



M-POWER ENERGY STORAGE SYSTEM MANAGEMENT: COLD WEATHER

REV. 1.5, 12.30.2020



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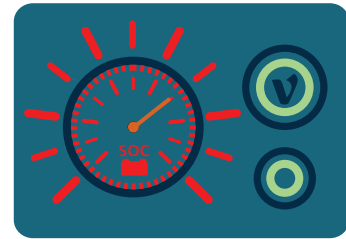
During the cold-weather months, proper planning and familiarity with the M-Power Energy Storage System (ESS) will help as you go about your winter adventures. The ESS is capable of withstanding below freezing temperatures without issue and will discharge as normal. However, if the core temperatures are too low they will not take a charge. Outlined below are some common scenarios you may experience during the winter season, whether utilizing the MODE4x4 every day or putting it away for storage.



Steady green:
System is in normal operation.



Blinking blue:
System is too cold, see below.



Blinking red:
System is experiencing cold fault.

Frequent Use

Whether driving your MODE4x4 daily or keeping it prepped and ready for a weekend adventure, the following tips can help you have a successful and worry-free experience. The ESS has a heating pad to help keep the energy pack core at proper operating temperature. There are two ways to ensure the heating pad is doing its job:

- **By the M-Power ESS + Inverter (monitored daily driver).** Have M-Power on and inverter on. This way the heating pad will be powered through a 110V outlet and maintain proper core temperature.
- **By Shore Power (monitored cold-weather storage).** With M-Power ESS off, plug your MODE4x4 into shore power and allow the system to automatically come on to allow the heating pad to maintain proper core temperature.

Always be sure to check and monitor your State of Charge (SOC) gauge for charge percentage and gauge color. **Keep the SOC above 10%** and be sure it is not slowly blinking blue. If this is the case, please see the section **"Recovering ESS From Below-Freezing Temperatures"** below. Additionally, if the system is at 10% SOC or below on a slow-blinking blue gauge, turn off all power-consuming devices and the M-Power ESS, then contact Storyteller Overland for further assistance.*

MONITORED DAILY DRIVER:

When driving your MODE4x4 on a daily/frequent basis, it is recommended to leave the M-Power ESS and the inverter on. This will allow the ESS to monitor and utilize the heating pad as necessary. Be sure to check the SOC from time to time, especially if you plan on parking for a few days. Normal driving will keep the SOC at an acceptable level.

MONITORED COLD-WEATHER STORAGE WITH SHORE POWER:

For extended parking periods, it is recommended to use shore power. Be sure the M-Power ESS is turned off before plugging into shore power. Once plugged in, the system will automatically come on and the ESS will assess what is needed. The heating pad will maintain the core temperature as needed. SOC will need to be checked often while the van is parked. When needed, disconnect shore power, turn on M-Power ESS with the inverter, and enjoy your MODE4x4!

Infrequent Use And Long-Term Storage:

When storing your MODE4x4 for the winter, it is recommended to set up the van for “**Unmonitored Cold Weather Storage**” as described in the following scenario. Be sure to follow the “**Recovering ESS From Below Freezing Temperatures**” section when ready to use the van again.

UNMONITORED COLD-WEATHER STORAGE:

To store your MODE4x4 in the cold for an extended period, do not connect shore power. Begin by charging the ESS to at least 80% SOC. Prepare the van by turning off all electrical items, then turn off the M-Power ESS. Be sure to check that the SOC is at or above 75% every 30 days. The M-Power ESS can be turned on to check the SOC. If the system is too cold, it may not operate, this is normal. System functions will resume when the ESS temperature is above freezing.

Recovering ESS From Below-Freezing Temperatures:

In the event the ESS internal temperatures are below freezing, there are some steps to take to properly and safely bring the system back to operational temperature. A slowly flashing blue SOC gauge is your first indicator the ESS is too cold. Typically, using the ESS with the inverter on OR using shore power will allow the heating pad to properly warm the ESS internal temperature and allow the pack to begin charging. Take note of the SOC before beginning any recovery procedure. Due to the power required to run the inverter and heating pad, it is possible to completely discharge the ESS before it can receive a charge, whether on or offshore power. **It is not recommended to plug the heating pad directly into an outside source.** Doing so can overheat and damage the ESS pack.

RECOVERY VIA SHORE POWER:

The preferred method to recover from cold ESS temperatures is to use shore power.

- 1) Make sure the ESS power button is in the off position (push button is flush) before connecting shore power.*
- 2) Once shore power is connected, check the SOC. Be sure the SOC is above 10%.*
- 3) Allow the system to warm up and begin charging the ESS. Monitor the SOC until the gauge is green.*

In extremely low-temperature conditions and/or a SOC below 10%, the ESS may not warm up adequately before the system is completely discharged. If this is the case, disconnect shore power and check that the ESS is off. Contact Storyteller Overland for further assistance.

Additionally, in extremely low-temperature situations (core temperatures of -4° F or below), the ESS may enter a Cold Fault state. This is noted by the SOC gauge flashing RED constantly. Follow the above procedure for disconnecting shore power, turn the ESS off, and contact Storyteller Overland for further assistance.

RECOVERY VIA ESS AND INVERTER:

The ESS and inverter may be utilized if shore power is unavailable to recover the cold ESS. This method requires constant monitoring of the SOC to prevent complete ESS discharge. Check your SOC before beginning recovery in this method. If SOC is at 10% or below, do not attempt to recover. Contact Storyteller Overland for further assistance.

- 1) Turn M-Power ESS and the inverter on. Allow the system to automatically bring the ESS to operating temperature.*
- 2) Monitor the SOC until it turns green. Keep in mind that the colder the ESS is, the longer it will take to bring to temperature.*
- 3) If the pack fails to reach the temperature in time and drops to 10% or less SOC, turn the M-Power ESS off and contact Storyteller Overland for further assistance.*