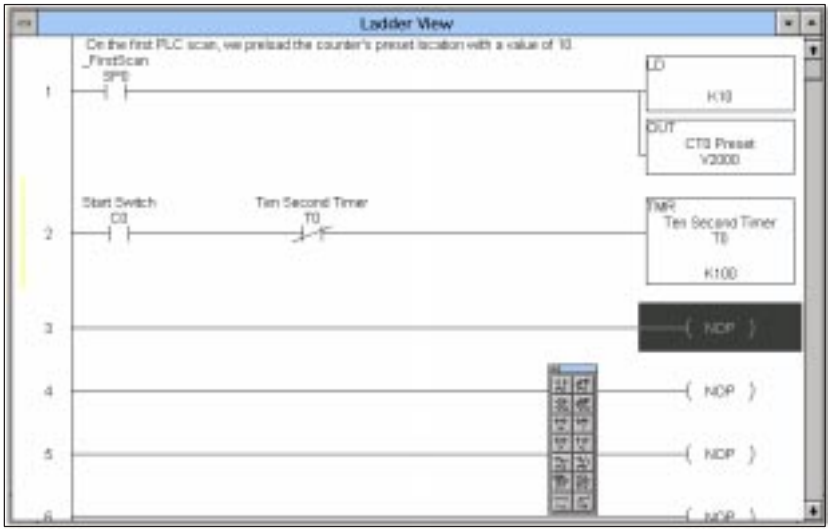
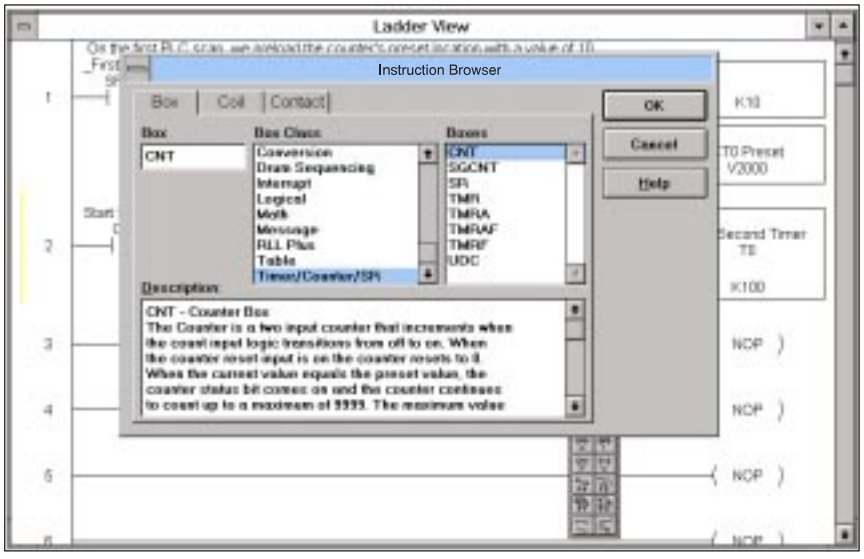
Step 20: Adding the Counter

You are now ready to start the third rung of the example program. You will be inserting the counter **CT0** (a preset was entered at V2000 with the first rung of logic). Move the cursor to the end of the third rung and press the **F7** key to open the **Box Tab** of the **Instruction Browser** again.

