



Description

The MEON LiFe *Smart* is a self-contained cart power system that provides 18 Amps* of 12 Volt nominal DC and 20 Amp-hours of internal Lithium-Iron-Phosphate [LiFePO₄] battery backup to ten standard 4-pin outlets all in a single, silent, 1-rack-space module weighing less than 14 pounds. The chassis is constructed of durable powder coated aluminum, and the removable rack-mount ears can be adjusted and reversed to allow mounting in a variety of configurations. Inside the unit features an upgraded DC power supply, low-loss power path controllers with solid-state MOSFET switching. The Meon LiFe *Smart* does not use mechanical relays. A new 1.5" Color OLED display shows detailed system information. Two USB Type-A output jacks are available at the front panel for charging or powering various devices and the MEON LiFe *Smart* can also be configured to connect with Remote Audio's Smart Remote which enable remote ON/OFF capability and comprehensive battery monitoring.

Function

The MEON LiFe *Smart* features an illuminated single button ON/OFF system. A momentary press of the button powers ON the unit. Holding the button for approximately 3 seconds powers down the unit. This delay helps prevent accidental power down of the system. When the unit is receiving 90-264VAC power, the power button glows GREEN, and current is provided by a low-noise AC-DC power supply (rated for 18A, 250 Watts continuous output). When AC power is present, the internal battery is bypassed from the outputs and charged

via its own dedicated, internal, 5A battery charger. When AC power is unavailable or interrupted, the battery seamlessly takes over thanks to the power path controller circuitry and this is indicated by the power button then glowing RED. When AC power is restored, the AC-DC supply takes over again, the battery resumes charging, and the power button glows GREEN.



Internal LiFePO₄ Battery

The MEON LiFe's Lithium-Iron-Phosphate (LiFePO₄) batteries share a common property with all Li-Ion technologies in that they are lower weight and smaller size than equivalent capacities in other chemistries, such as Lead Acid and NiMH. However, a key advantage of LiFePO₄, when compared to other Li-Ion types, is its superior thermal and chemical stability. LiFePO₄ cells are virtually non-combustible (even if mishandled during charge/discharge) and can handle much higher temperatures without degrading in performance. LiFePO₄ also offers a longer calendar life and higher peak-power rating than other Li-Ion designs, and it contains no toxic heavy metals.

The MEON LiFe *Smart*'s internal batteries are polyfuse-protected (7.3A each) for a combined maximum output of up to 14.6Amps. The batteries

also feature protection from over-charge, over-discharge, and short circuit conditions.

Mounting the MEON LiFe

The MEON LiFe can be mounted in a variety of ways: In a standard 19-inch single rack space. The mounting ears can be positioned so that connectors face inward or outward. An ON/OFF button and "Charge Status" LED are on both sides of the MEON LiFe, to facilitate front or back mounting. The mounting tabs are also adjustable so that the connectors can be recessed safely out of the way.



The mounting ears can be removed so that the MEON can be placed on a horizontal surface such as a cart shelf.



Output Connectors

There are ten DC power outlets on the back of the MEON LiFe, wired in the standard 4-pin XLR configuration of PIN 4 (+), PIN 1 (-). Each outlet has auto-resetting breakers to protect against overload. Three of the outlets are heavy-duty connectors, capable of supplying 9A each.



The remaining seven output connectors are rated for 5A each. A typical sound cart (drawing 9A or less) can be powered through a single XLR outlet if desired. For example, if power distribution to the devices on a cart is done through the Remote Audio BDS, HOT BOXv2, or HOT STRIP, a single 9A XLR outlet on the MEON LiFe *Smart* may be used to power multiple devices.

Does the MEON LiFe use fans?

No. The MEON LiFe *Smart* was designed to employ convective cooling specifically because cooling fans cannot be tolerated on a very quiet sound stage. This is why a new 400W AC-DC PSU was selected to be able to achieve the rated 18A 250W continuous output without any active cooling. It is best to mount the MEON LiFe *Smart* with some free space above the chassis to allow proper convective airflow when using AC power. The unit has vent slots in the sides of the chassis that should remain unrestricted during operation to facilitate cooling while supplying maximum rated current.

USB Connectors

The two front panel USB-A charging ports have each been upgraded with 3A auto-negotiating charge circuitry that supports dedicated charging port schemes for battery charging specification (BC1.2), divider mode, 1.2V/1.2V mode, and now quick charge specification QC 3.0 (3.6V – 12V_{OUT}). This upgrade greatly expands the USB charging capabilities of the Meon Life *Smart* for use with a wide variety of modern devices. The lower USB port can optionally be configured via the remote settings menu for a wired connection and communications with the SMART Remote control (Sold Separately).



