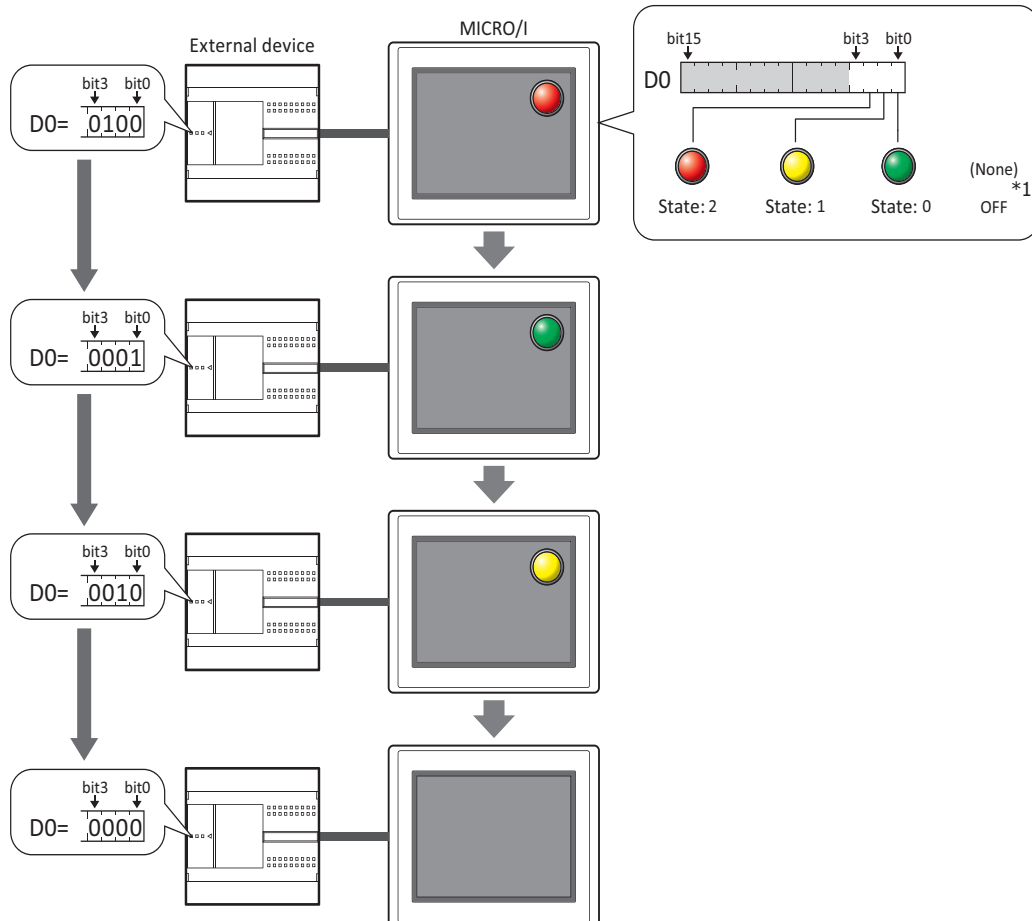## 2   Multi-State Lamps

HG2G-S HG2G-5S HG2G-5F HG3G HG4G HG1F HG2F HG2S HG3F HG4F
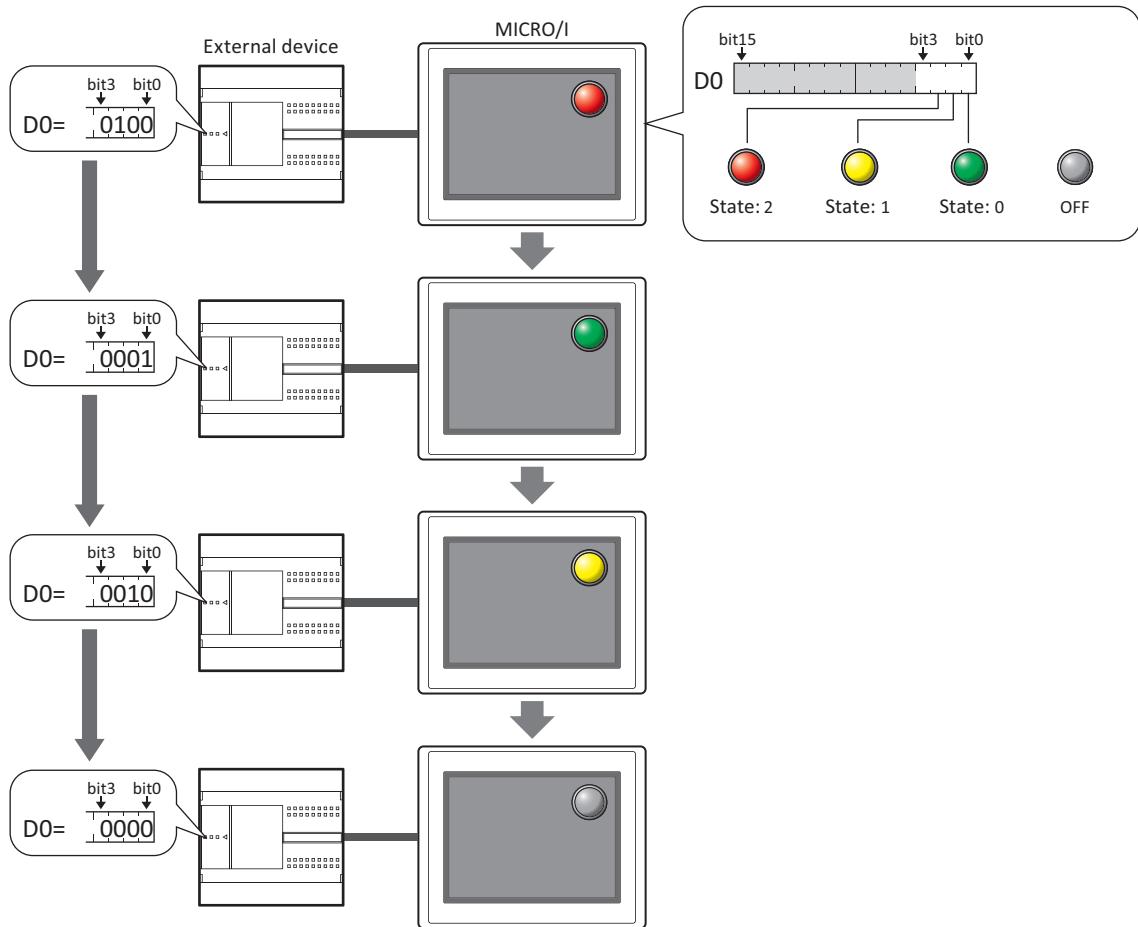
2.1   How the Multi-State Lamp is Used

Multi-state lamp parts display drawing objects. The value of a specified word device is used to switch the drawing object to be displayed.

