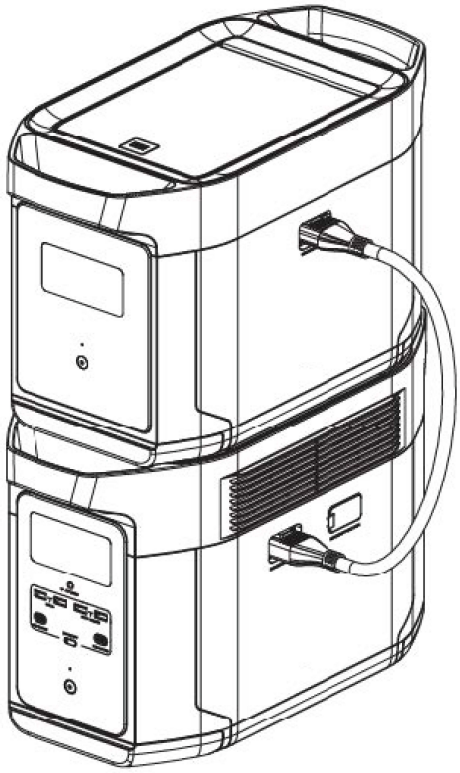
Users Guide & Testing Instructions

SAVERCELL Plus

MediProducts



Questions? 800-765-3237 or visit www.mediproducts.net

This Saver Cell Plus System Includes:

- SAVERCELL System
- SAVERCELL Extra Battery (With Cable)
- User Manual, Spec Sheet, Warranty documents

Safety & Disclaimer:

Intended Use and Equipment & Wiring Connections:

1. **Power Specifications:**
    - Using the correct phase, voltage, and amperage in a battery backup system is essential for efficient operation, equipment compatibility, safety, extended battery life, warranty compliance, regulatory adherence, and reliable performance during critical situations. Incorrect parameters can lead to inefficiencies, damage to equipment, safety hazards, shortened battery life, voided warranties, regulatory penalties, and compromised reliability when needed most. Adhering to specified values is crucial for optimal system performance and overall effectiveness.
2. **Location Considerations:**
    - Lithium-Ion (Li-Ion) batteries are used in the system due to their advantageous characteristics. Li-Ion batteries offer high energy density, longer lifespan, lighter weight, and faster charging compared to traditional battery technologies. Their compact design and reduced maintenance requirements make them ideal for powering backup systems, providing reliable and efficient energy storage for various applications.

- It is strongly advised to avoid locating a battery backup system near explosive medical gas storage, open flame heaters, or spark-inducing equipment. Placing the system in close proximity to such hazards can pose a significant safety risk. Lithium-Ion batteries, commonly used in backup systems, can be sensitive to extreme conditions and may pose a fire hazard. Ensuring a safe distance from explosive materials, open flames, or spark-producing equipment helps mitigate potential dangers and ensures the secure operation of the battery backup system.

Statement of Liability for Medical Environments:

1. **Flammable Anesthetic Mixtures:**
    - Using the system is strictly prohibited in the presence of flammable anesthetic mixtures with air, oxygen, or nitrous oxide within a surgical environment. This restriction is in place to prevent potential ignition risks and ensure the safety of the surgical setting.
2. **Intended Use in Medical Settings:**
    - The system is not intended to support life or life-supporting equipment. Its purpose is for emergency power in non-life-threatening medical procedures, emphasizing its use in situations where backup power is needed but not for critical life support.
3. **Patient Attention and FDA Classification:**
    - Constant patient attention is crucial when using the system. While the system provides emergency power, it is essential to monitor patients closely to ensure their well-being, especially in medical settings. Regular supervision helps address any potential issues promptly and ensures a timely response to changing patient needs during power outages or emergencies.
    - It's important to note that a general-purpose medical battery backup system lacks FDA classification. This emphasizes the need for careful

consideration and evaluation of the system's specifications and intended use in medical settings, as it may not have undergone specific regulatory scrutiny for medical device classification by the U.S. Food and Drug Administration (FDA). Users should be aware of this when selecting and utilizing such systems in healthcare environments.

