

# Troubleshooting: Common Solutions to Common Problems

## **Issue:**

My system shut down and now my BMV is showing "--" instead of a battery percentage.

## **Most Likely Cause:**

This is something that happens after the BMV-712 loses power, for example when the batteries disconnect due to low voltage or low temperature, when the "Battery Starts Synchronized" setting is disabled.

The BMV comes with this setting enabled by default, but we recommend that you keep it disabled. After a full shut down/reset, the BMV will not have enough information to know the actual state of charge of the battery. If "starts synchronized" is enabled, it will read the battery voltage and assume that it's 100% charged, even if the battery is still very low.

Essentially what the BMV is doing is guessing until it has more information. After a full recharge, the BMV will automatically recover and re-synchronize itself to the correct percentage, but having it display 100% when the batteries are almost dead is confusing. We think it's better for the unit to not guess at all than to guess wrong, which is why we recommend keeping this setting disabled. In this case, it will show "--" until it has enough information to give you an accurate reading.

In either case, a full charge is typically enough to get the BMV working properly again. Use your MultiPlus shore charging function or your solar controller to fully charge the batteries, and the BMV should return to normal operation after the "charged voltage" setpoint is reached.

## **Issue:**

My Phoenix inverter is turning off and on, never staying on long enough to fully charge my Aspen or AC200.

## **Most Likely Cause:**

First, make sure that ECO mode is off, and the unit is in the "ON" position. ECO mode will search for a load and it can cause strange things to happen. In our use case, having it on doesn't actually save energy, so there is no point in having it enabled.

When the Phoenix has a weak connection to the starter battery and/or the MIDI fuse, it will cause the voltage to drop dramatically when the load kicks on. The inverter will appear to work fine until the charger actually starts charging.

This will cause the inverter to immediately fall below its shutdown voltage and turn itself off. Turning off the load causes the voltage to immediately rise again, and the unit turns back on again after a few seconds, over and over again.

If you're having this issue, the first thing we recommend is that you check all of your connections between your inverter and starter battery. If using chassis grounding, consider using a direct negative wire instead, as using the chassis can add a lot of resistance. Make sure that all the lugs are making secure, complete contact with the blades of the fuse, and that there are no washers or other smaller lugs in between preventing solid contact. This is the most common cause of this issue.

If the problem persists, it may also be because your starter battery is very old, and it is having difficulty reaching the voltage required for the inverter to start. If this is the case, we recommend replacing your battery, but you can also adjust the shutdown voltage a little. We recommend setting the shutdown voltage to 13.2V, as this voltage can only be reached when the battery is being charged by the alternator, but if you are having issues you can set this setting as low as 12.9V, and sometimes that helps.

The "Alarm and Reconnect Voltage" should be set 0.1V higher than the shutdown voltage. DO NOT set the shutdown voltage lower than 12.9V, as doing so can drain your starter battery.

**Issue:**

My Orion DC-DC charger is draining my vehicle's starter battery.

**Most Likely Cause:**

Your Orion probably has not been programmed yet. The default mode for the Orion is "Power Supply Mode", which does not do engine shutdown detection. If you have connected your Orion but haven't programmed it yet, it will likely be in "Power Supply Mode" and this will drain your battery. Follow this guide to program your Orion.

**Issue:**

My BMV is reading 100%, even though the batteries are very low.

**Most Likely Cause:**

The BMV has not been programmed and/or the "starts synchronized" option is enabled. This will cause the BMV to read 100% after power loss, even when the batteries are still very low. Fully charge your system using your MultiPlus shore power feature or solar, and it should once the "Charged Voltage" set point is reached.

**Issue:**

My Orion DC-DC charger is connected, but it doesn't seem to work at all no matter what I do.

**Most Likely Cause:**

Make sure you have inserted the little green connector with the black loop of wire into the matching terminal on the left-hand side of the Orion. This jumper is included so that you can add a remote switch that turns the unit off and on, but in most cases adding a physical switch is unnecessary.

If this little piece is not inserted, the Orion interprets it as a switch in the "OFF" position, and it won't work at all.

This part ships in a small bag inside the box, and it is easy to overlook and/or lose. If you have lost it, and you can't come to the shop to pick one up, you can buy a replacement using this link. Remember that you must also make a jumper between the two terminals with a small bit of wire, or it still won't work.