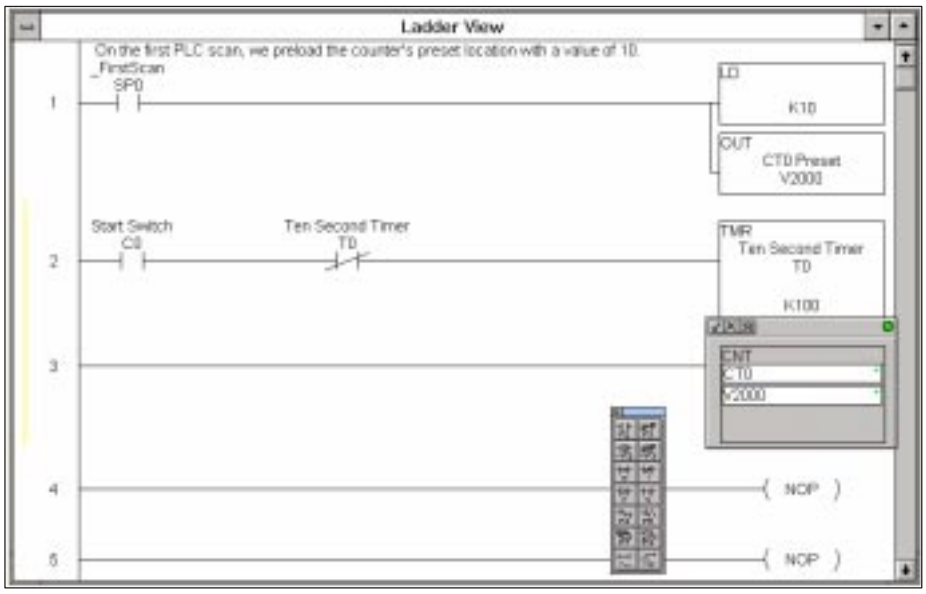


Select **Timer/Counter/SR** from the **Box Class**. Select **CNT** from the **Boxes** window and click **OK**.



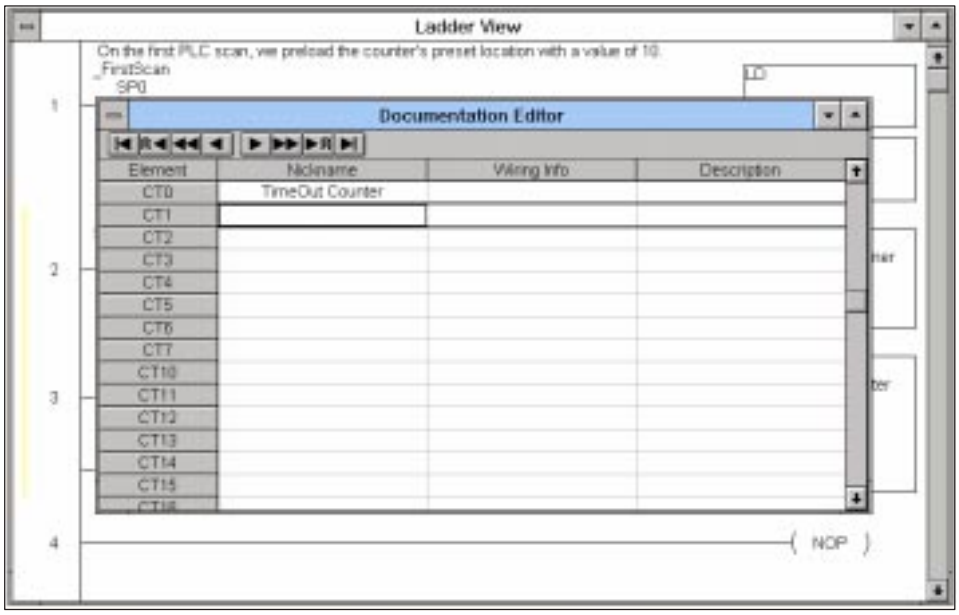
Step 21: Entering the Counter Data

An element window will appear. Enter **CT0** for the counter and **V2000** as the address holding the **preset** data for the counter. Select the check mark when you are finished making the entry.