4. **Equipment-Specific Energy Sources:**
    - It is crucial to stress that life-supporting equipment, monitors, gas monitors, room lighting, and exit signs should have their own FDA-approved, appliance-specific battery backup systems. Relying on dedicated backup solutions ensures compliance with regulatory standards and enhances the safety and reliability of critical medical equipment in the event of power interruptions or emergencies.
5. **Responsibilities of Equipment Owner:**
    - Equipment owners bear the responsibility of monitoring, maintaining, and testing appliances, such as refrigerators and freezers. Regular monitoring ensures proper functionality, maintenance helps prevent issues, and periodic testing guarantees that appliances operate effectively. These responsibilities are essential to ensure the longevity and reliable performance of the equipment.
6. **Liability Clarifications:**
    - It is important to specify that consequential damages and the loss of perishable merchandise are not the liability of Medi-Products/Medicanix. Users should be aware that the manufacturer is not responsible for indirect damages or losses resulting from power outages, emphasizing the need for appropriate precautions and additional safeguards to protect perishable items.

7. **End User Responsibility:**

    - It is important to specify that consequential damages and the loss of perishable merchandise are not the liability of the battery backup manufacturer. Users should be aware that the manufacturer is not responsible for indirect damages or losses resulting from power outages, emphasizing the need for appropriate precautions and additional safeguards to protect perishable items.

Specifications

General Info:

- Net Weight:
  40 lbs. (18 kg.)
- Dimensions:
  Width: 18.25” Depth: 9.25” Height: 11” (46.4 x 23.5 x 28.3 cm)
- Capacity:
  - 2000 Watt Hours

Output:

1500 Watts Max

Cycle Life

- 800 cycles @ 80% capacity

Environmental Conditions

Optimal Operating Temperature: 68°F to 86°F (20°C to 30°C)
Discharge Temperature: -4°F to 113°F (-20°C to 45°C)
Charge Temperature: 32°F to 113°F (0°C to 45°C)
Storage Temperature: -4°F to 86°F (-20°C to 45°C)

Protection

- Over Voltage Protection
- Overload Protection
- Over Temperature Protection
- Short Circuit Protection
- Low Temperature Protection
- Low Voltage Protection
- Over Current Protection

SAVERCELL Plus Startup Procedure:

1. **Initial Inspection:**
   - Place the SAVERCELL on a flat and stable surface.
   - Inspect the SAVERCELL for any visible damage.
2. **Power Station Connection:**
   - Ensure the SAVERCELL is powered off, and not plugged into the wall outlet or solar panels.
   - Connect the Additional Battery unit to the Main SAVERCELL unit, using the provided power cord located in the top compartment of the additional battery unit.
   - Be sure not to connect/disconnect the power cable when the system is charging/discharging. If necessary, power off both units before connecting or disconnecting.
3. **Power On:**
   - Locate the power button on the SAVERCELL.
   - Press and hold the power button until the unit powers on.
   - Wait for the SAVERCELL to initialize.
   - Ensure both LCD screens show an “Extra Battery Icon” before plugging in the system to charge
   - Locate the secondary power button (on back of system) which turns on the unit’s output outlets.
   - Press the secondary power button to power on the outlets.
4. **LCD Display Check:**
   - Check the LCD display or screen for the current battery level, input/ output information, and other relevant details.
5. **Connecting Refrigerator or Freezer:**
   - Connect your refrigerator or freezer to the available output ports on the SAVERCELL.
   - Ensure the appliance that is being supported is on and operating.
6. **Monitoring:**
   - Monitor the SAVERCELL’s status on the display.
   - Ensure that the connected refrigerator or freezer is receiving backup power.

7. **Always Plugged In:**
    - For continuous power support, keep the SAVERCELL always plugged into a power source.
8. **Shutdown (when not in use):**
    - When you're not using the SAVERCELL, power off the connected refrigerator or freezer.

