Title: **Stop-Start-Jog using Selector Switch for 1P Motor** Job: 11

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

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

**Objectives**

1. Student shall design a motor control circuit for a single-phase motor.
2. Student shall develop motor control circuit design skills.
3. Student shall construct a basic single-phase 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 Control rubric.

**Materials**

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| --- | --- | --- | --- | --- | --- |
| Inputs | | | Outputs | | |
| Q | Input Device | Function | Q | Input Device | Function |
| 1 | Mushroom head PB | ESTOP | 1 | Green Pilot Light | RUNNING |
| 0 | 3P selector switch |  | 0 | Yellow Pilot Light |  |
| 0 | 2P selector switch |  | 1 | Red Pilot Light | STOPPED |
| 1 | NC Pushbutton | STOP | 0 | Blue Pilot Light |  |
| 1 | Dual Pushbutton | START | 1 | Eight-pin relay | Motor Control |
|  |  | | 0 | Eleven-pin relay |  |

**Instructions**

Design a stop/start motor control circuit with an ESTOP using the components listed above. When the START button is depressed, the motor shall start. When the start button is released, the motor shall remain running until either the STOP button, or the ESTOP button is depressed. Whenever the motor is running, the green light shall illuminate 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 illuminate. If the ESTOP is pressed, both lights shall be off. The motor control relay shall be connected to both DC, for control signals, and AC, to start/stop the motor. Ensure that all voltages are separated. 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, wire the circuit. Ensure to label all wires with the appropriate wire numbers. Have the instructor review all wiring before energizing the circuit. Render the schematic using a CAD type software package. Post the schematic to the *student share* folder using filename *MMC Job 11 –name.ext.*

**Graphic**

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