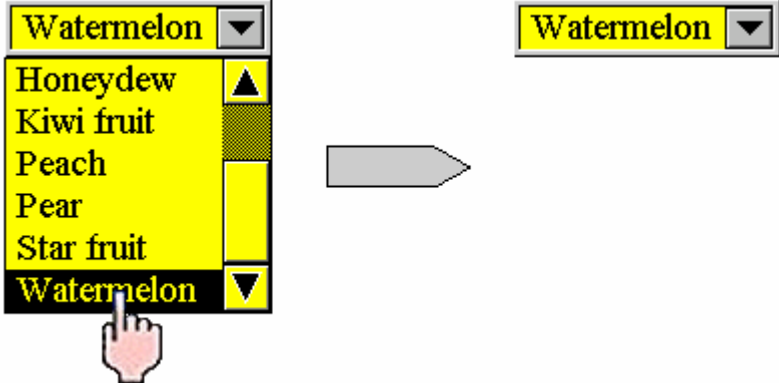
| Property              |   | Description  |               |              |                   |               |              |                       |   |   |       |       |                       |   |   |       |        |                       |   |   |        |       |                       |   |   |       |    |                       |   |   |   |     |
|-----------------------|---|--|---------------|--------------|-------------------|---------------|--------------|-----------------------|---|---|-------|-------|-----------------------|---|---|-------|--------|-----------------------|---|---|--------|-------|-----------------------|---|---|-------|----|-----------------------|---|---|---|-----|
| ID                    |   | The object's identifier. It is generated when the object is created. The identifier is unique within the screen where the object is located. The format of the IDs for word buttons is WBnnnn.   |               |              |                   |               |              |                       |   |   |       |       |                       |   |   |       |        |                       |   |   |        |       |                       |   |   |       |    |                       |   |   |   |     |
| Note                  |   | You can type a note for the word button.   |               |              |                   |               |              |                       |   |   |       |       |                       |   |   |       |        |                       |   |   |        |       |                       |   |   |       |    |                       |   |   |   |     |
| Shape settings        |   | For details about the following properties, see <a href="#">Section 4.3.4 Setting up the Shape of an Object</a> . Picture Shape,  , VFTA,  , Border Color, Pattern, FG Color, BG Color.   |               |              |                   |               |              |                       |   |   |       |       |                       |   |   |       |        |                       |   |   |        |       |                       |   |   |       |    |                       |   |   |   |     |
| External Label        |   | Check this option if you want the word button to have an external label. Set up the external label in the External Label page.   |               |              |                   |               |              |                       |   |   |       |       |                       |   |   |       |        |                       |   |   |        |       |                       |   |   |       |    |                       |   |   |   |     |
| Operation             |   | Specifies the operation that the word button performs. For details, <a href="#">see Section 5.6.1 Basic Operations</a> .   |               |              |                   |               |              |                       |   |   |       |       |                       |   |   |       |        |                       |   |   |        |       |                       |   |   |       |    |                       |   |   |   |     |
| Data Type             |   | The data type of the variable to be controlled.  |               |              |                   |               |              |                       |   |   |       |       |                       |   |   |       |        |                       |   |   |        |       |                       |   |   |       |    |                       |   |   |   |     |
| Write Address         | Write Address   | Specifies the variable to be controlled.   |               |              |                   |               |              |                       |   |   |       |       |                       |   |   |       |        |                       |   |   |        |       |                       |   |   |       |    |                       |   |   |   |     |
|                       |  | Click this icon to bring up the Address Input Keypad and specify an address for this property.   |               |              |                   |               |              |                       |   |   |       |       |                       |   |   |       |        |                       |   |   |        |       |                       |   |   |       |    |                       |   |   |   |     |
|                       |  | Click this icon to bring up the Select Tag dialog box and select a tag for this property.  |               |              |                   |               |              |                       |   |   |       |       |                       |   |   |       |        |                       |   |   |        |       |                       |   |   |       |    |                       |   |   |   |     |
| Constant              |   | The constant for the specified operation.  |               |              |                   |               |              |                       |   |   |       |       |                       |   |   |       |        |                       |   |   |        |       |                       |   |   |       |    |                       |   |   |   |     |
| Minimum               |   | The minimum for the specified operation.   |               |              |                   |               |              |                       |   |   |       |       |                       |   |   |       |        |                       |   |   |        |       |                       |   |   |       |    |                       |   |   |   |     |
| Maximum               |   | The maximum for the specified operation.   |               |              |                   |               |              |                       |   |   |       |       |                       |   |   |       |        |                       |   |   |        |       |                       |   |   |       |    |                       |   |   |   |     |
| Total Digits          |   | The number of digits to be displayed for the Minimum and the Maximum on the numeric keypad.  |               |              |                   |               |              |                       |   |   |       |       |                       |   |   |       |        |                       |   |   |        |       |                       |   |   |       |    |                       |   |   |   |     |
| Fractional Digits     |   | <p>When the Data Type is 32-bit Floating Point, this property specifies the number of fractional digits to be displayed for the Minimum and Maximum on the numeric keypad.</p> <p>When the Data Type is not 32-bit Floating Point, this property specifies not only the number of fractional digits to be displayed, but also the number of least significant digits to be displayed as the fractional part. With this feature, an integer can be shown and entered as a fixed point number. When the Fractional Digits is nonzero, say N, the entered value will be converted to an integer according to the following formula before being output.</p> <p>OutputValue = EnteredValue * (N<sup>th</sup> power of 10)</p> <p><b>Example:</b></p> <table><tr><th>Display Type</th><th>Total Digits</th><th>Fractional Digits</th><th>Entered Value</th><th>Output Value</th></tr><tr><td>32-bit Floating Point</td><td>4</td><td>2</td><td>12.34</td><td>12.34</td></tr><tr><td>32-bit Floating Point</td><td>4</td><td>2</td><td>123.4</td><td>Error!</td></tr><tr><td>16-bit Signed Decimal</td><td>5</td><td>2</td><td>123.45</td><td>12345</td></tr><tr><td>16-bit Signed Decimal</td><td>5</td><td>2</td><td>-0.05</td><td>-5</td></tr><tr><td>16-bit Signed Decimal</td><td>5</td><td>2</td><td>3</td><td>300</td></tr></table> | Display Type  | Total Digits | Fractional Digits | Entered Value | Output Value | 32-bit Floating Point | 4 | 2 | 12.34 | 12.34 | 32-bit Floating Point | 4 | 2 | 123.4 | Error! | 16-bit Signed Decimal | 5 | 2 | 123.45 | 12345 | 16-bit Signed Decimal | 5 | 2 | -0.05 | -5 | 16-bit Signed Decimal | 5 | 2 | 3 | 300 |
| Display Type          | Total Digits  | Fractional Digits  | Entered Value | Output Value |                   |               |              |                       |   |   |       |       |                       |   |   |       |        |                       |   |   |        |       |                       |   |   |       |    |                       |   |   |   |     |
| 32-bit Floating Point | 4   | 2  | 12.34         | 12.34        |                   |               |              |                       |   |   |       |       |                       |   |   |       |        |                       |   |   |        |       |                       |   |   |       |    |                       |   |   |   |     |
| 32-bit Floating Point | 4   | 2  | 123.4         | Error!       |                   |               |              |                       |   |   |       |       |                       |   |   |       |        |                       |   |   |        |       |                       |   |   |       |    |                       |   |   |   |     |
| 16-bit Signed Decimal | 5   | 2  | 123.45        | 12345        |                   |               |              |                       |   |   |       |       |                       |   |   |       |        |                       |   |   |        |       |                       |   |   |       |    |                       |   |   |   |     |
| 16-bit Signed Decimal | 5   | 2  | -0.05         | -5           |                   |               |              |                       |   |   |       |       |                       |   |   |       |        |                       |   |   |        |       |                       |   |   |       |    |                       |   |   |   |     |
| 16-bit Signed Decimal | 5   | 2  | 3             | 300          |                   |               |              |                       |   |   |       |       |                       |   |   |       |        |                       |   |   |        |       |                       |   |   |       |    |                       |   |   |   |     |
| Activation            | Button Down   | Select this item so the touch operation will be activated when the button is touched.  |               |              |                   |               |              |                       |   |   |       |       |                       |   |   |       |        |                       |   |   |        |       |                       |   |   |       |    |                       |   |   |   |     |
|                       | Button Up   | Select this item so the touch operation will be activated when the button is released.   |               |              |                   |               |              |                       |   |   |       |       |                       |   |   |       |        |                       |   |   |        |       |                       |   |   |       |    |                       |   |   |   |     |
| Key                   |   | The hard key that is used to operate the word button. This item is available when the target panel has hard keys.  |               |              |                   |               |              |                       |   |   |       |       |                       |   |   |       |        |                       |   |   |        |       |                       |   |   |       |    |                       |   |   |   |     |

## 5.7. Selecting Work Value Using Multi-state Switches



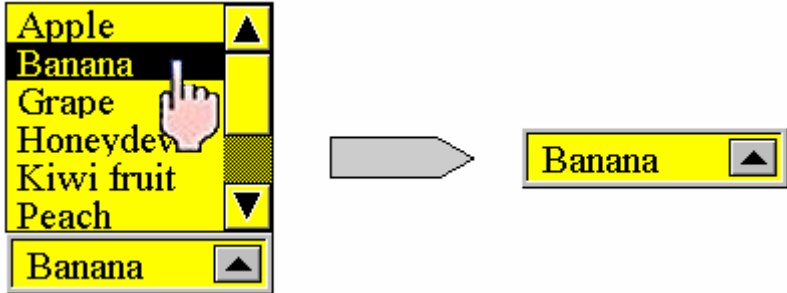
You can use a multi-state switch to change the state of the specified variable.

