Motor Controllers and process Controllers Lab

Program: Electrician Technician

Course: EL- 170- Motor and Industrial Motor Controls

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

- Connect a transformer step down 120VAC/12 VAC
- Connect a solid-state cycle relay 2601SA.
- Connect two lamps to simulate two electrical motors

Lab Equipment:

- 1- One transformer 120 VAC input and 24/12 VAC output
- 1- 2601SA DIP Switches adjustable Off/on cycle timer coil 24 VAC
- 1 – Digital Multi meter

Required Tools:

- 1 – Screwdriver flathead
- 1 – flathead Phillips
- 1 – Pair of strippers
- 1 – Crimper tool
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Materials:

- 2’ - #14 AWG THHN black
- 2’ - #14 AWG THHN blue
- 2’ - #14 AWG THHN green
- 2’ - #14 AWG THHN white
- 1 – Terminal board
- 1 – Set of female disconnect terminals
- 1 – Set of male disconnect terminals
- 1 – Set of twist-on wire connectors
- 1 – fuse 1 amps
- 2 – Lamps 130 volts

Safety (PPE):

- Safety glasses/goggles

Resources: N/A

Time required: One Day

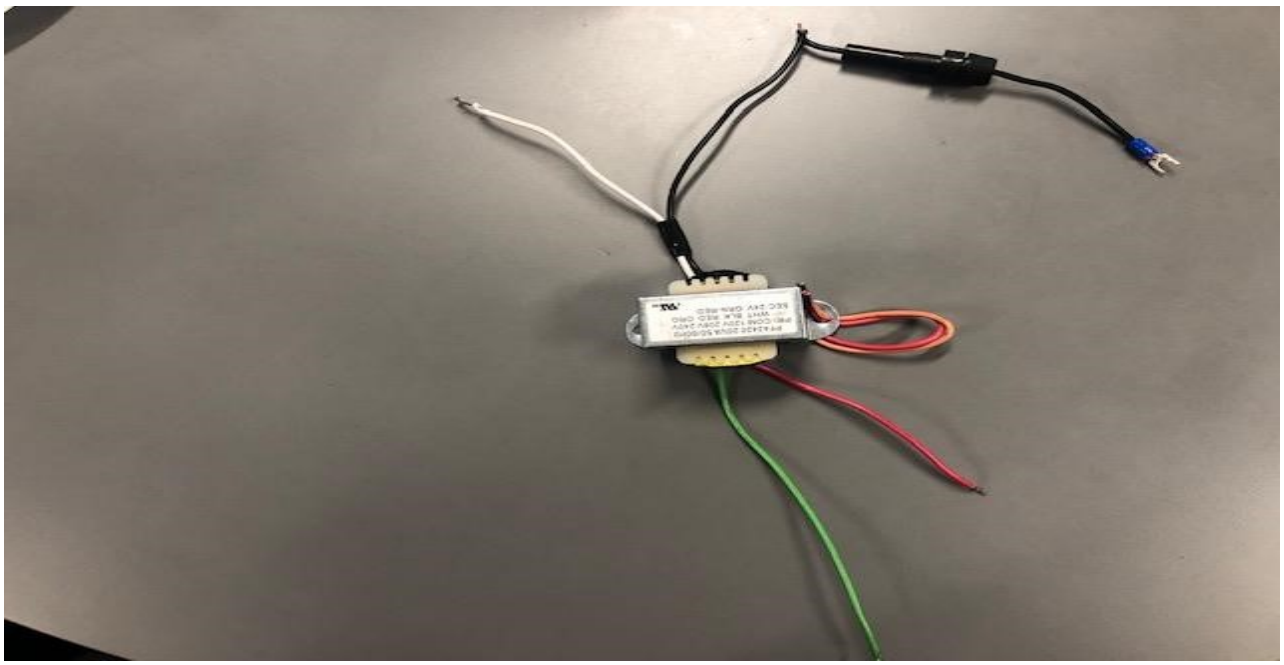
Shop Maintenance:

- 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

Procedures: *(Eye protection must always be worn, and power must be turned off till testing)*

Section 1:

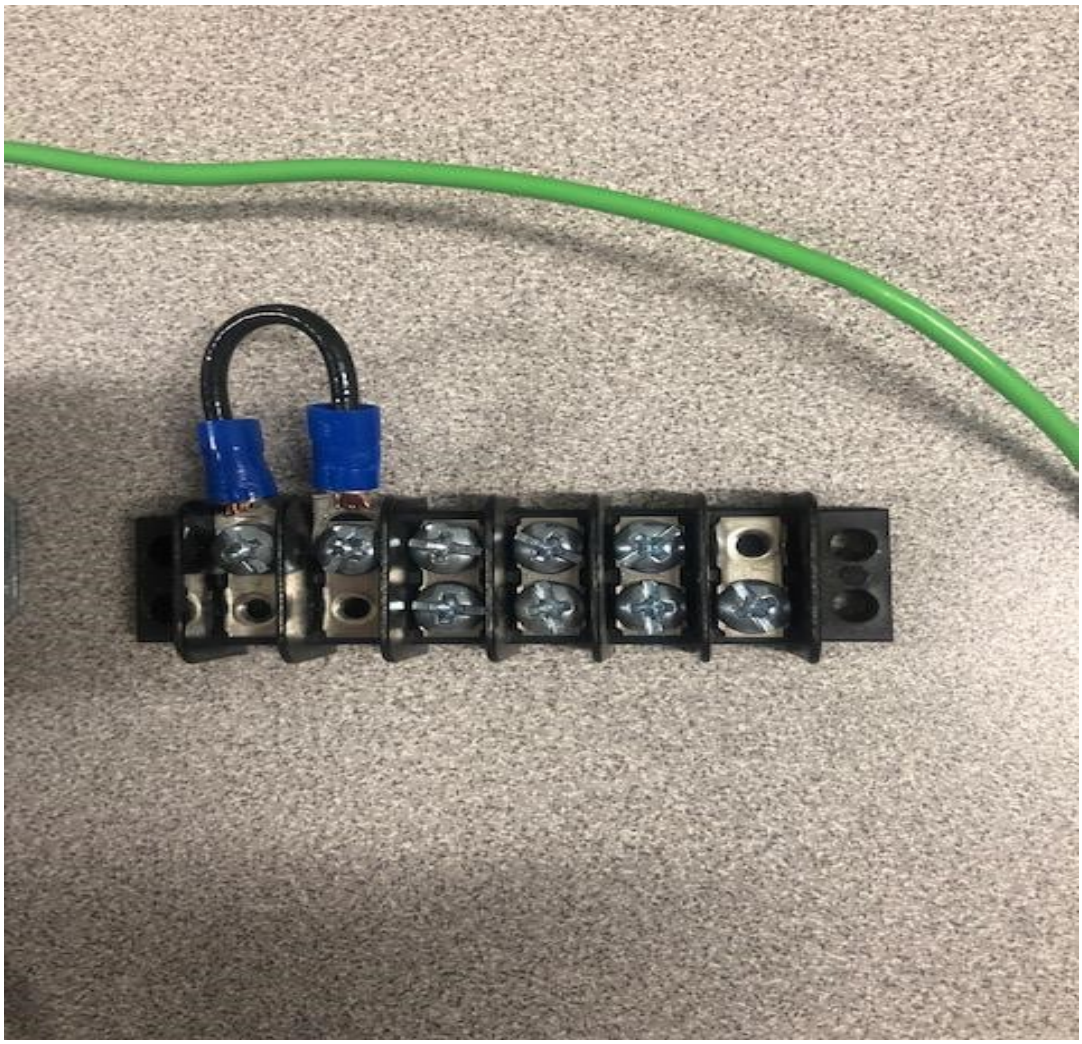
1. Connect 120 VAC to the primary transformer pf42420
2. Connect a fuse holder with a fuse in there in series with the black wire.
3. Connect the other end of the fuse to the hot line(black). Use the terminal board.
4. Connect the white wire from the transformer to neutral. Use the terminal board.

