0617-470 and 870 Controls for Manufacturing Automation

Department of MMET-PS

Rochester Institute of Technology

Laboratory Exercise #2

Objective:

The objective of this laboratory exercise is to create a PLC program to understand the use of **NO and NC Contacts**. You will be using a NO Selector Switch to initiate the motor, and two NO Momentary Push Buttons to start the motor. The NO Selector Switch will be used to Stop the motor. The NC Momentary Push Button will be used to pause the motor.

Tasks to be accomplished:

1. The Green light should turn ON after a NO Selector Switch is turned ON.
2. The DC motor should turn when the NO Selector Switch is turned ON and Both of the NO Momentary Push Buttons are pressed at the same time.
3. The Motor should Stop and the green Light should turn off and the Red light should turn on when the NC Momentary Push Button is pressed.
4. If the either of the NO Momentary Push Buttons are pressed the DC motor and the Green light should turn on and the Red light should go off.
5. If the NO Selector Switch is turned OFF then all lights and the motor should turn off, and everything should reset.

Input/Output Listing for the Experiment:

	Inputs/Outputs	PLC
Inputs	NO Selector Switch	Local:5:I.Data.20
	NO Momentary Push Button	Local:5:I.Data.16
	NO Momentary Push Button	Local:5:I.Data.17
	NC Momentary Push Button	Local:5:I.Data.18
Outputs	Motor	Local:6:O.Data.30
	Red light	Local:6:O.Data.30
	Green Light	Local:6:O.Data.22

Hand Written Program: (Write the ladder rung that will perform each task given below – rungs for each task)

1. The Green light should turn ON after a NO Selector Switch is turned ON.

2. The DC motor should turn when the NO Selector Switch is turned ON and Both of the NO Momentary Push Buttons are pressed at the same time.

3. The Motor should Stop and the green Light should turn off and the Red light should turn on when the NC Momentary Push Button is pressed.

4. If the either of the NO Momentary Push Buttons are pressed the DC motor and the Green light should turn on and the Red light should go off.

5. The Fan should be turned OFF when the DC motor is stopped.

What needs to be submitted?

1. Test the program and show the demo to the instructor in the lab (only for on campus students).
2. A well documented functional PLC program, containing all tasks, should be submitted in hard copy. (You should have tested the program and had it signed off before submission)