### 5.7.1. Basic Operations

A multi-state switch can be configured to perform as one of the following types of controls:

| Control Type   | Description  |
|----------------|--|
| Button         | The multi-state switch is a push button. It changes the state of the specified variable to the next state when it is touched. <b>Note:</b> that the next state is not necessarily the current state plus one.  |
| List           | <p>The multi-state switch is a list box. It lists the text of all the states of the switch one state per line starting from state 0 as shown in the example on the right.</p> <p>The text of the current state is highlighted. If the desired state is not in view, you can use the scroll bar attached to the right side of the list box to scroll the text. When you select a desired state by touching its text, the list box writes the value of the selected state to the specified variable.</p>    |
| Drop-down List | <p>The multi-state switch is a drop-down list. It displays the text of the current state and a button with the down arrow symbol as shown in the following example.</p>  <p>When the button is touched, the switch list displays a list box beneath itself as shown in the following example.</p>  <p>The list box lists the text of all states of the switch one state per line starting from state 0. The text of the current state is highlighted. If the desired state is not in view, you can use the scroll bar attached to the right side of the list to scroll the text. When you select a desired state by touching its text, the switch writes the value of the selected state to the specified variable and closes the list box.</p>  <p>If you want to cancel the operation when the list box is showing, touch anywhere other than the text in the list box.</p> |

Continued

| Control Type  | Description   |
|---------------|---|
| Throw-up List | <p>The multi-state switch is a throw-up list. It displays the text of the current state and a button with the up arrow symbol as shown in the following example.</p>  <p>When the button is touched, the switch list displays a list box above itself as shown in the following example.</p>  <p>The list box lists the text of all states of the switch one state per line starting from state 0. The text of the current state is highlighted. If the desired state is not in view, you can use the scroll bar attached to the right side of the list to scroll the text. When you select a desired state by touching its text, the switch writes the value of the selected state to the specified variable and closes the list box.</p>  <p>If you want to cancel the operation when the list box is showing, touch anywhere other than the text in the list box.</p> |

### 5.7.2. Operation Options

The following operation options can be added to a multi-state switch to make it more informative, secure, and useful. You need to select and set these options in the Multi-state Switch dialog box.

| Options                 | Description  |
|-------------------------|--|
| Touch Operation Control | The touch operation can be enabled and disabled either by a specified bit or by the current user level. Select and set this option in the Advanced page.                                   |
| Minimum Hold Time       | The touch operation of the switch will not be activated until the switch is pressed and held down for the specified time period (Minimum Hold Time). Set this option in the Advanced page. |
| Notification            | The switch can be configured to notify a bit of the completion of the specified operation. Select and set this option in the Advanced page.  |
| Operation Logging       | Each data change performed by the switch can be recorded in the operation log. Select and set this option in the Advanced page.  |
| Invisible               | The switch can be invisible and still touch operable. Select this option in the Visibility page.   |
| Visibility Control      | The switch can be shown or hidden either by a specified bit or by the current user level. Select and set this option in the Visibility page.   |

### 5.7.3. Settings

You can complete all the settings of a multi-state switch in the Multi-state Switch dialog box. This dialog box contains the following six pages. Some of the pages appear only when they are needed.

- **General**

Described in [Section 5.7.4.](#)

- **Text**

Described in [Section 4.3.6.](#)

- **Picture**

Described in [Section 4.3.7.](#)

- **Advanced**

Described in [Section 4.4.5.](#)

- **Visibility**

Described in [Section 4.4.6.](#)

- **External Label**

Described in [Section 4.3.8.](#)



### 5.7.4. General Settings

This section describes how to define the general settings for a multi-state switch. The following is an example of the General page of the Multi-state Switch property sheet.

**Multistate Switch**

General | Text | Advanced | Visibility

ID: MS0000 Note:

GF\_0041

Shape... VFTA: Sunken

State: 4 Test VFTA

Border Color: FG Color:

Pattern: BG Color:

**State Type**

☐ Value ☐ LSB ☒ Custom

**Control Type**

☐ Button ☐ Drop-down List ☒ List ☐ Throw-up List

Data Type: 16-Bit Unsigned Integer

Write Address: \$U900

Total States: 9 Custom State Value...

☒ Monitor Address identical to Write Address





Monitor Address: \$U900

OK Cancel Help

The following table describes each property in the General page.

| Property       | Description  |
|----------------|--|
| ID             | The object's identifier. It is generated when the object is created. The identifier is unique within the screen where the object is located. The format of the IDs for multi-state switch is MSnnnn.                     |
| Note           | You can type a note for the multi-state switch.  |
| Shape settings | For details about the following properties, see <a href="#">Section 4.3.4 Setting up the Shape of an Object</a> .<br>Picture Shape, <b>Shape...</b> , VFTA, <b>Test VFTA</b> , Border Color, Pattern, FG Color, BG Color |
| External Label | Check this option if you want the multi-state switch to have an external label. Set up the external label in the External Label page.  |

Continued

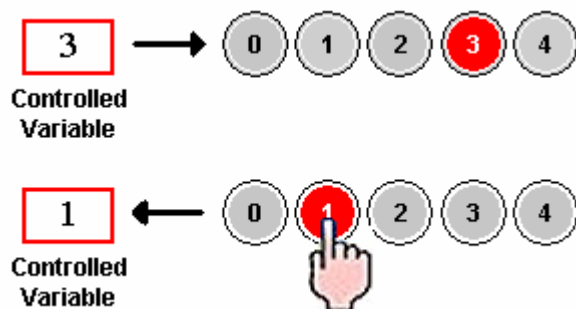
| Property                                   |   | Description   |
|--|---|---|
| State                                      |   | The current state of the multi-state switch that you can view and set the object appearance for.  |
| State Type                                 |   | The state type of the monitored variable. There are two options: Value and LSB. For details, see <a href="#">Section 4.4.1.1 State Types</a> .  |
| Control Type                               |   | Specifies the control type that the multi-state switch will perform as. There are three types you can choose: Button, List, and Drop-down List, Throw-up List. For details, see <a href="#">Section 5.7.1 Basic Operations</a> .  |
| Data Type                                  |   | The data type of the variables specified in this page.  |
| Write Address                              | Write Address   | Specifies the variable to be controlled.  |
|  |    | Click this icon to bring up the Address Input Keypad and specify an address for this property.  |
|  |    | Click this icon to bring up the Select Tag dialog box and select a tag for this property.   |
| Total States                               |   | Specifies the number of valid states that the monitored variable has.<br><b>Note:</b> The last state is state N-1 when the Total States is N.   |
| Next State                                 |   | Specifies the method of calculating the next state for the Button control type.   |
|  | +1 (Wrap)   | The next state is the current state plus one when the current state is not the last state. When the current state is the last state, the next state is state 0.   |
|  | -1 (Wrap)   | The next state is the current state minus one when the current state is not state 0. When the current state is state 0, the next state is the last state.   |
|  | +1/-1 (Retreat)   | With this method, the switch is either in the increasing mode or in the decreasing mode for the next state calculation. The switch is in the increasing mode initially.<br>Assume that the total states of the switch is N. When the switch is in the increasing mode, the next state is the current state plus one, if the current state is not the last state, i.e. state N-1. If the current state is the last state, the switch changes into the decreasing mode, and the next state is the current state minus one, i.e. state N-2. When the switch is in the decreasing mode, the next state is the current state minus one if the current state is not state 0. If the current state is state 0, the switch changes into the increasing mode and the next state is the current state plus one, i.e. state 1. |
| Activation                                 |   | Specifies how the multi-state switch is activated for the Button control type.  |
|  | Direct  | The multi-state switch is activated when the button is touched.   |
|  | Indirect  | The multi-state switch is activated when it is selected, and a function button on the same screen with the operation of “Increase Value By One” or “Decrease Value y One” is touched.   |
| Monitor Address identical to Write Address |   | Specifies that the Monitor Address is identical to the Write Address. With this item checked, you don't need to specify the same variable for the Monitor Address field.  |
| Monitor Address                            | Monitor Address   | Specifies the variable to be monitored.   |
|  |  | Click this icon to bring up the Address Input Keypad and specify an address for the Monitor Address field.  |
|  |  | Click this icon to bring up the Select Tag dialog box and select a tag for the Monitor Address field.   |
| Key  |   | The hard key that is used to operate the multi-state switch. This item is available when the target panel has hard keys.  |

## 5.8. Setting Word State Using Radio Button Groups

You can press a button of a radio button group to change the state of the controlled variable.