- Switch and display pictures by device values

*1 HG2G-S/-5S/-5F, HG3G/4G only

• Display a picture when in the OFF state.[1]

The conditions to display the picture set by the OFF state[1] on the screen are as follows.

• **Y** is selected under **Flash** on the **State** tab and the trigger condition is not satisfied.
• **Switching Method** on the **General** tab is **Bit**, and the all bit are 0 or a bit not allocated a picture is 1.
• **Switching Method** on the **General** tab is **Value**, and the value of device is a number not allocated a picture.

*1 HG2G-S/-5S/-5F, HG3G/4G only

2.2 Multi-State Lamp Configuration Procedure

This section describes the configuration procedure for Multi-State Lamps.

1 On the **Home** tab, in the **Parts** group, click **Lamps**, and then click **Multi-State Lamp**.
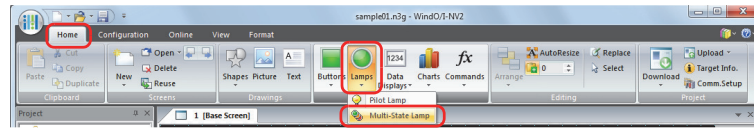
2 Click a point on the edit screen where you wish to place the Multi-State Lamp.

3 Double-click the dropped Multi-State Lamp and a Properties dialog box will be displayed.

4 Change the settings on each tab as necessary.
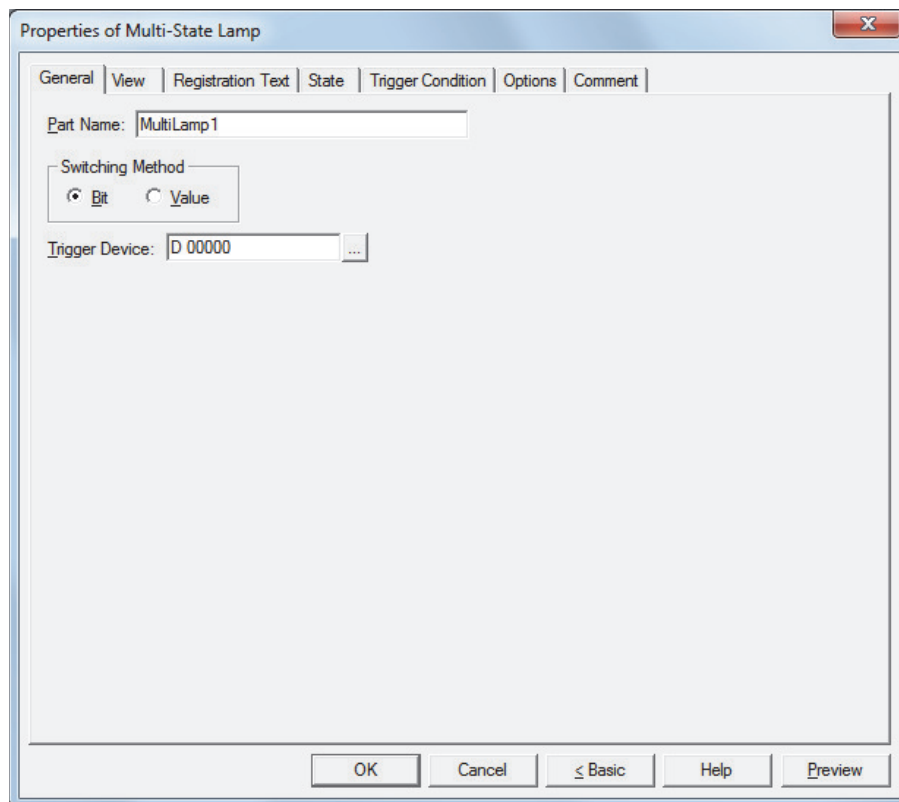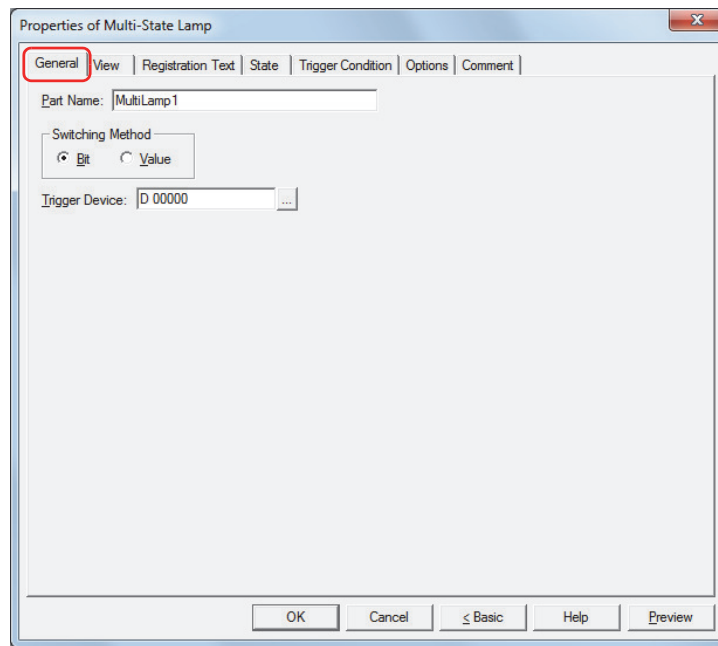

The **Options** tab only appears in Advanced mode.

To switch to Advanced mode, click **Advanced**.

2.3 Properties of Multi-State Lamp Dialog Box

This section describes items and buttons on the properties dialog box.

● **General** Tab

■ **Part Name**
Enter a name for the part. The maximum number is 20 characters.

■ **Switching Method**
Specify the method to switch drawing objects from the following:

Bit: Switches the drawing object displayed, according to the status of the bits.

Example 1: Bit is selected. The bits triggered in device D0 corresponds to the following pictures and the OFF state[*1] is **None**.

Switches the picture to display according to the status of the bits.

