

# Trouble Shooting

The Nomad Pdu's are designed to be used as specifically described in the included instructions, which can also be found on this website under specs / instructions.

Most common faults include over charging (exceeding the 25amp max charge rate), Over drawing (Exceeding the Max 20amp draw across the unit at any time), and Dead short.

## **Nomad stops taking on charge, ie not charging**

Firstly, test the charger source – ie use the ACDC charger 8 amp supplied with the unit and plug the charge into the wall, the light on the charger should be green. When you plug the nomad into the charger does the light on the charger (not the nomad go red?) red on the charger means charging. Check all Anderson connections.

If not charging you need to test the charger itself by plugging the ACDC charger into the wall and test with multimeter, or power analyzer to the Anderson output of the charger, is there above 12.5 volt coming out of the charger? If less than 12.5 is it zero? If zero volt coming out of the charger, it could possibly be the Anderson connection. Rest the nomad unit for an hour before testing.

## **The ACDC Charger tests ok but nomad will still not charge.**

This is a typical response to a unit that has been exposed or charged at a higher rate than 25amp (you cannot exceed the 25 amp max charge by even half an amp) the unit will not take on a charge until you draw at least 1amp from the unit, which will then reset the nomad. To do this have the nomad stand alone off charge and connect a draw or an accessory that pulls more than 1amp , a fridge or will do fine. Run for 10 seconds , disconnect the load and then plug the charger in , this will reset the unit, so you should see the light on the charger go red and or the red light on the nomad to indicate charge (please note if the nomad is already full the charge light on the nomad may not come on)

## **The Nomad will not take charge even after reset procedure above, and The Charger has tested ok.**

This indicated the unit has been exposed to excessive charge rate with multiple resets and potentially damaged the BMS, this can occur when the nomad is connected to a higher than 25amp charger (seen when connected to 25amp DCDC chargers that all charge over 25amp), with a fridge or load on the nomad, this will continually have the nomad shut down due to excessive charge rate and then rest because the fridge is attached with a load of more than 1amp, this creates a cycle situation that the BMS will eventually fail to protect the battery pack. IE in this scenario, the unit is simply overcharging /resetting, overcharging /resetting till BMS Fail. This requires the BMS to be replaced. Please Note: this is not covered under warranty as it is abuse of the system.

### **Unit will still not charge**

Rest the unit for an hour without any loads or accessories attached. Then try connecting an unregulated solar panel to the red and black solar poles less than 200-watt panel. It will take a minute or so for the MPPT to kick in, does the unit charge? Please note if the unit is already above 12.4volt the red light may not come on, so in this case run a fridge on the unit for an hour and try again.

### **Unit fails to charge after all above tested**

Run the nomad completely flat <9volt, then try connecting a charger that is known to be working, ie if ACDC charger tests ok then plug this in, or plug a ciga dc charger in or solar panel, regulated to red Anderson or unregulated to the red and black poles.

Unit still does not take on charge at this point most likely BMS shutdown requires replacing.

### **Unit Blacks out Goes black while in use , nothing on screen**

The simplest cause of this is dead short, or over drawing on the unit, remember each output is rated 10 amp except the green Anderson output which is rated 20 amp. In both cases above, disconnect all loads and plug in charger, this should reset the unit. If it is still blacked out, rest for 15 minutes and then plug the ACDC charger in again. Please note the unit will shut down as the draw exceeds 20amp , however the constant overdrawing or exceeding 20amp and resetting could eventually cause BMS Damage.

### **Other Causes of BMS Shutdowns inability to reset**

If the nomad has been charged by an unregulated source, ie directly from a vehicle without a DCDC or voltage stabilizer this will damage the unit, in addition, was the unit charged by the red regulated Anderson input by an unregulated panel ? this will cause pitches and troughs in the current and create an imbalance. If this has occurred, then run the unit dead flat and then charge with a regulated charger such as the ACDC charger . Please Note: DO not plug an unregulated solar panel into the regulated input.

### **Unit will not fully charge**

Unit if fully charged 12.4-12.7, screen calibration does not effect the unit battery time or AH , anything over 12.4 is fully charged.

If the unit falls short of this voltage it typically will be the ACDC charger – Firstly test the output of the ACDC charger at the Anderson. If the Anderson off the ACDC charger shows 11.7 or 12.1 for example, Then this is only as high it will charge to however you can still fully charge off the solar panel reg or unreg, or by the car dc dc chargers. The charger should show 12.5v plus, if its less then the charger needs replacing.

