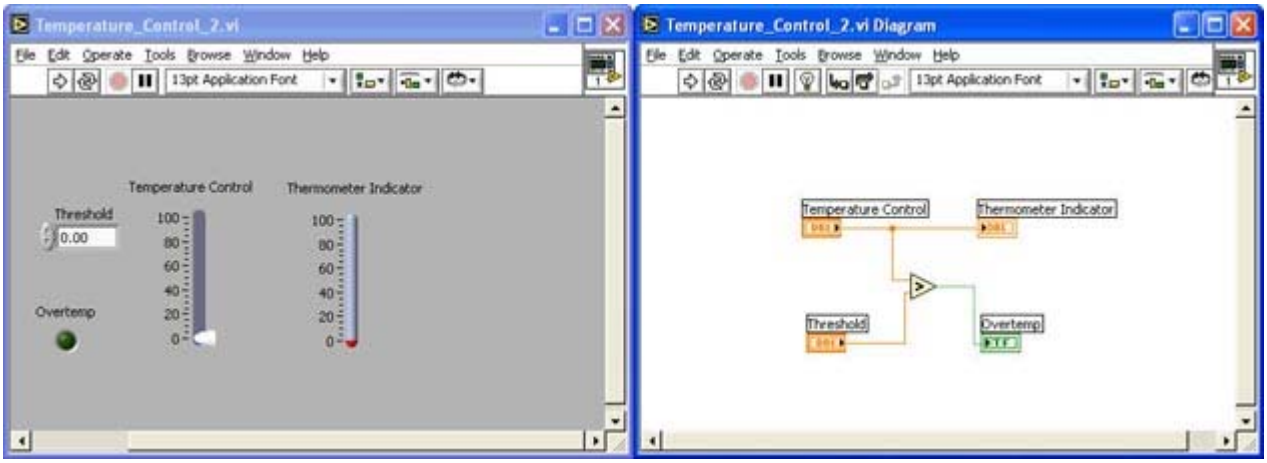
Tutorial Labview Basics II - Temperature & Control 2



INTRODUCTION

In this tutorial, you will open the last tutorial and add a temperature threshold control and an over temperature indicator to the VI. To achieve this, you will:

- Start Labview, Open the Temperature Control VI and "Save As"
- Add a Digital Control to the Front Panel and Rename It
- Add a Round LED Indicator to the Front Panel and Rename It
- Add a Great? Function to the Diagram
- Wire Everything Together in the Block Diagram
- Run the VI and Observe the Results
- Save the VI and Exit Labview

START LABVIEW, OPEN THE TEMPERATURE CONTROL VI AND SAVE-AS

Start Labview

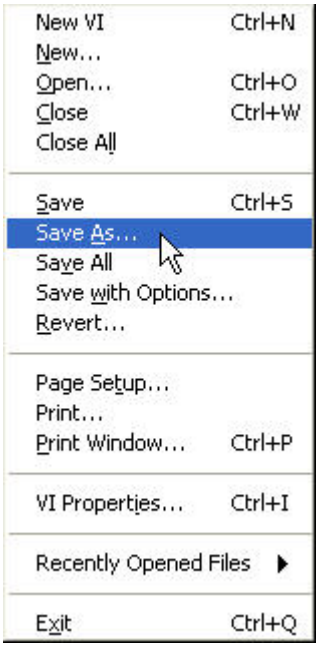
Click on Open VI 

in the Labview Splash Screen

Locate and open the Temperature_Control_1.vi

Arrange the Front Panel and Diagram windows left and right with the Tile left and Right command

