

PLC127 LAB 3.2: BASIC OTE, OTL, AND OTU INSTRUCTIONS

Student Name: _____

Student ID: _____

LAB OUTCOMES:

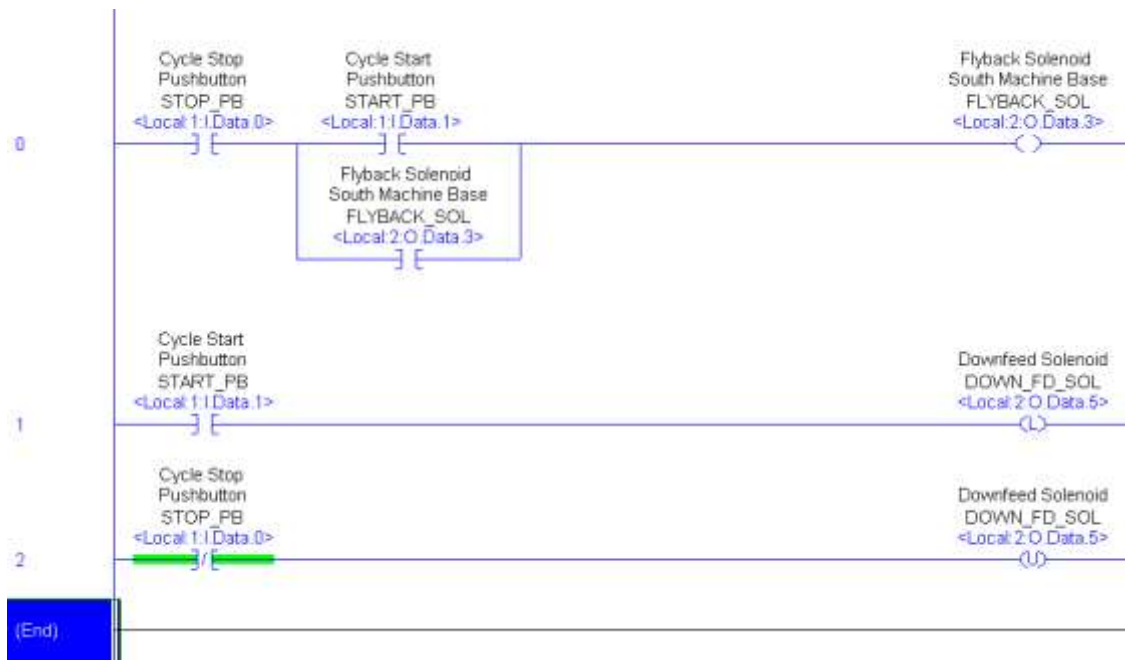
1. Explain the operation of an OTE instruction as compare to the OTL, and OTU instructions
2. Demonstrate how to turn the address descriptions on and off for the ladder program display within RSLogix5000
3. Demonstrate how to monitor the image tables with RSLogix5000
4. Explain how retentive and non-retentive coils respond after recovery from a power loss

LAB PROCESS:

Key in the Alias tags for the Base I/O Tag addresses. Write the program with RSLogix5000 as shown in part 1 and then save it to the hard drive of the computer. You will then download the program to the ControlLogix processor. Once that it is complete you will go online with the ControlLogix and place the processor in RUN mode.

