

Group Number: 22A

Group Advisor: Professor Bigelow

Group Client: Professor Bigelow

Group Members: Hamzah Abeer, Aziz Almarzouqi, Nick Riesberg, Derek Schmitz, Matt Stobb, Brandon Umscheid

We have successfully tested the SSR with the Arduino and it worked properly. We also have the pushbuttons working properly with the Arduino to control the microcontroller interface.

After talking with Professor Bigelow we are going to go with a premade industry made buck converter four out design instead of making our own. Matt is still working on getting us access to the powers lab. We need do discuss with the cart group/the multi-disciplinary team to find out exactly where on the cart our charging system will be and what restrictions we will have with it for sizing and accessibility. We have decided based on all component requirements that our safety shut off temperature will be at 90 degrees Celsius. This is primarily based on the SSR because it shouldn't be operated over 100 degrees Celsius. We have also decided that a lightweight casing made of aluminum would be the best idea for our casing for now. This can change if the cart team changes plans on us and we have more restrictions or concerns. We have submitted a new parts list to be ordered which includes what we will be mounting our components on. Also contains wires to connect, heat sinks, solder, and some smaller lithium ion batteries that we are planning to do our testing with.

Future focus on the group is to start testing more components together. We will do this by testing multiple pieces together at the same time to verify proper operation. We also want to start mounting equipment on the board when we get it. We also need to formulate a way to organize our components for best access and heat dissipation. This also includes location of our sensors as well for best safety monitoring. Further focus is to start charging the lithium ion batteries we ordered to verify our charging station operation.