Creating Animations

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Animating Graphic Objects

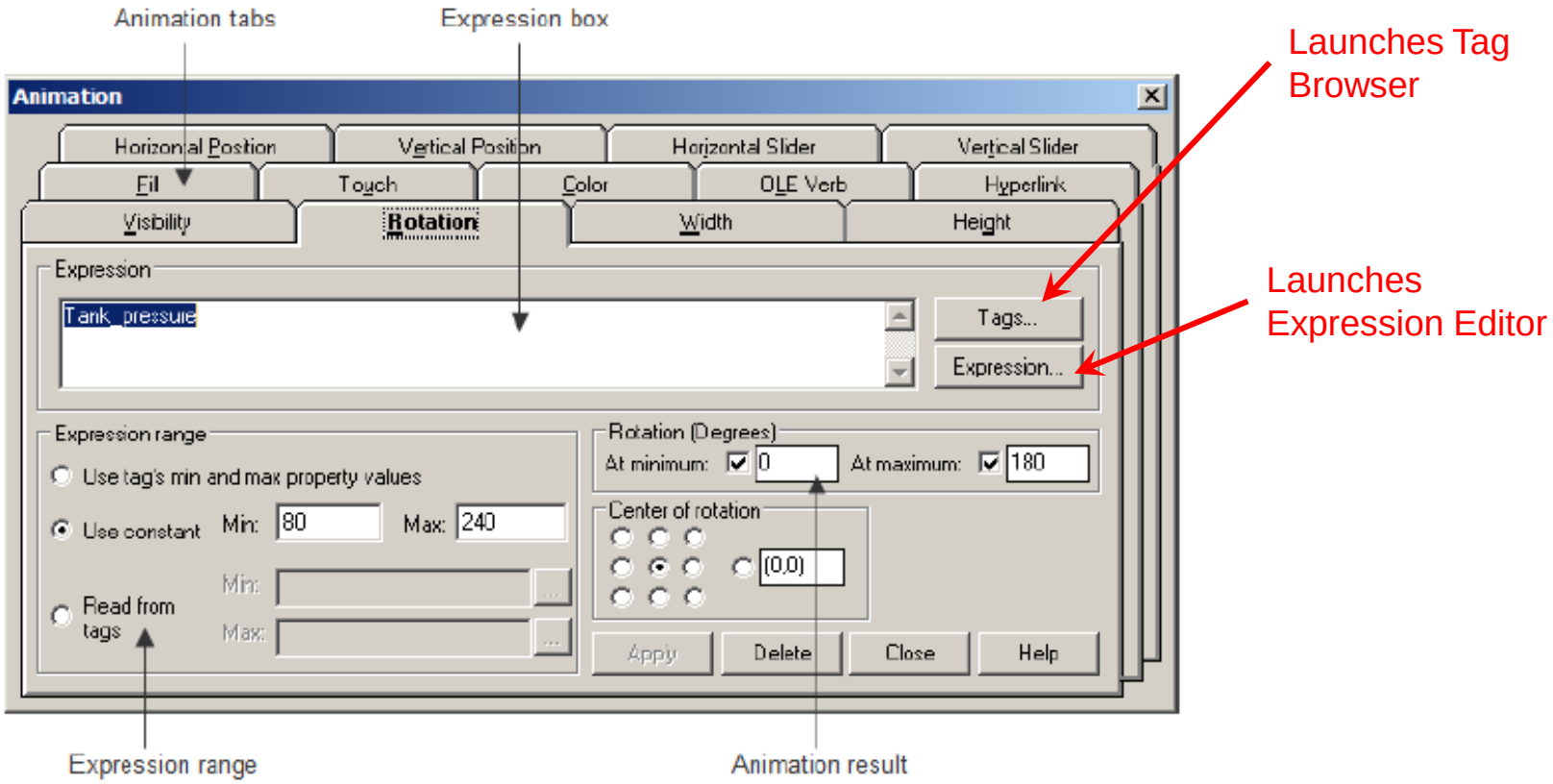
- Animation associates graphic objects with **tags** so the *appearance* or *position* of an object changes to reflect changes to the tag's value.
- For example, an object's color could change from yellow to orange to red as the tag's value increases. Or a slider could move from left to right as a tag's value increases.
- Types of animation:
  - Color
  - Fill
  - Height
  - Horizontal position
  - Horizontal slider
  - Hypelrink
  - Rotation
  - Vertical position
  - Vertical slider
  - Visibility
  - Width

