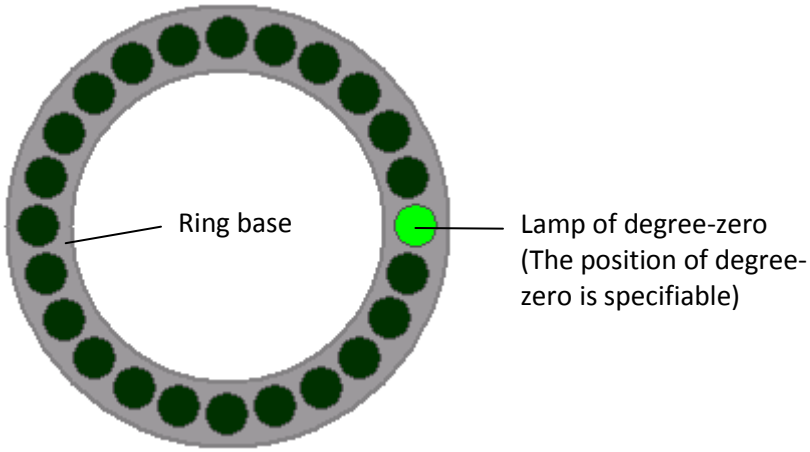
Rotation Indicators

Introduction

A rotation indicator can display the status of a rotation device. It has a multiple of 4 lamps distributed evenly on its ring base as shown in the following figure. By controlling the lamps' on and off, it generates intuitively understandable messages for showing the status of the associated device.



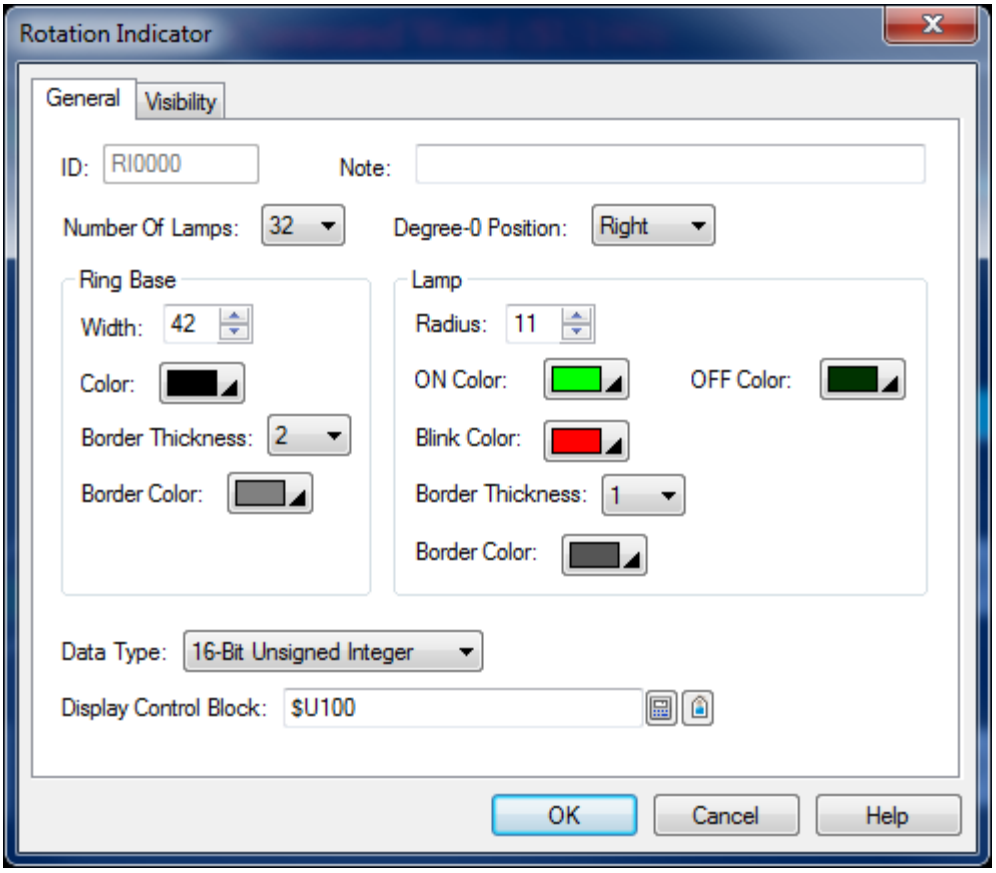
You can command the object to do the following:

1) Turn off all the lamps to indicate that the device is off or inactive.
2) Turn on only the lamp that is the closest one to the specified angle to indicate the angular position of the device.
3) Make the lamps take turns to light in the specified sequence to generate the visual effect of rotation.
4) Turn on only the lamp of degree-zero to indicate that the device is ready or at its initial position.
5) Turn on all the lamps to indicate that the device is shut down or under initialization.
6) Blink all the lamps together with the specified speed to indicate that the device has an urgent condition.

To create a rotation indicator, select the menu item "Object>>Graph/Chart>>Range Indicator" and place the new object on the current screen.

Configuration

This section describes how to define the general settings for a rotation indicator in the General page of the Rotation Indicator property sheet. The following is an example of the General page.