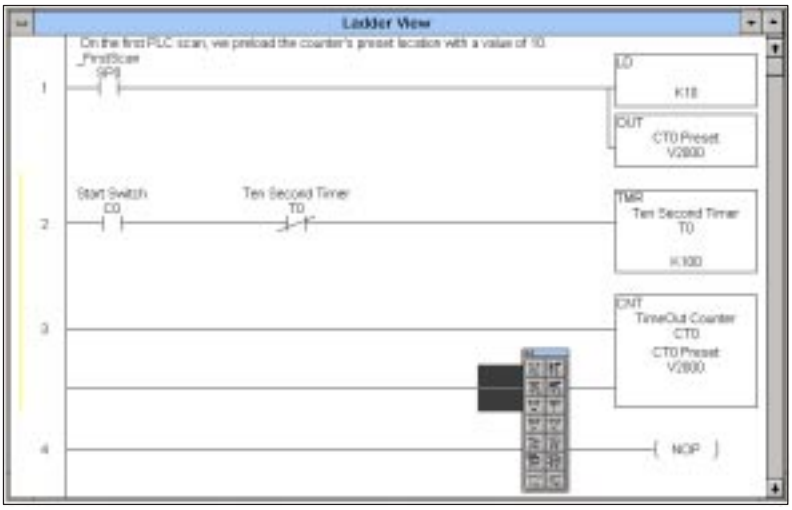
Step 22: Assigning a Nickname to the Counter

Enter the **Nickname** (TimeOut Counter), using the same procedure previously described. Use the key combination **CTRL + D** to bring up the browser.



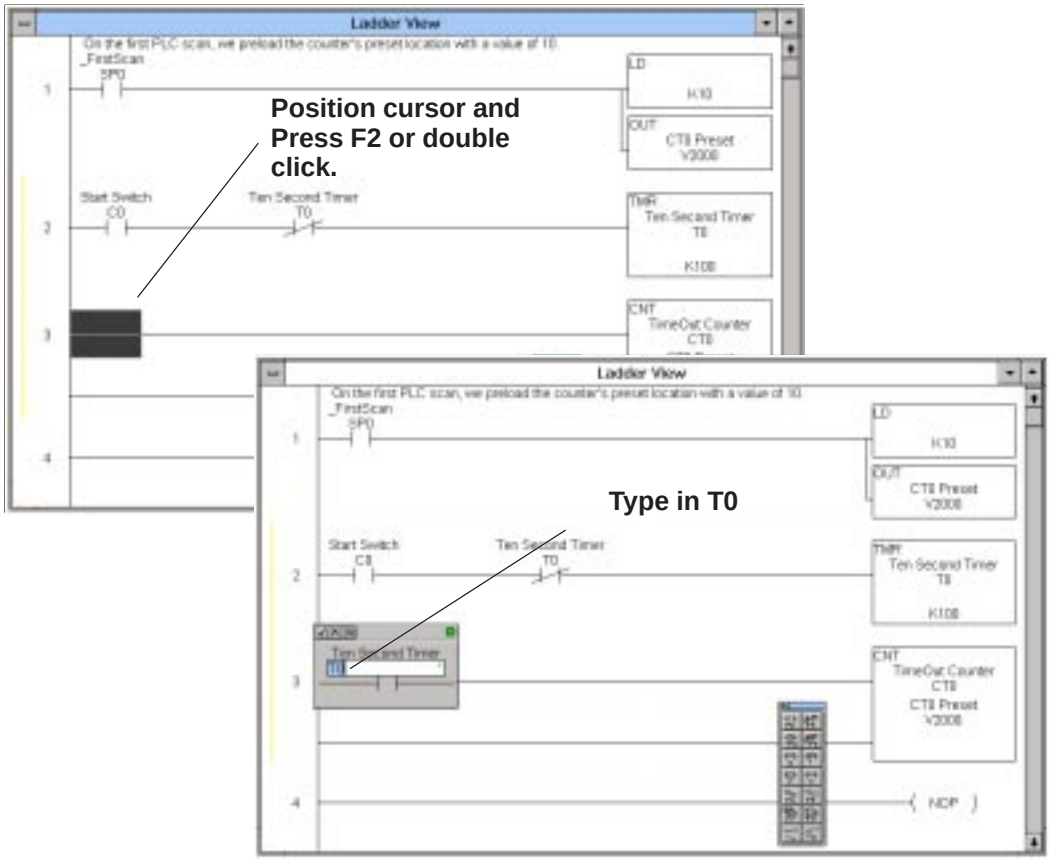
Step 23: Making the Counter Self-Resetting

Close the **Documentation Editor** and return to the rung. You will see the new Nickname, as well as the Nickname (**CT0 Preset**) you had given earlier to the preset memory location V2000.