Testing Procedures for SAVERCELL Battery Backup System:

Medi-Products emphasizes the importance of implementing rigorous testing standards for the SAVERCELL battery backup system. Regular testing, including weekly, monthly, and annual load tests, is crucial for ensuring the functionality and reliability of the power system. The following guidelines must be understood and adhered to:

Weekly Testing:

Objective: To verify the functionality of the transfer switch, auto-invert, and charge mode.

Procedure:

- Disconnect the power feeding the battery backup unit or unplug its power cord for a quick test.
- Confirm that the system switches to invert mode, drawing power from the batteries.
- Ensure that supported equipment remains operational during this period.

Runtime Information:

- Contact tech support with your power system's model and serial number, along with the refrigerator or freezer make and model, to determine the runtime.
- Standard runtime for operating room equipment is 2 hours.

Duration:

- The test should not last more than 2 to 3 minutes.

Monthly Testing:

Objective:

- Conduct a load test to ensure the generator can last 25% of its intended runtime.

Frequency:

- Conduct the test no sooner than 20 days and no longer than 40 days from the prior monthly load test.

Runtime Calculation:

- The runtime is a predetermined amount calculated at the time of purchase based on the refrigerator's expected running time on battery backup.

Example:

- If the runtime is 12 hours, the monthly test duration is 3 hours.

Note:

- It is not necessary to perform the weekly test during the week the monthly test is conducted.

Caution:

Restoration:

- Reconnect the input power promptly and allow time for the battery bank to recharge, which may take several hours

Record Keeping:

Importance:

- Maintain detailed records of these tests for the protection of vaccines and valuable inventory.

Resources:

- Utilize test logs provided in service manuals or available for download from the Medi-Products website.

Disposal Guidelines:

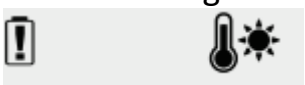
- If possible, fully discharge the battery before placing it in a designated battery recycling bin. Never throw it in regular trash due to potentially harmful chemicals. Follow local laws for battery recycling.
- If the battery can't be fully discharged due to a product issue, don't put it in a recycling bin. Contact a professional battery recycling company for proper disposal.
- Dispose of over-discharged batteries that can't be recharged through appropriate channels. Do not attempt to recycle them conventionally. Contact a professional battery recycling service to ensure safe and environmentally responsible disposal.

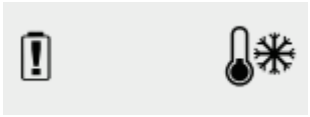
Extra Battery Usage Guidelines:

Here are some important points to remember before using the product:

- Before connecting the SAVERCELL system and the Extra Battery, ensure both are powered off.
- After connecting, check for Extra Battery icons on both LCD screens before charging or discharging.
- NEVER connect Extra Battery while SAVERCELL is charging or discharging. Power off both before removing the cable.
- Avoid touching the metal Extra Battery Port; clean it with a dry cloth if needed.
- Connect the cable tightly to prevent overheating, which could affect performance or pose a fire risk.

Troubleshooting

Indicator	Problem	Solution
Icons flash together 	High-temperature charge protection	Charging can be resumed automatically after the battery cools down
Icons flash together 	High-temperature discharge protection	The power supply can be resumed automatically after the battery cools down

Icons flash together 	Low-temperature charge protection	Charging can be resumed automatically after the battery temperature rises above 41°F
Icons flash together 	Low-temperature discharge protection	Charging can be resumed automatically after the battery temperature rises above 10°F
Icon flashes 	Battery overload protection short circuit protection during discharging	Remove high-power electrical appliances
Icon stays ON 	Battery failure	Contact SAVER cell customer service

Warranty Activation Form:

MEDI-PRODUCTS SAVERCELL™ Emergency Power System

MEDI-PRODUCTS warrants that your SAVERCELL™ 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. Warranty on the batteries is pro-rated over 30 months.

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 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 SAVERCELL™, 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.