These objects	Support these types of animation
Drawing objects, except images, panels, and rounded rectangles	All types
Rounded rectangles	All types except rotation
All other objects	Visibility

- Interactive objects (pushbuttons & Indicators) and Images only support visibility
- You can also attach animation to groups of drawing objects.

Animation Dialog Box

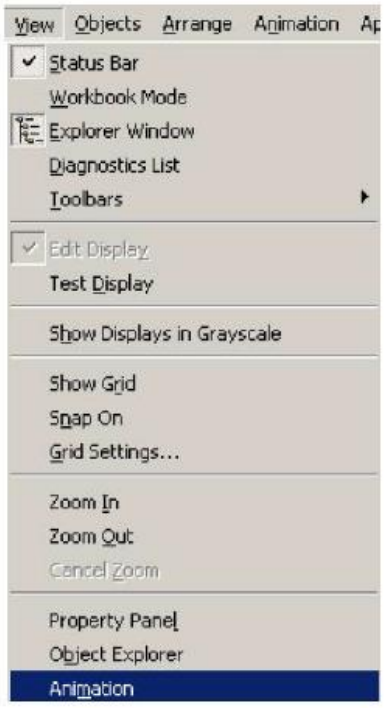
- The **Animation** dialog box is a floating dialog box, which means you can keep it open all the time and move it around the screen. While it's open you can select other objects and open other dialog boxes.



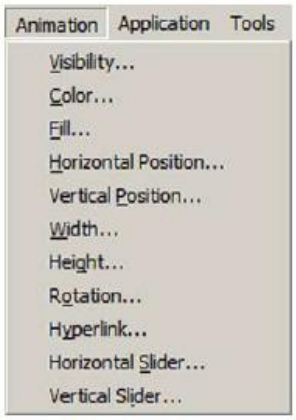
To open the Animation Dialog Box

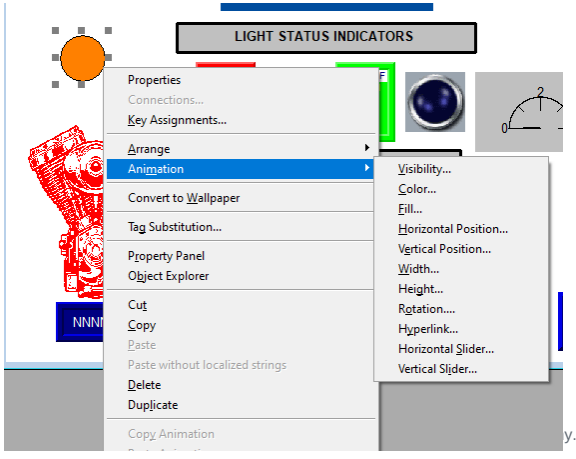
- Select an object, and then from the View menu, select Animation.
- Select an object, and then from the Animation menu, select an animation type.
  - Animation types that are not supported for the selected object are unavailable.
- Right-click an object, select Animation, and then click an animation type. Animation types that are not supported for the selected object are unavailable.

