

Checking battery charger and batteries health

How to diagnose failure on batteries and SLAT
battery chargers

Ref: D-0011829-EN-r04



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Description

SLAT battery chargers for VA systems, complying with EN54 standard, can give up to 960 W or 3600 W power (upon model).

It is designed to charge lead-acid batteries (backup supply for VA systems), while gives supply for auxiliary functions.

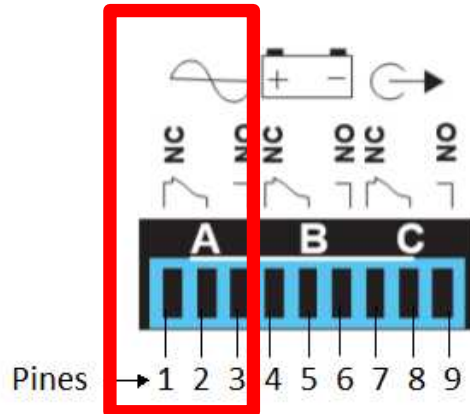
Alarms



	LED	Green	Red-Orange
A	Main AC source	OK	Check the steps in paragraphs 4 & 7
B	Batteries	OK	Check the steps in paragraphs 5 & 7
C	Power supply output	OK	Check the steps in paragraphs 6 & 7

Main power source

- Check racks cooling is enough and ambient temperature is below 45 °C.
- Check main AC power is between 195 Vac and 265 Vac.
- Check with a polypmeter that AC power charger's contact is correct :
 - NC = Normally closed. Terminal 1 & Terminal 2.
 - NO = Normally open. Terminal 2 & Terminal 3.

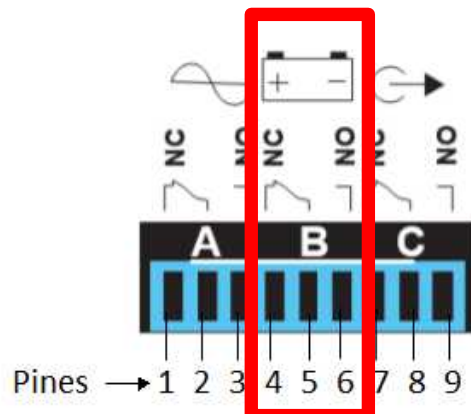


- Check the main fuse “F1” in the Supply/Control board.

Check batteries health

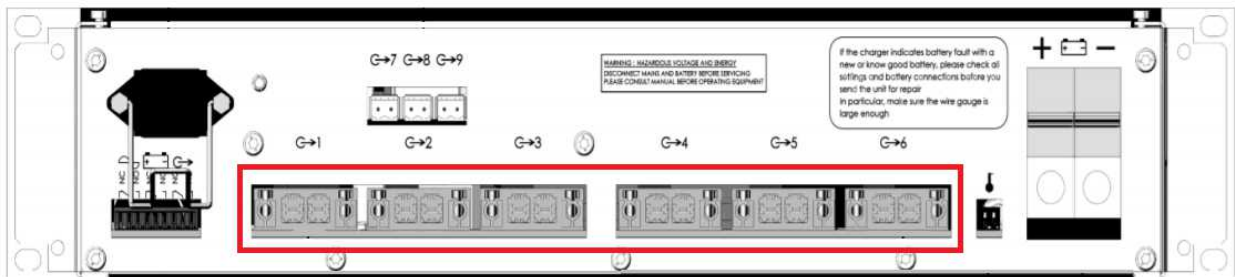
First of all, check the polarity of each battery and from main battery connector.

- Use a polypmeter to check the battery contacts are correct:
 - NC = Normally closed. Terminal 4 & Terminal 5.
 - NO = Normally open. Terminal 5 & Terminal 6.

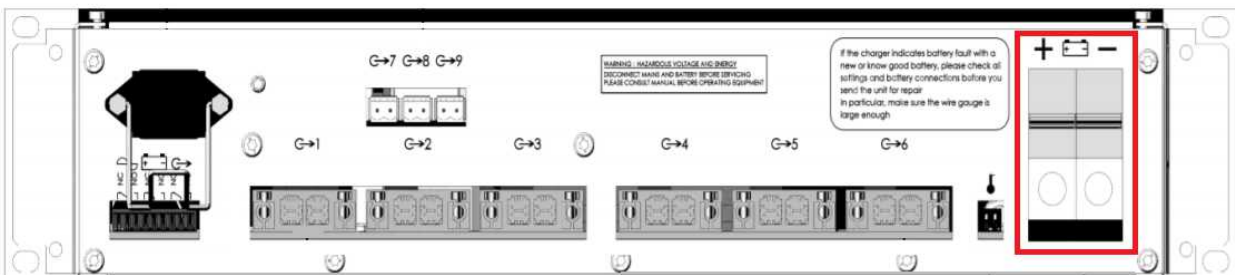


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- Measure the voltage at the battery charger output, it must be within 22-24 volts.



