Title: **Stop-Start-Jog using Three Pushbuttons for 1P Motor** Hands-On: 3

Course: Intro to Automation Unit: Manual Motor Control CLO: 1, 2

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

**Objectives**

1. Student shall demonstrate how a stop/start motor circuit can be converted to a jogging circuit using a third dual action pushbutton.
2. Student shall demonstrate circuit design and building skills.

**Assessment**

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

**Devices**

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| Inputs | | |
| *Device* | *Description* | *Symbol* |
| Normally Closed Pushbutton | Stop Button | STOP |
| Normally Open Pushbutton | Start Button | START |
| Dual Action Pushbutton | Start Button | JOG |
| Outputs | | |
| *Device* | *Description* | *Symbol* |
| Green Pilot Light | Motor Running | RUNNING |
| Red Pilot Light | Motor Stopped | STOPPED |
| Eight-Pin 24VDC Relay | Motor Control | MC3 |
| 120VAC Motor | Motor | M3 |

**Instructions**

Design a stop/start/jog motor control circuit using the devices listed above. One pushbutton shall be a START button. When the START button is pressed, the motor shall start and continue to run even if the button is no longer pressed. If the STOP button is pressed, the motor shall stop. If the dual action pushbutton, a JOG button, is pressed the motor shall only run for as long as the button is being held down. Once the JOG button is released, the motor shall stop running. While the motor is running, the green light shall illuminate, 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. Use the space on the opposite side of this page to design the circuit. Once complete, it is not necessary to review the design with the instructor. Any instructor assistance during the design of the circuit shall be a points deduction based on the Manual Motor Control rubric. After completing the design, the circuit may be wired. Ensure to label all wires with the appropriate wire numbers. Have the instructor review all wiring before energizing the circuit.

**Graphic**

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