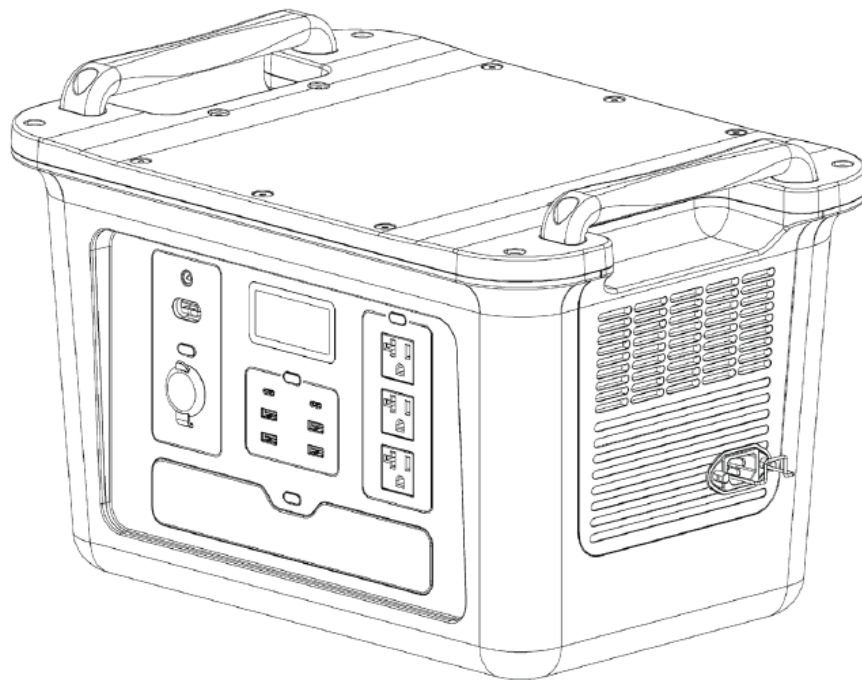




SaverCell 20 System User Manual



Medicanix, Inc. dba Medi-Products

281 Fields Lane, Suite 2B, Brewster, NY 10509

1.800.765.3237 | www.mediproducts.net

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Safety and Disclaimer

Intended Use and Equipment & Wiring Connections

- This UPS system stores energy. Outlets may be live when the system is turned off or after the input power has been disconnected.
- Please be sure to turn off the electricity in the location where the UPS will be installed prior to working on the unit.
- Please be sure that the power supplied to this unit is the proper phase, voltage and amperage specified.
- The UPS system is required to be powered on a dedicated circuit.
- Although the system is supplied with lithium-ion batteries, Medi-Products recommends that the unit should not be located near explosive medical gas storage, open flame heaters, or electric spark-inducing equipment.

Statement of Liability for Medical Environments

- When used within a surgical environment, do not use in the presence of flammable anesthetic mixtures with air, oxygen, or nitrous oxide.
- This battery backup power system is not intended to support life or run life-supporting equipment but rather to power surgical appliances needed in superficial surgical procedures or medical cold storage appliances. Its use is intended for the supply of emergency power to appliances which may be employed in non-life-threatening medical procedures. It is imperative to understand that at no time should a patient remain unattended. At the time of this manual's writing, the FDA has no classification for a general-purpose medical emergency power supply. This system is not a medical device.
- All life-support type equipment, life-signs monitors, gas monitors etc. are expected to have their own built-in FDA approved appliance-specific energy sources and be maintained correctly. General room lighting and exit signs are also expected to have multiple independent energy sources.
- If life-supporting equipment is to be powered by any sort of electrical source or device, it is Medi-Products' expectation that several alternative independent power supply sources and devices be available.
- Appliances such as refrigerators and freezers, and the contents being stored within them, are the responsibility of the owner/operator to see that they are monitored, maintained and tested. Consequential damages and loss of perishable merchandise are not the liability of Medi-Products/Medicanix.
- It is the sole responsibility of the end user or equipment owner to ensure that the battery backup power system has been tested, maintained, and testing records have been kept and filed.

