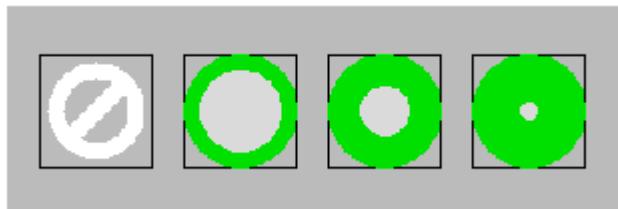
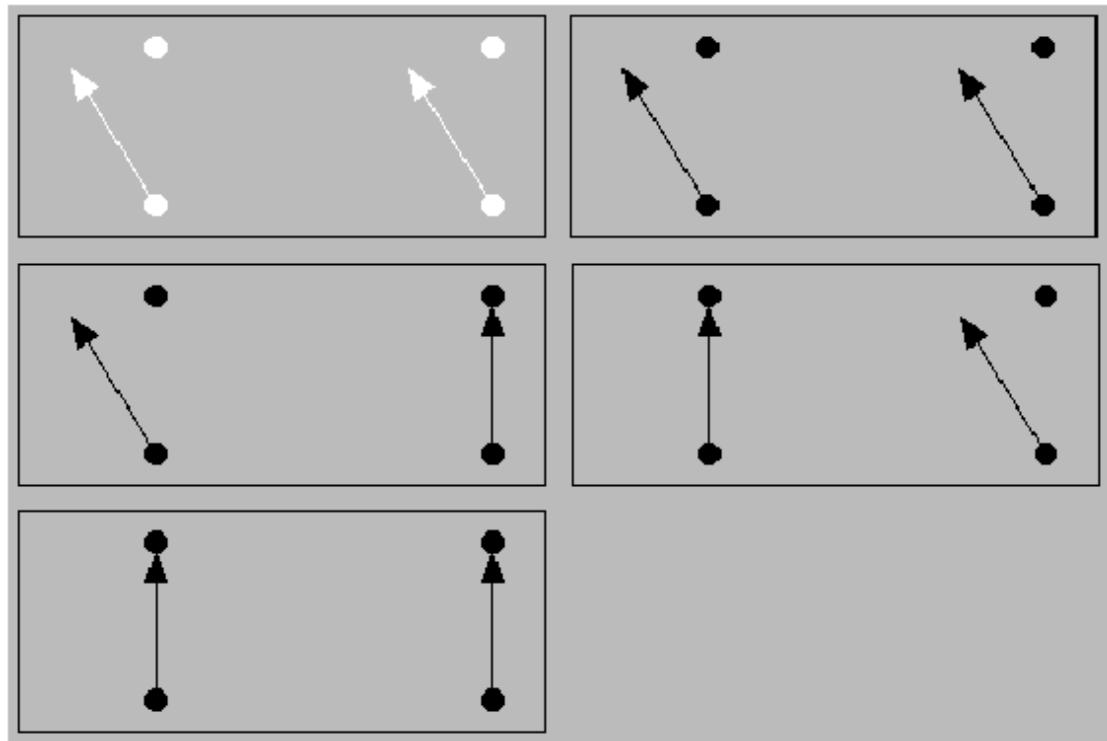