## **Unit will not fully charge part 2**

If the charger is showing an output at the Anderson of 12.5v and higher then the charger is fine and if the unit will still only charge to 11.7 or 12.1 as an example then there is a series breakdown most likely, which can be caused by constant overcharging reset cycles (exceeding 25amp charge), and or constant and ongoing attempts to draw too much current from the unit, ie exceed 20amp output. Other causes will be incorrectly charging the unit such as from the output! Or charging the unit with an unregulated power source such as car crank or alternator directly to the nomad on any input, or charging the nomad with Unreg solar to regulated input.

**Please Note:** the unit will not enter this state unless it has been subject to loads and charges exceeding specifications, it is out of balance. The first response to such an instance is run the nomad flat and then try charging fully with regulated charge such as the ACDC Charger. If you are unable to get the unit to fully charge , the unit can still be used and cycled , but just wont reach full charge – if it is a series or cell breakdown. It is possible in some cases to re-balance the battery pack but the instance of this is rare but is typically only caused by operating outside the specifications in the instructions.

## **My Fridge Won't run**

Firstly you need to read your fridge manual as it will have many settings and be subject to operational ranges of voltage and cut outs depending on setting. Always se the fridge on low and or eco and understand when the cut off voltage of your fridge cuts in.

A typical fridge may cut out if setting on low at 10.6 volt and not cut back in until >11 volt. This is not a fridge or battery issue but standard voltage of operation. The Nomad provides voltage of 12.6 down to 9 volt. So if your fridge stops working and the nomad has a voltage of say 10.6, its not the nomad its simply the voltage the fridge operates in.

## **My Fridge wont run as long as I thought it would**

If this is the case the onus falls on you the customer to understand what your fridge draws (draws means what amperage does it use depending on settings) is it set on 2 degree or freezer , how large is the fridge and so on.

The average amp per hour draw spec can be provided by the fridge manual – for example a 50 litre fridge set at minus 15 depending on make , model and Ambient temp could use 3-4amp an hour continuous. If that was the case, the nomad has 100ah or amp hour at 80 percent dod, so you have 80 ah available, so your fridge drawing 3 amp an hour for 24 hours would use 72amp, and the fridge might cut out at 10.6 so you get 18 hours of power. This is not a fault of the battery or the fridge. If you had a 200ah battery typical style battery you would still only have 100ah (50% dod) You need to ensure you are putting in the charge rate to counter the output.

This is the simple mathematical equation to how long your fridge will run.

### **My fridge stops working and sometimes kicks in.**

This is very common, the fridge has reached its set temperature so the compressor stops and only cuts in as needed which is why the draw on the nomad screens shows, .004 amp and then jumps up. This is the fridge functioning correctly

### **Nomad will not charge when the fridge is running?**

The nomad will take charge while running the fridge no problem, the red light on the nomad is the charging light. The red light will go on and off when a fridge is connected because if there is more amp going out (to the fridge) then is going in the red light does not come on. It is charging, but all the input current is going directly to the fridge and taxing the nomad very little, so no light on.

The simple way to look at it is if more amp is going out than in , then the red light is off (but it is still taking on whatever the charge current is. This is a normal function of the nomad.

### **Where do I connect an unregulated solar panel?**

Very simply, if your solar panel does not have a regulator of any sort – ie it is just a panel, then you connect to the red and black poles or unregulated input of the nomad , which is then regulated by the nomad MPPT regulator internally. Less than 10 amp up to 24 volt, typically less than 200 watt no more panel is fine, but check the spec on the panel.

### **Can I charge directly from my car?**

No you cannot, you must use a dc/dc charger or voltage stabilizer to regulated the charge from the car, and ensure that it is fused. No more than 25amp charge . This is not an approximation, it must be less than 25, nothing over.

### **Can I jump start my car with the Nomad?**

Under no circumstance should you jumpstart a vehicle or use in this manner

### **Can I run a coffee machine, oven , blender or other household appliances?**

The nomad output max is 20amp, so an inverter to run 240volt appliances are limited to about a 300 watt inverter, but not exceed 20 amp , so coffee machines and ovens , blenders can typically draw about 100-200 amp , you need to understand the draw of appliances and do not exceed.