Click on File pull down and Save as



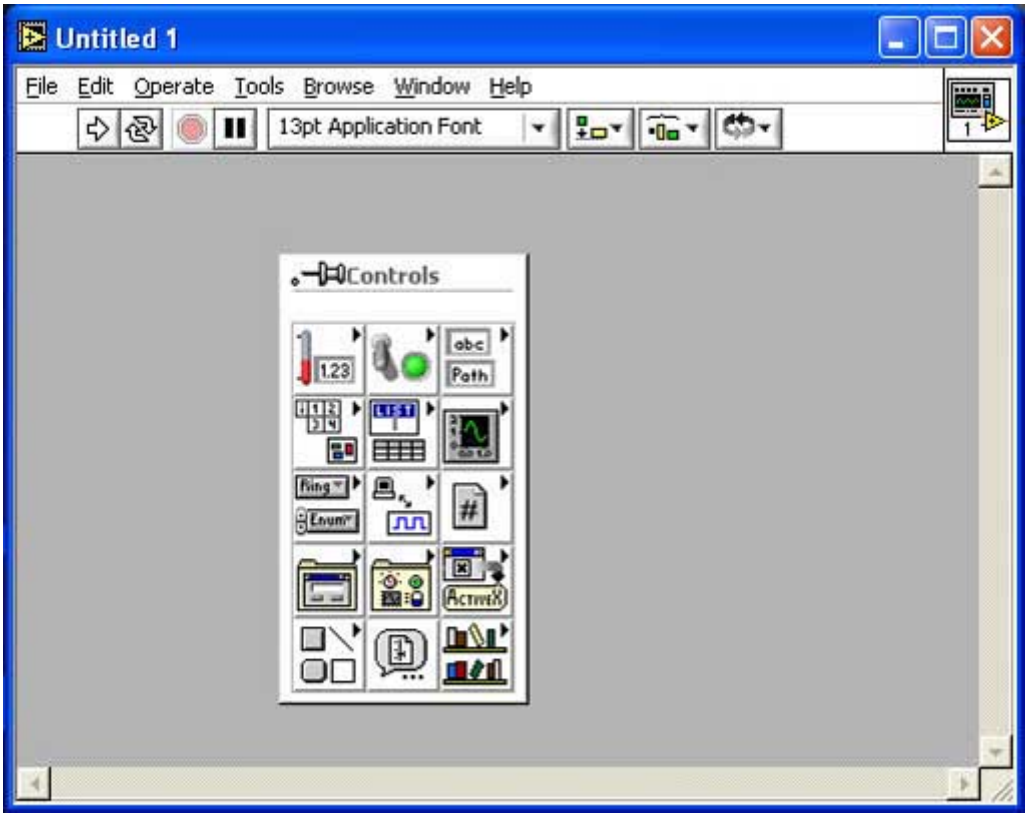
Save as to *Temperature_Control_2.vi*

Show the Tools Palette

ADD A DIGITAL CONTROL TO THE FRONT PANEL AND RENAME IT

Right-Click on the Front Panel Window

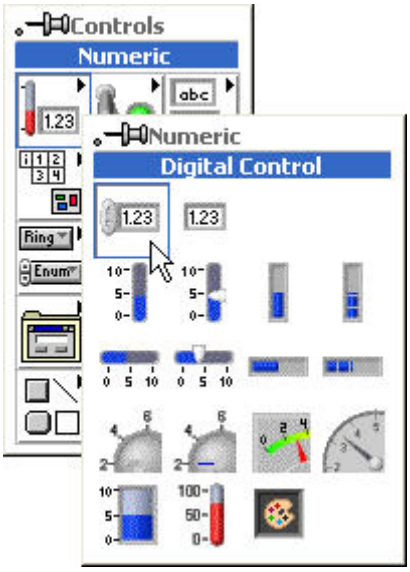
You should see the Controls Palette



Bring the cursor over the Numeric button (Upper Left)