*1 HG2G-S/-5S/-5F, HG3G/4G only

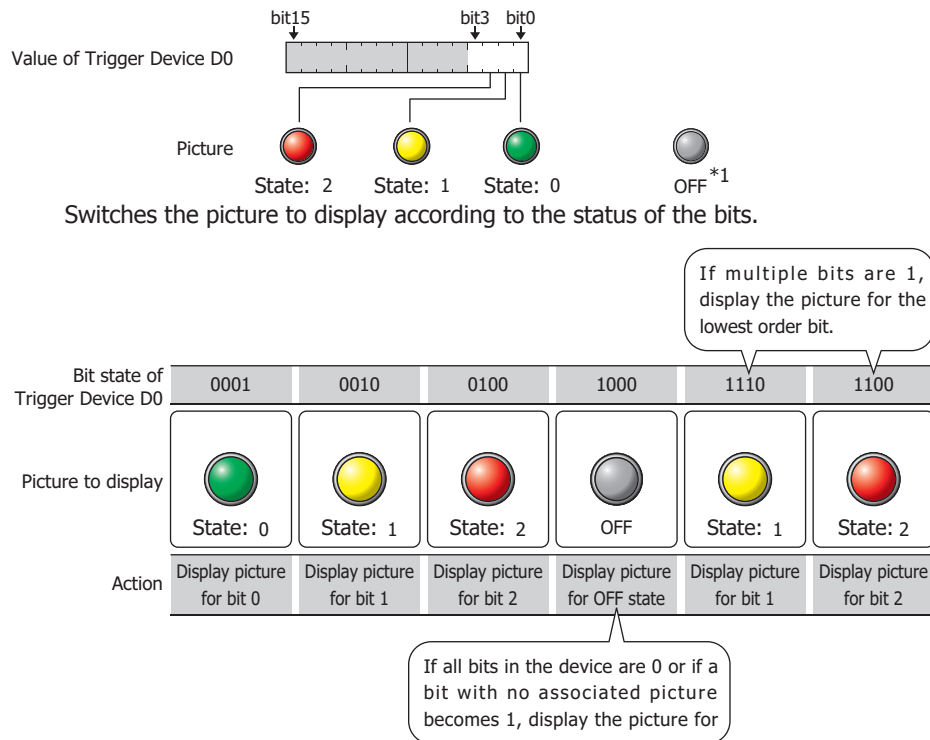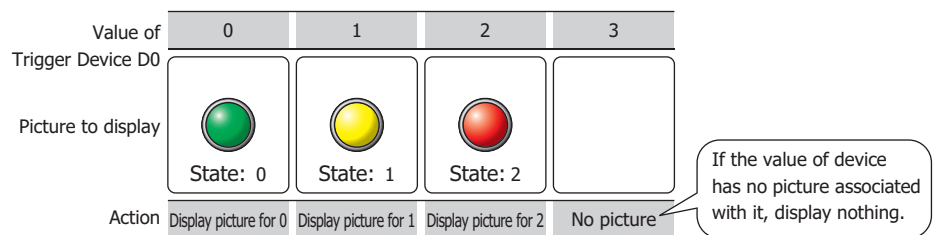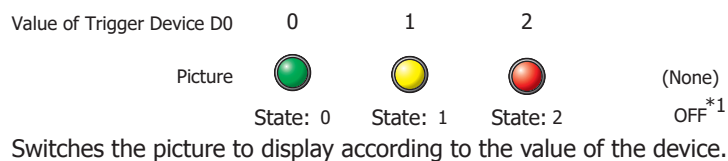Example 2: Bit is selected. The bits of trigger device D0 and the OFF state are allocated to the following pictures.[1]
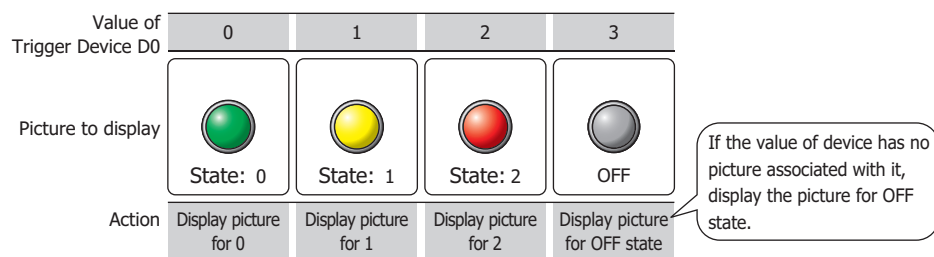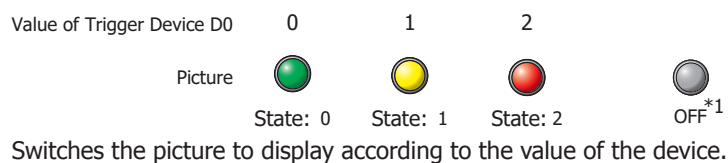
	bit15		bit3	bit0
Value of Trigger Device D0				

Picture	State: 2	State: 1	State: 0	OFF[1]

Switches the picture to display according to the status of the bits.

If multiple bits are 1, display the picture for the lowest order bit.
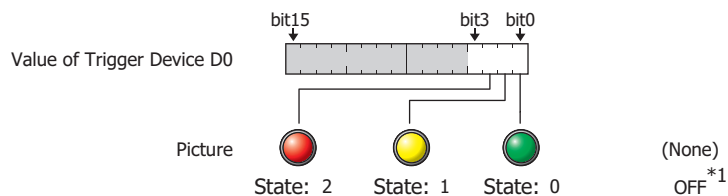
Bit state of Trigger Device D0	0001	0010	0100	1000	1110	1100
Picture to display	State: 0	State: 1	State: 2	OFF	State: 1	State: 2
Action	Display picture for bit 0	Display picture for bit 1	Display picture for bit 2	Display picture for OFF state	Display picture for bit 1	Display picture for bit 2

If all bits in the device are 0 or if a bit with no associated picture becomes 1, display the picture for

Value: Switches the drawing object displayed, according to the value of the device.

Example 3: Value is selected. The value assigned to the trigger device D0 are allocated to the following pictures and the OFF state[1] is **None**.

Value of Trigger Device D0	0	1	2	
Picture	State: 0	State: 1	State: 2	(None) OFF[1]

Switches the picture to display according to the value of the device.

Value of Trigger Device D0	0	1	2	3
Picture to display	State: 0	State: 1	State: 2	
Action	Display picture for 0	Display picture for 1	Display picture for 2	No picture

If the value of device has no picture associated with it, display nothing.