View menu



Animation menu





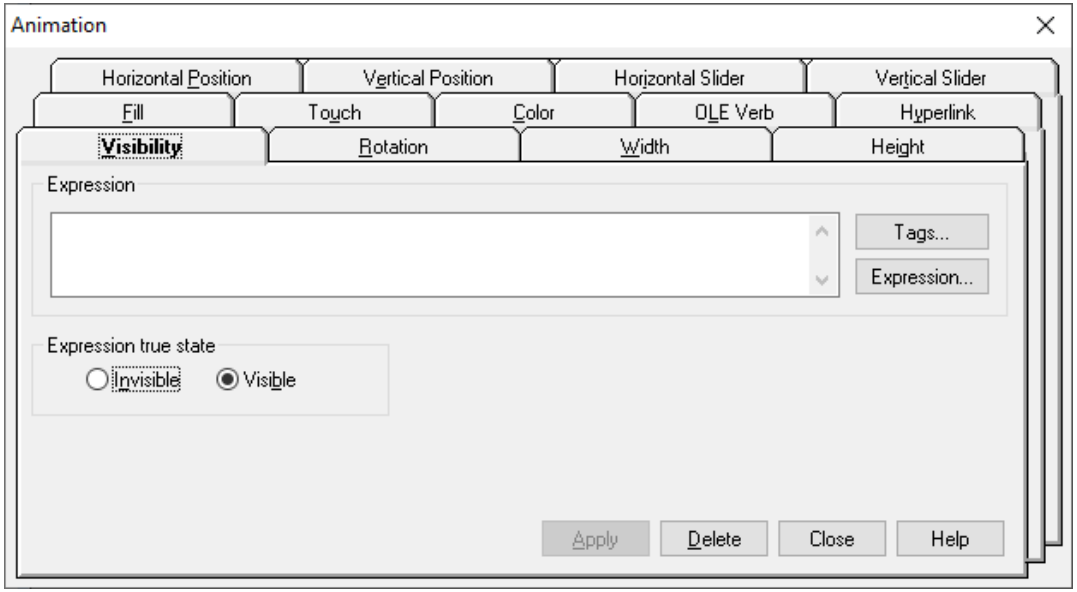
Set minimum and maximum values

- Many types of animation require a minimum and maximum range for the tag or expression. These values determine the start and end points for a range of motion.

- **Use tag's min and max property values** — select this method to use the minimum and maximum values of the first HMI tag in the expression. If more than one HMI tag is used in the expression, the first HMI tag's minimum and maximum values are used. For analog HMI tags, the values are taken from the **Minimum** and **Maximum** boxes in the **Tags** editor. For digital tags, the minimum is 0 and the maximum is 1.
- **Use constant** — select this method to use numeric constants. Type the minimum and maximum values in the boxes. **(Typical used for Data Server Tags)**
- **Read from tags** — select this method to read two tags' values to determine the minimum and maximum values. Type the tag names in the boxes, or click the **Browse** buttons to open the **Tag Browser** and select the tags. If you use this method, the tags are read when the graphic display opens. Their values at that time are used for the minimum and maximum values. The tags are not read again after this.

