

PLC126 LAB 2.2: BASIC RELAY INSTRUCTIONS

Student Name: _____

Student ID: _____

LAB OUTCOMES:

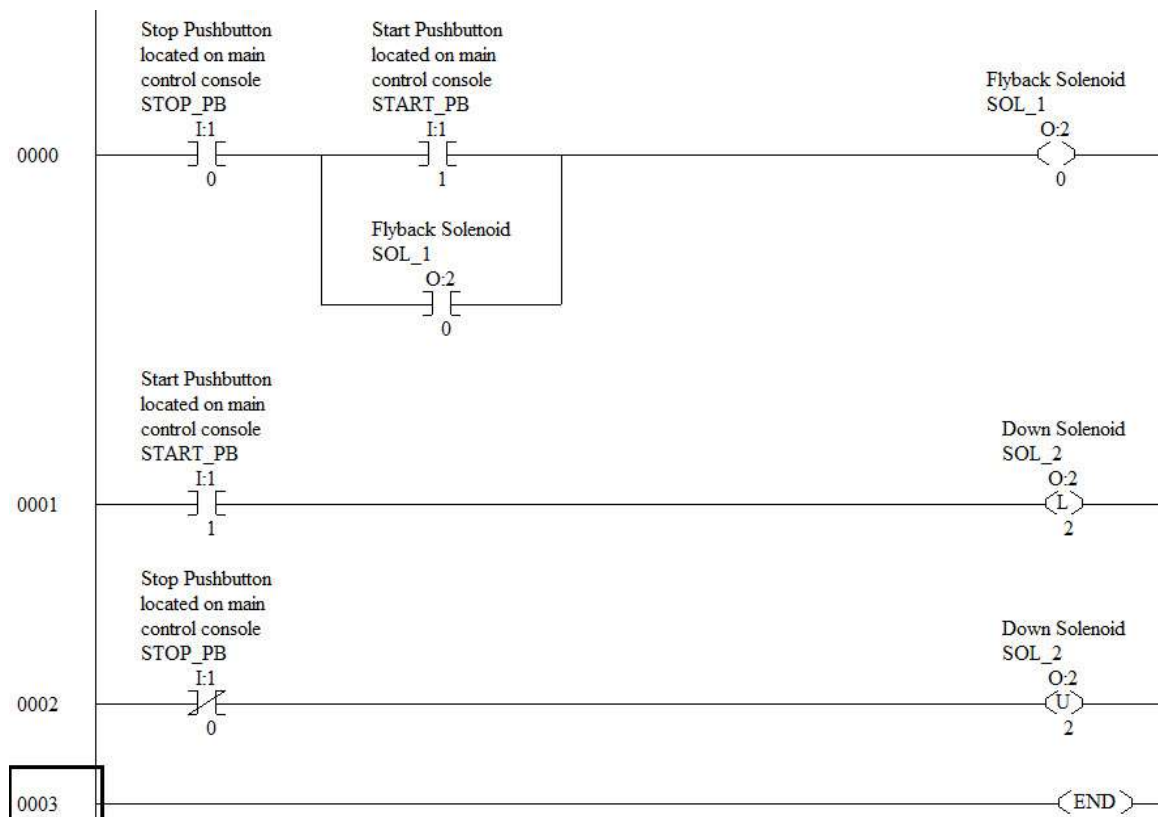
1. Explain the operation of a regular coil
2. Explain the operation of a Latching coil
3. Explain the operation of an Unlatching coil
4. Demonstrate how to turn the address description and symbols on and off
5. Demonstrate how to monitor the image tables using RSLogix500
6. Explain how retentive and non-retentive coils respond after recovery from a loss of power

LAB PROCESS:

Write the program as shown in part 1 and then save it to the hard drive of the computer. You will then download the program to the SLC-500 processor. Once that it is complete you will go online with the SLC-500 and place the processor in RUN mode.

Part 1

1. Key in the following program and save it to the hard drive. Pick a name for the project that you can remember.
2. Download the program to the SLC-500 processor.
3. Go online to the SLC-500 processor and make sure it is in RUN mode.



Part 2

This lab assumes that a Normally Closed wired stop button is wired to input I:1/0. Pull this switch head out (pull to reset stop button I:1/0) to simulate a Normally Closed pushbutton.