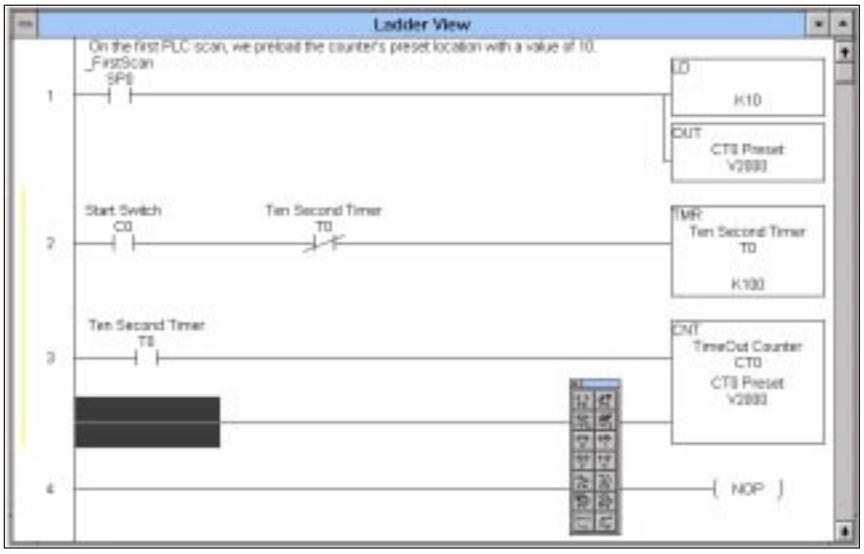
Notice the **CNT** box has two inputs—**count enable** and **reset**. To count the number of times the "done" bit turns ON, the contact for the timer "done" bit (**T0**) on the **count enable** rung needs to be inserted.

With the cursor in the position shown below, enter contact **T0**. Press **F2** to call up the contacts input window. Type in **T0**. Select the check mark when finished.

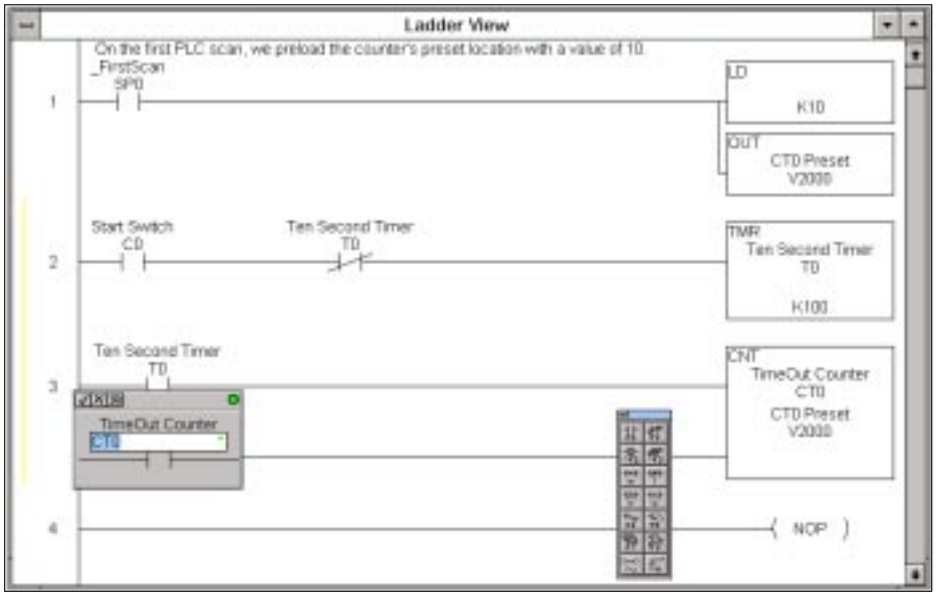


Notice the **Nickname** assigned previously for **T0 (Ten Second Timer)** automatically appears to the first rung of the counter.