Installation

Pre-installation Steps:

1) Safety Considerations:

- Read these instructions carefully before attempting to install this product.
- Be sure to leave this manual for end user and save for local inspector's use.
- Observe all governing codes and ordinances.
- Proper installation is the responsibility of the installer.
- Product failure due to improper installation is not covered under the warranty.
- This product should not be altered in any way without manufacturer's consent.
- Be sure all hardwire electrical connections are done by a certified electrical contractor.
- Take special care when working with battery cables, connectors & terminals to make sure they are never short circuited.

2) Prepare and Check Installation Site:

First, Identify the area on site where you will be installing the system.

Check all measurements to ensure there will be no physical obstructions. The space directly in front of the unit will need to be accessible, to allow access to the display screen, and for AC outlet connections.

Installation Steps:

This system is designed to be a standalone unit, meaning it comes as a single unit that is plugged directly into the designated wall outlet, and the appliance plugs directly into the AC outlets found on the unit.

Once the unit has been placed in the intended installation area, the 10ft NEMA 5-15 power cord for the system can be connected. The input port for the power cord is located on the right side of the system. The power cord can be connected to that port now, however, please wait to plug system into designated wall outlet at this time.

Please move to the next section to identify pertinent information for your system.

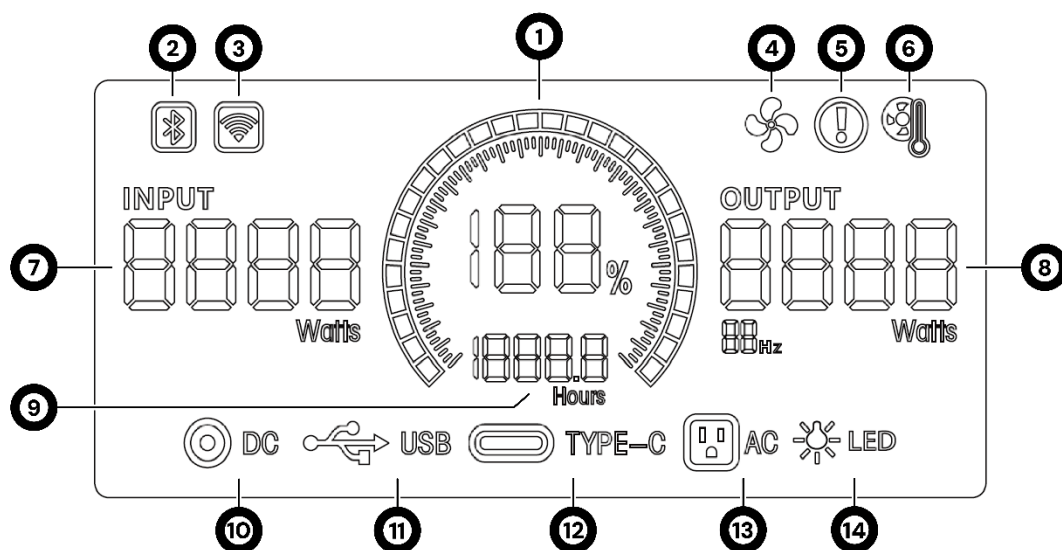
Additional Details:

Once the system has been installed, the system is ready to be plugged in and initialized. Before doing so, please see the following tables to determine any additional pertinent information for your system:

Output Wattage	2000W
AC Power Specifications	100-120v, 60Hz, 15A maximum
Waveform	Pure Sine Wave
Battery Capacity	1872 Wh (1.87kWh)
Battery Type	LiFePO4
Cycles	>3000
Charging / Operating Temperature Range	32°F – 104°F
Dimensions	18.40" Wide x 12.10" Tall x 12.2" Deep
Weight	50.7 lbs