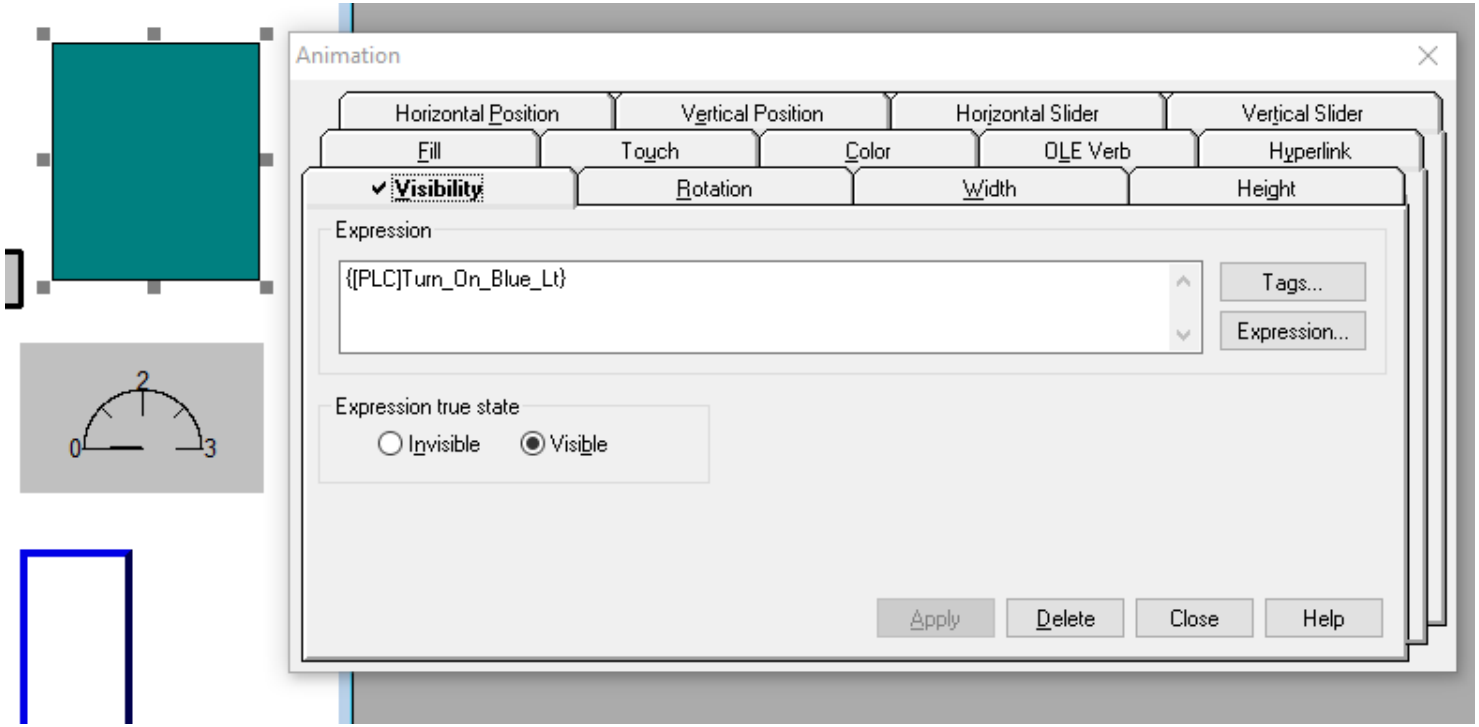
Visibility Animation

- With visibility animation, an object becomes visible or invisible based on a tag value or the result of an expression.
- When an object is invisible, it cannot be selected. Mouse clicks pass through it to whatever object is underneath.
- Visibility animation is available for all objects and overrides an object's Visible property.



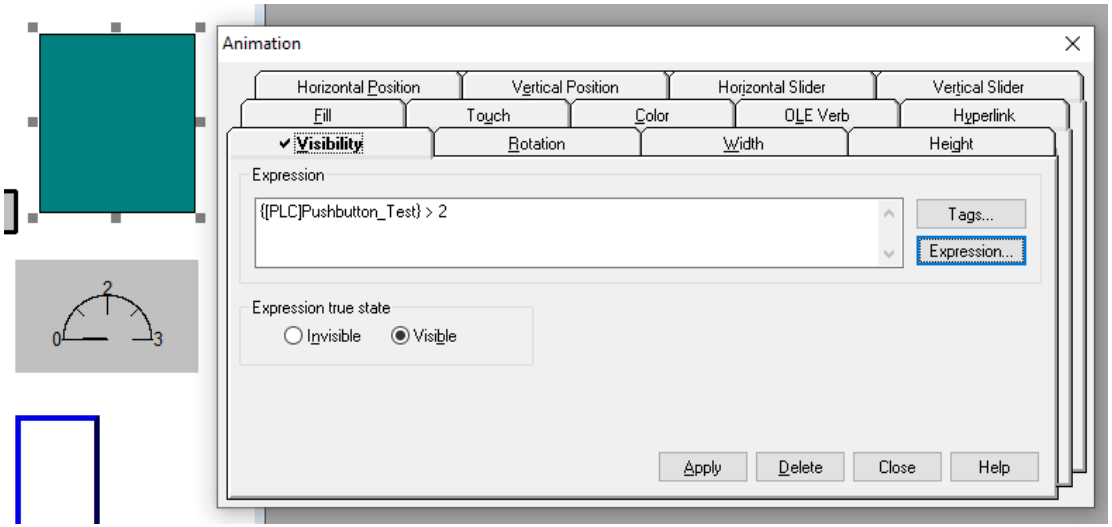
Visibility Animation Example – Discrete Tag