Example 4: Value is selected. The values assigned in trigger device D0 and the OFF state are allocated to the following pictures.[1]

Value of Trigger Device D0	0	1	2	
Picture	State: 0	State: 1	State: 2	OFF[1]

Switches the picture to display according to the value of the device.

Value of Trigger Device D0	0	1	2	3
Picture to display	State: 0	State: 1	State: 2	OFF
Action	Display picture for 0	Display picture for 1	Display picture for 2	Display picture for OFF state

If the value of device has no picture associated with it, display the picture for OFF state.
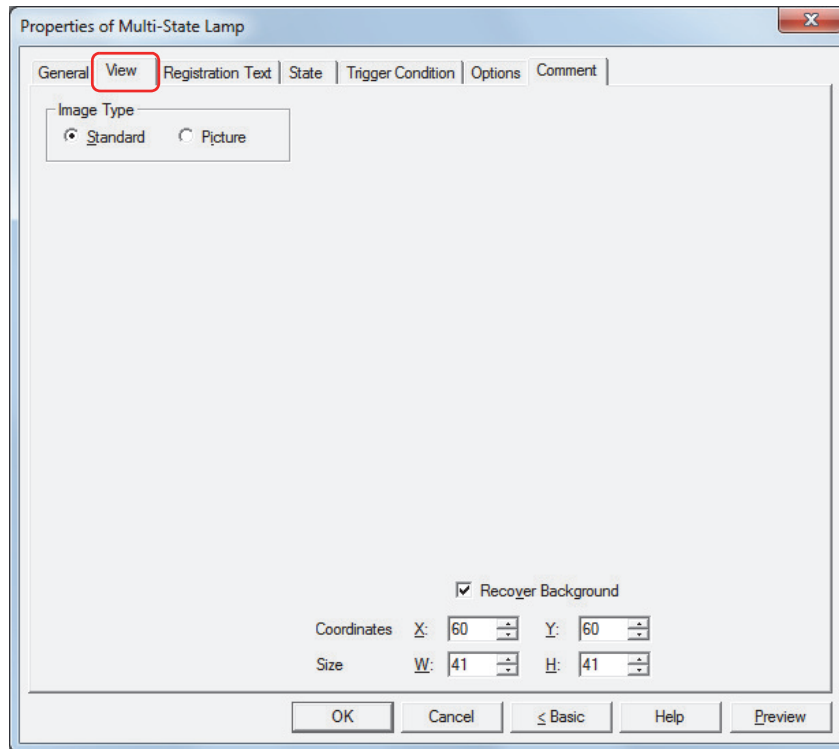
*1 HG2G-S/-5S/-5F, HG3G/4G only

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■ **Trigger Device**

Specifies the word device to use as the condition for switching the drawing object.

Click [...] to display the **Device Address Settings** dialog box. For the device address configuration procedure, refer to Chapter 2 "5.1 Device Address Settings" on page 2-67.

● **View** Tab

■ **Image Type**
Select the type of graphic to be used to represent the part.

Standard: Uses the default graphic for WindO/I-NV2.

Picture: Uses an image file saved using Picture Manager.
                 For details about image file restrictions, refer to Chapter 2 "1.5 Available Image Files" on page 2-20.

■ **Recover Background**[*1]
Select this check box to recover the background of the area where the picture had been displayed after the picture is switched. When this check box is cleared, the background is filled with the screen's **Background Color**.

When parts or drawings are arranged so they overlap the background of the Multi-State Lamp (below), the background of parts and drawings is displayed as follows if the Multi-State Lamp picture is hidden.
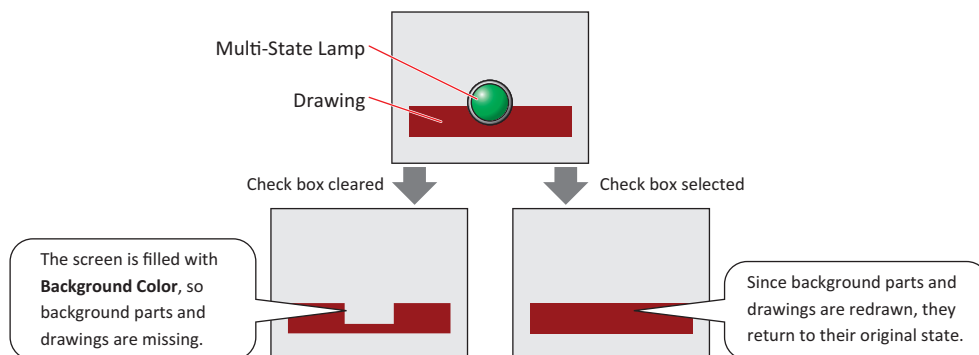
Can only be set when **Picture** is selected for **Image Type**.

For the HG2G-5F and the HG3G/4G, the function to recover the background is always enabled, so this item is not displayed. However, when the background part is the Alarm List Display, Alarm Log Display, bar chart, line chart, or pie chart, the missing sections will remain.

> ⚠ If the **Recover Background** check box is selected, the number of parts that can be placed on a single screen decreases. If an error message appears when the Multi-State Lamp is displayed on the MICRO/I screen, clear the **Recover Background** check box or reduce the number of parts.
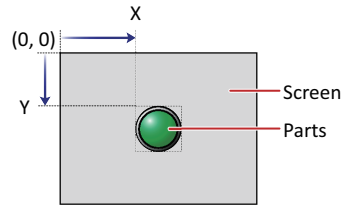
*1 Advanced mode only

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■ **Coordinates**

X, Y: Sets the display position of parts using coordinates.

The X and Y coordinates of parts is defined relative to an origin at the top-left corner of the screen.