System Protections	
Over Voltage Protection	Low Voltage Protection
Overload Protection	Over Current Protection
Over Temperature Protection	Low Temperature Protection
Short Circuit Protection	

Please see the diagram on the following page, with the accompanying table, to identify the various icons on the Main Display screen:



1 – Battery Percentage Indicator	8 – Output Power Indicator
2 – Bluetooth Indicator	9 – Time Left to Charge / Discharge
3 – Wifi Indicator	10 – DC Power Indicator
4 – Fan Status	11 – USB Power Indicator
5 – Overload Warning Indicator	12 – USB Type-C Power Indicator
6 – Temperature Warning Indicator	13 – AC Power Indicator
7 – Input Power Indicator	14 – LED Light Indicator

Now that you are familiar with the various details, you are ready to move to the next section, to begin initializing your system. Please follow the **Unit Startup Procedure** on the next page to do so.

Unit Startup Procedure

Upon completing each step of the Installation process, follow these steps to start using your system. If at any point a step is unsuccessful, or you have any questions, please call our Technical Support line for assistance, at 1-800-765-3237.

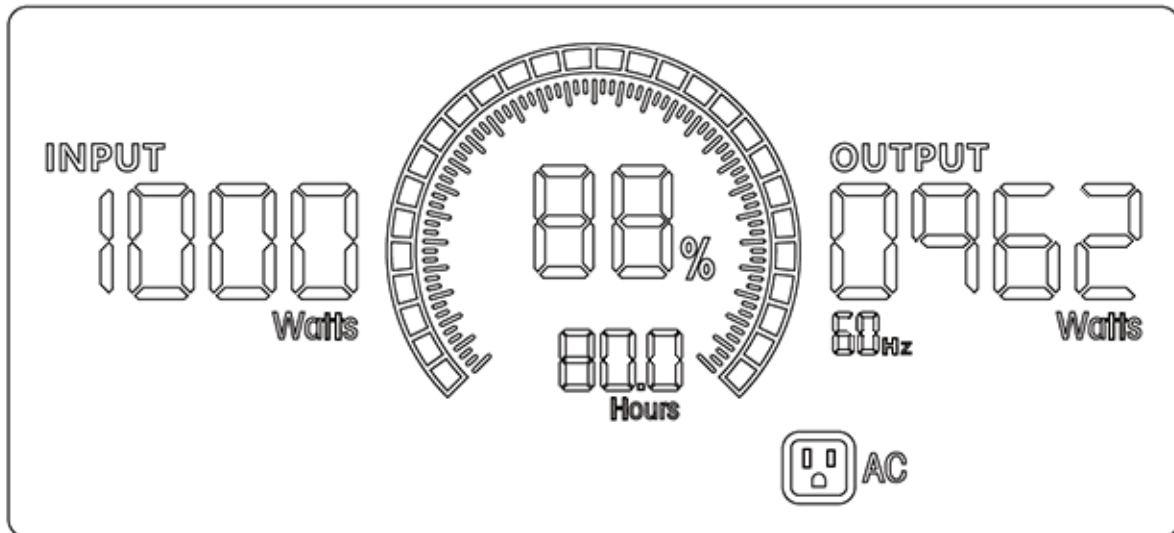
- 1) If installation procedure was followed properly the main power cord will not be plugged into the designated wall outlet. Before plugging system in, power the system on by pressing the silver **Main Power Button** found on the front of the SaverCell 20. The LED light around the button will illuminate.
- 3) Next, to enable the AC outlets, press the **AC Button** found above the AC outlets. To confirm if the AC outlets are enabled, look for the **AC Power Indicator** icon to be present on the **Main Display** screen.
- 4) Plug in an appliance to one of the unit's AC outlets and ensure that your appliance will run on battery power. Once appliance is plugged in, you will also begin to see numbers change in the **Output Power Indicator** section of the **Main Display** screen. This number indicates the output power being used by the appliances.