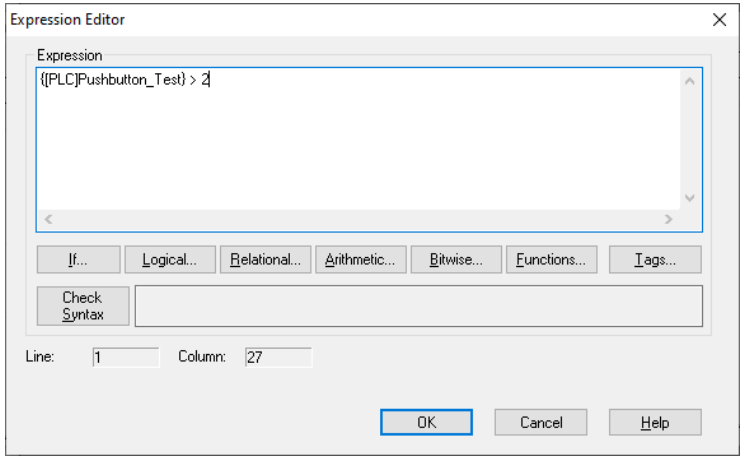
- This visibility will cause the box to appear when the ***discrete tag*** changes from 0 to 1.



Visibility Animation Example – integer tag

- This visibility will cause the box to appear when the ***integer tag*** is greater than 2.
- Note: This expression was created using the Expression Editor.

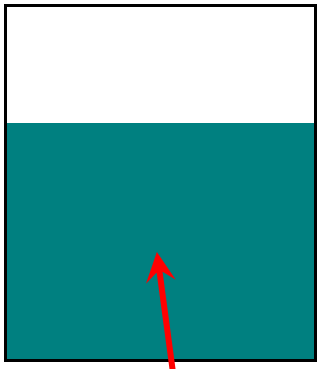




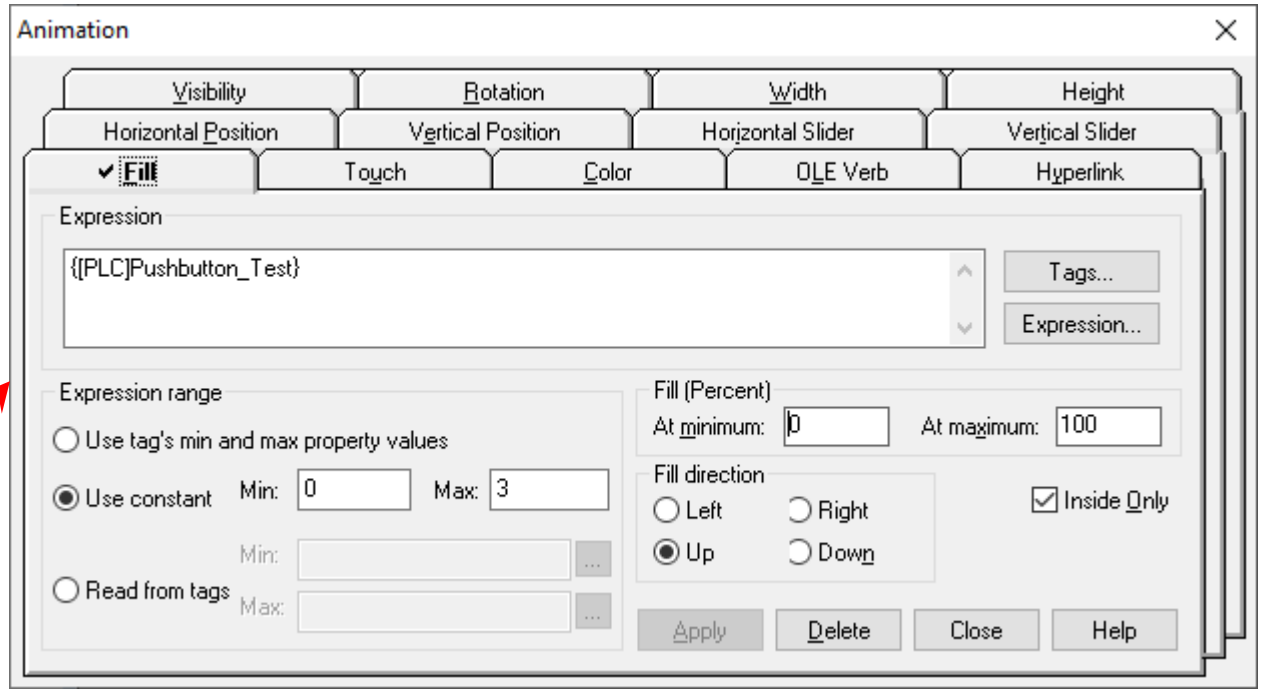
Many types of animation can be achieved using expressions. You can use expressions containing tag values, constants, mathematical equations, security functions, and if-then-else logic. A tag name or tag placeholder can be included as part of an expression, or it can stand alone as the entire expression.

