Hydraulics & Pneumatics

Chapter 4: PLC
(LAB #4)

by
Dr. Mohd Fadzil Faisae
Faculty of Mechanical Engineering
ffaisae@ump.edu.my

Objective

- By the end of lab, students should be able:
  - To familiarize with actual PLC programming
  - To familiarize with method to setup communication between PLC software and hardware
  - To familiarize with method to download PLC program from PC to PLC

Instruction

- The student will make a PLC program for Siemen PLC using MicroWin STEP 7 software. The input and output address are given as below.

I/O	Input	Output	Note
Green button (G)	I0.0	Q0.0	The I0.0 will activate when the G button is pressed. When the Q0.0 activated, the green light will turn on. Its also same for the others I/O.
Red button (R)	I0.1	Q0.1	
Yellow button (Y)	I0.2	Q0.2	

Instruction

- Select an experiment based on your group number. Design a ladder diagram to turn on and off the given button light by following the given sequences.

Instruction

Experiment	Sequence
A	1. Press G 2. G on 3. Y on 4. R on 5. Sequence 2 until 4 run continuously until press R
Experiment	**Sequence**
B	1. Press G 2. G on 3. GY on 4. GYR on 5. GYR off 6. Press G to restart

Instruction

- Draw the ladder diagram
- Download your program to the Siemen PLC. Test the program

Discussion

- Describe the steps that were used to design ladder diagram to ensure its working
- What are safety precautions that need to be taken before downloading the program to PLC?
- Explain the troubleshooting procedure that required if your program is not working,

Conclusion

- Conclude the experiment in relation with experiment objectives