Part 1

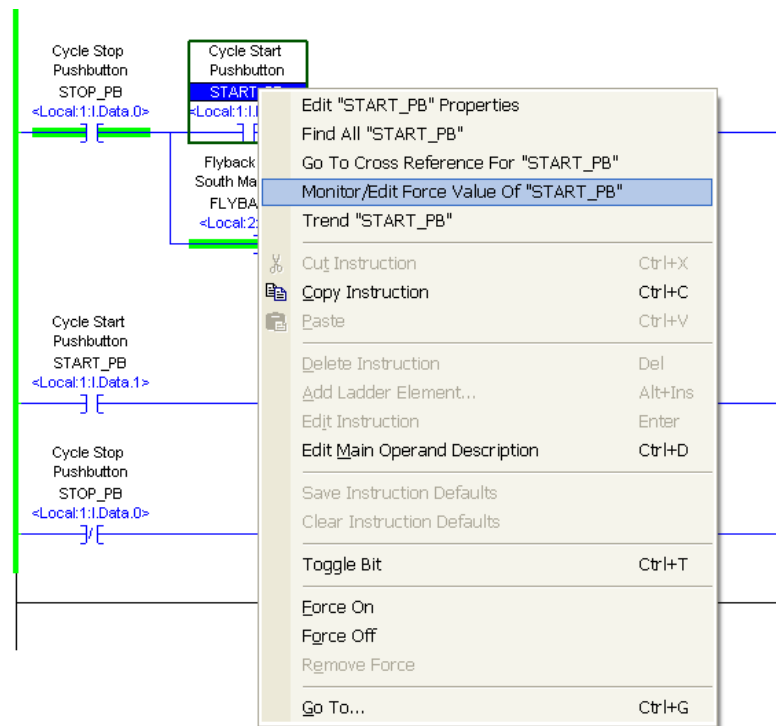
1. Key in the following program and save it to the hard drive. Name the project something you will be able to easily remember.



2. Do any instruction (contacts or coils) have highlight?

Which ones?

3. Momentarily push or toggle on (then off) the **START_PB** (Local:1:I.Data.1).
Do both outputs come on?
4. The **Flyback Solenoid** (Local:2:O.Data.3) is held on with a hold in contact, and the **Down Solenoid** output is held on with a retentive coil instruction.
5. When the **Downfeed Solenoid** (Local:2:O.Data.5) is on are both the latch and unlatch coils highlighted? Explain.
6. Monitor the input tag table with RSLogix5000 by right clicking while pointing the mouse on an input addresses instruction. Choose "Monitor/Edit Force Value of "START_PB"" from the menu.



The data should be shown as in the following graphic.

Scope:	CL_Relay3	Show...	Show All					
Name	Value	Force Mask	Style	Data Type	Description			
DOWN_FD_SOL	1		Decimal	BOOL	Downfeed Solenoid			
FLYBACK_SOL	1		Decimal	BOOL	Flyback Solenoid ...			
+ Local:1:I	{...}	{...}		AB:1769_DI16:I:0				
+ Local:2:C	{...}	{...}		AB:1769_D016:C:0				
+ Local:2:I	{...}	{...}		AB:1769_D016:I:0				
+ Local:2:O	{...}	{...}		AB:1769_D016:O:0				
+ Local:3:C	{...}	{...}		AB:1769_IF4XOF...				
+ Local:3:I	{...}	{...}		AB:1769_IF4XOF...				
+ Local:3:O	{...}	{...}		AB:1769_IF4XOF...				
+ Local:4:I	{...}	{...}		AB:1769_SDN_4...				
+ Local:4:O	{...}	{...}		AB:1769_SDN_3...				
START_PB	0		Decimal	BOOL	Cycle Start Pushb...			
STOP_PB	1		Decimal	BOOL	Cycle Stop Pushb...			