Fill Animation

- Changes the fill level of a graphic object when a tag or expression changes
- The objects fill level is proportional to the minimum and maximum values assigned to an expression.

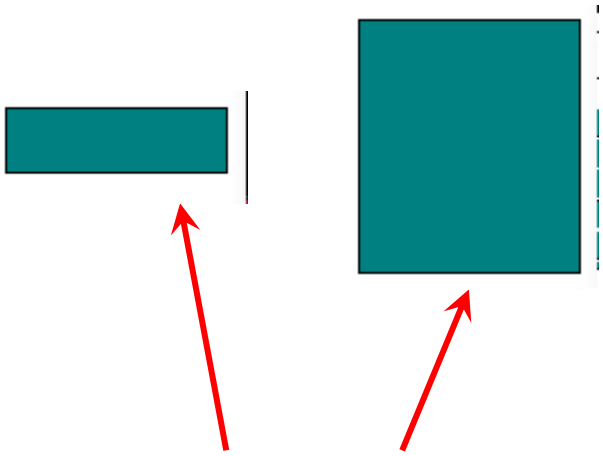


Objects fill adjusts according to Integer Tag value (which currently has a value of 2).

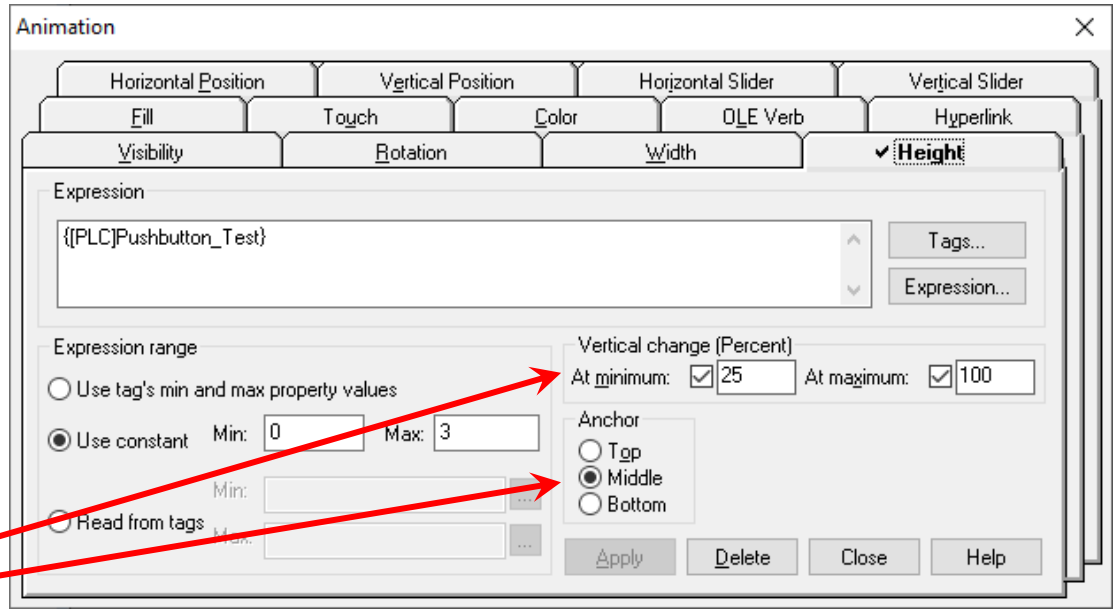


Height and/or Width Animation

- Changes the size of a graphic object when a tag or expression changes.
- The Objects Height or Width is proportional to the minimum and maximum values assigned to an expression.

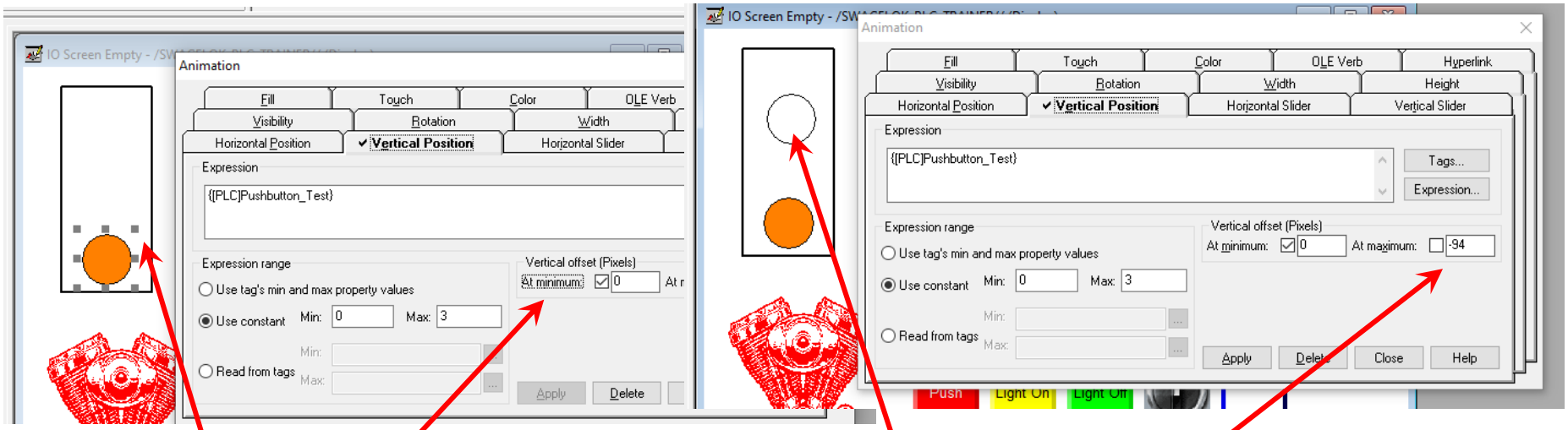


Objects height adjusts per the integer tags value and dialog box settings



Position Animation

- Used to simulate movement of a graphic object along a horizontal and/or vertical axis as a tag value or the result of an expression changes
- The Object Smart Path feature lets users drag a graphic object to the starting and ending point of the motion



Place the object in the initial position, select it and add the animation. Be sure to check “At minimum”

Click on the object and move it to final position with mouse and click “At maximum”

Position Animation

- Orange Ball will change vertical position as integer tag (Pushbutton_Test) increases.