Title: **Sealing and Unsealing with ESTOP Circuit** Job: 8

Course: Intro to Automation Unit: Manual Motor Control CLO: 2

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Grade \_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Objectives**

1. Student shall identify the function of a latching mushroom head (ESTOP) pushbutton.
2. Student shall classify input components that “break” the circuit versus input components that “make” the circuit.
3. Student shall develop a foundation for creating a complete motor control circuit.

**Assessment**

Students shall demonstrate a comprehension of the objectives listed above by scoring a minimum of 75% on this Job. Grading shall be based on the Manual Motor Controls rubric.

**Materials**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Inputs | | | Outputs | | |
| Q | Input Device | Function | Q | Input Device | Function |
| 1 | Mushroom head PB | ESTOP | 1 | Green Pilot Light | Energized |
| 0 | 3P selector switch |  | 0 | Yellow Pilot Light |  |
| 0 | 2P selector switch |  | 1 | Red Pilot Light | De-energized |
| 1 | NC Pushbutton | Unseal | 0 | Blue Pilot Light |  |
| 1 | Dual Pushbutton | Seal | 1 | Eight-pin relay | CR1 |
|  |  | | 0 | Eleven-pin relay |  |

**Instructions**

Design a sealing/unsealing circuit using the two momentary pushbuttons listed above. The circuit will also utilize a latching mushroom head pushbutton to act as an “ESTOP”. Whenever the circuit is “sealed”, the green light shall come on and the red light shall be off. When the circuit is “unsealed”, the green light shall be off and the red light shall be on. If the ESTOP is pressed, both lights shall be off. Use the space below to design the circuit. Once complete, review the design with the instructor. After obtaining approval, wire the circuit. Ensure to label all wires with the appropriate wire numbers. Have the instructor review the wiring before energizing the circuit. Render the schematic using a CAD type software package. Post the schematic to your *student share* folder using filename *MMC Job 8 –name.ext.*

**Diagram**

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Discussed design \_\_\_\_\_\_\_\_ Checked wiring \_\_\_\_\_\_\_\_ Energized Test \_\_\_\_\_\_\_\_