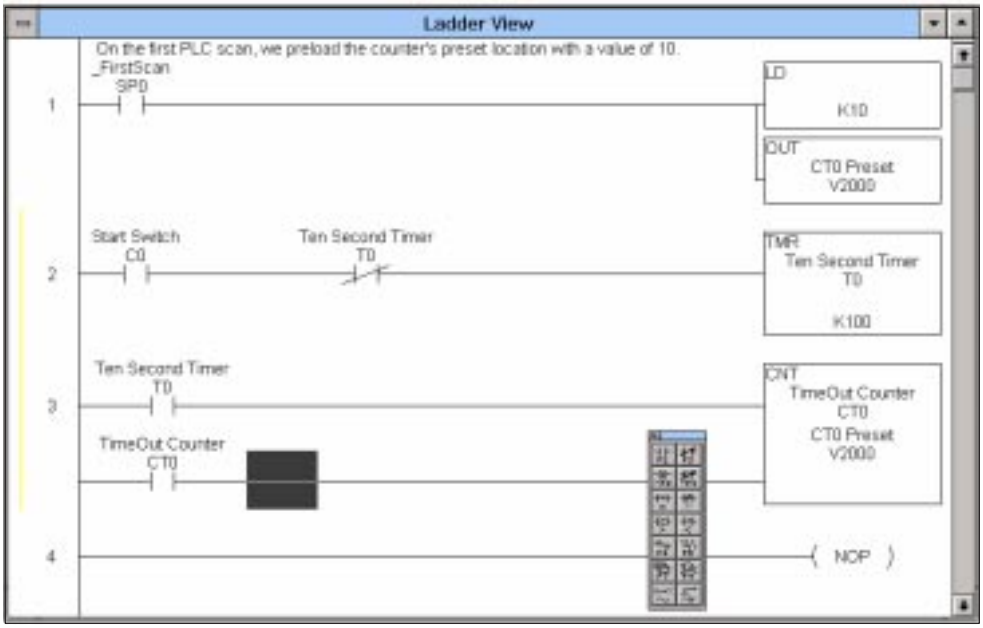
With the count enable rung of the counter completed, move the cursor down to the second rung of the counter to enter the reset logic.



At this point, the reset contact using the counter “done” bit (**CT0**) will be entered so when the counter reaches its preset, it will automatically reset itself to zero. Again, press F2 to bring up the contacts input window. This time type in **CT0**.

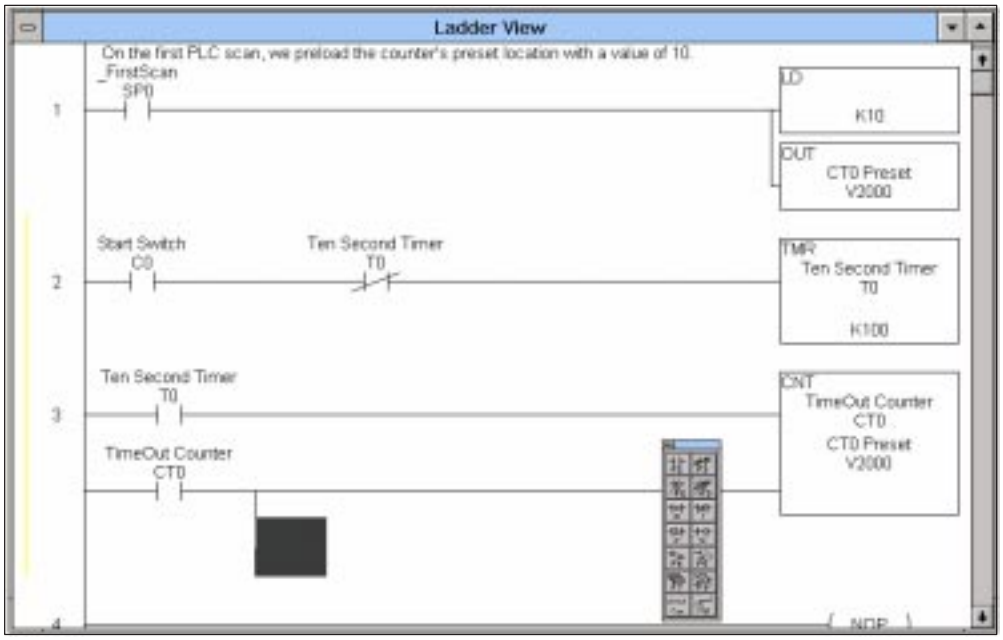


Click on the check mark in the dialog box to return to the rung. Notice the **Nickname** for **CT0 (TimeOut Counter)** is automatically placed above **CT0**.

