Title: **Time-On Delay for 3P Motor** Hands-On: 7

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

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

**Objectives**

1. Student shall demonstrate the operation of a Time-On Delay relay.
2. Student shall showcase their motor control design 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* |
| Mushroom Head Pushbutton, NC | Emergency Stop | ESTOP |
| Normally Closed Pushbutton | Stop Motor | STOP |
| Normally Open Pushbutton | Start Button | START |
| Outputs | | |
| *Device* | *Description* | *Symbol* |
| Green Pilot Light | Motor Running Forward | RUNNING |
| Red Pilot Light | Motor Stopped | STOPPED |
| Yellow Pilot Light | Motor Overload | OVERLOAD |
| 8-pin 24VDC On-Delay Relay | Motor Run Delay Timer | TON |
| 3-phase Motor Starter, with 2 NO, 2 NC auxiliary contacts | Motor Starter | MS2 |
| 208VAC/3P Motor | Three-phase AC Motor | M2 |

**Instructions**

Design a time delay motor control circuit using the devices listed above. One pushbutton shall be a START button. When the motor is energized, it shall run for 15 seconds then shut off. This shall be done using an On-Delay relay in conjunction with a three-phase motor starter. The other pushbutton shall be a STOP pushbutton. The green light shall indicate RUNNING, the red light shall indicate STOPPED and the yellow light shall indicate OVERLOAD. Use the space on the opposite side of this page to design the circuit. Once complete, is not necessary to review the design with the instructor. Any instructor assistance during design shall be subject to a points deduction based on the Manual Motor Control rubric. Wire the circuit ensuring 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 Hands-On 7 – name.ext.*

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