### 5.8.1. Basic Operations

A radio button group has as many radio buttons as the number of states it has. Each radio button corresponds to a state. When a radio button is pressed, the value of that button's associated state is written to the controlled variable. The state of a radio button group is determined by the state of the controlled variable. A radio button is highlighted when its associated state is the current state.



### 5.8.2. Operation Options

The following operation options can be added to a radio button group to make it more informative, secure, and useful. You need to select and set these options in the Radio Button Group dialog box.

| Options                 | Description  |
|-------------------------|--|
| Touch Operation Control | The touch operation of the radio button group can be enabled and disabled either by a specified bit or by the current user level. Select and set this option in the Advanced page.                   |
| Minimum Hold Time       | The touch operation will not be activated until a button of the radio button group is pressed and held down for the specified time period (Minimum Hold Time). Set this option in the Advanced page. |
| Operation Logging       | Each data change performed by the radio button group can be recorded in the operation log. Select and set this option in the Advanced page.  |
| Visibility Control      | The radio button group can be shown or hidden either by a specified bit or by the current user level. Select and set this option in the Visibility page.   |

### 5.8.3. Settings

You can complete all the settings of a radio button group in the Radio Button Group dialog box. This dialog box contains the following six pages. Some of the pages appear only when they are needed.

- **General**

Described in [Section 5.8.4.](#)

- **Text**

Described in [Section 4.3.6.](#)

- **Picture**

Described in [Section 4.3.7.](#)

- **Advanced**

Described in [Section 4.4.5.](#)

- **Visibility**

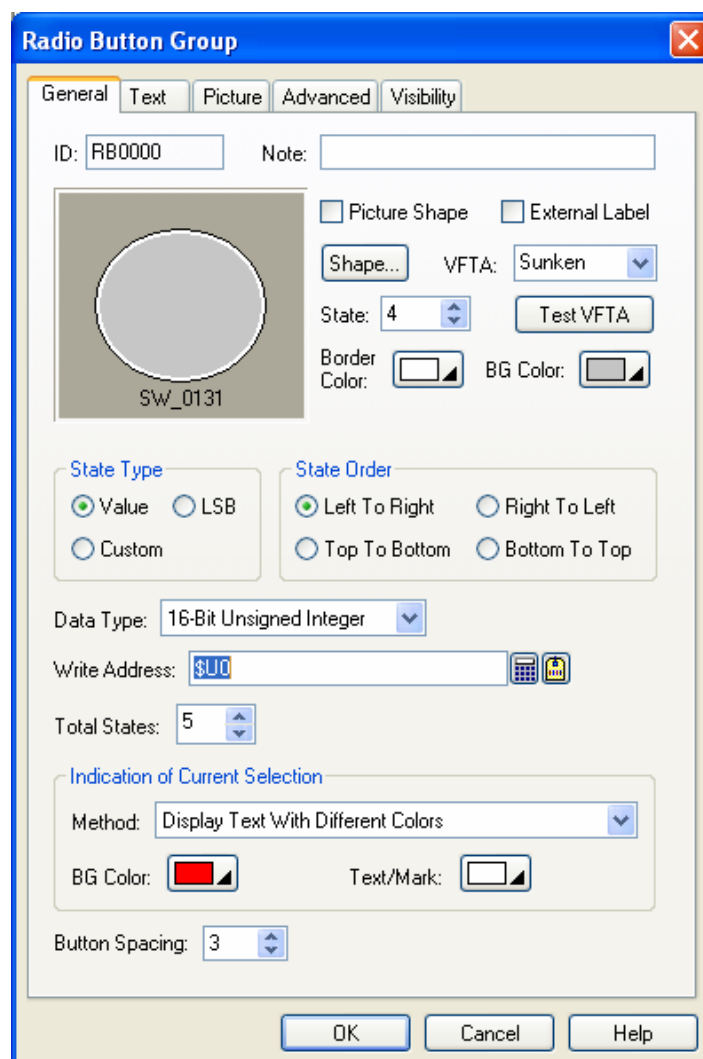
Described in [Section 4.4.6.](#)

- **External Label**

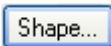
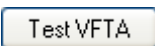


Described in [Section 4.3.8.](#)

### 5.8.4. General Settings

This section describes how to define the general settings for a radio button group. The following is an example of the General page of the Radio Button Group property sheet.



The following table describes each property in the General page.

| Property                        |  | Description   |             |             |               |   |               |  |               |  |               |   |
|---------------------------------|--|---|-------------|-------------|---------------|---|---------------|--|---------------|--|---------------|---|
| ID                              |  | The object's identifier. It is generated when the object is created. The identifier is unique within the screen where the object is located. The format of the IDs for radio button groups is RBnnnn.   |             |             |               |   |               |  |               |  |               |   |
| Note                            |  | You can type a note for the radio button group.   |             |             |               |   |               |  |               |  |               |   |
| Shape settings                  |  | For details about the following properties, <a href="#">Section 4.3.4 Setting up the Shape of an Object</a> .<br>Picture Shape,  , VFTA,  , Border Color, BG Color  |             |             |               |   |               |  |               |  |               |   |
| External Label                  |  | Check this option if you want the radio button group to have an external label. Set up the external label in the External Label page.   |             |             |               |   |               |  |               |  |               |   |
| State                           |  | Specifies the current state of the radio button group. You can set the appearance of the button associated with the current state.<br><b>Note:</b> Although you can set the appearance for the button of the current state, you cannot view all the changes immediately. This is because the button is highlighted with the BG color and the text color set for the Current State. You can change the current state so the button is shown with new settings instead of being highlighted.  |             |             |               |   |               |  |               |  |               |   |
| State Type                      |  | The state type of the controlled variable. There are three options: Value, LSB, and Custom. For details, see <a href="#">Section 4.4.1.1 State Types</a> .  |             |             |               |   |               |  |               |  |               |   |
| State Order                     |  | Specifies how to arrange the radio buttons. There are four kinds of order: <table><tr><th>State Order</th><th>Description</th></tr><tr><td>Left to Right</td><td>The buttons are arranged in order, in a row with the button of state 0 at the left most position.</td></tr><tr><td>Right to Left</td><td>The buttons are arranged in order, in a row with the button of state 0 at the right most position.</td></tr><tr><td>Top to Bottom</td><td>The buttons are arranged in order, in a column with the button of state 0 at the top position.</td></tr><tr><td>Bottom to Top</td><td>The buttons are arranged in order, in a column with the button of state 0 at the bottom position.</td></tr></table> | State Order | Description | Left to Right | The buttons are arranged in order, in a row with the button of state 0 at the left most position. | Right to Left | The buttons are arranged in order, in a row with the button of state 0 at the right most position. | Top to Bottom | The buttons are arranged in order, in a column with the button of state 0 at the top position. | Bottom to Top | The buttons are arranged in order, in a column with the button of state 0 at the bottom position. |
| State Order                     | Description  |   |             |             |               |   |               |  |               |  |               |   |
| Left to Right                   | The buttons are arranged in order, in a row with the button of state 0 at the left most position.  |   |             |             |               |   |               |  |               |  |               |   |
| Right to Left                   | The buttons are arranged in order, in a row with the button of state 0 at the right most position. |   |             |             |               |   |               |  |               |  |               |   |
| Top to Bottom                   | The buttons are arranged in order, in a column with the button of state 0 at the top position.     |   |             |             |               |   |               |  |               |  |               |   |
| Bottom to Top                   | The buttons are arranged in order, in a column with the button of state 0 at the bottom position.  |   |             |             |               |   |               |  |               |  |               |   |
| Data Type                       |  | The data type of the variables specified in this page.  |             |             |               |   |               |  |               |  |               |   |
| Write Address                   | Write Address  | Specifies the variable to be controlled.  |             |             |               |   |               |  |               |  |               |   |
|                                 |                 | Click this icon to bring up the Address Input Keypad and specify an address for this property.  |             |             |               |   |               |  |               |  |               |   |
|                                 |                 | Click this icon to bring up the Select Tag dialog box and select a tag for this property.   |             |             |               |   |               |  |               |  |               |   |
| Total States                    |  | Specifies the number of valid states that the controlled variable has.  |             |             |               |   |               |  |               |  |               |   |
| Indication of Current Selection | Method   | Choose the method from display text with different colors, use round mark or use square mark to indicate the current selection.   |             |             |               |   |               |  |               |  |               |   |
|                                 | BG Color   | The color to replace the shape's BG color when selected.  |             |             |               |   |               |  |               |  |               |   |
|                                 | Text / Mark  | The color to replace the text or mark color when selected.  |             |             |               |   |               |  |               |  |               |   |
| Button Spacing                  |  | The distance in pixels between two adjacent radio buttons.  |             |             |               |   |               |  |               |  |               |   |
| Custom State Value              |  | Click this button to define the state value for each state when the State Type is Custom. For details, see <a href="#">Section 4.4.1.2 Setting the Custom States of an Object</a> .   |             |             |               |   |               |  |               |  |               |   |

