

General Troubleshooting Guide for Kussmaul Battery Chargers

Battery wiring test:

With the charger disconnected from 120 volts A.C. power check the voltage at the battery output terminal strip of the charger.

- You should read battery voltage.
- If you read no voltage at your charger, the charger is not connected to your batteries. Check wiring.

Note: All of our battery chargers must be connected to a battery in order for the charger to work.

Run other tests with charger connected to 120 Volts A.C. power.

AC input test:

Check the neon indicator light or L.E.D.

- If off, check to see if the charger has 120 volts A.C. power or if the fuse is blown.
- If on, okay.
- If flickering, okay.

DC output test:

Chargers with amp meters:

With batteries charged, turn off all the 12 volt loads on the vehicle. Check and record the D.C. ammeter reading (it should read around zero) or the Bar-graph display (all the bars should be lit). Turn on the vehicle headlights to put a load on the batteries.

- The D.C. ammeter should show an increase in amps or the Bar-graph display should show an increase in charging (less bars should be lit).
- If no increase in reading, measure the voltage at the battery output terminal strip of the charger. This voltage should be approximately 13.23 volts. If voltage is 12.5 volts or less the charger is inoperative. If voltage is 13.1 volts or greater, charger is functioning and the problem may exist in the vehicle wiring.

Battery full charge test:

Check voltage at the batteries when all the bars on the bar-graph display are lit or when the D.C. amp meter reading is approximately zero.

- Each battery should read approximately 13.23 +/- 0.1 volts. If readings are below 13.00 volts the batteries are not fully charged and charger may require calibration.
- If both readings are above 13.50 volts the batteries are being over-charged and charger may require calibration.

Batteries over charging:

- Check for sulfated batteries.
- Poor connections between charger and batteries.
- If battery voltage 13.5 volts or less and battery is boiling check for faulty battery.

General charging information:

Measure the voltage at the charger with the charger plugged in. Measure the voltage at the batteries. The voltage at the charger should always be higher than the voltage at the battery, but not more than .75 volts D.C. higher. The higher the charger output amperage, the greater the difference in voltage between the batteries and the charger. As battery voltage approaches 13.23 volts dc, the charger will automatically start to lower the amperage to the batteries. A fully charged battery will read 13.23 volts dc, +/- 0.1 volts. If the voltage at the batteries is higher than the voltage at the charger, check for faulty wiring connections or resistive connections.