X: 0 to (base screen horizontal size - 1)

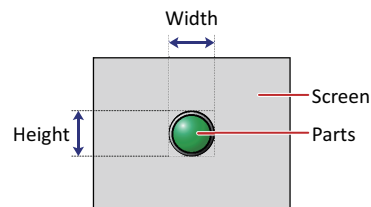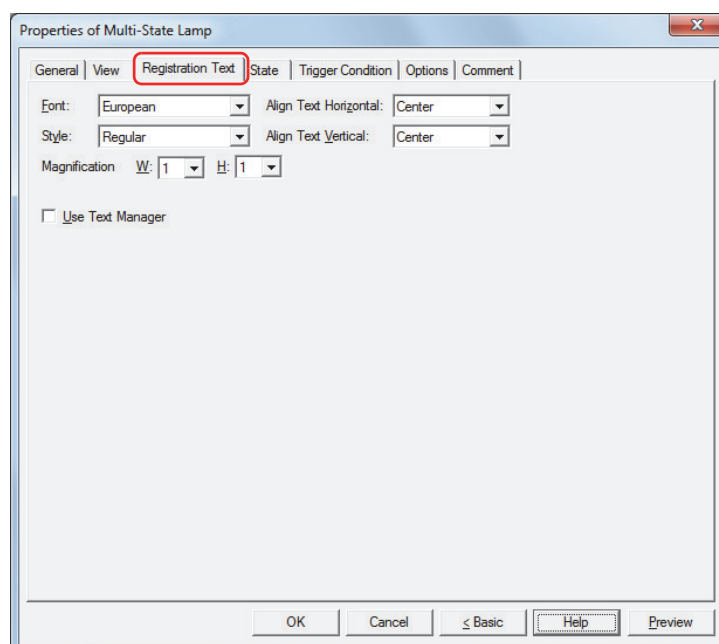Y: 0 to (base screen vertical size - 1)

■ **Size**

W, H: Sets width and height to define the size of parts.

W: 5 to (base screen horizontal size)

H: 5 to (base screen vertical size)

● **Registration Text** Tab

■ **Font**
Selects the font used for displaying text from the following.
Japanese, **European**, **Chinese**, **Taiwanese**, **Korean**, **Central European**, **Baltic**, **Cyrillic**, **Windows**, **Stroke**
Can only be set when the **Use Text Manager** check box is cleared.
The characters that can be displayed depend on the font. For details, refer to Chapter 2 "1.3 Available Text" on page 2-6.

■ **Size**
Sets the character size (8 to 128).
Can only be set when **Stroke** is selected.

■ **Style**
Selects **Regular** or **Bold** for text style.
Can only be set when **Font** is set to **Japanese**, **European**, **Chinese**, **Taiwanese**, **Korean**, **Central European**, **Baltic** or **Cyrillic**.

■ **Magnification**
W, H: Selects the magnification (0.5, 1 to 8[*1]) for text display.
Can only be set when **Font** is set to **Japanese**, **European**, **Chinese**, **Taiwanese**, **Korean**, **Central European**, **Baltic** or **Cyrillic**.

■ **Align Text Vertical**
Selects text alignment in the vertical direction.
Top, **Center**, **Bottom**
For details, refer to Appendix "5 Text Alignment" on page A-5.

■ **Align Text Horizontal**
Selects text alignment in the horizontal direction.
Left, **Center**, **Right**, **Center-Left**
For details, refer to Appendix "5 Text Alignment" on page A-5.

■ **Set by State**
Select this check box if displaying different text when ON and OFF.

■ **Use Text Manager**
Select this check box if using the text registered in Text Manager for text display.

*1 5 to 7 are only for the HG2G-S/-5S/-5F and HG3G/4G.

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● **State** Tab

■ **Number of States**
Specify the number of drawing objects (1 to 16) to display by switching.

■ **Settings**
Lists the state settings. The list shows various settings such as the state number and file name for the drawing object.

State:	Shows the OFF state[*1] and state number. Double clicking the cell displays the **State Settings** dialog box where you can edit the state settings. For details, refer to "State Settings dialog box" on page 9-26.
Image:	Shows the name or a file name for a drawing object. Double clicking the cell opens the View Browser if **Standard** is selected under Image Type on the **View** tab, or Picture Manager if **Picture** is selected. This allows you to change the drawing object to display.
Text:	Shows the registration text. Double clicking the cell displays the **Unicode Input** dialog box. If you selected the **Use Text Manager** check box on the **Registration Text** tab, the **Text Manager** dialog box will appear. This allows you to change the registration text.
Fg.Color, Bg.Color:	Shows the foreground and background colors (color: 256 colors, monochrome: 16 shades) for standard images. Double clicking the cell opens the Color Palette where you can change the foreground and background colors. This setting can only be changed if Image Type is set to **Standard** on the **View** tab.
Pattern:	Shows the pattern for standard images. Double clicking the cell opens the Pattern Palette where you can change the pattern of the image. This setting can only be changed if Image Type is set to **Standard** on the **View** tab.
Text Color	Shows the color of the registration text. Double clicking the cell opens the Color Palette where you can change the color of the text.
Flash:	Indicates whether to display the drawing object flashing or constantly lit. Double clicking the cell toggles between **Y** for yes and **N** for no. If **Y** is selected, the picture which corresponds to a bit state or value of device is alternately shown and hidden at a fixed time interval.
	However, if the OFF state[*1] is set, the picture that corresponds to a bit state or value of device and the picture set for the OFF state[*1] are alternately displayed at a fixed time interval.
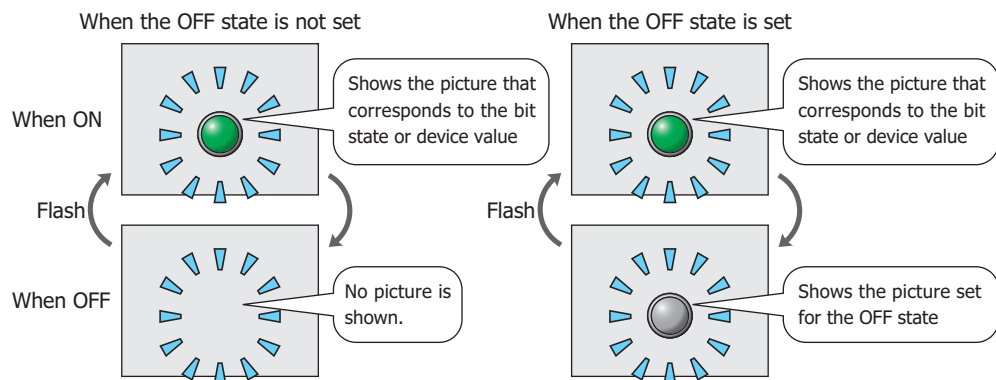
Windows Font:	Shows the currently set Windows Font. Double clicking the cell displays the **Font Settings** dialog box where you can change the Windows Font. This setting can only be changed when **Windows** is selected for **Font** on the **Registration Text** tab.
Set:	Registers the state settings to the list. If you select the OFF state[*1] or state number that is already registered, that number is overwritten with the new settings. Click this button to display the **State Settings** dialog box. For details, refer to "State Settings dialog box" on page 9-26.
Insert:	Inserts the settings in the position selected on the list. Select a state number in the list and click this button to display the **State Settings** dialog box. The settings at the insertion point shift down one line. Settings cannot be inserted if all state numbers are configured.
Remove:	Deletes the registered settings from the list. Select the OFF state[*1] or state number and click this button to delete the selected settings from the list.