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: _____

Email Address: _____

Address Where System is Installed:

Weekly Test Log:

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

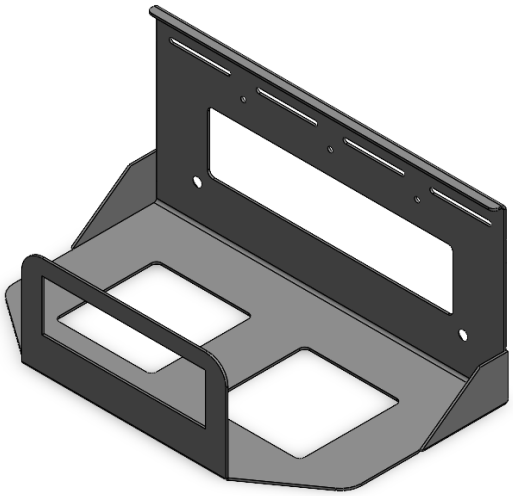
Monthly Test Log:

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

Wall Bracket Installation Instructions

SAVERCELL and SAVERCELL Plus

Questions? 800-765-3237 or visit www.mediproducts.net



BEFORE YOU BEGIN:

Read these instructions carefully before attempting to install this product.

- **Note to Installer** – Be sure to leave these instructions with the end user.
- **Skill Level** - Installation of this appliance requires basic mechanical skills.
- 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 anyway without manufacturers consent.

- **IMPORTANT –** Save these Instructions for local inspectors use.
- **IMPORTANT –** Observe all governing codes and ordinances.

FOR YOUR SAFETY:

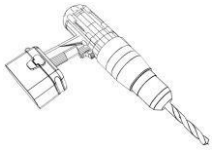
- Be sure all hardwire electrical connections are done by a certified electrical contractor.
- Always wear protective eye, hand and footwear while assembling this system.

Prepare for the Installation

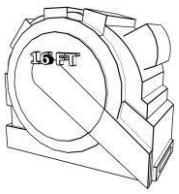
Needed Tools:

Gloves

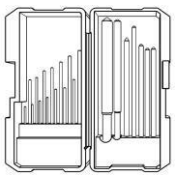
Wrench



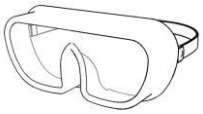
Screw Gun/Drill



Tape Measure



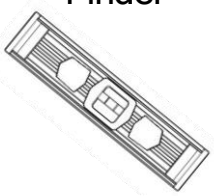
Drill Bit Set



Safety Glasses

Stud Finder

Pencil



Level

Phillips Head & ¼” Hex Bit

Parts & Supplies Provided:

Savercell Wall Bracket

Flip Toggle Fasteners & Bolts

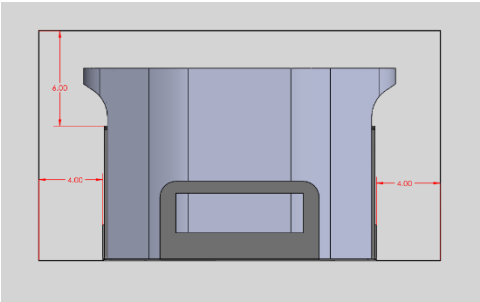
User Manual & Testing Guide

PRE-INSTALLATION STEPS

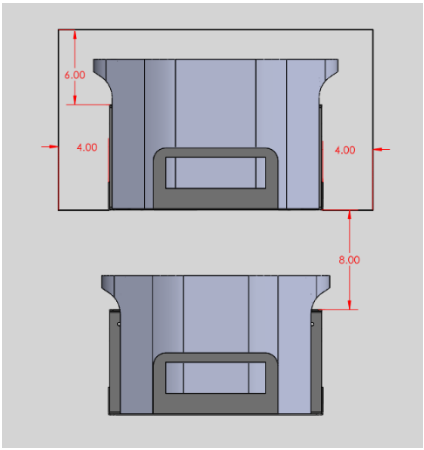
Prepare your Wall:

Identify the area on the wall where you will be mounting the Savercell system.