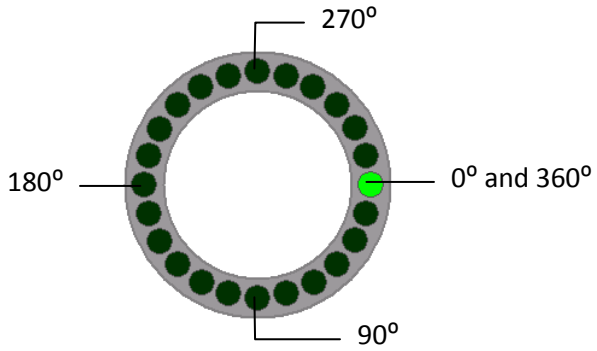


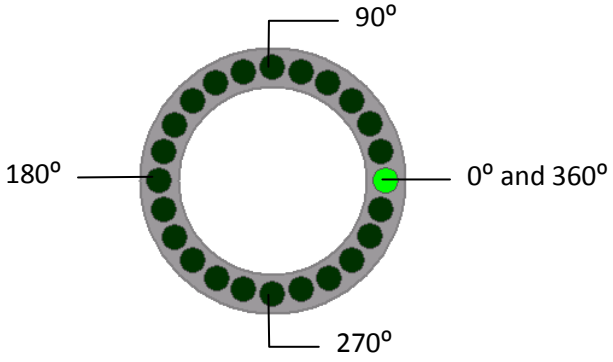
The following table describes each property in the General page.

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 on. The format of the ID's for the rotation indicators is RInnnn.
Note		You can type a note for the rotation indicator.
Number Of Lamps		Specifies how many lamps the object has. The maximum is 40.
Degree-0 Position		Specifies the position of degree 0. There are four options: Top, Bottom, Left, and Right.
Ring Base	Width	The thickness of the ring in pixel.
	Color	The color of the ring.
	Border Thickness	The thickness of the ring border in pixel. Select 0 if no border is desired.
	Border Color	The color of the ring border
Lamp	Radius	The radius of the lamps in pixel.
	ON Color	The color of the lamps when they are turned on.
	Off Color	The color of the lamps when they are turned off.
	Blink Color	The color of the lamps when they are turned on while blinking.
	Border Thickness	The thickness of the lamps' border in pixel. Select 0 if no border is desired.
	Border Color	The color of the lamps' border

<table>
<tr><td>Data Type</td><td>The type of the data that controls the object.</td></tr>
<tr><td>Display Control Block</td><td>
Specifies the address or tag of the display control block that controls the object. The display control block can be an unsigned word array or an unsigned double-word array with 3 data members.

The following table shows the data members of the display control block.
<table>
<tr><th>Word No. or Double-word No.</th><th>Data Member</th><th>Description</th></tr>
<tr><td>0</td><td>Command Word</td><td>Stores the command code of the desired operation.</td></tr>
<tr><td>1</td><td>Speed Control Word</td><td>Specifies the speed for the animated rotation or the lamp blinking operation.</td></tr>
<tr><td>2</td><td>Angle Control Word</td><td>Stores the angle to be indicated by the object.</td></tr>
</table>

The following table describes the operation of each command code.
<table>
<tr><th>Command Code</th><th>Description</th></tr>
<tr><td>0</td><td>Turns off all lamps.</td></tr>
<tr><td>1</td><td>Indicates the angle specified in the Angle Control Word. The angle is counted clockwise as shown below when the Degree-0 Position is Right.


Angle Control Word
<table>
<tr><th>Value</th><th>Description</th></tr>
<tr><td>0-360</td><td>Valid angles.</td></tr>
<tr><td>Others</td><td>Invalid angles. The values are ignored.</td></tr>
</table>
</td></tr>
<tr><td>2</td><td>Indicates the angle specified in the Angle Control Word. The angle is counted counter-clockwise as shown below when the Degree-0 Position is Right. See the description of Angle Control Word in the above cell.


</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><td></td><td>
<table>
<tr><td>3</td><td>Shows the animated clockwise rotation with the speed specified in the Speed Control Word.

Speed Control Word
<table>
<tr><th>Value</th><th>Description</th></tr>
<tr><td>0</td><td>Invalid number. Value 1 is assumed.</td></tr>
<tr><td>1-1000</td><td>The interval that a lamp takes turns to light. The unit is 0.01 second. If the object has N lamps and the value in the Speed Control Word is V, the time of one rotation is N x V x 0.01 second. For example, if the object has 20 lamps and the value is 5, the time of one rotation is 20 x 5 x 0.01 = 1 second. Note that the system may not be able to perform as fast as the specified.</td></tr>
<tr><td>Others</td><td>Invalid numbers. Value 1000 is assumed.</td></tr>
</table></td></tr>
<tr><td>4</td><td>Shows the animated counter-clockwise rotation with the speed specified in the Speed Control Word. See the description of Speed Control Word in the above cell.</td></tr>
<tr><td>5</td><td>Turns on the lamp of degree-zero only.</td></tr>
<tr><td>6</td><td>Turns on all the lamps.</td></tr>
<tr><td>7</td><td>Blinks all the lamps together at the speed specified in the Speed Control Word.

Speed Control Word
<table>
<tr><th>Value</th><th>Description</th></tr>
<tr><td>0</td><td>Invalid number. The value 1 is assumed.</td></tr>
<tr><td>1-100</td><td>The interval to blink the lamps once. The unit is 0.1 second. For example, the value of 10 will cause the lamps to blink once every second. Note that the system may not be able to perform as fast as the specified.</td></tr>
<tr><td>Others</td><td>Invalid numbers. The value 100 is assumed.</td></tr>
</table></td></tr>
</table>
</td></tr>
<tr><td> </td><td>Click this icon to bring up the Address Input Keypad and specify the desired address for the Display Control Block field.</td></tr>
<tr><td> </td><td>Click this icon to bring up the Select Tag dialog box and select the desired tag for the Write Display Control Block field.</td></tr>
</table>