*1 HG2G-S/-5S/-5F, HG3G/4G only

■ **Image**

Shows the image for the OFF state[1] or state number selected in the **Settings** list.

■ **Copy to next State**

Select this check box to register or change all state settings at once.

This option copies the current settings to all state numbers after the selected state number when the settings are set or changed. This option can only be set when a state number is selected.

*1 HG2G-S/-5S/-5F, HG3G/4G only

State Settings dialog box

This dialog box sets the drawing object and registration text to display.
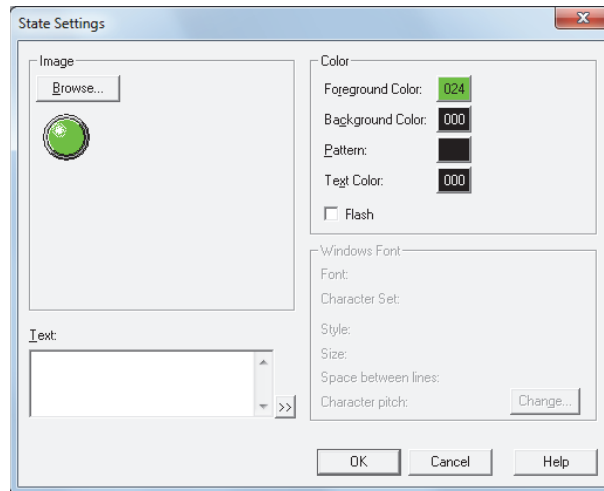
■ **Image**

Browse: Select the drawing object to use for the lamp part. Clicking this button opens the View Browser if **Standard** is selected under Image Type on the **View** tab, or Picture Manager if **Picture** is selected.

Image: Shows the selected drawing object.

■ **Text**

Enter the text to display. The maximum number is 3,750 characters.
The characters that can be entered depends on the font selected for **Font** on the **Registration Text** tab. For details, refer to Chapter 2 "1.3 Available Text" on page 2-6.
This setting is only enabled when the **Use Text Manager** check box is cleared on the **Registration Text** tab.

■ **Text ID**

To use the text registered in the Text Manager, specify the ID number from 1 to 32000.
This setting is only enabled when the **Use Text Manager** check box is selected on the **Registration Text** tab.

■ **Color**

Foreground Color, Background Color:

          Select the foreground and background color to use for standard images (color: 256 colors, monochrome: 16 shades).
Clicking either button opens the Color Palette. Select a color from the Color Palette.

Pattern: Select the pattern for a standard image.
Clicking this button opens the Pattern Palette. Select a pattern from the Pattern Palette.

Text Color: Select the text color (color: 256 colors, monochrome: 16 shades) for the registration text.
Clicking this button opens the Color Palette. Select a color from the Color Palette.

Flash: Select this check box to make the picture flash (alternately show and hide the picture that corresponds to the bit state or device value at a fixed time interval).
The flashing interval can be set with the **Flashing Cycle** setting on the **System** tab of the **Project Settings** dialog box. This option cannot be set for the OFF state[1].

■ **Windows Font**

Specify the Windows Font to use.
The current settings are displayed by selecting **Windows** in the **Font** property on the **Registration Text** tab. To change the settings, click **Change** to display the **Font Settings** dialog box.
The text ID setting is only enabled if the **Use Text Manager** check box is cleared.
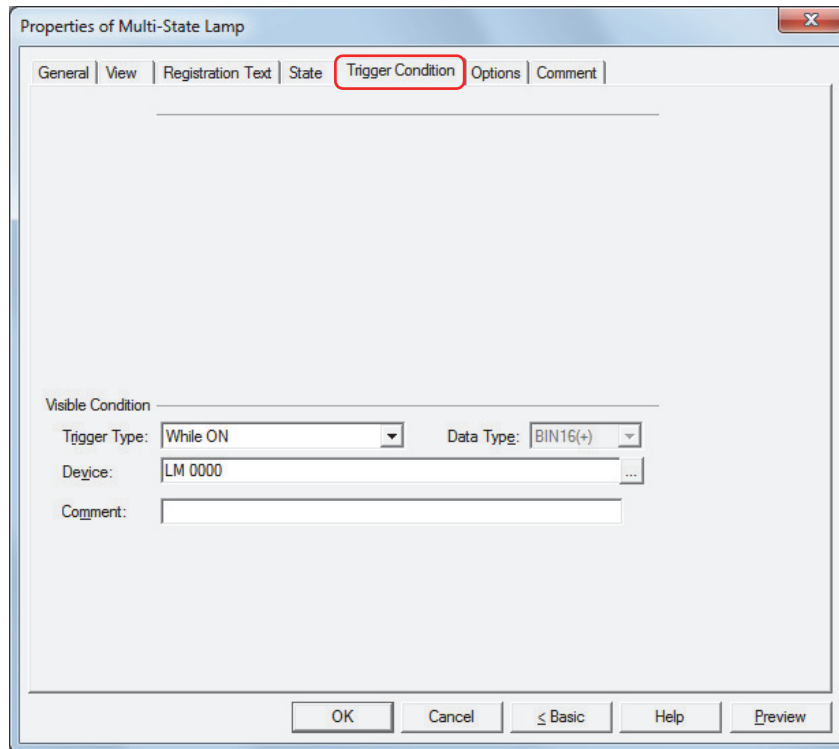For details, refer to Chapter 2 "Windows Font" on page 2-13.

*1 HG2G-S/-5S/-5F, HG3G/4G only

● **Trigger Condition** Tab

HG2G-S HG2G-5S HG2G-5F HG3G HG4G HG1F HG2F HG2S HG3F HG4F

The **Trigger Condition** tab is displayed in Advanced mode.
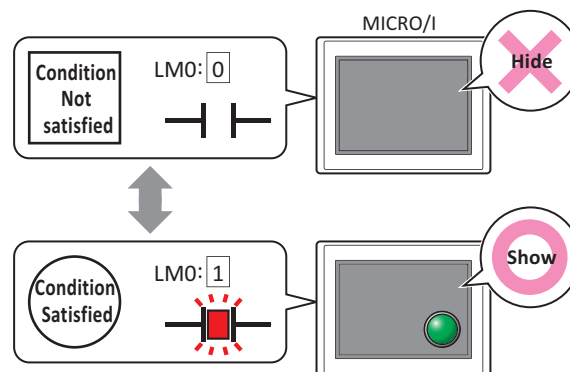

■ **Visible Condition**

The Multi-State Lamp is displayed while the condition is satisfied. The Multi-State Lamp is hidden while the condition is not satisfied.

