Title: **Fwd-Rev-Jog using 3 PBs and 3P-SS for 3P Motor** Job: 26

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

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

**Objectives**

1. Student shall develop a further understanding of reversing a motor.
2. Student shall enhance motor jogging design skills.
3. Student shall enhance knowledge base for creating proficient motor control circuits.

**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.

**Devices**

|  |  |  |
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| Inputs | | |
| *Device* | *Description* | *Symbol* |
| Three-position Selector Switch | Direction, Forward or Reverse | DIR |
| Normally Closed Pushbutton | Stop Motor | STOP |
| Normally Open Pushbutton | Start Button | START |
| Dual Action Pushbutton | Jog Button | JOG |
| Outputs | | |
| *Device* | *Description* | *Symbol* |
| Green Pilot Light | Motor Running Forward | FORWARD |
| Red Pilot Light | Motor Stopped | STOPPED |
| Yellow Pilot Light | Motor Overload | OVERLOAD |
| Blue Pilot Light | Motor Running Reverse | REVERSE |
| 3-phase 24VDC Motor Starter | 3-phase Motor Starter, Forward with 2 NO, 2 NC auxiliary contacts | MS1\_F |
| 3-phase 24VDC Motor Contactor | 3-phase Motor Contactor, Reverse with 2 NO, 2 NC auxiliary contacts | MS1\_R |
| 208VAC/3P Motor | Three-phase AC Motor | M1 |

**Instructions**

Design a forward/reverse/jog motor control circuit the devices listed above. One pushbutton shall be used to START the motor. Motor rotation shall be based on the three-position selector switch. Another pushbutton shall be used as a JOG button, much like the START but without the sealing action. The remaining pushbutton shall be a STOP button. The three-position selector switch shall determine if the motor is to rotate “forward” (CCW) or “reverse” (CW). If the motor is running and the selector switch is changed, the motor shall stop running. The operator shall have to press the “start” button to engage the motor in the newly selected direction. The green light shall indicate FORWARD, the blue light shall indicate REVERSE, the red light shall indicate STOPPED and the yellow light shall indicate OVERLOAD. Once complete, review the design with the instructor. After obtaining approval, wire the circuit. 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 26 – name.ext.*

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