## 5.9. Customizing the Keypad Using Keypad Buttons

A keypad button inputs a character to the keypad buffer or issues a command to the keypad buffer when it is pressed. You can use keypad buttons to create your own keypads.

### 5.9.1. Operation Options

The following operation options can be added to a keypad button to make it more useful. You need to select and set these options in the Keypad Button dialog box.

| Options            | Description   |
|--------------------|---|
| Macro              | The keypad button can have a macro to execute when being pressed. Specify and edit the macro in the Macro page.                                     |
| Visibility Control | The keypad button can be shown or hidden either by a specified bit or by the current user level. Select and set this option in the Visibility page. |

### 5.9.2. Settings

You can complete all the settings of a keypad button in the Keypad Button dialog box. This dialog box contains the following four pages. Some of the pages appear only when they are needed.

- **General**

Described in [Section 5.9.3.](#)

- **Label**

Described in [Section 4.3.5.](#)

- **Visibility**

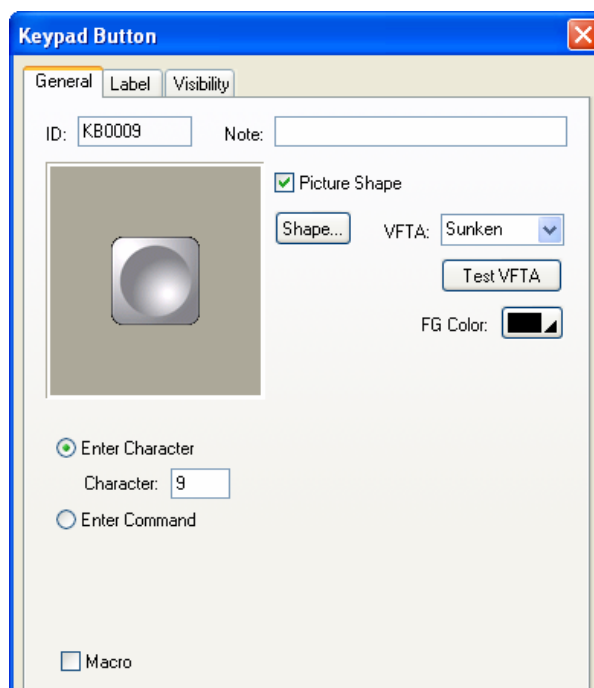
Described in [Section 4.4.6.](#)

- **Macro**

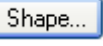

Described in [Section 14.2.6.](#)

### 5.9.3. General Settings

This section describes how to define the general settings for a keypad button. The following is an example of the General page of the Keypad Button property sheet.

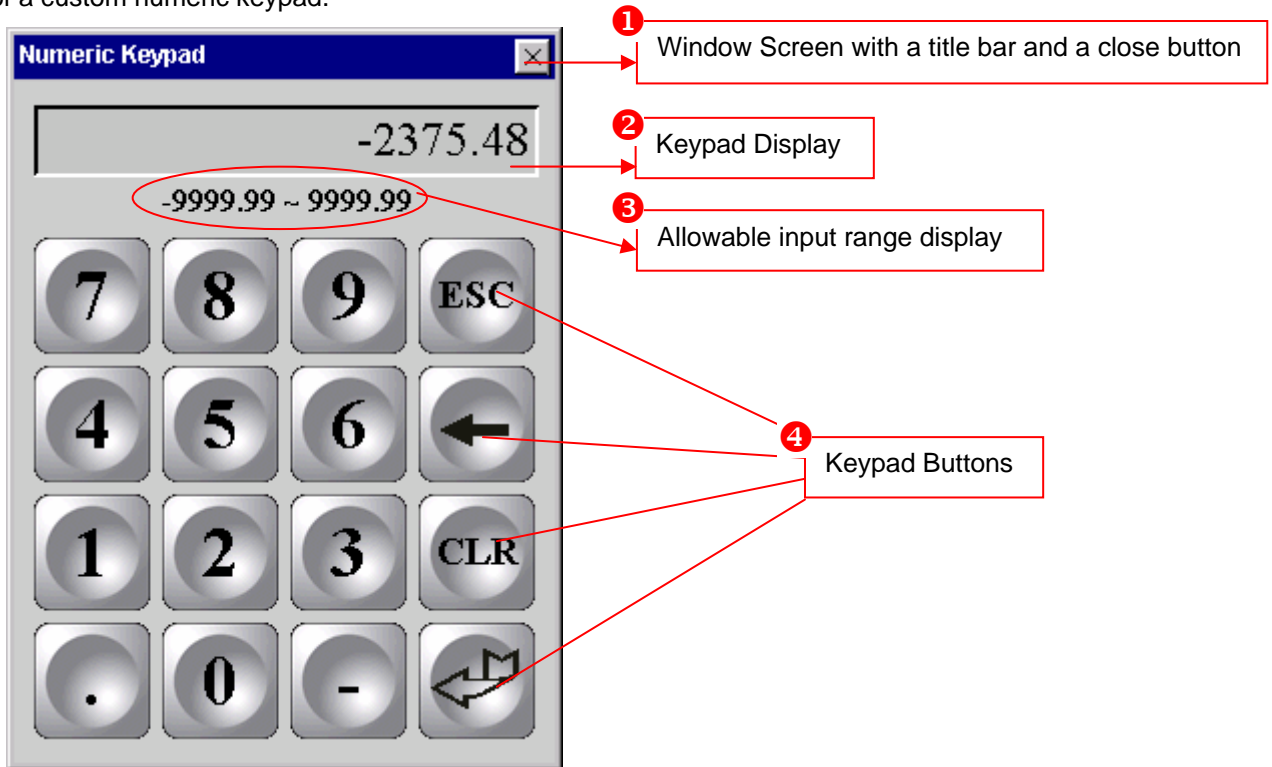


The following table describes each property in the General page.

| Property        | Description  |         |             |       |   |        |                                   |       |                           |           |  |
|-----------------|--|---------|-------------|-------|---|--------|-----------------------------------|-------|---------------------------|-----------|--|
| ID              | The object's identifier. It is generated when the object is created. The identifier is unique within the screen where the object is located. The format of the IDs for keypad buttons is KBnnnn.   |         |             |       |   |        |                                   |       |                           |           |  |
| Note            | You can type a note for the keypad button group.   |         |             |       |   |        |                                   |       |                           |           |  |
| Shape settings  | For details about the following properties, see <a href="#">Section 4.3.4 Setting up the Shape of an Object</a> .<br>Picture Shape,  , VFTA,  , Border Color, Pattern Color, FG Color, BG Color  |         |             |       |   |        |                                   |       |                           |           |  |
| Enter Character | Select this item if the button is used to input the specified character to the keypad buffer.  |         |             |       |   |        |                                   |       |                           |           |  |
| Character       | Available when Enter Character is selected. Specifies the character to be entered in the keypad buffer.  |         |             |       |   |        |                                   |       |                           |           |  |
| Enter Command   | Select this item if the button is used to issue the specified command to the keypad buffer.  |         |             |       |   |        |                                   |       |                           |           |  |
| Command         | Available when Enter Command is selected. Specifies the command to be issued to the keypad buffer. There are four commands available: <table border="1"> <thead> <tr> <th>Command</th><th>Description</th></tr> </thead> <tbody> <tr> <td>Enter</td><td>Completes data entry and sends the input string to the associated object or the system.</td></tr> <tr> <td>Escape</td><td>Cancels the data entry operation.</td></tr> <tr> <td>Clear</td><td>Clears the keypad buffer.</td></tr> <tr> <td>Backspace</td><td>Removes the last character in the keypad buffer.</td></tr> </tbody> </table> | Command | Description | Enter | Completes data entry and sends the input string to the associated object or the system. | Escape | Cancels the data entry operation. | Clear | Clears the keypad buffer. | Backspace | Removes the last character in the keypad buffer. |
| Command         | Description  |         |             |       |   |        |                                   |       |                           |           |  |
| Enter           | Completes data entry and sends the input string to the associated object or the system.  |         |             |       |   |        |                                   |       |                           |           |  |
| Escape          | Cancels the data entry operation.  |         |             |       |   |        |                                   |       |                           |           |  |
| Clear           | Clears the keypad buffer.  |         |             |       |   |        |                                   |       |                           |           |  |
| Backspace       | Removes the last character in the keypad buffer.   |         |             |       |   |        |                                   |       |                           |           |  |
| Key             | The hard key that is used to operate the keypad button. This item is available only when the target panel has hard keys.   |         |             |       |   |        |                                   |       |                           |           |  |
| Macro           | Check this option if you want the button to have a macro. Specify and edit the macro in the Macro page.  |         |             |       |   |        |                                   |       |                           |           |  |