Exercise 8 - Symbols

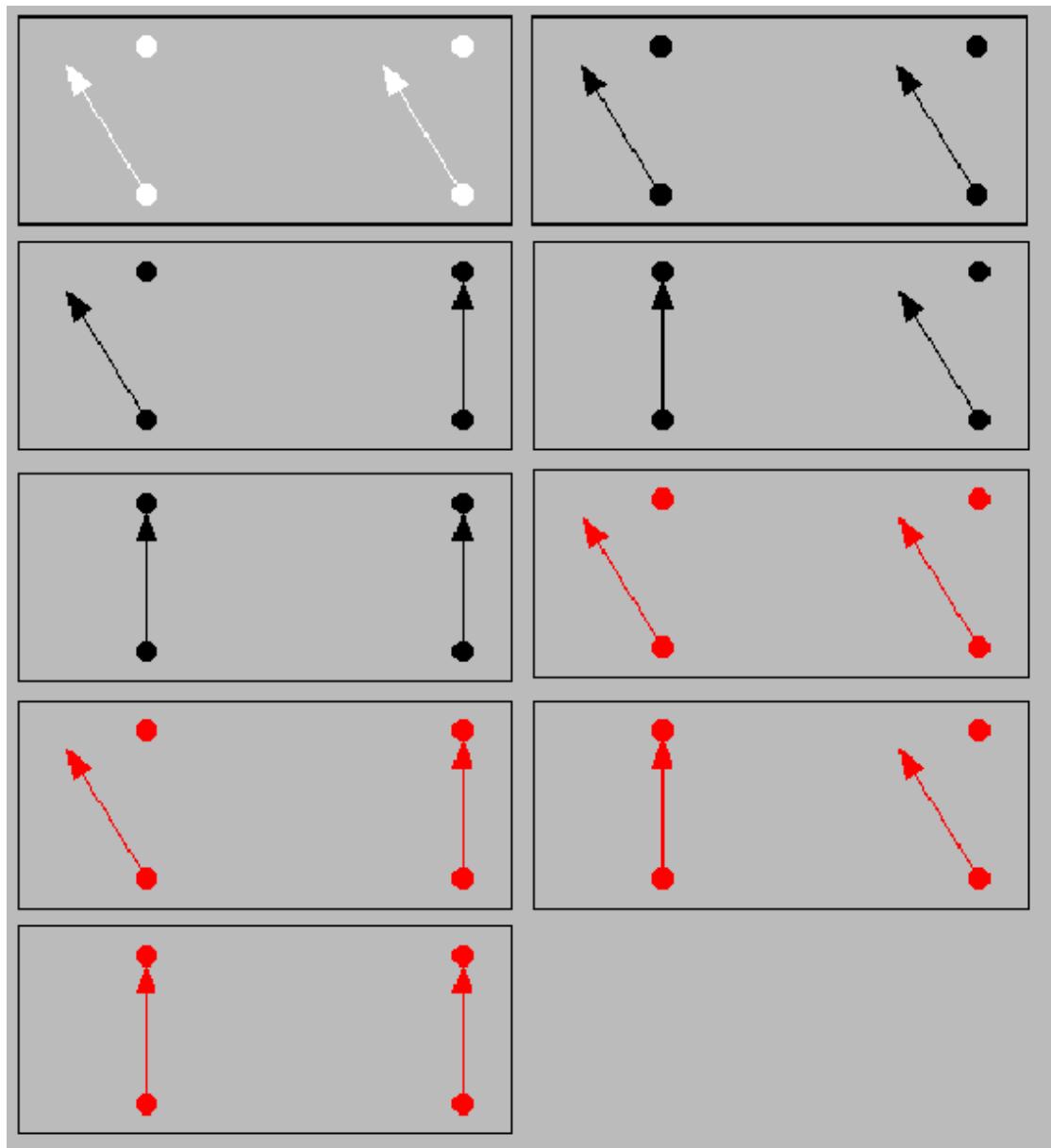
In this exercise, you will create symbol template files and then create symbol instances on an edm display. Shown below are the symbol templates and their respective file names.



ApSym.edl – Aperture



twoLimitsSym.edl – Two Limit Switches



twoLimitsWithFaultSym.edl – Two Limit Switches with Fault Condition

Aperture Symbol Template File

- Execute edm

edm -m “db=student#”

- Create a new window
- Use on-line help for assistance
 - Help --> On-line --> Objects --> Symbol
 - Press the button named *Creating a Symbol File*
- Draw the aperture states
 - Create and then duplicate (copy/paste) the invisible rectangle
 - Draw the out-of-band/disconnected state within the first rectangle
 - Draw the invariant content within the second rectangle
 - Duplicate the second rectangle and content two produce three images
 - Add the state dependent content to each image
- Make sure there are no groups and that the images are somewhat aligned in one horizontal row
- Middle-click the display background and choose *Auto Make Symbol* from the menu
- The edm message box should appear, displaying the following:

Symbol make complete, 4 states detected
- Dismiss the message box
- Save the file as apSym.edl

Two Limit Switches Symbol Template File

Repeat the process in a manner similar to that described above for this symbol template file.

- Save the file as twoLimitsSym.edl

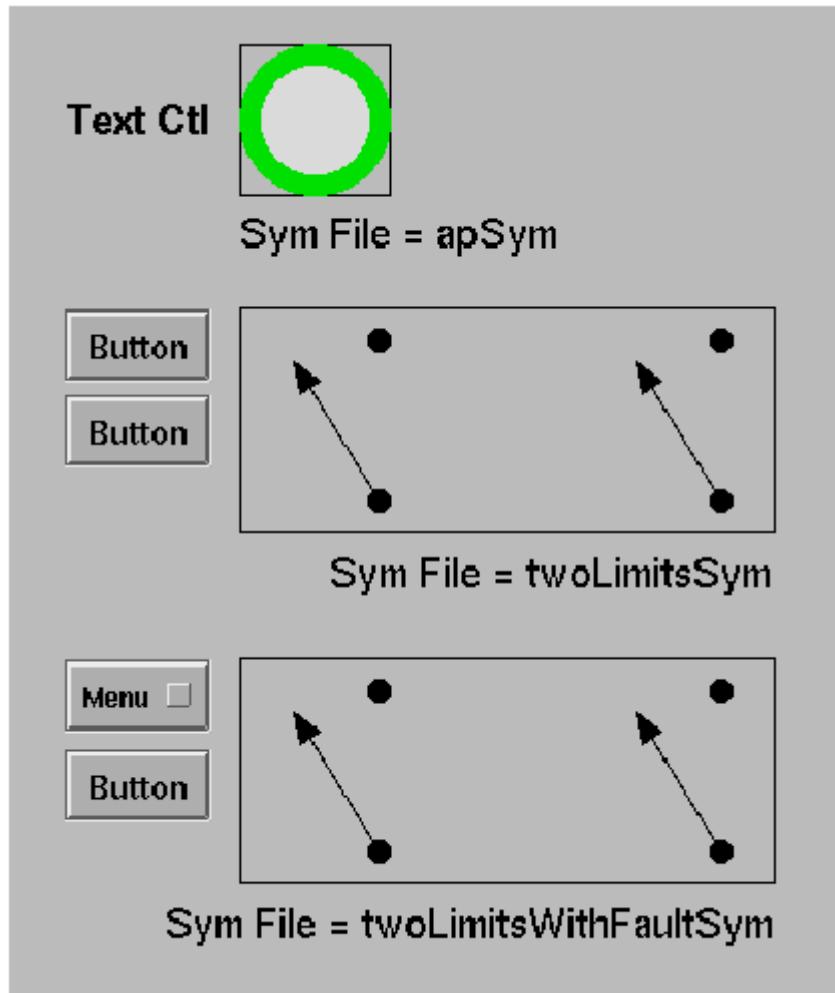
Two Limit Switches with Faults Symbol Template File