The Numeric Menu should appear

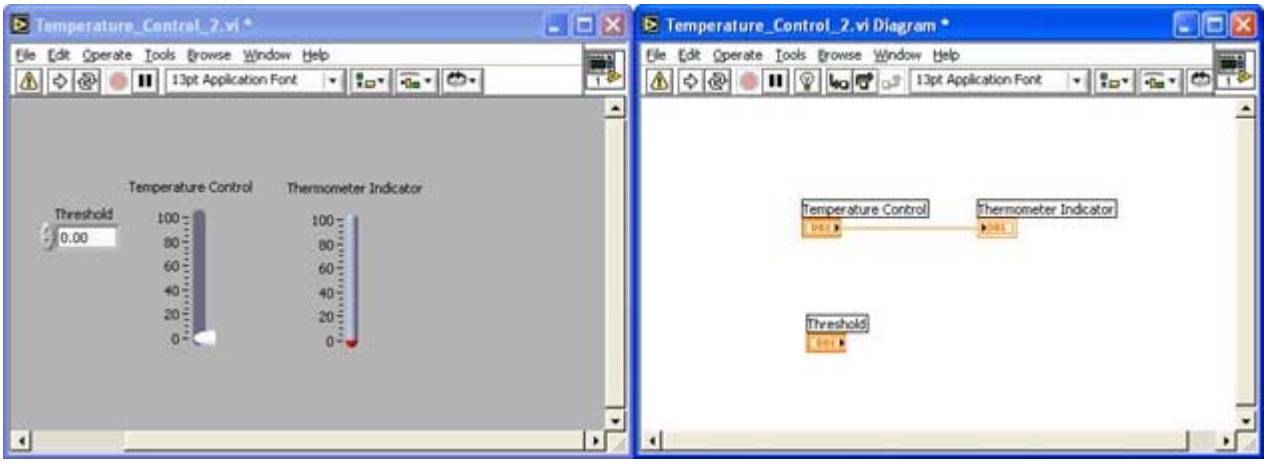
Bring the cursor over the Digital Control> Left-Click on the selection and drag the control onto the Control Panel just to the upper-left left of the Temperature Control



Rename its label to *Threshold*

In the Diagram window, drag the Threshold Digital Control under the Temperature Control

Your Control Panel and Block Diagram should look like this:



ADD A ROUND LED INDICATOR TO THE FRONT PANEL AND RENAME IT

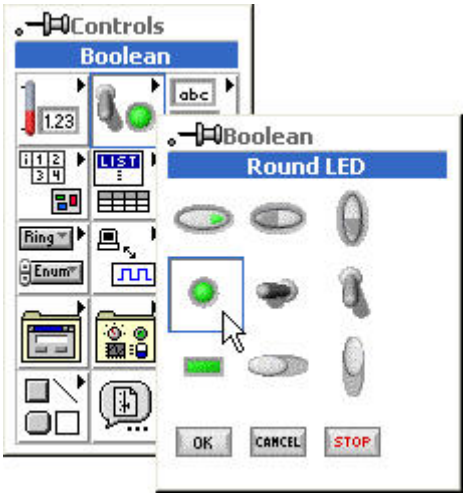
Right-Click on the Front Panel Window

The Numeric Menu should appear

Bring the cursor over the Boolean button

The Boolean Menu should appear

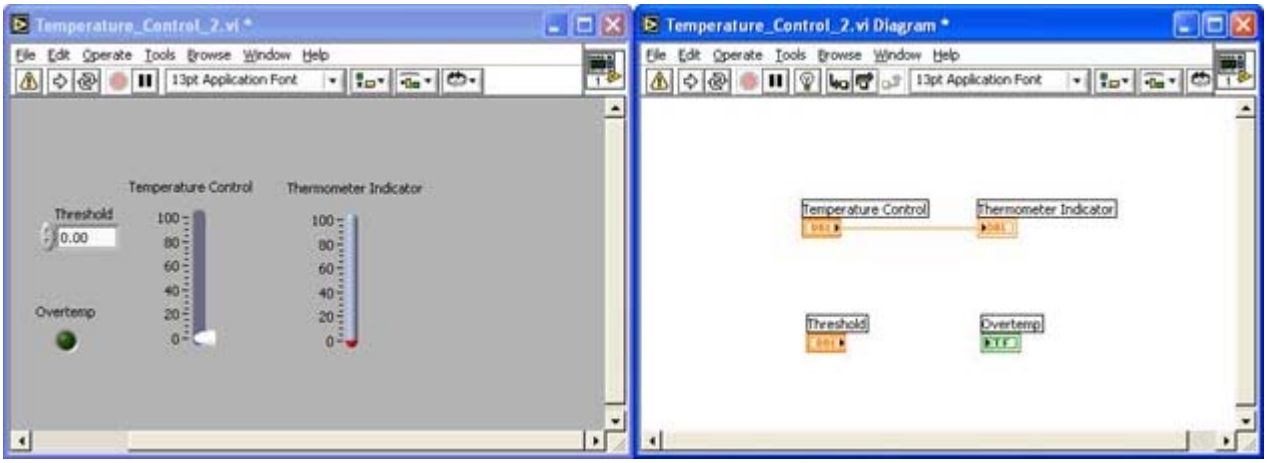
Bring the cursor over the Round LED > Left-Click on the selection and drag the control onto the Front Panel just below the Threshold Control



Rename its label to *Overtemp*

Move the Round LED Indictor's terminal to just below the Thermometer Indicator's terminal in the Block Diagram Window

Your Control Panel and Block Diagram should look like this:



ADD A GREATER? FUNCTION TO THE DIAGRAM

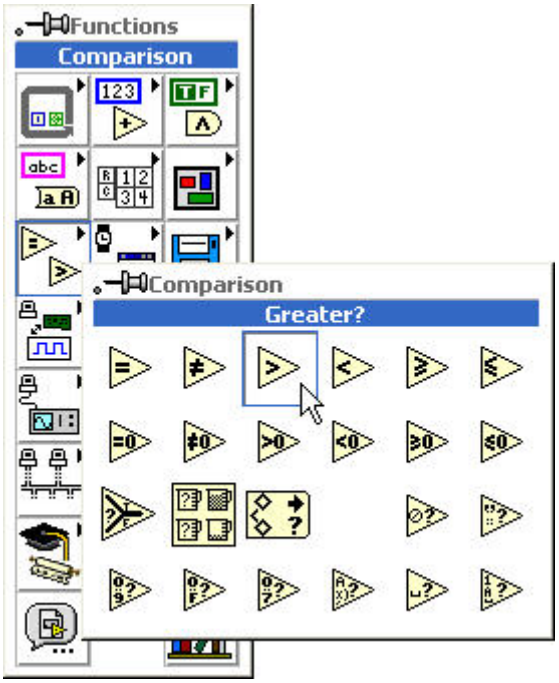
Right-Click in the Block Diagram Window

The Function Palette should appear:

Bring the cursor over the Comparison Button

The Comparison Sub-Menu should Appear

Bring the cursor over the Greater? Function > Left-Click on the selection and drag the function onto the Block Diagram in the middle between the other nodes.