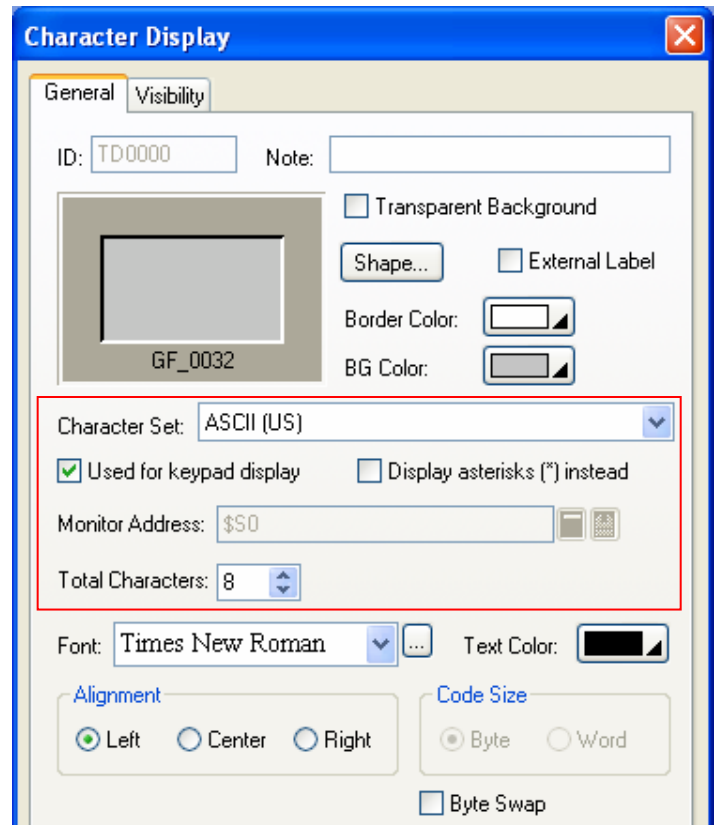
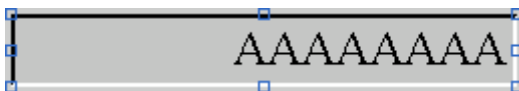
### 5.9.4. Creating your own keypads

You can create your own keypads using keypad buttons as custom keypads for your application. The following is an example of a custom numeric keypad.



To create your own keypads, please do the following:

1. Create a window screen, please see [Section 3.9.2 Creating and Opening Screens](#) for details.
2. Create a Character Display with the following settings to display characters when the keypad button is pressed.



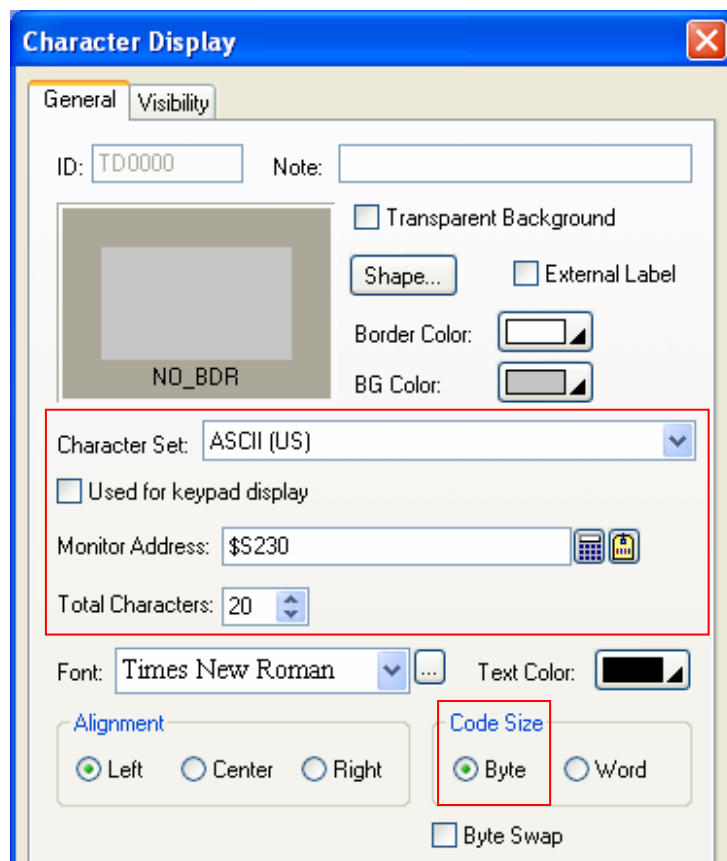


3. Create a Character Display with the following settings to display an allowable input range.



**Note:**

Monitor Address:     \$S230  
 Total Characters:    24 (or less)  
 Font:                 Any font  
 Alignment:           Any (Center recommended)  
 Character Set:       ASCII code (7 bits)  
 Code Size:           Byte










4. Create keypad buttons to customize the keypad.
5. Set up the Custom page of the General Setup dialog box to use the custom keypad instead of the built-in keypad. Please see [Section 3.1.2 Custom Settings](#) for details.

## 5.10. Scrolling Object Content Using Scroll Button Groups








You can use the buttons of a scroll button group to scroll the content displayed by the associated object.

### 5.10.1. Basic Operations

A scroll button group with the horizontal button alignment can have the following buttons:

| Button              | Example   | Description  |
|---------------------|---|--|
| Scroll to Right End |    | Scrolls the content displayed by the associated object to the right end.   |
| Scroll Page Right   |    | Scrolls the content displayed by the associated object to the right by one page.   |
| Scroll Right        |    | Scrolls the content displayed by the associated object to the right.   |
| Scroll Left         |    | Scrolls the content displayed by the associated object to the left.  |
| Scroll Page Left    |    | Scrolls the content displayed by the associated object to the left by one page.  |
| Scroll to Left End  |   | Scrolls the content displayed by the associated object to the left end.  |
| Pause               |  | This is a toggle switch. It stops the auto-scrolling of the content displayed by the associated object when it is touched. When you touch it again, it resumes the auto-scrolling operation. |

A scroll button group with the vertical button alignment can have the following buttons:

| Button               | Example   | Description  |
|----------------------|---|--|
| Scroll to Top End    |  | Scrolls the content displayed by the associated object to the top end.   |
| Scroll Page Up       |  | Scrolls the content displayed by the associated object to the top by one page.   |
| Scroll Up            |  | Scrolls the content displayed by the associated object to the top.   |
| Scroll Down          |  | Scrolls the content displayed by the associated object to the bottom.  |
| Scroll Page Down     |  | Scrolls the content displayed by the associated object to the bottom by one page.  |
| Scroll to Bottom End |  | Scrolls the content displayed by the associated object to the bottom end.  |
| Pause                |  | This is a toggle switch. It stops the auto-scrolling of the content displayed by the associated object when it is touched. When you touch it again, it resumes the auto-scrolling operation. |

### 5.10.2. Operation Options

The following operation option can be added to a scroll button group. You need to select and set this option in the Scroll Button Group dialog box.

| Options            | Description   |
|--------------------|---|
| Visibility Control | The scroll button group can be shown or hidden either by a specified bit or by the current user level. Select and set this option in the Visibility page. |

### 5.10.3. Settings

You can complete all the settings of a scroll button group in the Scroll Button Group dialog box. This dialog box contains the following two pages.