Note: If you are powering a refrigerator or freezer, make sure you test it long enough to see that the appliance's compressor turns on. You can speed this process up by opening the door of the appliance.
- 5) Once the output has been verified, apply main power to the system. Do this by plugging in the system's power cord to the designated wall outlet. The system will now pass-through power to the load and charge the batteries at the same time. Once plugged in, you will again see numbers begin to change, in the **Input Power Indicator** section of the **Main Display** screen. This number indicates the input power being used to charge the batteries as well as passing through to the appliances.
- 6) Verify that the **AC Power Indicator** is still present on **Main Display** screen, and appliance is still receiving power.
- 7) The system is now operational and has been verified to work solely on battery power, as well as the main power supply from the facility.

Operation

During normal operation, the system shall be plugged into the designated wall outlet, and main power is available. When this is true, the display screen will display the amount of time needed to recharge the system's battery, in the **Time Left to Charge / Discharge** section. The **Battery Percentage Indicator** will also show the current battery percentage, and the circular status bar will change depending on the capacity needed to charge. During typical operation, with your appliance being powered by the UPS system, the **Total Input Power** and **Total Output Power** values will fluctuate. With the appliance being powered, the **AC Power Indicator** will also be present.

Please refer to the diagram below to see how the display screen may typically look:



This display screen details a system that is currently plugged into the designated outlet and charging, while powering an appliance at the same time. The display shows that the battery will be fully charged in 80 Hours, indicated by **Time Left to Charge / Discharge Indicator**. The battery is currently at 88% level, indicated by the **Battery Percentage Indicator** in the center of the display. The system's AC outlets are enabled, shown by the **AC Power Indicator** being present. The system is currently consuming 1,000 Watts from the main supply, and providing 962 Watts to the appliance connected, both detailed by the **Output Power Indicator**. Finally, the included AC outlets are outputting the proper 60Hz. Please keep in mind this is an example display; the information will vary depending on the details of each installation.

Qualified Technical Support

A large amount of energy is stored in the batteries which can cause injury to unqualified persons attempting to effect repairs. Also, no one untrained regarding electrical energy should attempt any service task or remove any of the covers as live circuits will be exposed in all cases. If at any time a problem arises, be as diligent as possible to record any indicators that may be present, and call our Technical Support line when possible.

Testing Procedure

Standards of testing the power system must be implemented and carried out along with your regular testing policies.

Medi-Products sets out the following guidelines and instructions that must be understood and implemented for the use and dependence on our battery backup generators.

Weekly, and Monthly load tests must be performed, recorded and documented. The following criteria must be followed to complete each test:

Weekly Testing:

The recommended weekly test is a quick and simple test which assures the functionality of the transfer switch, auto-invert and charge modes.

This test is performed by disconnecting the power that feeds the battery backup unit, by unplugging its power cord. Upon disconnecting the feed power, your system should switch over to invert mode and draw its power from the batteries. At this point, you should be sure your equipment is still on and running.

Note: If you need to find out your “runtime” contact technical support with your power system’s model and serial number and the make and model of the refrigerator or freezer you are supporting.

After you have ensured that your system has switched over and is inverting, you will need to restore the main power (or plug the system back in). This test should not last more than 2 to 3 minutes.

Monthly Testing:

The monthly test is a load test that needs to be conducted no sooner than 20 days and no longer than 40 days from the prior (monthly) load test. This test is to ensure the battery backup can last 25% of its intended runtime. Your runtime is a predetermined amount of time that your refrigerator will run on the battery backup. This would have been calculated at the time you purchased the unit.

Example: 12 hour run time = Monthly test duration of 3 hours

For the week you are performing the monthly test, it is not necessary to also perform the weekly test.

Another important issue to take note of is that it is possible to over test your power system. Medi-Products battery backup systems use lithium-ion batteries, which if discharged too frequently or discharged too deeply, can cause damage to the batteries, shortening their life expectancy and weakening the health of the battery.