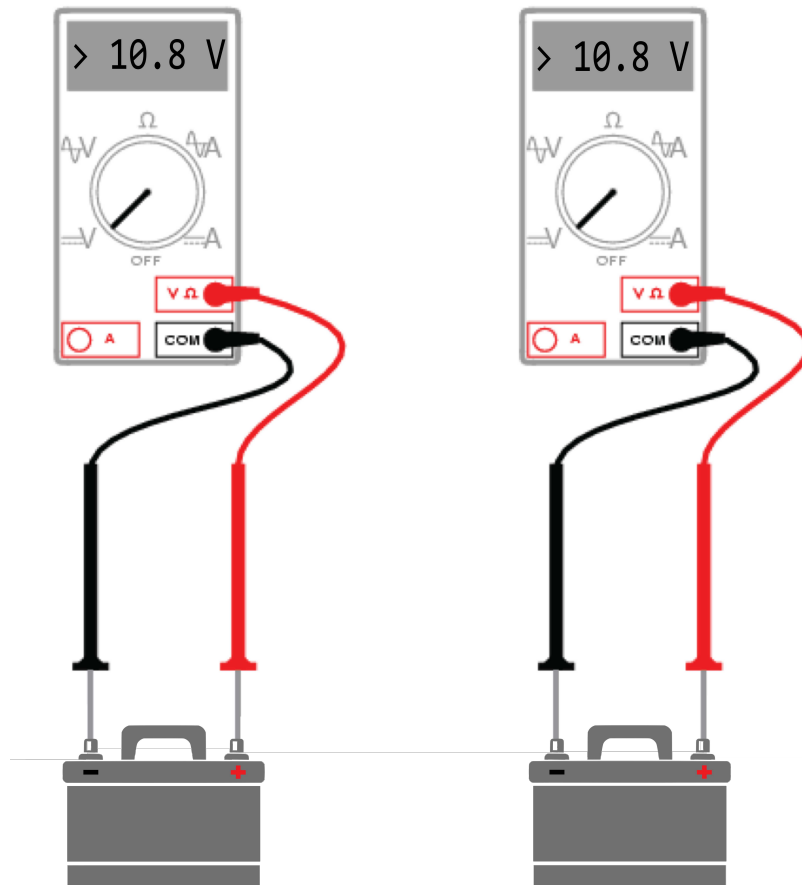
- Check charger's battery input voltage is between (22-28V)



- Low battery charge:

Nominal voltage of the sum of both batteries is 24 V, but its tension may swing between 22 & 28 V. Battery charger will trigger battery error if it senses the sum of both batteries is less than 22 V.

Although the sum of the batteries were over 22 V or even more could occur a battery is more charged than the other one, therefore, before continuing check each battery voltage is more than 10,8 V.



- If power is incoming, check output current is less than:
 - 12A for 3600W chargers.
 - 6A for 960 W chargers.