- **General**

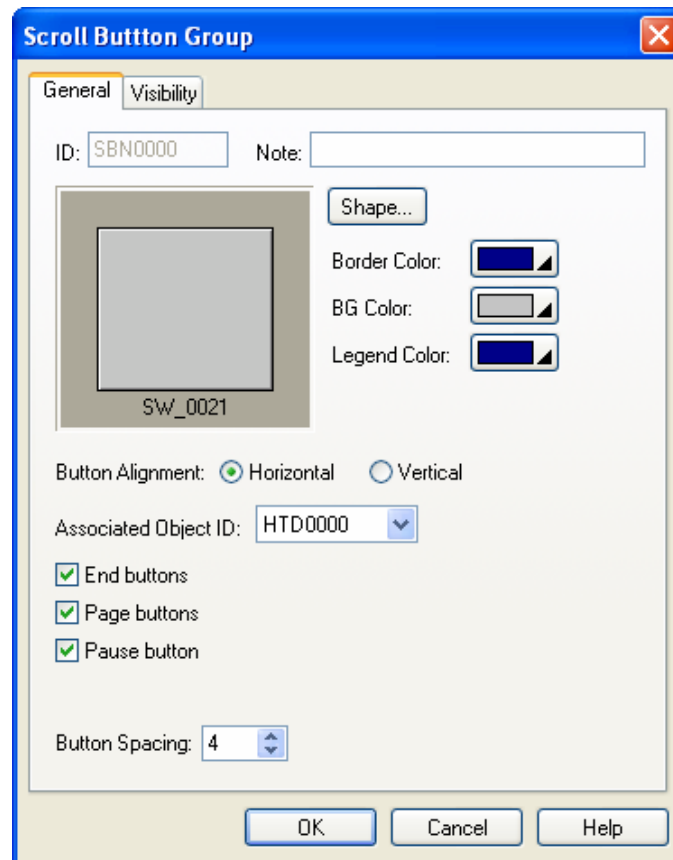
Described in [Section 5.10.4.](#)

- **Visibility**

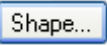
Described in [Section 4.4.6.](#)

### 5.10.4. General Settings

This section describes how to define the general settings for a scroll button group. The following is an example of the General page of the Scroll Button Group property sheet.



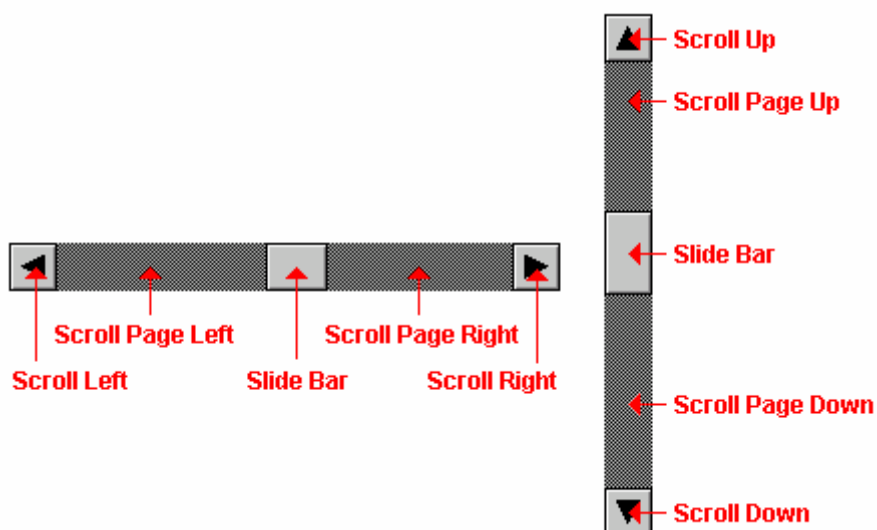
The following table describes each property in the General page.

| Property             |            | Description   |
|----------------------|------------|---|
| ID                   |            | The object's identifier. It is generated when the object is created. The identifier is unique within the screen where the object is located. The format of the IDs for the scroll button groups is SBNnnnn.                                 |
| Note                 |            | You can type a note for the scroll button group.  |
| Shape settings       |            | For details about the following properties, <a href="#">Section 4.3.4 Setting up the Shape of an Object</a> .  , Border Color, BG Color                  |
| Legend Color         |            | The color of the legend for every button of the scroll button group.  |
| Button Alignment     | Horizontal | The buttons of the scroll button group are aligned in a row.  |
|                      | Vertical   | The buttons of the scroll button group are aligned in a column.   |
| Associated Object ID |            | The ID of the object that the scroll button group will be used to scroll its content. You can select the associated object from this drop-down list which displays the IDs of objects on the same screen that support the scroll operation. |
| Start/End buttons    |            | Check this item if you want the scroll button group to include the buttons that scroll the content to the start or to the end.  |
| Scroll Page buttons  |            | Check this item if you want the scroll button group to include the buttons that scroll the content each time by one page.   |
| Pause button         |            | Check this item if you want the scroll button group to include the Pause button.  |
| Button Spacing       |            | The distance in pixels between two adjacent buttons.  |

## 5.11. Scrolling Object Content Using Scroll Bars

You can use a scroll bar to scroll the content displayed by the associated object. The associated objects include Historic Data Display, Historic Message Display, Historic Trend Display, Operation Log Display, Alarm Display, Recipe Table, and Sub-link Table.

### 5.11.1. Basic Operations



A horizontal scroll bar has the following buttons:

| Button            | Description  |
|-------------------|--|
| Scroll Right      | Scrolls the content displayed by the associated object to the right.   |
| Scroll Page Right | Scrolls the content displayed by the associated object to the right by one page.   |
| Slide Bar         | You can push and move the slide bar to scroll the content displayed by the associated object. The content is scrolled in the same direction as you move the slide bar. The amount of scrolling is proportional to the displacement of the slide bar. The position of the slide bar in the scroll bar indicates the position of the viewable part of the content. The width of the slide bar indicates how much of the content is viewable. |
| Scroll Page Left  | Scrolls the content displayed by the associated object to the left by one page.  |
| Scroll Left       | Scrolls the content displayed by the associated object to the left.  |

A vertical scroll bar has the following buttons:

| Button           | Description   |
|------------------|---|
| Scroll Up        | Scrolls the content displayed by the associated object to the top.  |
| Scroll Page Up   | Scrolls the content displayed by the associated object to the top by one page.  |
| Slide Bar        | You can push and move the slide bar to scroll the content displayed by the associated object. The content is scrolled in the same direction as you move the slide bar. The amount of scrolling is proportional to the displacement of the slide bar. The position of the slide bar in the scroll bar indicates the position of the viewable part of the content. The height of the slide bar indicates how much of the content is viewable. |
| Scroll Page Down | Scrolls the content displayed by the associated object to the bottom by one page.   |
| Scroll Down      | Scrolls the content displayed by the associated object to the bottom.   |

### 5.11.2. Operation Options

The following operation option can be added to a scroll bar. You need to select and set this option in the Scroll Bar property sheet.

| Options            | Description  |
|--------------------|--|
| Visibility Control | The scroll bar can be shown or hidden either by a specified bit or by the current user level. Select and set this option in the Visibility page. |

### 5.11.3. Settings

You can complete all the settings of a scroll bar in the Scroll Bar property sheet. This sheet contains the following two pages.

- **General**

Described in [Section 5.11.4.](#)

- **Visibility**

Described in [Section 4.4.6.](#)

### 5.11.4. General Settings

This section describes how to define the general settings for a scroll bar. The following is an example of the General page of the Scroll Bar property sheet.

The following table describes each property in the General page.

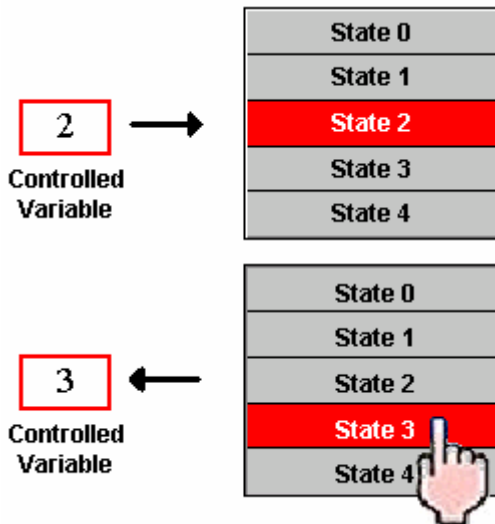
| Property             | Description   |
|----------------------|---|
| ID                   | The object's identifier. It is generated when the object is created. The identifier is unique within the screen where the object is located. The format of the IDs for the scroll bars is SBRnnnn.                          |
| Note                 | You can type a note for the scroll button group.  |
| Type                 | The type of scroll bar. There are two types; horizontal and vertical.   |
| Associated Object ID | The ID of the object that will use the scroll bar to scroll its content. You can select the associated object from this drop-down list which shows the IDs of objects on the same screen that support the scroll operation. |
| Bar Color            | The color of the scroll bar.  |
| Legend Color         | The color of the legend for the buttons of the scroll bar.  |

## 5.12. Stepping Through Word State Using Step Buttons

You can press a step button to write the value of the button's next state to the specified variable.