You may want to set a timer to remind you to restore the input power to the system and not over discharge the batteries. Reconnect the input power and recharge the battery bank. This may take several hours.

Record Keeping:

Recording these tests is important for the protection of your vaccines and costly inventory. You can use our example test logs on the following page, and can download more from our website if needed.

Weekly Test Log:

Date:	Test Start Time:	Test End Time:	Status:	Tested By:

Monthly Test Log:

Date:	Test Start Time:	Test End Time:	Status:	Tested By:

Maintenance Procedure

The Medi-Products system contains virtually no moving or lubricated components and therefore requires almost no user maintenance aside from testing / recordkeeping.

The user should be aware that by their nature, battery life is negatively affected by some usage patterns. Of course, batteries are intended to be used, but minimizing deep discharges, and frequent charge / discharge cycles will extend overall life. Their life expectancy will be generally in the range of ten years. Please refer to the section on Battery Testing for more on this subject.

The system has a low battery alarm which will sound when the battery voltage drops below a set value. System display screen should be checked to determine status, if the alarm sounds. Often a low battery alarm will result from a tripped input supply breaker in the main building electric panel. If this is not the cause, please contact Medi-Products promptly.

Unit Shut Down Procedure

If the system needs to be turned off for any reason, please follow these steps:

- 1) Begin by ensuring all connected appliances are powered via different means while the system is being disconnected, to avoid any damage or loss of power.
- 2) First, disconnect the system's power cord from the designated wall outlet. Then, power down the system. Do so by pressing and holding (~5–8 seconds) the **Main Power Button**, until the Green LED light is no longer illuminated.
- 3) Once all cables are disconnected, and the system is powered off, you can now move the system as you please, if necessary.
- 4) If desired, follow the **Installation Steps** and **Unit Startup Procedure** again to re-commission the UPS system.

Warranty Activation Form

Medi-Products warrants that your Emergency Power System is assembled using high quality components and workmanship and is free of defects in material and workmanship. This warranty shall remain in effect for two (2) years from the date of the original consumer purchase of the inverter.

THIS WARRANTY DOES NOT COVER:

- 1) Replacement parts or labor furnished by anyone other than Medi-Products approved service agent. (All approved agents should be licensed electricians or bio-medical technicians or as specifically approved).
- 2) Defects or damage caused by labor furnished by someone other than Medi-Products or an approved service agent.
- 3) Any malfunction or failure of this product while it is in the possession of the owner during the warranty period, if the malfunction or failure is not caused by a defect in material and workmanship of Medi-Products, or if the malfunction or failure is caused by unreasonable use, including the failure to verify the equipment's utility and usefulness prior to emergency conditions.
- 4) Normal battery depletion.

ALSO:

- 1) This warranty is non-transferable to other owners of the product during the warranty period without the express written consent of Medi-Products.
- 2) Medi-Products reserves the right to repair, replace, or allow credit for any material returned under this warranty. Any damage caused by the customer will be charged or deducted from this allowance.
- 3) All warranty work will be performed at Medi-Products factory or using a valid Warranty Authorization Number (WAN) prior to repair. Products shall be delivered to Medi-Products factory freight prepaid and fully insured.

The inverter manufacturer's owner's manual is provided. The owner should become conversant with it and with this owner's manual. Before operating your system be sure to read these safety instructions.

TO INITIATE YOUR WARRANTY PLEASE COMPLETE THIS FORM AND RETURN WITHIN 30 DAYS

It is recommended that you keep a copy of this activation form for your own records.

Model Number: _____

Serial Number: _____

Date of installation: _____

Facility Name: _____

Contact Name: _____

Phone Number: _____

Fax Number: _____

Email Address: _____

Address where System is installed:

Scan and email this form to sales@mediproducts.com, or you can mail it to
Medicanix Inc. 281 Fields Lane, Suite 2B, Brewster, NY 10509.



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