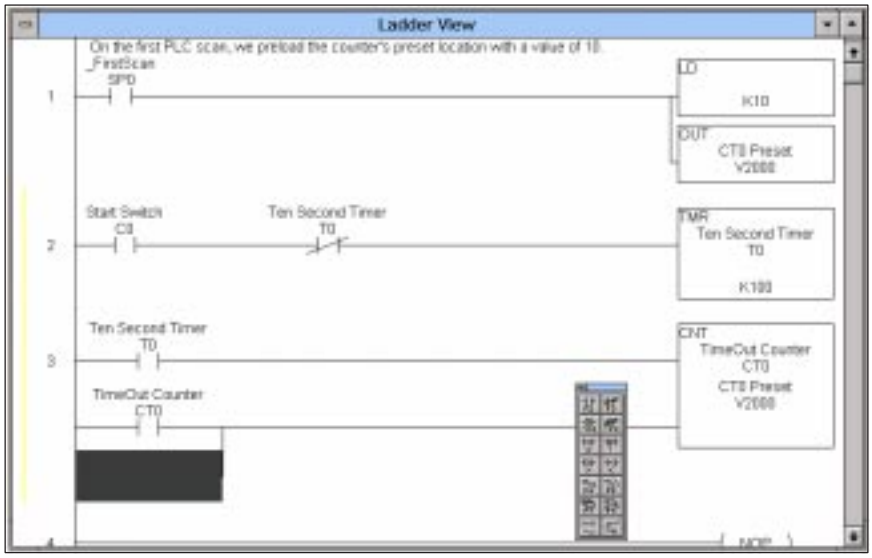


Step 24: Adding a Coil for Resetting on the First Scan

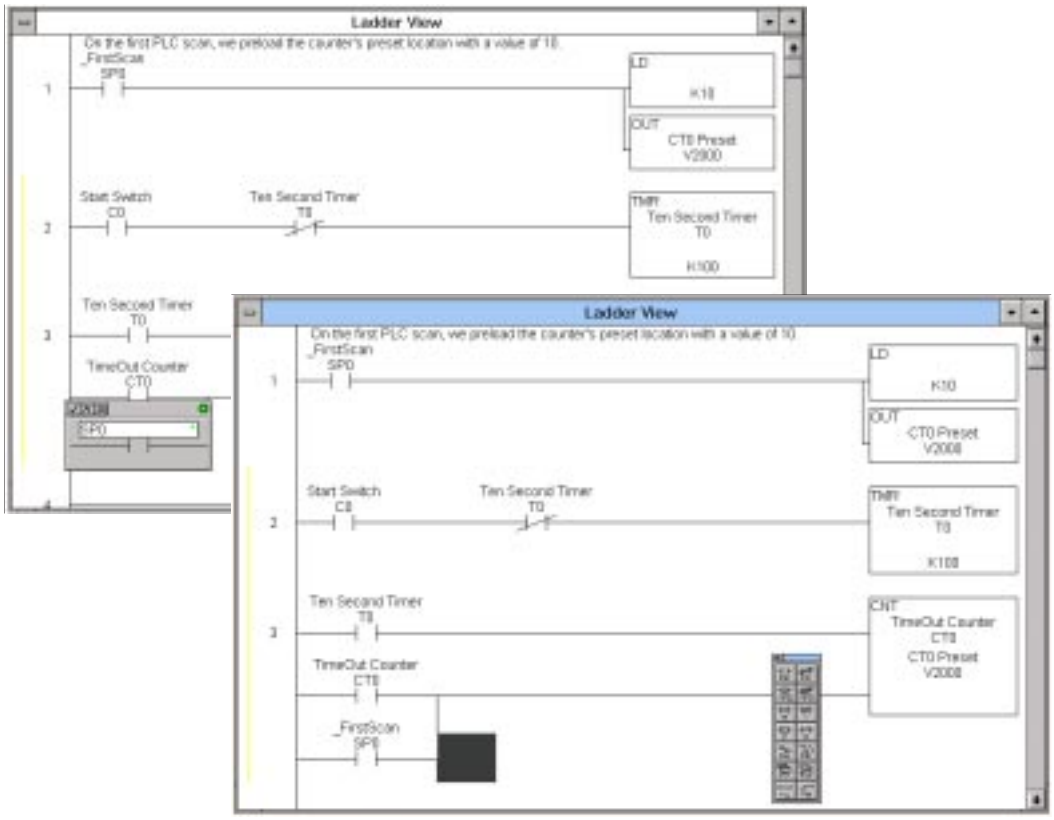
You will want to reset the counter during the first scan. The counter will reset on the first scan by placing special relay **SP0** in parallel with the reset contact **(CT0)**. To place an instruction in parallel with another, first position the cursor to the right of the first instruction and use **CTRL + DOWN ARROW** to place a vertical connecting segment extending downward.