### 5.12.1. Basic Operations

Unlike most of the other objects, a step button displays all the states at once, with the current state highlighted, instead of displaying just the current state. A step button can let the operators know all the available states, and what the next state will be when they touch it.



The state of a step button is determined by the value of the specified variable and the specified state type. When a step button is pressed, it calculates the value of the next state, and writes that value to the specified variable. The next state is the current state plus one, when the current state is not the last state. When the current state is the last state, the next state is state 0.

### 5.12.2. Operation Options

The following operation options can be added to a step button to make it more informative, secure, and useful. You need to select and set these options in the Step Button property sheet.

| Options                 | Description   |
|-------------------------|---|
| Touch Operation Control | The touch operation of the step button can be enabled and disabled either by a specified bit or by the current user level. Select and set this option in the Advanced page.       |
| Minimum Hold Time       | The touch operation will not be activated until the step button is pressed and held down for the specified time period (Minimum Hold Time). Set this option in the Advanced page. |
| Operation Logging       | Each data change performed by the step button can be recorded in the operation log. Select and set this option in the Advanced page.  |
| Visibility Control      | The step button can be shown or hidden either by a specified bit or by the current user level. Select and set this option in the Visibility page.                                 |



### 5.12.3. Settings

You can complete all the settings of a step button in the Step Button property sheet. This sheet contains the following six pages. Some of the pages appear only when they are needed.

- **General**

Described in [Section 5.12.4.](#)

- **Text**

Described in [Section 4.3.6.](#)

- **Picture**

Described in [Section 4.3.7.](#)

- **Advanced**

Described in [Section 4.4.5.](#)

- **Visibility**

Described in [Section 4.4.6.](#)

- **External Label**

Described in [Section 4.3.8.](#)

### 5.12.4. General Settings

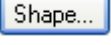
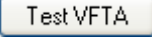
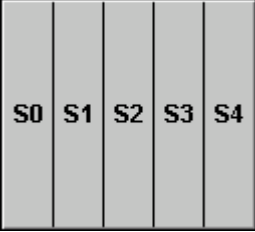
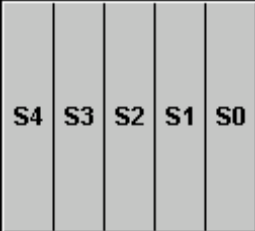
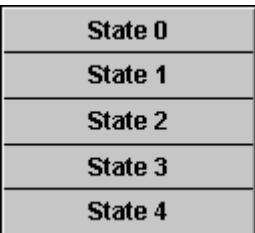
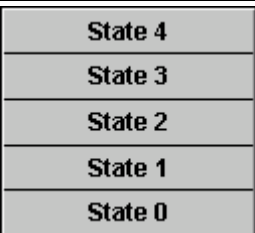
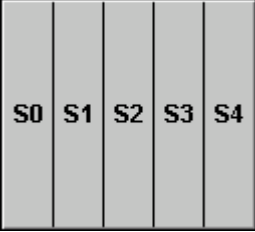
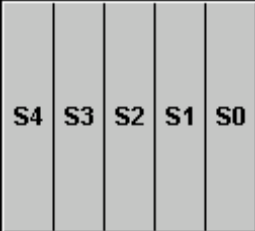
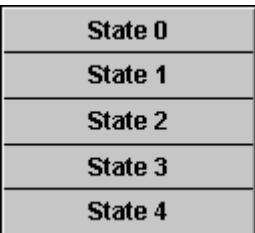
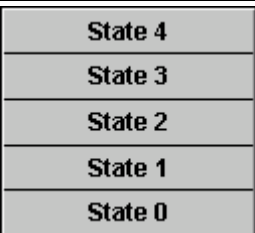
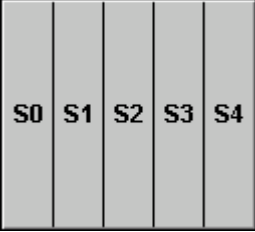
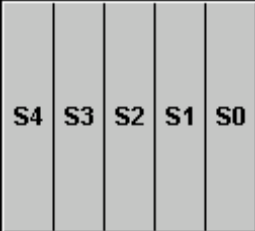
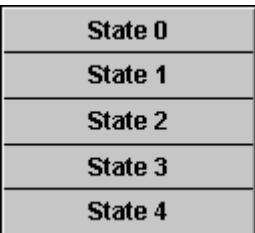
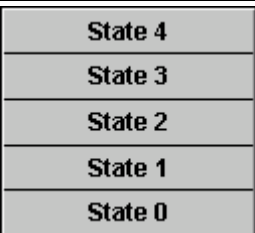
This section describes how to define the general settings for a step button. The following is an example of the General page of the Step Button property sheet.

The screenshot shows the 'Step Button' property sheet with the 'General' tab selected. The window has a title bar with a close button. The tabs are 'General', 'Text', 'Picture', 'Advanced', and 'Visibility'. The 'General' tab contains the following settings:



- ID:** STB0000
- Note:** (empty text box)
- External Label:** ☐
- Shape...** (button)
- VFTA:** Sunken (dropdown menu)
- State:** 0 (spin box)
- Test VFTA** (button)
- Border Color:** (color picker showing white)
- BG Color:** (color picker showing gray)
- State Type:**
  - ☐ Value
  - ☐ LSB
  - ☒ Custom
- State Order:**
  - ☒ Left To Right
  - ☐ Right To Left
  - ☐ Top To Bottom
  - ☐ Bottom To Top
- Data Type:** 16-Bit Unsigned Integer (dropdown menu)
- Write Address:** \$U10 (text box with calculator and memory icons)
- Total States:** 5 (spin box)
- Custom State Value...** (button)
- Indication of Current Selection:**
  - Method:** Display Text With Different Colors (dropdown menu)
  - BG Color:** (color picker showing red)
  - Text/Mark:** (color picker showing white)
  - Separator Color:** (color picker showing black)

At the bottom are 'OK', 'Cancel', and 'Help' buttons.

The following table describes each property in the General page.

| Property       | Description  |             |         |               |  |               |   |               |   |               |   |
|----------------|--|-------------|---------|---------------|--|---------------|---|---------------|---|---------------|---|
| ID             | The object's identifier. It is generated when the object is created. The identifier is unique within the screen where the object is located. The format of the IDs for the step buttons is STBnnnn.  |             |         |               |  |               |   |               |   |               |   |
| Note           | You can type a note for this object.   |             |         |               |  |               |   |               |   |               |   |
| Shape settings | For details about the following properties, <a href="#">Section 4.3.4 Setting up the Shape of an Object</a> .<br> , VFTA,  , Border Color, BG Color  |             |         |               |  |               |   |               |   |               |   |
| External Label | Check this option if you want the object to have an external label. Set up the external label in the External Label page.  |             |         |               |  |               |   |               |   |               |   |
| State          | Select a state as the current state so you can set the BG Color for that state. You can also see how the step button looks when the selected state is highlighted.<br><b>Note:</b> The current state is always highlighted by the settings defined in the Highlight Current State group. Therefore, you cannot see the change of the BG color you made for the current state immediately. To see the change, select another state as the current state.  |             |         |               |  |               |   |               |   |               |   |
| State Type     | The state type of the step button. The supported types are: Value, LSB, and Custom. For details, see <a href="#">Section 4.4.1.1 State Types</a>   |             |         |               |  |               |   |               |   |               |   |
| State Order    | Specifies how to arrange the states on the step button. There are four different orders: <table border="1"> <thead> <tr> <th>State Order</th><th>Example</th></tr> </thead> <tbody> <tr> <td>Left to Right</td><td>  </td></tr> <tr> <td>Right to Left</td><td>  </td></tr> <tr> <td>Top to Bottom</td><td>  </td></tr> <tr> <td>Bottom to Top</td><td>  </td></tr> </tbody> </table> | State Order | Example | Left to Right |  | Right to Left |  | Top to Bottom |  | Bottom to Top |  |
| State Order    | Example  |             |         |               |  |               |   |               |   |               |   |
| Left to Right  |    |             |         |               |  |               |   |               |   |               |   |
| Right to Left  |   |             |         |               |  |               |   |               |   |               |   |
| Top to Bottom  |   |             |         |               |  |               |   |               |   |               |   |
| Bottom to Top  |   |             |         |               |  |               |   |               |   |               |   |
| Data Type      | The data type for the variable in the Write Address field. The supported types are: 16-bit Unsigned Integer, 16-bit BCD, 32-bit Unsigned Integer, and 32-bit BCD.  |             |         |               |  |               |   |               |   |               |   |