RGB OLED Display

The MEON LiFe *Smart* now features a 1.5" Color OLED Display panel that is easy to read and can be configured to show detailed system information or a more simplified at-a-glance system voltage like this MEON's predecessors.



"MFB" Button

When the MEON LiFe *Smart* is turned OFF, the MFB button on the front panel can be pressed to briefly show the Voltage and State of Charge (SoC) of the internal battery. When the MEON LiFe is powered ON, the MFB button can be pressed to enter the Settings Menu.

Settings Menu

Pressing the MFB button with the unit powered on will enter the Settings menu. Inside the menu are various display and configuration settings. Continuing to press MFB will highlight the next menu setting. Briefly pressing the front ON/OFF button will toggle the highlighted setting state or confirm the sub-menu selection. Note that only the front panel ON/OFF button is configured for menu use. The rear panel ON/OFF button has no function in the setting menu.

Supplemental Batteries and Charging

An input connector (4-pin XLR Male) is provided on the back panel for connecting supplemental batteries such as Remote Audio's single rack space, "ExtraLiFe" LiFePO₄ battery modules (available in 20 Ah and 40 Ah versions) or LiFeBox portable LiFePO₄ battery modules (available in 20 Ah and 30 Ah versions).



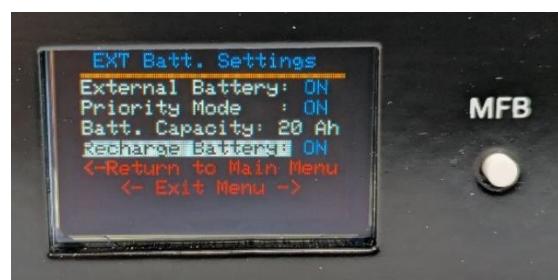
The XLR is wired in the configuration of Pins 1 & 2 (Battery -), Pins 3 & 4 (Battery +). Note, to improve reliability and reduce voltage drop, the contacts are doubled on the DC INPUT. Therefore, if the user wires their own input cables, it is recommended to connect pins 1-2 and 3-4.

After connecting a supplemental battery to the MEON LiFe *Smart*, it will need to be enabled and configured prior to use. First, navigate to the External Battery sub-menu and then toggle the External Battery setting to ON. This turns on the MOSFET for the external battery, allowing it to discharge power through the MEON LiFe *Smart*.



The Priority Mode setting is a new feature that allows the External battery to be prioritized for use first, thereby saving the MEON LiFe *Smart*'s internal battery until the external battery voltage falls below the automatic switchover threshold.

The Battery Capacity setting is used to set the approximate capacity, in Amp hours (Ah), of the external battery. This setting is important for a more accurate SoC calculation for the external battery.



The Recharge Battery setting is used to enable recharging of a connected External Battery when the unit is on AC power. Since the internal 5Amp battery charger is designed for Lithium Iron Phosphate (LiFePO₄) battery charging, it is recommended to only enable recharging on LiFePO₄ chemistry external batteries. It is also important to remember that adding a supplemental battery in this fashion will increase the overall charge time of the system.

Lead Acid batteries can still be used as supplemental batteries with the MEON LiFe *Smart*. However, it is recommended to use them in a discharge only manner, by setting the external battery Recharge Battery setting to OFF.

The LED indicator labeled "Charge Status" signals that battery charging is taking place when (red) or

fully charged when (green). Due to the charge / discharge controller circuitry, the MEON LiFe *Smart* can remain connected to AC power indefinitely without fear of overcharging or damaging the battery.

Remote Control

The Meon LiFe *Smart* has been designed for use with the new SMART Remote control (Sold Separately). This allows for remote viewing of the MEON LiFe *Smart*'s status and performance as well as the ability to remotely turn the MEON's output ON and OFF. The lower USB port can be configured in the remote settings menu to enable a wired data connection with the SMART Remote control. Additionally, the MEON LiFe *Smart* has the option to enable close range Bluetooth low energy wireless communication with the SMART Remote.



Battery Calibration

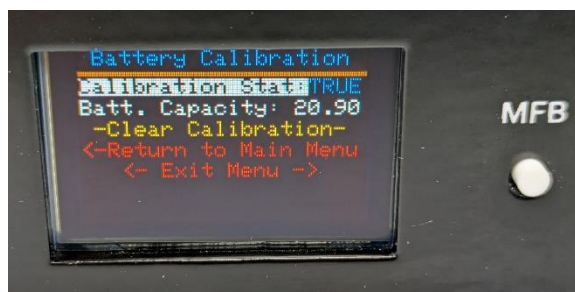
Another new feature of the MEON LiFe *Smart* is the ability to recalibrate the internal battery pack for a more accurate State of Charge during Battery operations. Every MEON LiFe *Smart* has an initial calibration performed at the factory during quality control. While LiFePO₄ batteries benefit from increased stability and longevity, every battery pack will slowly degrade in its useful capacity over time.