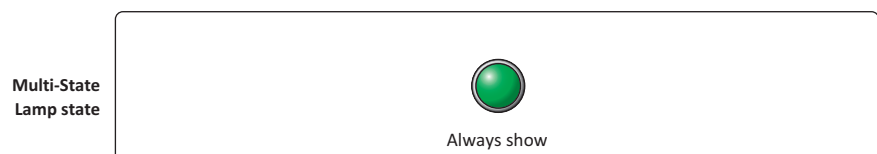Example: When **Trigger Type** is **While ON** and **Device** is **LM 0**

While LM 0 is 0, the condition is not satisfied and the Multi-State Lamp is hidden.
While LM 0 is 1, the condition is satisfied and the Multi-State Lamp is displayed.
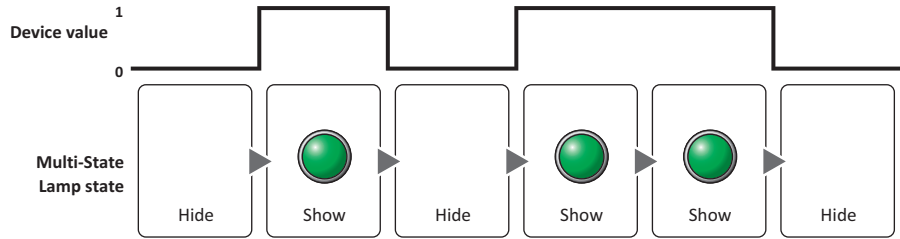

Trigger Type: Selects the condition to display the Multi-State Lamp from the following.
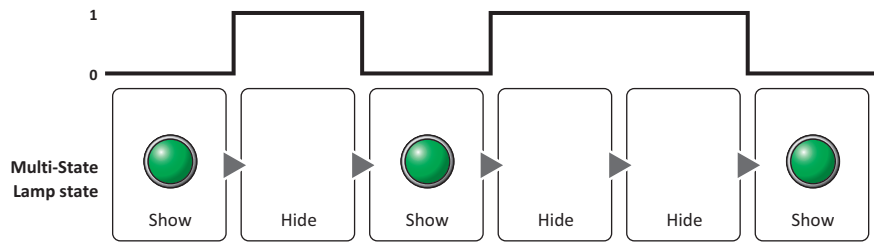
Always visible: The Multi-State Lamp is always displayed.

While ON: Displays the Multi-State Lamp when the device value is 1.
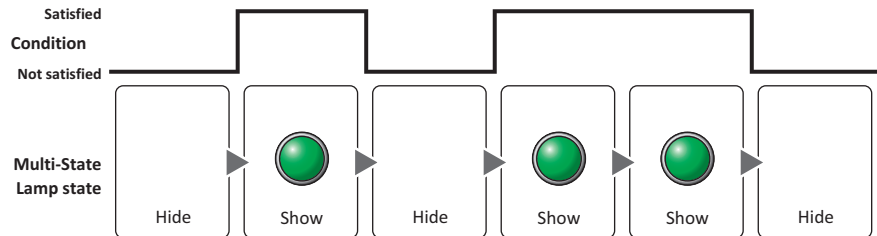

While OFF: Displays the Multi-State Lamp when the device value is 0.

While satisfying the condition:

Displays the Multi-State Lamp when the condition is satisfied.

Data Type: Selects the type of data handled by the conditional expression for the visible condition.

This option can only be configured if **While satisfying the condition** is selected for **Trigger Type**.

For details, refer to Chapter 2 "1.2 Available Data" on page 2-2.

Device: Specifies the bit device or bit of the word device to serve as the visible condition.

This option can only be configured when **While ON** or **While OFF** is selected for **Trigger Type**.

Click ⸱⸱⸱ to display the **Device Address Settings** dialog box. For the device address configuration procedure, refer to Chapter 2 "5.1 Device Address Settings" on page 2-67.

Condition: Specifies the conditional expression for the visible condition.

This option can only be configured when **While satisfying the condition** is selected for **Trigger Type**.

Click ⸱⸱⸱ to display the **Trigger Condition Settings** dialog box. For the conditional expression configuration procedure, refer to Chapter 2 "5.2 Setting Conditional Expressions" on page 2-69.

Comment: Used for entering a comment for the visible condition. The maximum number is 80 characters.

● **Options** Tab

The **Options** tab is displayed in Advanced mode.
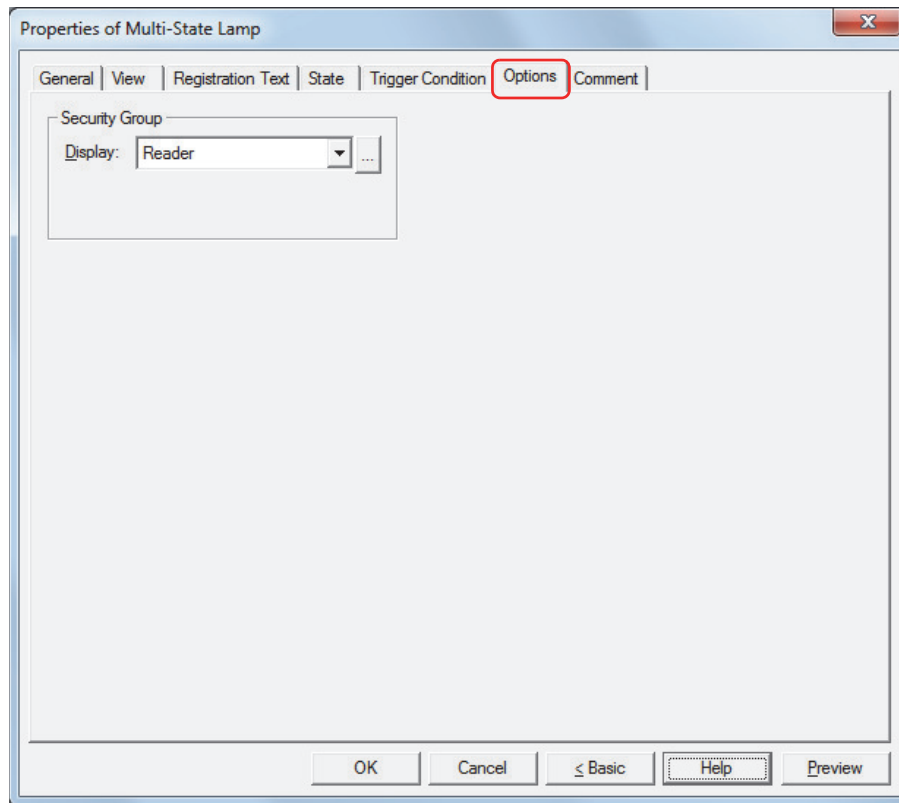
■ **Security Group**

Security groups are a security function for restricting the display and operation of parts.