7. Now toggle the **START_PB** input. Does the value change to a "1"?

8. Toggle the Stop Pushbutton (Local:1:I.Data.0)

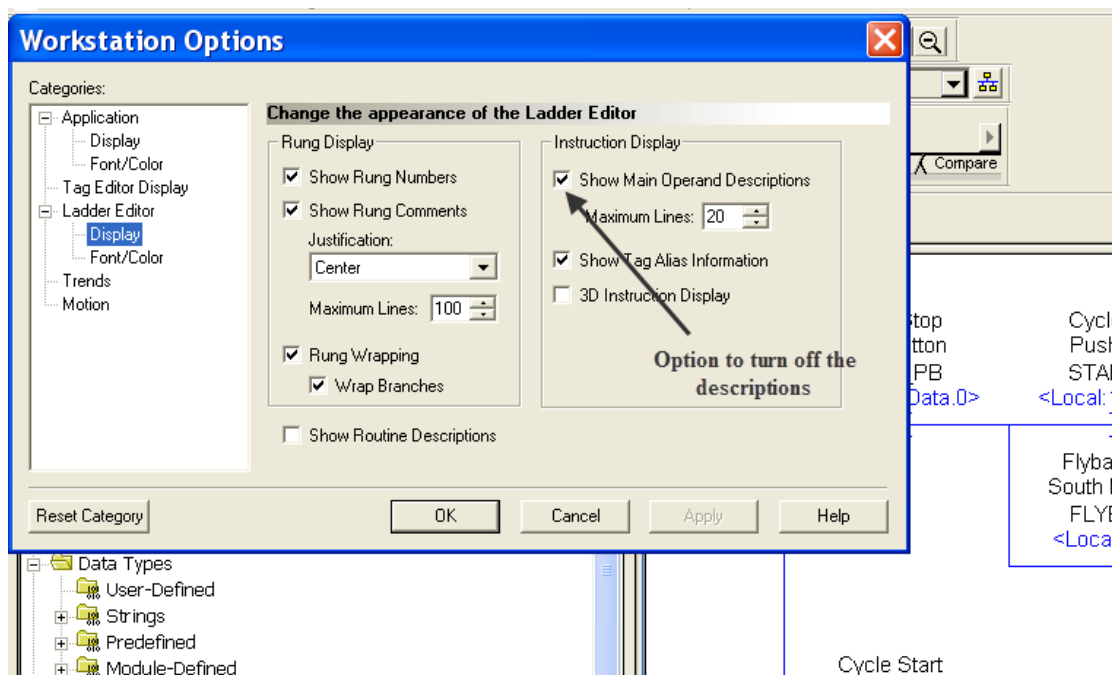
Does the **Flyback Solenoid** go off? Explain.

Does the **Downfeed Solenoid** go off? Explain.

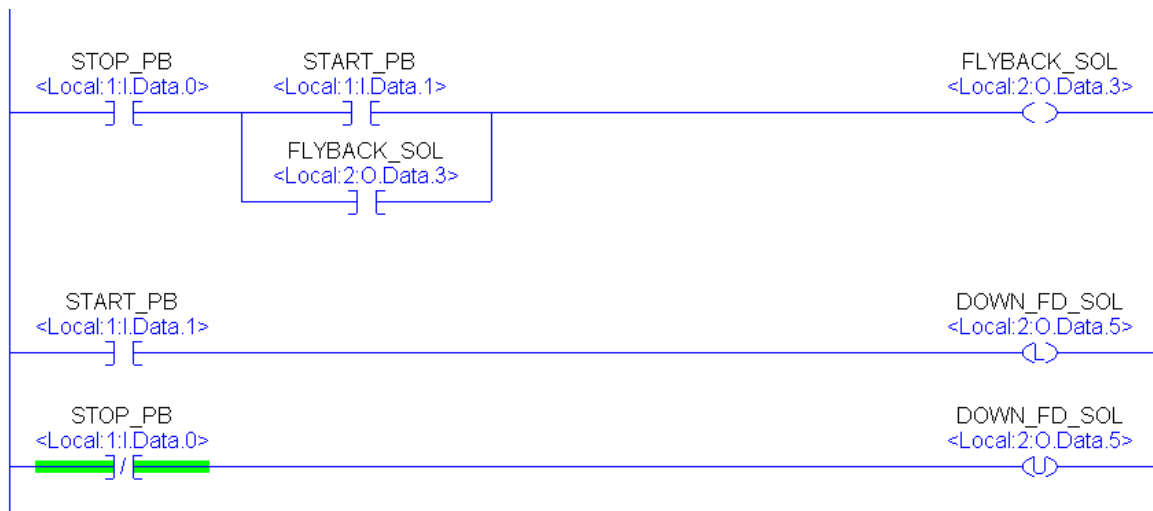
9. Push (or toggle) the **START_PB** tag (Local:1:I.Data.1) to turn the outputs back on.
10. Turn the power supply off that feeds the rack of the PLC to simulate a power outage. Now turn the power back on. What is the state of the outputs? Explain.
11. Turn off the address descriptions on the ladder display. Click on the **"Tools"** pull down menu and choose **"Options"** for program display options.



Uncheck the **"Show Main Operand Descriptions"**, then click apply or OK.



The ladder program should be displayed as below.



Now turn the descriptions back on.

Program

1. Design a program that will energize output O:000/04 when any of three start buttons (I:000/02, I:000/03, and I:000/04) are energized. If the Stop Pushbutton (I:000/00) is pushed or input I:000/07 is pushed, the output will shut off. Download the program to the PLC processor and place it in Run Mode.

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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