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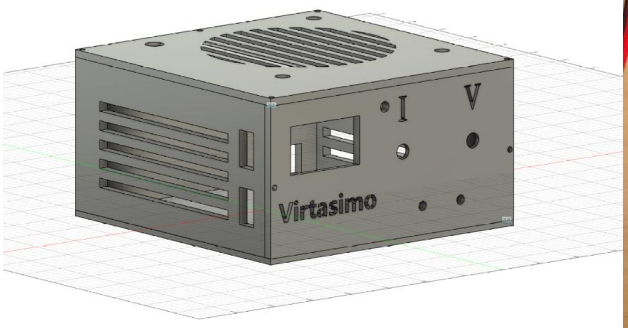
Dc power supply

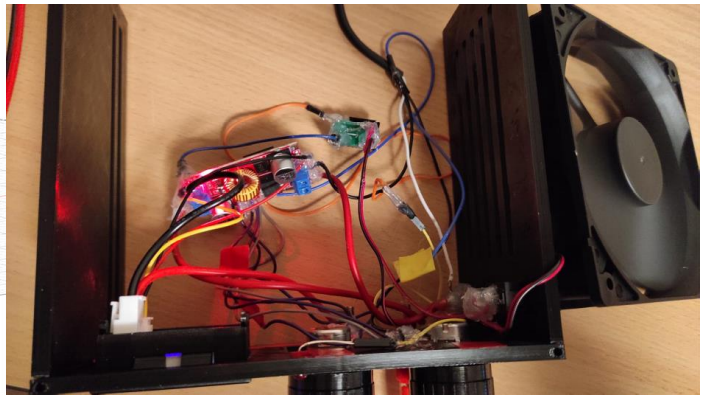
To save money, I designed and made my own variable power supply out of a laptop charger and aftermarket parts. It has a voltage range of 1.25-20 (limited by laptop charger), adjustable current limiter, display with voltage and amperage values and a 120mm fan that can be toggled on or off. Once again not fancy but it gets the job done.

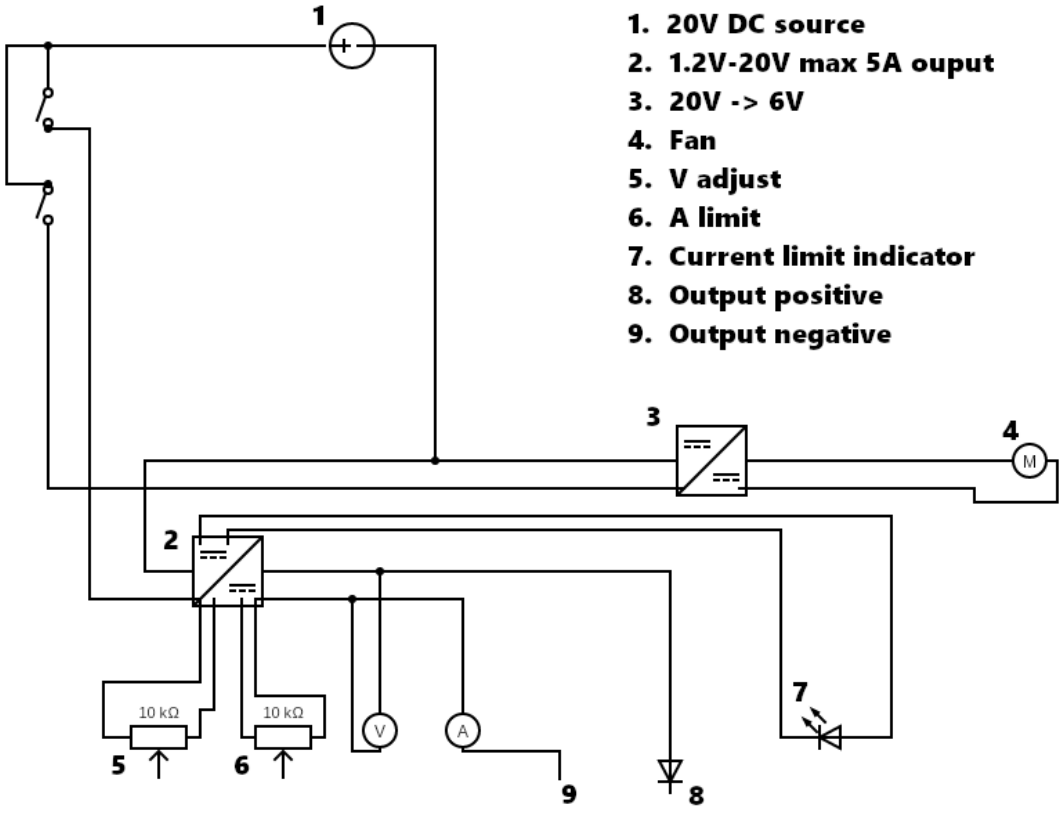
Some valuable lessons were learned:

- Learned to use Autodesk Fusion
- Realized that no amount of hot glue will make a bad solder into a good one.
- Things will eventually break and need maintenance. Design with that in mind.
- Next iteration should have a protective diode (included in diagram but not on product) and a fuse for safety. Although the laptop charger shuts itself off if shorted.
- Next iteration should have the fan switch before the fans buck converter as to not load it unnecessarily. (It popped after a year of use).
- Cable management matters.

Diagram and more pictures below on the next page.







1. 20V DC source
2. 1.2V-20V max 5A ouput
3. 20V -> 6V
4. Fan
5. V adjust
6. A limit
7. Current limit indicator
8. Output positive
9. Output negative