Display: Selects the security group for which display of parts is restricted. (Default: None)

None: No security function is used.

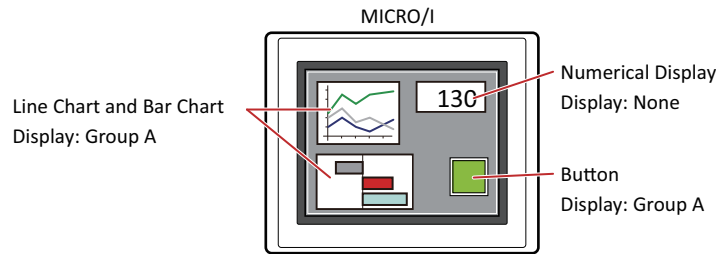Administrator, Operator, Reader: Three security groups are set up by default.

Click ... to display the **Security Group Settings** dialog box. If you create a security group on the **Security Group Settings** dialog box, you can select that created group. For details, refer to Chapter 23 "2.2 Adding and Editing Security Groups" on page 23-18.

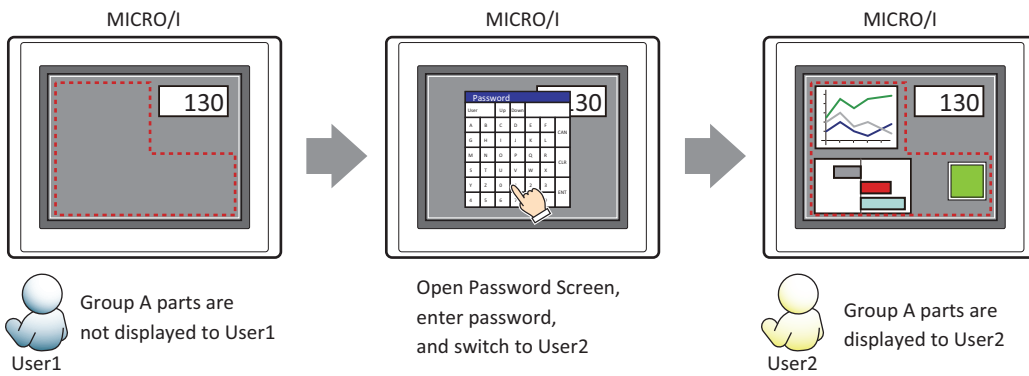For details about security functions, refer to Chapter 23 "User Accounts and the Security Function" on page 23-1.

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Example: If the user and security group for a part are set as follows:

User Name	User1	User2
Security Group	None	Group A

MICRO/I

Line Chart and Bar Chart
Display: Group A

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Numerical Display
Display: None

Button
Display: Group A

For User 1, who is not included in the specified security group, Group A parts are not displayed.

If the Password Screen is now opened and a switch is made to User 2 of Group A, Group A parts are displayed.

MICRO/I

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Group A parts are
not displayed to User1

User1

MICRO/I

Password

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Open Password Screen,
enter password,
and switch to User2

MICRO/I

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Group A parts are
displayed to User2

User2

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● **Comment** Tab

The **Comment** tab is used to specify the parts arranged on the editing screen, and the popup text displayed when the mouse pointer is placed close to **No., Name**, or **Type** in the object list.

> When there are multiple parts of the same shape on the screen, this features makes it possible to distinguish between the parts without displaying the Properties dialog box for each part, by just mousing over the part.
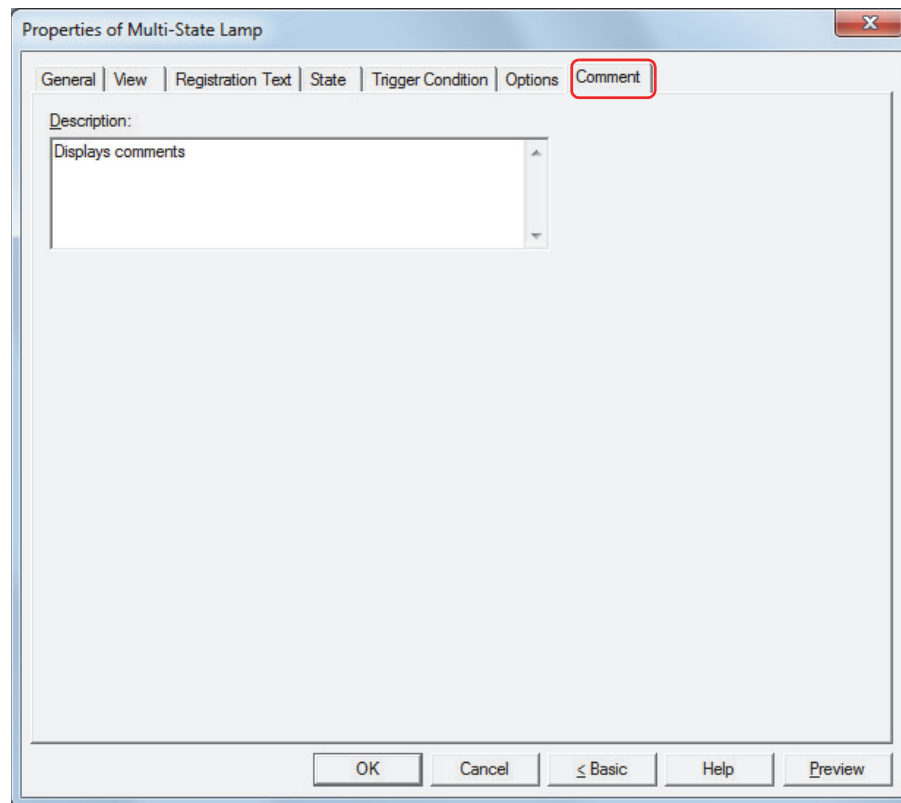
■ **Description**

Used for entering comments about parts. The maximum number is 80 characters.

Example: When mousing over the Multi-State Lamp on the editing screen