DATE: 2025-04-20

TECHNICIAN: Gabriel Robinson

DESCRIPTION OF PROBLEM:

E-Bikes Battery Stopped Charging Properly.

DESCRIPTION OF WORK: Replaced the charging port with a higher quality one.

TOOLS USED:

- Heat Shrink Tubing
- Heat Gun
- FLUKE 115 True RMS Multimeter
- Wire Snips
- Wire Stripper
- Philips Screwdriver
- Solider
- Resin Flux

Parts Bought:

- 5.5mm x 2.1mm Female Barrel Plug Connector Threaded
  - Rated for : 50 volts at 5 amps
  - 5000 plug-unplug cycles
  - IP68 Waterproof

WHAT I DID:

1. Observed the badly worn charge port
2. With the charge controller unplugged measured the diameter and length of the male barrel plug.
3. Looked at the charging brick to find out;
    1. The plug polarity
    2. power input into the battery.
        - To find out the voltage and amperage so I could spec the new part so it would be a safer and a more ware resistant part.
4. Search online to find a replacement with the given information found.
    1. Found a sensible replacement on amazon.
    2. Bought it.
    3. Set up a tool box with the need tool for the job for when the replacement part arrived.
5. Measured the charging port of the battery
    1. It was about 54volts, live.
    2. Noting that made sure to not short the battery out.
6. Set my soldering iron to a correct temperature and let it warm up.
7. Dissembled the charging port's mounting plate.
8. Slipping the mounting plate over the new barrel plug and tightening the nut down.
9. Took pictures documenting the condition of the old parts and how the wires where connected.
10. Then cut the wires from the old worn plug as close as possible to the old plug soldiering connections one leg at a time.
11. On the new plug's legs I slipped shrink tubing over each leg.
12. Cleaned and tinned my soldering iron
13. Twisted the new connections together, then covering them in flux so it would diffuse into the wires.
14. Heated the flux letting it diffuse into the wires
15. Then applied solider to the twisted wires, observing the solider to make sure it wasn't cold solider joint. It was a good solider joint.
16. Slid the shrink tubing over the new solider joint, turned on my hot air gun starting applying heat with swirling motions till the heat shrink was done.
17. Then positive wire of the plug is complete.
18. Moved to the negative wires repeating steps 10 to 16 till complete.
19. Stuffed the wires in to the battery's top cover, checking that none of the connections would be stressed or would short.
20. Screwed the mounting plate into place.
21. Plugged the battery in under supervision for a few minutes. All tested and looked good.
22. Job done.