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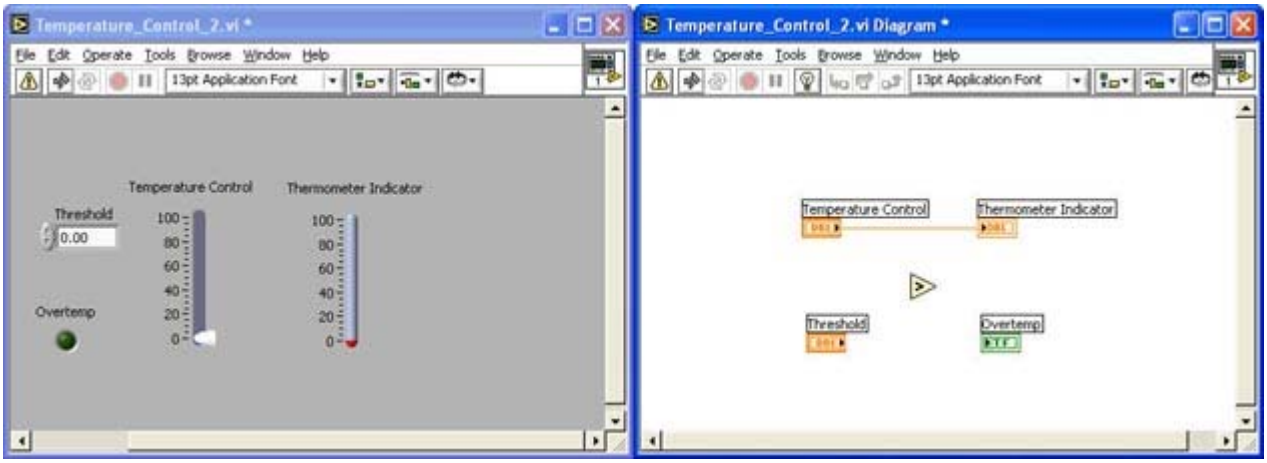


WIRE EVERYTHING TOGETHER IN THE BLOCK DIAGRAM

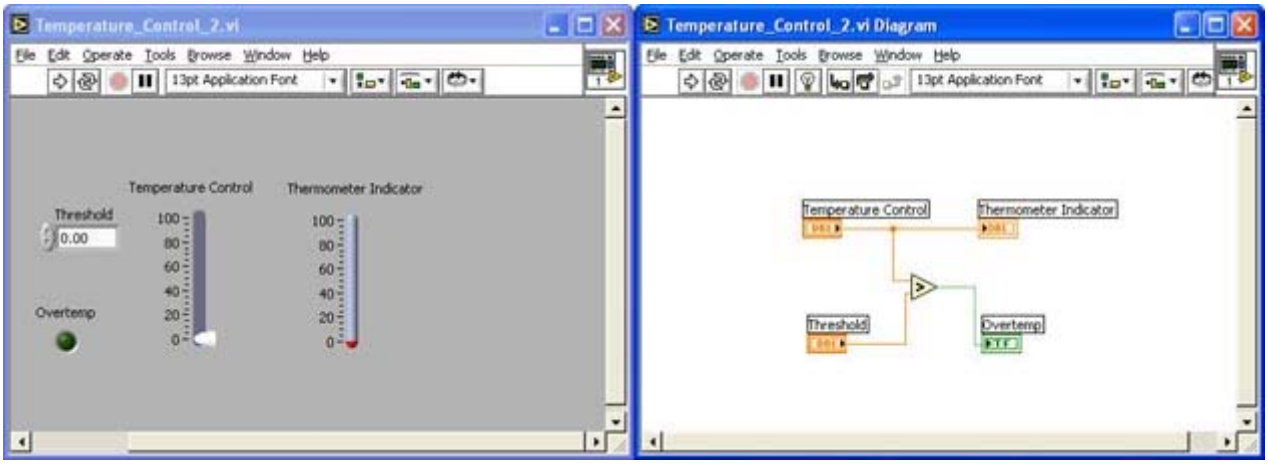
In the Block Diagram Window, Wire the Threshold terminal to lower input terminal of the the Greater? function

Wire the output terminal of the Greater? function to the Overtemp terminal

Wire the upper input terminal of the Greater? function to the existing wire between the Temperature Control and Thermometer Indicator terminals. This will create a *wire junction*

Note: The existing wire should blink indicating that a good junction will be created

Your Control Panel and Block Diagram should look like this:



RUN THE VI AND OBSERVE THE RESULTS

In the Control Panel window, Change the threshold value to 50

Run the VI Continuously

Move the Slider on the Temperature Control and note when the Overtemp LED

Experiment with different threshold values

Stop the VI
