**Unit: Manual Motor Controls Job: 19**

**Title: ESTOP/Stop/Start with Overload Circuit for 3-Phase Motor CLO# 1,2**

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Station \_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Objectives**

1. Establish the use of a motor overload in controlling a three-phase motor.
2. Define the connections to a motor contactor, overload and auxiliary contacts and their terminal numbers.
3. Differentiate between fuse or circuit breaker protection verses that of a motor overload.

**Assessment**

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

**Instructions**

Design a stop/start motor control circuit using two momentary pushbuttons. The circuit will also utilize a latching mushroom head pushbutton to act as an “ESTOP” as well. This circuit shall include overload protection for the motor. If the motor experiences an overload condition, power to the motor shall be disconnected and the control logic shall de-energize the motor starter. The green light indicates the motor is running, the yellow light indicates an overload condition and the red light indicates that the motor is stopped (regardless off ESTOP or stop button being pressed) If the ESTOP is pressed, the motor shall stop. Use the space on the opposite side of this page to design your circuit. Once complete, review your design with you instructor. After obtaining approval, you may wire your circuit. Ensure to label all wires with the appropriate wire numbers. Have your instructor review your wiring before energizing your circuit.



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Render the schematic you designed using a CAD type software package on a classroom PC. Once complete, post the schematic to your student network folder using filename MMC Job 19 – *username.ext*