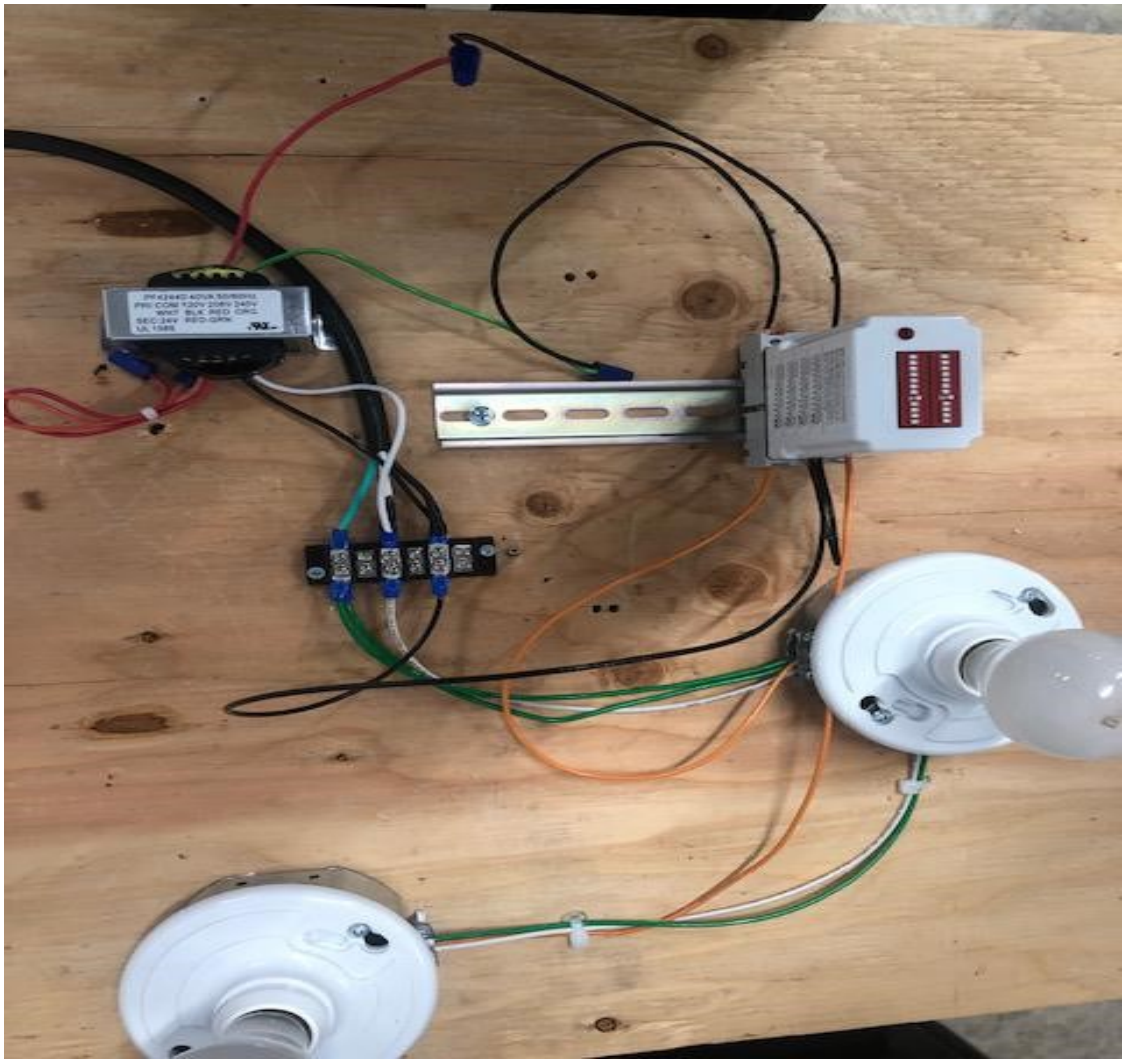


5. Connect the green cable to the secondary of the transformer 12 VAC to pin number 2 on the relay 2601SA.
6. Connect the Red cable to the secondary of the transformer 12 VAC to pin number 7 on the relay 2601SA.
7. Connect the pins 1 and 8 on the relay to the hot line 120 VAC.
8. Connect on end of the lamp 1 to pin 4 on the relay.
9. Connect the other end of the lamp 1 to the neutral.
10. Connect the one end of the lamp 2 to pin 6 on the relays.
11. Connect the other end of lamp 2 to neutral.
12. Set up DIP switches 11 and 12 off on both sets.
13. On both set of switches, set up DIP switch number 8, to have 12.8 second's delay. 14. In an alternating way, both lamps should be switched ON-OFF

Section 2:

1. Connect the 120 VAC power cable to the terminal board.
2. Connect the other end of the 120 VAC power cable to a 120 VAC outlet.





EL-170 MOTOR CONTROLLERS AND PROCESS CONTROLLERS_RELAYS_B

120 VAC

EL-170 MOTOR CONTROLLERS AND PROCESS CONTROLLERS_RELAYS_B 120 VAC