If you notice that the MEON is shutting down well before the SoC meter reaches 0% it may be beneficial to clear the current calibration data and run a calibration cycle.

To run the calibration cycle, first disable any supplemental batteries or unplug from the DC Input. Next, make sure the MEON LiFe *Smart* is plugged into AC power and that the internal battery is fully charged with the Charge Status LED Illuminated Green. A "dummy" test load must be applied to the outputs of the MEON to complete the recalibration process. The test load should be at least a minimum of 10.5 Amps, but less than the 14.6 Amp maximum discharge rate. Example: two 12V, 60W H6054 Automotive Headlights.

Once the Meon is configured with the test load, navigate to the Battery Calibration submenu and then highlight the "-Clear Calibration-" menu option. Once highlighted, press the front panel ON/OFF button to confirm. The stored value will be reset to the default 20 .0 Amp hours, and the Calibration Status will now show "None".

To complete the recalibration, Exit the settings menu, then remove AC power from the unit and let the MEON fully discharge the internal battery till depleted and the unit turns off. Once finished, AC power can be restored to the unit. If the calibration cycle is a success, you should now see that the Calibration Status is "True" and the Batt. Capacity has an updated value.



Noise and Shared Power Systems

It is possible to have unwanted audible noise through a common (shared) power source typically due to "ground loops" from the various internal power supplies of the devices being powered. If noise is heard, unplug one device at a time from the MEON noticing any change in noise associated with the removal of each device. If the noise goes away after unplugging a particular device, try powering that device with a separate battery. If using a separate battery causes the noise to go away, then the problem is a ground loop associated with the combination of a common power source and audio grounding schemes. Be aware that this noise will not be removed with "LC" filters found in some cart power supplies. To remove the noise, here are four options for interrupting the ground loop:

- 1) Use a power isolator cable such as the Remote Audio Juicer cable.
- 2) Use a separate battery for the offending device.
- 3) Try different grounding/floating schemes with the audio cables.
- 4) In devices that use a 9V battery, use an isolating 9V battery eliminator.

Important Information about Internal Battery Protection

In addition to the resettable circuit breakers on each output, the MEON LiFe's battery is internally protected from overload and short circuits. In some cases, an overcurrent or short circuit event while under battery operation may activate the protection circuit of the internal battery. In this condition, the MEON LiFe will power back on only when external AC power is applied.

This device contains FCC ID: 2ANgS-ABX00032

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference. (2) this device must accept any interference received, including interference that may cause undesired operation.

This device contains IC ID: 26792-ABX00032

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference. (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Limited Warranty

Remote Audio warrants the MEON LiFe *Smart* against defects in materials and workmanship for a period of one (1) year from the date of original retail purchase. The internal battery pack is warranted for six (6) months. Remote Audio will repair or replace qualifying products at its discretion.

Specifications

Dimensions: 19.00" x 13.00" x 1.75" (1 Rack Space)

Weight: 12.6 lbs

AC Input Voltage: 90-264VAC, 50-60Hz

DC Input Voltage: 12.8V LiFePO₄ or 12V Nominal Lead Acid

DC Output Voltage: 12V Nominal (unregulated), shut down below 10V

Output Current: 18A Max Total (AC), 14.6A Max Total (Internal Batt.)

Output Connectors: 3x Neutrik 4-Pin XLR Female, rated at 9A each

7x Neutrik 4-Pin XLR Female, rated at 5A each

Battery Capacity: 20 Ah (Expandable with optional battery modules)

Battery Charger: 5A LiFePO₄ battery charger

Illuminated Power Switch: Front and Rear mounted

USB Ports: x2, Max continuous charging rate 3A (18W) per port



- 1) Removable rack ears for recessed or reverse mounting.
- 2) 1.5" Color OLED display.
- 3) MFB button.

- 4) Dual USB-A charging ports.
- 5) Charge Status LED.
- 6) Power ON/OFF



- 7) AC input. 90 - 264VAC nominal, 50 / 60 Hz
5A Fast-Blo fuse, GMA or S500
(2.5A for 240VAC locations)

- 8) Power ON/OFF.
- 9) Charge Status LED.
- 10) DC input. pin 1 & 2: (-), pin 3 & 4: (+)



11) High-Capacity DC outputs, 9A each

Pin 1: (-), Pin 4: (+)

12) Standard DC outputs, 5A each

Pin 1: (-), Pin 4: (+)