Continued

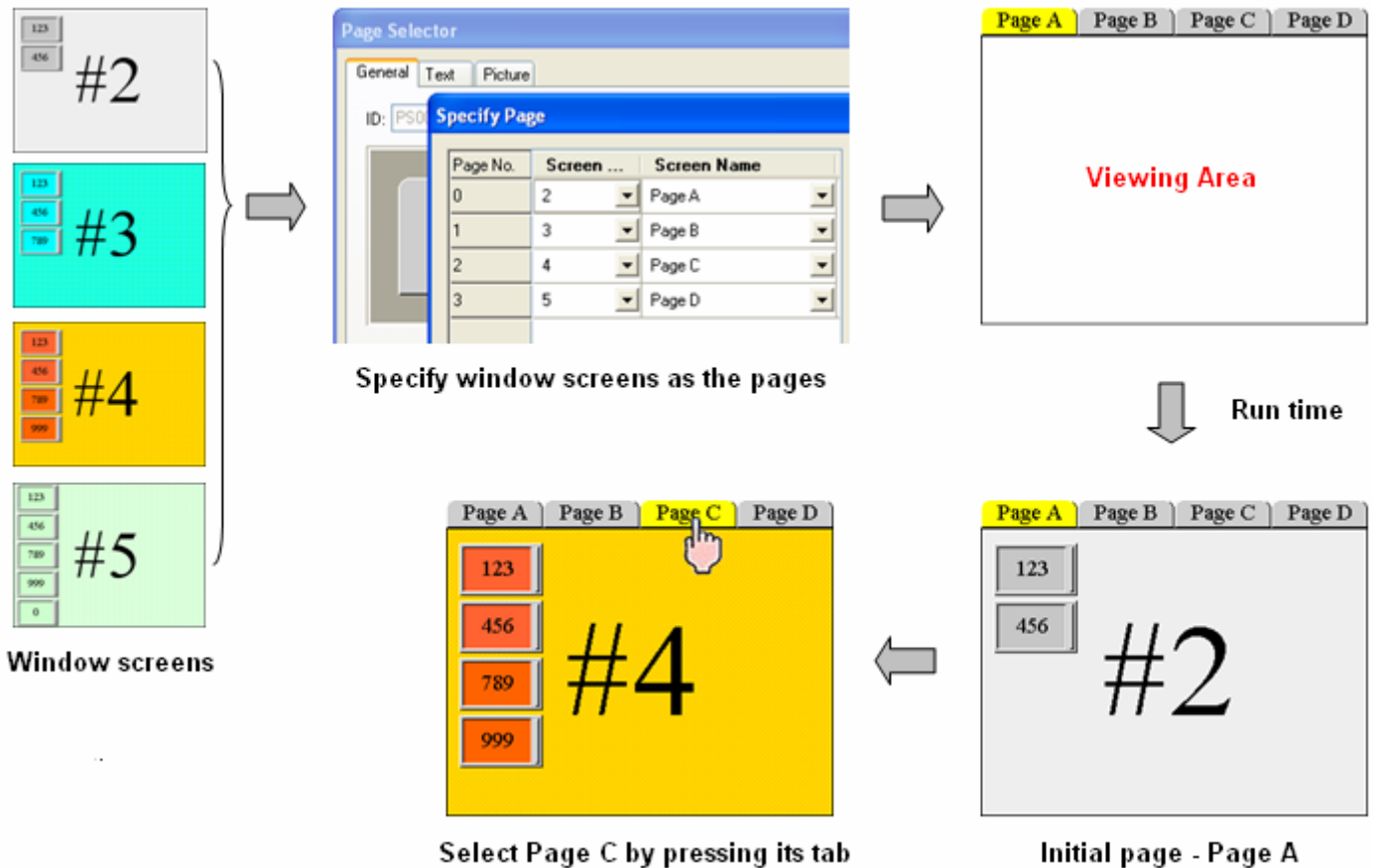
| Property                        |   | Description  |
|---------------------------------|---|--|
| Write Address                   | Write Address   | Specifies the variable to be controlled by the step button. This variable will also be monitored to decide the state of the step button.   |
|                                 |  | Click this icon to bring up the Address Input Keypad and specify an address for this property.   |
|                                 |  | Click this icon to bring up the Select Tag dialog box and select a tag for this property.  |
| Total States                    |   | Specifies the number of states that the step button can display and process.   |
| Custom State Value...           |   | Click this button to define the state value for each state of the step button when the State Type is Custom. For details, see <a href="#">Section 4.4.1.2 Setting the Custom States of an Object</a> . |
| Indication of current selection | Method  | Choose the method from display text with different colors, use round mark or use square mark to indicate the current selection.  |
|                                 | BG Color  | The color to replace the shape's BG color when selected.   |
|                                 | Text/Mark   | The color to replace the text or mark color when selected.   |
| Separator Color                 |   | The color of the lines that are drawn between two states.  |

## 5.13. Displaying Window Screen as Information Page Using Page Selectors

In a page selector, you can press a tab to view the associated page (window screen).

### 5.13.1. Basic Operations

You can configure a page selector to contain up to 8 window screens. Each of the specified window screens is a page, and each page has an associated tab. You can specify the text and picture for each tab. At runtime, a page selector shows one of the specified pages in its viewing area. You can select a desired page to view by pressing the associated tab.



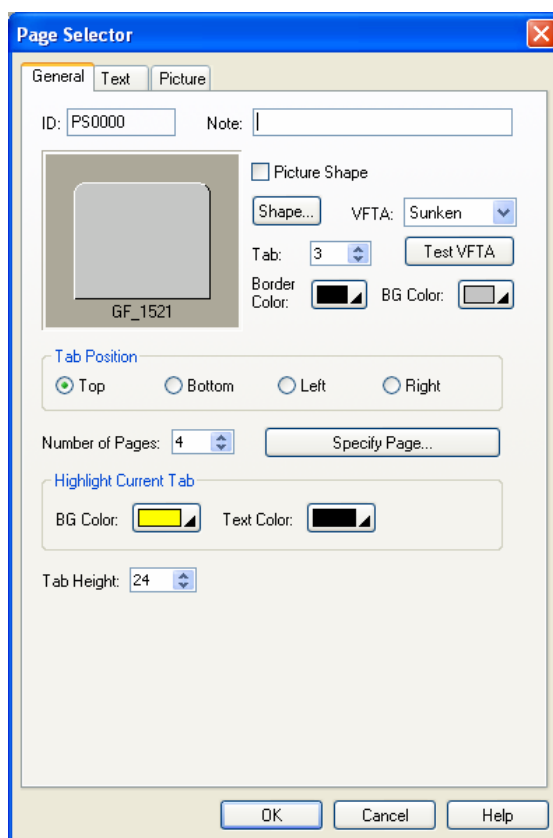
### 5.13.2. Settings

You can complete all the settings of a page selector in the Page Selector property sheet. This sheet contains the following three pages.

- **General**  
Described in [Section 5.13.3.](#)
- **Text**  
Described in [Section 4.3.6.](#)
- **Picture**  
Described in [Section 4.3.7.](#)

### 5.13.3. General Settings

This section describes how to define the general settings for a page selector. The following is an example of the General page of the Page Selector property sheet.



The following table describes each property in the General page.

| Property              |            | Description   |
|-----------------------|------------|---|
| ID                    |            | The object's identifier. It is generated when the object is created. The identifier is unique within the screen where the object is located. The format of the IDs for the page selectors is PSnnnn.  |
| Note                  |            | You can type a note for this object.  |
| Shape settings        |            | For details about the following properties, <a href="#">Section 4.3.4 Setting up the Shape of an Object</a> .<br>Picture Shape, <a href="#">Shape...</a> , VFTA, <a href="#">Test VFTA</a> , Border Color, BG Color   |
| Tab                   |            | Select a tab as the current tab so you can set the BG Color for that tab. You can also see how the tabs look when the selected tab is highlighted.<br><b>Note:</b> The current tab is always highlighted by the settings defined in the Highlight Current Tab group. Therefore, you cannot see the change of the BG color you made for the current tab immediately. To see the change, select another tab as the current tab. |
| Tab Position          |            | You can select Top/Bottom/Left/Right for the location of the tab.   |
| Number of Pages       |            | Specifies the number of window screens this page selector contains.   |
| Specify Page...       |            | Click this button to open the Specify Page dialog box. You can specify the window screen for each page in this dialog box.  |
| Highlight Current Tab |            | The settings for highlighting the text of the current tab.  |
|                       | BG Color   | The color to replace the BG color of the current tab when highlighted.  |
|                       | Text Color | The color to replace the text color of the current tab when highlighted.  |
| Tab Height            |            | The height of each tab.   |