Step 26: Adding a Comparative Boolean Instruction You are now ready to start a new rung. The next rung of logic will turn ON an output when the counter reaches a count of 5. Use the Tool palette to open the **Equal To** (Comparative Boolean) dialog. Type in **CTA0**, which is the **Direct**SOFT name for the accumulated value of counter **CT0**. Tab to the right side of the input window to enter **K5**. Select the check mark when you have entered the constant value, **K5**.



Step 27:In this example, you will use C1 as a test output coil. You will be able to see if C1 turnsAdding aON by viewing the screen during the running of this program. As an output turns fromConditional OutputOFF to ON, there is a color change on the screen for that particular element.

Add C1 to the rung at this time by moving your cursor to the end of the rung and pressing F5 to open the Coil Tab of the Instruction Browser. Select Standard Coil and OUT from the available choices. Select OK when finished.



After selecting OK in the Instruction Browser, the Element Dialog box appears. You will be prompted for the output relay designation. In this case, type in **C1**.



You can now enter the nickname "**Test Output1**" for **C1**, using the same procedure used earlier. Press the key combination **CTRL + D** to bring up the **Documentation Editor** and enter "Test Output1" into the **Nickname** window.



Close the Documentation Editor and return to the rung. Notice the Nickname Test Output1 is now above the element. You are now finished with these rungs. Accept them by using the hot key F8 or by selecting Edit/Accept from the upper menu bar.

| 1 | Ladder View | |
|-----|--|---|
| 2 | Start Switch Ten Second Triver | TMR Ten Second Timer T0 |
| | The Counter CT0 will increment one cause each time Tores TO reaches to preset. Counters was have essecuted bits which energize when the counters reach their preset values. This bit is used to make a soft-mosting counter. The Second Time TO Second Time CT0 | Chill ThreeOut Counter CTO Press V2000 32 44 V2000 34 V2000 34 V2000000000000000000000000000000000000 |
| 4 | CTAB = HS | -(&) |
| - 5 | | (HOP) |

Step 28: Copying to the Clipboard

The following example illustrates the use of the **Copy and Paste** features of **Direct**SOFT. You will copy a rung and paste it to the next. Then, change the count value to **K6** and use output relay **C2** to test it.

To copy a rung, first select the rung. **Rungs cannot be selected and copied unless you have accepted the rung.** Accept the rung by selecting **Edit** and **Accept**. You will see a green vertical bar by the rung when it is accepted.

Now you can select the rung for copying. This is accomplished by placing your cursor on the rung and using the **SHIFT + Arrow** key combination. With the rung selected, select **Edit** then select **Copy** to send a copy of the rung to the Windows clipboard.

| - | Did CHHX Digiy CHHC | La Second Time | dder W | ew row | |
|---|--|--|---|--|--|
| | Delete Del | 11 | | Ten Second Timer | |
| | Insert. Ins Morgo Soloct | if increment are count each dibts which energies when a saf-residing counter | | Lander View | Twi Ten Seget Timer |
| | Gagtact. P4 Gall. P5 Box. F7 Mire | | | The Caurter CTD will excernent one count each time Timer TO reaches its preset. Counters | K108 |
| | docept FB | | 3 The State | also have accounted too which energies when the counters reach their preset values. This bit is used to make a self-resetting counter. This largest Toward | in the second se |
| | / Edit Mode Ctri+E | | | Ti - | CTI Pre-Cel Courter CTI Pre-Cel Cel C Value 2010 |
| | | | | CT-0 +5 | Test Chipufi Ci Out) |
| | | | | | -(NOP) |

Step 29: Pasting to your Program Once you have selected the rung and copied it to the clipboard,

① move the cursor down to the next rung in order to paste. The position of the paste will always be one rung above the current cursor position.

⁽²⁾ To paste, select the **Clipboard Icon**, select **Paste** from the <u>Edit</u> menu, or use the key combination **CTRL + V**. Step 2 below shows the pasted rung in position.

Move the cursor up to the pasted rung and start changing the elements. Start by editing the conditional contact so it shows **K6**.

⁽³⁾ When the cursor is on the conditional contact, you can press the **Enter** key and the input window will be opened. Press the tab key to move the cursor to the right. Type in **K6** in place of **K5** and then select the check mark \checkmark .



Next, move the cursor to the end of the pasted rung. With the cursor over the **C1** output element, double click with your mouse. This opens the window for editing the output coil. Change it to **C2**.



You will also want to assign the nickname C2 to "**Test Output2**". Use the key combination **CTRL + D** to bring up the **Documentation Editor**. Follow the steps discussed previously for changing and entering the nickname. When your finished the dialog will show the information given below.

| | | | Ladder V | iew | | - | | | |
|---|--|---|--------------|------------------|-------------|---|--|--|--|
| з | The Count also have bit is used Ten Secor T0 | The Counter CTD will increment one count each time Timer TD reaches its preset. Counters also have associated bits which energize when the counters reach their preset values. This bit is used to make a self-resetting counter. Ten Second Timer TD | | | | | | | |
| | TimeCu | - | Docur | nentation Editor | | | | | |
| | î | | | | | | | | |
| | i i | Element | Nicknami | Wiring Info | Description | 1 | | | |
| | Frs | C2 | Test Output2 | | | | | | |
| | 1 | 03 | | | | - | | | |
| | | C4 | | | | | | | |
| | 1 1 | C5 | | | | | | | |
| | 0710 | CB | | | | | | | |
| 4 | CIAO | C7 | | | | | | | |
| | | C10 | | | | | | | |
| | 1 1 | C11 | | | | _ | | | |
| 5 | CTA0 | C12 | | | | _ | | | |
| | | C13 | | | | _ | | | |
| | | C14 | | | | | | | |
| | | C15 | | | | | | | |
| | | C16 | | | | _ | | | |
| ы | | C17 | | | | | | | |
| | | 630 | | | 1 | | | | |

Step 30: Ending the Program Every program must have a rung with the **END** command. Move your cursor to the far right of the next rung. Press the **F5** key to bring up the **Coil Tab of the Instruction Browser**. Select **Program Control** under **Coil Class** and **END** under **Coils**.



Click on **OK** when you are finished. With the final rung showing the **END** statement, you have now completed the program. Press **F8** to accept the rungs. Finally, click on the **Save to Disk** icon of the toolbar. You are now ready to connect and communicate with your PLC. Move to the next page and see how to download the program to the PLCs memory and test it.

