Connecting 3-Phase Lab

Program: Electrician Technician

Course: EL170 – Motor and Industrial Controls

Objectives: Under the supervision of your instructor, you should be able to do the following:

- Correctly interpret the diagrams provided for installation.
- Wire all components according to the ladder diagram.
- Mount a stop/start station, relay, and light base.
- Test circuit for proper operation and troubleshoot as required.
- Ensure that all nine T-leads are disconnected.
- Label all connections.

Required Tools:

- 1 – Phillips's screwdriver
- 1 – Flathead screwdriver
- 1 – Pair of diagonal cutters
- 1 – Pair of wire strippers

Materials:

- 1 – 3 phase motors.
- 1 – Allen Bradley Contactors.
- 1 – Start / Stop switches.

Safety (PPE):

- Safety glasses/goggles

Resources: N/A

Required Time: 180 minutes

Shop Maintenance:

- All work will cease 20 minutes prior to the end of class.
- All work areas must be cleaned.
- Tools and equipment must be cleaned and returned to the designated areas (cage, tool room, cabinets etc.)
- Any broken or missing tools must be reported immediately.
- Tools and equipment are students' responsibility.

Procedure:

1. Turn the power off for the entire system. Switch it off from the system's circuit breaker.
2. Create a ladder logic diagram for proper operation
3. Wire start / stop switch based on ladder diagram.

4. Connect all Allen Bradley contactors per ladder logic diagram.
5. Wire a three-phase motor for high voltage using nameplate values.
6. Next wire three phase motor for low voltage use nameplate values.
7. Plug motors into the outlets, turn on circuit breakers.
8. Test the functionality.