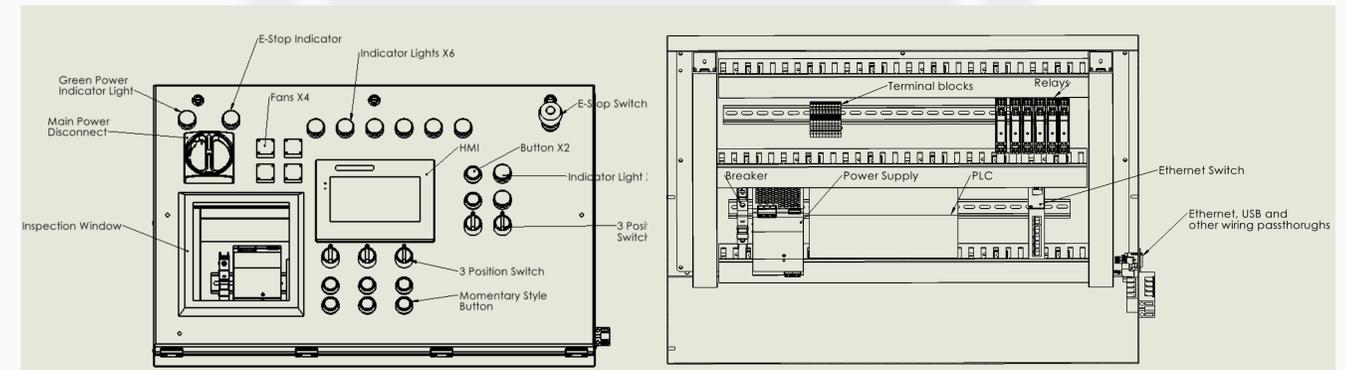


Automation Trainer

Project Description

- To build an automation training system for Utah State University to teach PLC (Programming Logic Controller) to undergraduate students
- To implement a new educational opportunity at Utah State University for students of all backgrounds to gain hands-on experience with a common system used in manufacturing automation
- To create a user-friendly interface with various input and output devices to operate the PLC system using uploaded ladder logic programs

Design Description



Performance Review



- The design was focused primarily on the control box and plc system as is shown above

Conclusion

- The successful activation and identification of the IP address for the micro 820 PLC using Rockwell Automation software, demonstrating connectivity and configuration
- Conducted a simulation exercise to develop and test example PLC program using ladder logic

- The Automation Trainer is easily transportable and is staged on a mobile table with a hand crank for various adjustment height needs
- The Automation Trainer includes a programmable PLC to connect to pushbuttons, switches, sensors, actuators, and a programming HMI
- The PLC connection supports communication with a student laptop through Ethernet connection
- Lessons Learned: Design changes were introduced adding complexity and challenges, but the team remained flexible and adaptable, incorporating customer recommendations. This experience highlighted the importance of collaboration, problem-solving, and teamwork in attempts for project success
- Recommended Future Work: Future work for this project consists of the implementation of programming scenarios and a mounted workspace. These items were not able to be included due to time and budget constraints