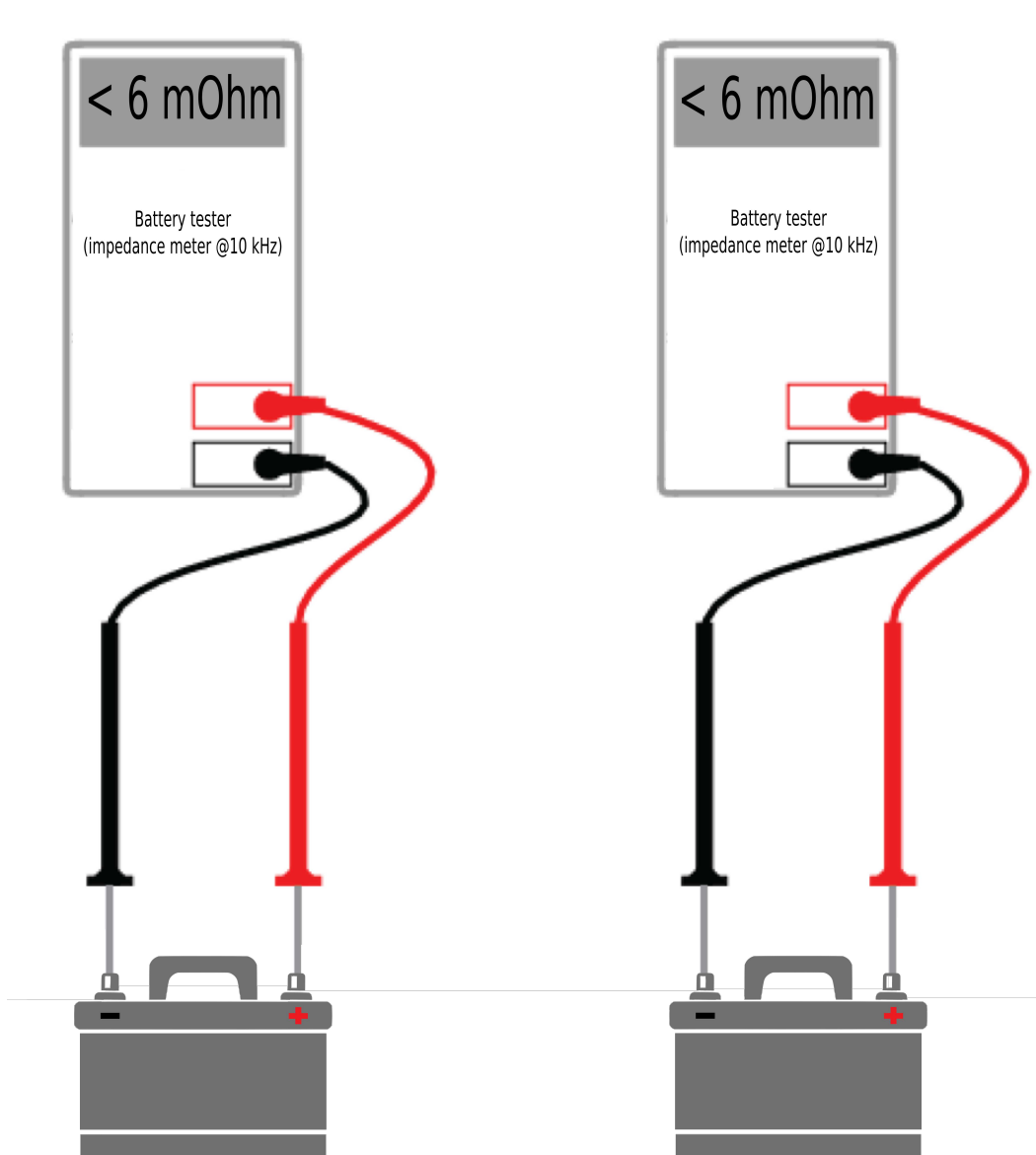
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- Damaged battery, too high impedance (battery led in red-orange):

SLAT battery chargers monitor every so often batteries impedance, 4 hours after is powered it do its first measurement because to let battery to recover in case it is very discharged and let the impedance to go down to nominal values. After the first measurement, the device will perform measurements each 20 minutes.

- If charger detects impedance sum of both batteries is **>13 m Ohm it will show battery error.**

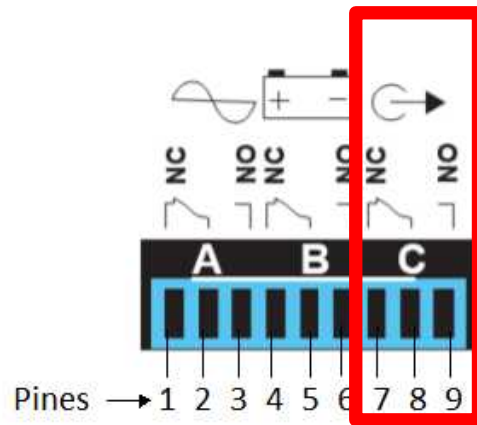
A specific instrument will be needed to do this measurements. LDA kindly advise its integrators to buy one of these impedance measurement devices that can be found below 30€ that will get back with the first charger diagnosed using it.



- Compruebe los fusibles interiores indicados en el punto 7.