Press the **F2** key to bring up the normally open contact input window.

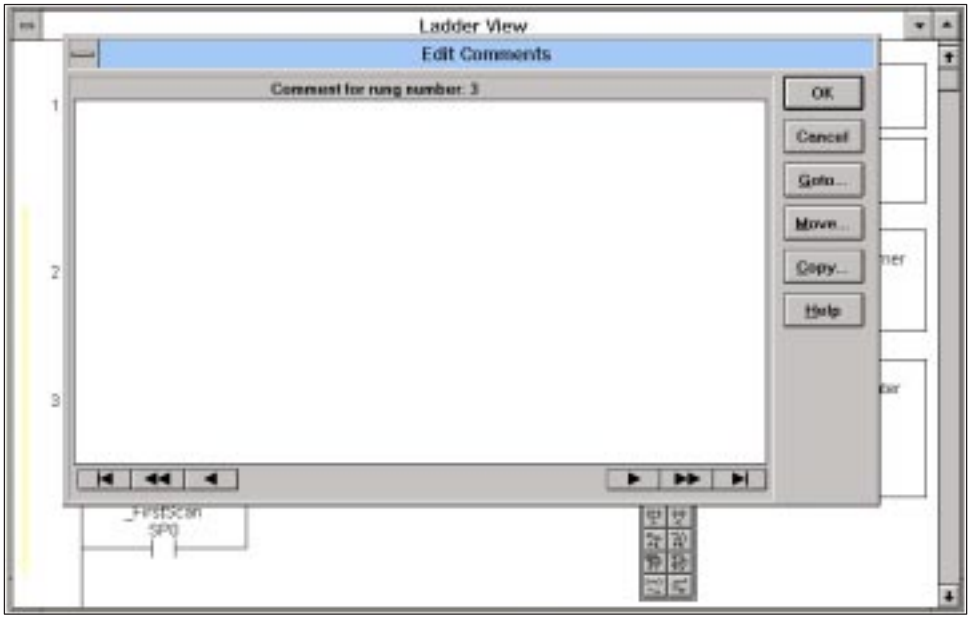


The special contact **SP0** turns **ON** for the first scan will be entered next. You do not have to place a nickname above SP0. The software automatically places **_FirstScan** above it. This is a “system–defined” nickname. You will find a list of special contacts and nicknames in an appendix near the end of your PLC user manual.



Step 25: Documenting the Function of the Counter

In this example, refer to the top rung of the counter and add a comment about the function of **CT0**. You will use the same **Edit Comments** dialog window as in the first rung. This is opened by pressing the shortcut key combination **CTRL + K** or by double clicking anywhere above the rung to which you are adding comments.



Now type in your comments for this part of the ladder logic. When finished, select **OK**.