Title: **ESTOP/Stop/Start of a Single-Phase Motor Circuit** Job: 8

Course: Introduction to Automation Unit: Introduction of PLC CLO: 4

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Station \_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Objectives**

1. Student shall reinforce their knowledge of a stop/start motor control circuit.
2. Student shall develop a knowledge of timers and their use.
3. Student shall apply this circuit in a motor control scenario.

**Assessment**

Students shall demonstrate a comprehension of the objectives listed above by scoring a minimum of 75% on this shop job. Grading shall be based on the Introduction to PLC rubric.

**Devices**

|  |  |  |
| --- | --- | --- |
| Inputs | | |
| *Device* | *Description* | *Symbol* |
| NC Mushroom Head Pushbutton (ESTOP) | Emergency Stop | ESTOP |
| NC Pushbutton (PB1) | Stop Motor | STOP |
| NO Pushbutton (PB2) | Start Motor | START |
| Control Relay Contacts | Motor Status | CR1\_STAT |
| Outputs | | |
| *Device* | *Description* | *Symbol* |
| Green Pilot Light | Motor Running | RUNNING |
| Red Pilot Light | Motor Stopped | STOPPED |
| 8-Pin 24VDC Control Relay | Motor Control | CR1 |

**Instructions**

Design a stop/start motor control circuit using two momentary pushbuttons. The circuit will also utilize a latching mushroom head pushbutton to act as an “ESTOP” as well. Whenever the motor is running, the green light shall come on and the red light shall be off. When the motor is not running, the green light shall be off and the red light shall be on. If the ESTOP is pressed, the motor shall stop and not be able to be restarted until the “ESTOP” is disengaged. Use the space on the opposite side of this page to design the circuit. Once complete, review the design with the instructor. After obtaining approval, configure the program in RSLogix 500. Have the instructor review the program before downloading. Once the program has been reviewed, verify and download the program.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

1. Discuss the design with the instructor. Instructor Initials \_\_\_\_\_\_\_
2. Configure, verify the program in RSLogix 500.
3. Have instructor review the program before downloading. Initials \_\_\_\_\_\_\_
4. Review running program with instructor. Initials \_\_\_\_\_\_\_
5. Wire motor into circuit. Have instructor review wiring. Initials \_\_\_\_\_\_\_
6. Final test of motor reviewed by instructor. Initials \_\_\_\_\_\_\_