Output source

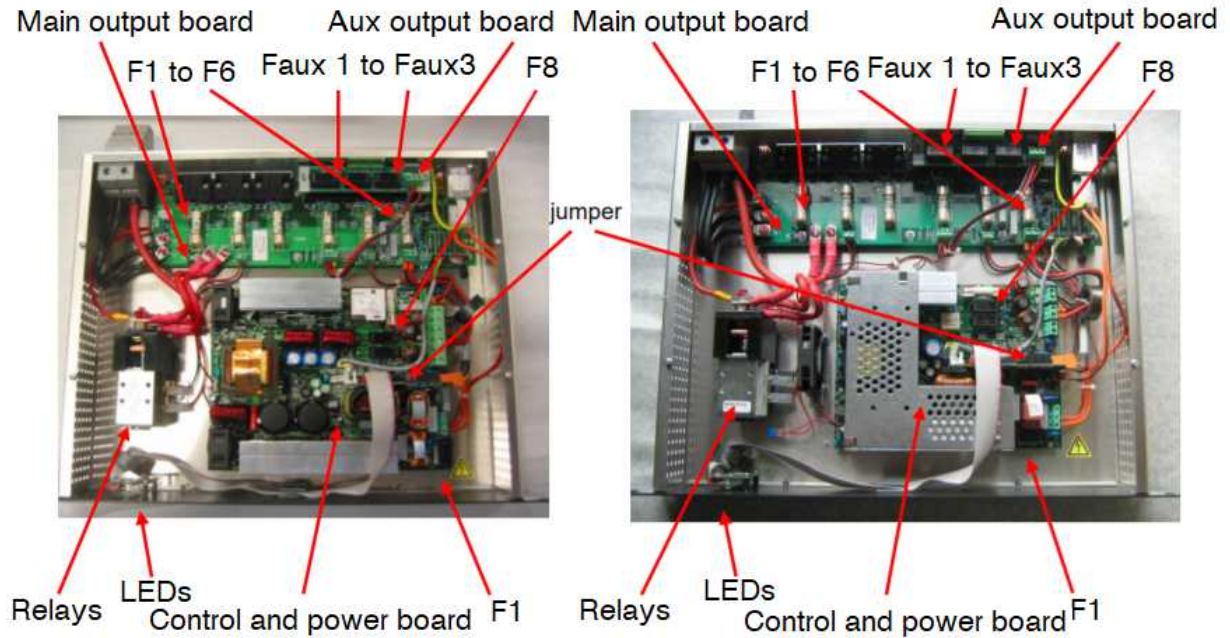
- Use a polypmeter to check battery charger contacts related with output source are correct:
 - NC = Normally closed. Terminal 7 & terminal 8.
 - NO = Normally open. Terminal 8 & terminal 9.



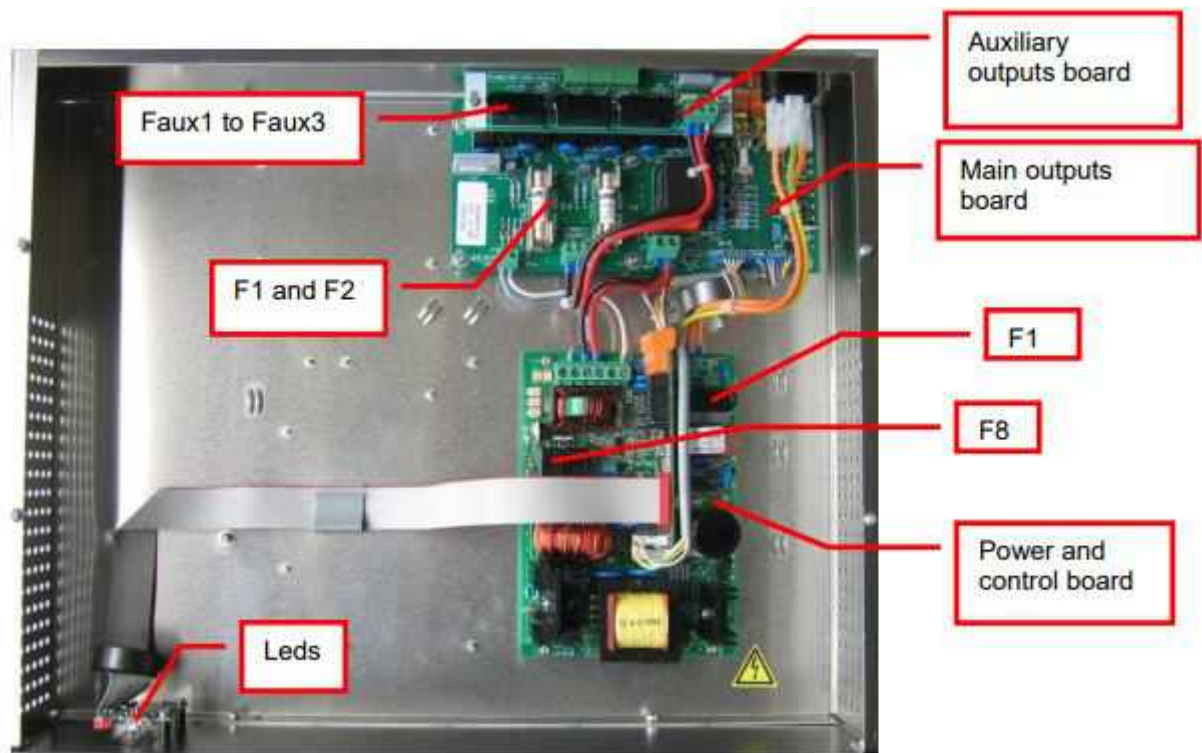
- Check output fuses from F1 to F6. Revise paragraph 7.
- Check aux fuses from F1 a F3. Revise paragraph7.

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General inside view



Picture 1: Inside 3600 W charger



Picture 2: Inside 960 W charger

Warning

This device has been designed to be connected to electric power grid at 230 V.

To avoid any electric shock risk, every work without cover must be done with MAIN AC POWER AND BATTERIES UNPLUGGED.

It must be operated just by qualified staff.