Again, repeat the process in a manner similar to that described above.

- Save the file as twoLimitsWithFaultSym.edl

Create Edm File with Symbol Instances

- Create a new file
- The following image shows the final result



Aperture Symbol Instance

- Create text control
 - Drag a box with the left mouse button and release the button
 - Select *Controls* --> *Text* from the menu
 - *PV* = \$(db):a1
 - *Auto Height* = True
 - *Editable* = True
 - *Keypad* = True
 - *Font* = 18 point bold helvetica
- Create the aperture symbol instance
 - Drag a small box with the left mouse button and release the button
 - Select *Monitors* --> *Symbol* from the menu
 - *Symbol File* = apSym
 - *(First) PV Name* = \$(db):a1
 - *Preserve Original Size* = True
 - *Preserve Original Colors* = True
 - *Number of Items* = 4
 - Item 1
 - ≥ 0
 - < 0
 - Item 2
 - ≥ 80
 - < 100
 - Item 3
 - ≥ 50
 - < 80
 - Item 4
 - ≥ 0
 - < 50
- Save file as exercise8.edl
- Execute display and change the text control value by clicking on it and entering values from the keypad
- Examine corresponding symbol images
- Return display to edit mode

Two Limits Symbol Instance

- Create the first button
 - Drag a small box with the left mouse button and release the button
 - Select *Controls --> Button* from the menu
 - *Control PV = \$(db):e1*
- Create the second button
 - Drag a small box with the left mouse button and release the button
 - Select *Controls --> Button* from the menu
 - *Control PV = \$(db):e2*
- Create the two limits symbol instance
 - Drag a small box with the left mouse button and release the button
 - Select *Monitors --> Symbol* from the menu
 - *Symbol File = twoLimitsSym*
 - *(First) PV Name = \$(db):e1*
 - *(Second) PV Name = \$(db):e2*
 - *Binary Truth Table = True*
 - *Preserve Original Size = True*
 - *Preserve Original Colors = True*
 - *Number of Items = 5*
 - Item 1
 - ≥ 0
 - < 0
 - Item 2
 - ≥ 0
 - < 1
 - Item 3
 - ≥ 1
 - < 2
 - Item 4
 - ≥ 2
 - < 3
 - Item 5
 - ≥ 3
 - < 4
- Save the file
- Execute display and change the button values
- Examine corresponding symbol images
- Return display to edit mode

Two Limits With Fault Symbol Instance

- Create the menu button
 - Drag a small box with the left mouse button and release the button
 - Select *Controls* --> *Menu Button* from the menu
 - *Control PV* = \$(db):e4
- Create the button
 - Drag a small box with the left mouse button and release the button
 - Select *Controls* --> *Button* from the menu
 - *Control PV* = \$(db):e3
 - *Label Type* = Literal
 - *On Label* = Fault
 - *Off Label* = OK
- Create the two limits with fault symbol instance
 - Drag a small box with the left mouse button and release the button
 - Select *Monitors* --> *Symbol* from the menu
 - *Symbol File* = twoLimitsWithFaultSym
 - *(First) PV Name* = \$(db):e4
 - *(First) AND* = 0 *XOR* = 0 *Shift* = 0
 - *(Second) PV Name* = \$(db):e3
 - *(Second) AND* = 0 *XOR* = 0 *Shift* = 2
 - *Binary Truth Table* = False
 - *Preserve Original Size* = True
 - *Preserve Original Colors* = True
 - *Number of Items* = 9
 - Item 1
 - ≥ 0
 - < 0
 - Item 2
 - ≥ 0
 - < 1
 - Item 3
 - ≥ 1
 - < 2
 - Item 4
 - ≥ 2
 - < 3
 - Item 5
 - ≥ 3
 - < 4
 - Item 6
 - ≥ 4
 - < 5
 - Item 7
 - ≥ 5
 - < 6
 - Item 8
 - ≥ 6

- < 7
- Item 9
 - ≥ 7
 - < 8
- Save the file
- Execute display and change the menu button and toggle button values
- Examine corresponding symbol images
- Return display to edit mode