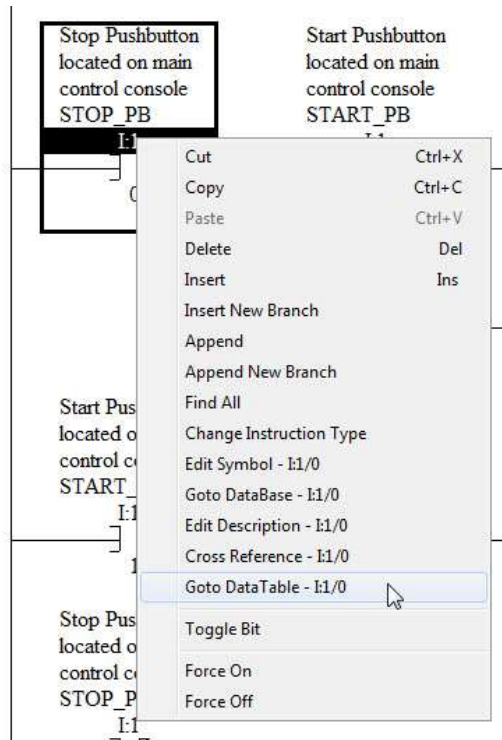
1. Do any instructions (contact or coils) in the program have highlight?
2. Momentarily push or toggle on then off the start pushbutton (input I:1/0). Do both outputs come on?

The **Flyback Solenoid** is held on with a “hold on contact”, and the **Down Solenoid** output is held on with a retentive coil instruction.

When the **Down Solenoid** is on (output O:2/2), are both the latch and unlatch coils highlighted?

Explain?

- Now monitor the input image table with RSLogix by right clicking the mouse while pointing at an input addressed instruction. Choose "Goto Data Table" from the menu. The image table will be shown.



Toggle any input and you should see the corresponding input address go to a "1".



- Toggle the Stop Pushbutton (input I:1/0).

Does output O:2/0 go off? _____ Explain.

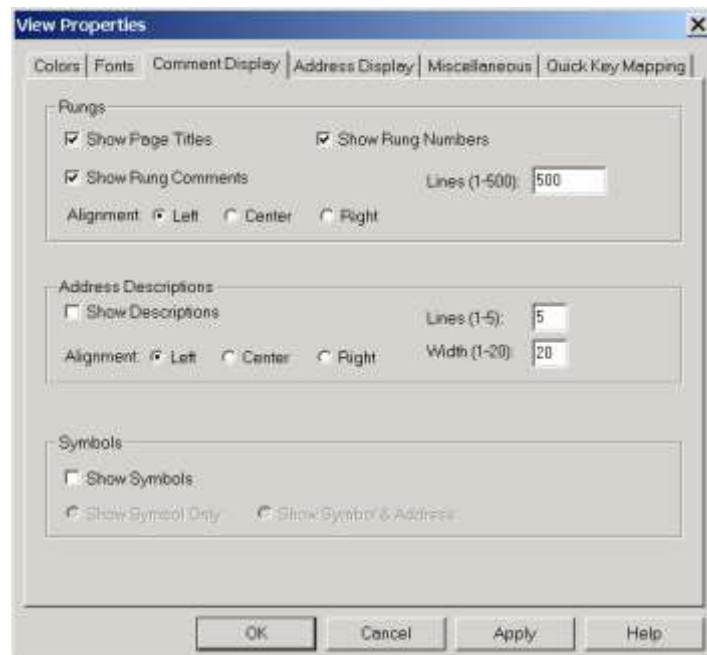
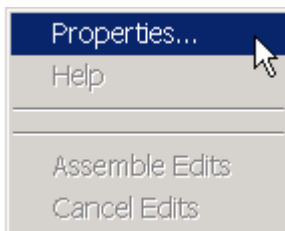
Does output O:2/2 go off? _____ Explain.

5. Push (or toggle) the Start Pushbutton (input I:1/1) to turn the outputs back on. Turn the power supply off that feeds the rack of the SLC-500 to simulate a power outage. Now turn the power to the trainer back on. What is the state of the outputs?

Explain.

6. Turn off the symbols and address descriptions on the ladder display.

Put the mouse pointer in the middle of the ladder display (not on any object). Right click the mouse and choose properties (Left graphic). This will bring up the View Properties menu (Right graphic). Turn off the check box for “Show Descriptions” and “Show Symbols”.



Part 3

1. Design a program that will energize output O:2/4 when any of the three start buttons (I:1/1, I:1/2, and I:1/3) are energized. If the Stop Pushbutton (I:1/0) is pushed or input I:1/7 is actuated the output will shut off. Key in the program and download it to the processor.

Questions

1. What is the Symbol for address O:2/0?
2. What is the Address description for address O:2/2?
3. How does the user get to the menu to turn off the symbols and comments?
4. Why do both the OTL and OTU instructions highlight when the OTL O:2/2 gets power flow?
5. Why in the first rung (Start/Stop configuration) is an XIC instruction used for the stop Pushbutton?

6. What data file is the input image table stored in?

7. What data file is the output image table stored in?

8. What program file is the ladder program stored in?

The outcomes of this exercise (listed on page 1) specifies the skills that the Student must demonstrate to the Instructor. Once the Instructor is satisfied with the demonstration of Knowledge & Skills by the individual student, they will sign this document (for the student), then enter a 100% into the Hands-On Lab grade in Sakai.

I verify that this student has completed all of the requirements of this Hands-On Assessment:

Student Name: _____

Faculty Signature: _____ Date: _____

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