

# PLC125 LAB 2.3: REVERSING CIRCUITS, PROXIMITY, AND PHOTOELECTRIC SWITCHES

Student Name: \_\_\_\_\_

Student ID: \_\_\_\_\_

## LAB OUTCOMES:

Upon completion of this lab procedure, the student should be able to:

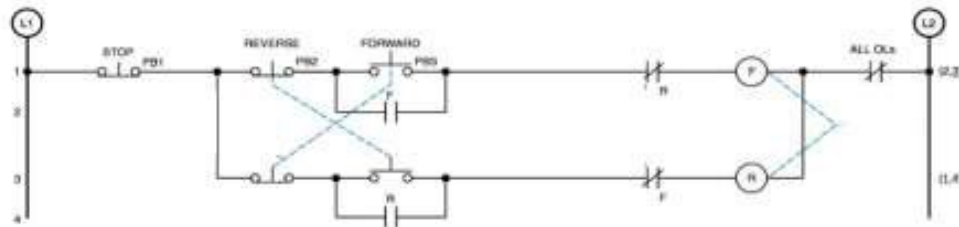
1. Interpret the cut-sheet wiring diagram for various switches.
2. Interpret electrical prints with a motor reversing power control circuit.
3. Wire a switch in a control circuit.
4. Adjust a photo-electric switch sensitivity
5. Define basic terms relating to switches

## LAB PROCESS:

Set up NSCC 120VAC wiring board. Setup the unit on its base, or lay flat on the work table.

### Part 1:

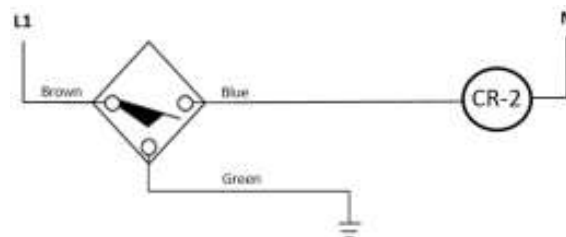
1. Correlate all of the IEC reversing starter components to the electrical print from the following diagram.



2. Wire the above control circuit and demonstrate the operation.
3. Explain how the circuit operates
4. Explain the mechanical and electrical interlocks.

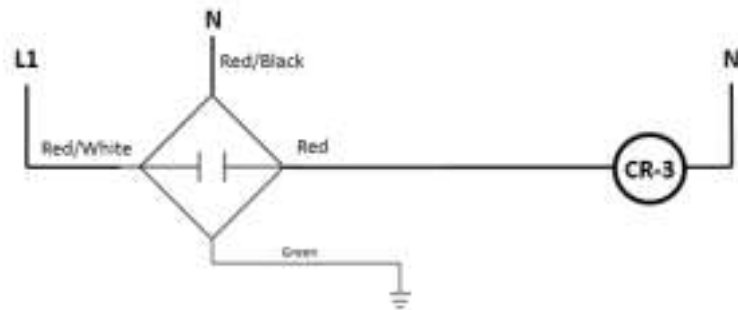
## Part 2:

1. Interpret the cut sheet for the 120VAC proximity switch used on the NSCC trainer.
2. Wire the 120VAC proximity switch to turn on one of the ice cube relay coils on the NSCC wiring trainers when it senses a metal object.



## Part 3:

1. Interpret the cut sheet for the 120VAC photo-electric switch used on the NSCC trainer.
2. Wire the 120VAC photo-electric switch to turn on one of the ice cube relay coils on the NSCC wiring trainers when it senses an object coming closer to it.



3. Explain how to adjust the photo-electric switch to sense an object at a variable distance.
4. Explain the following terms when using a photo-electric and proximity switch:
  - a. Inductive proximity switches
  - b. Capacitive proximity switches
  - c. Light activated photo-electric switches
  - d. Dark activated photo-electric switches
  - e. NPN for DC circuits
  - f. PNP for DC circuits

*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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