Check all measurements to ensure there will be no obstructions. You will need a space that is at minimum 18” wide and 9” high, with at least 6” above and 4” on either side free. Also ensure the mounting location is close enough to an outlet to plug in the Savercell system, and close enough to your appliances to be plugged in as well.

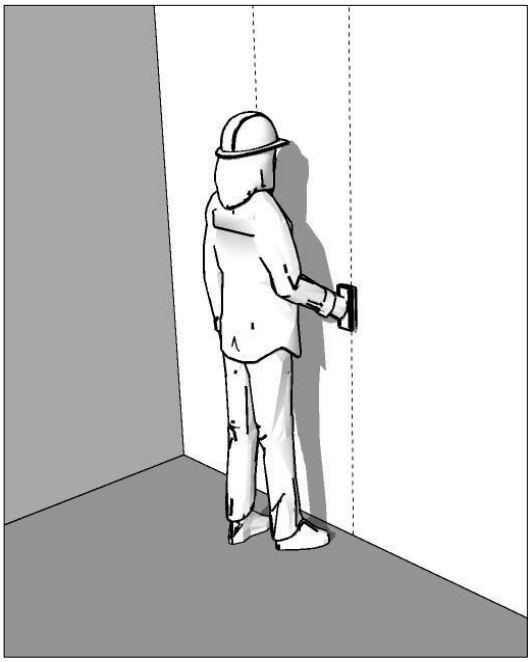


If installing the Savercell Plus Extra Battery, mount your second bracket at least 8” below your first bracket.



The space directly above and on the sides will need to be accessible to remove the system from the wall bracket, and for future servicing.

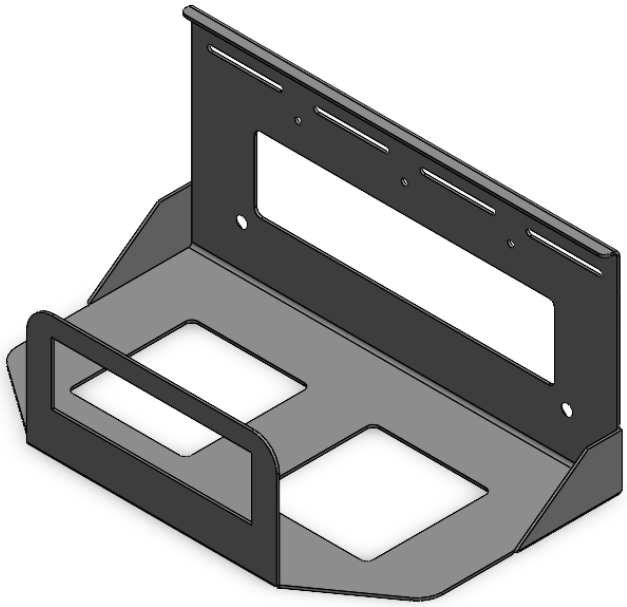
Locate and mark the wall studs directly behind the intended location where the bracket will be mounted using a stud finder.



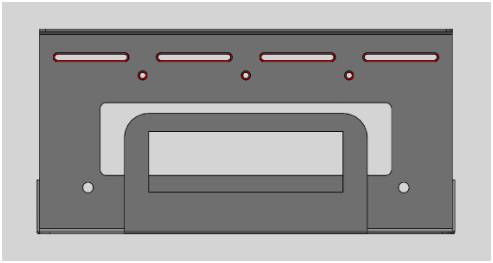
It’s important that your bracket is fastened to at least 1 sturdy wall stud, preferably 2 if possible.

Un-Wrap Bracket & Prepare for Mounting:

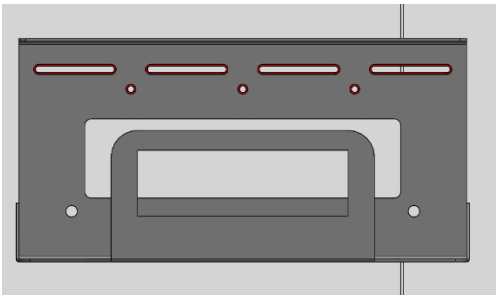
Unwrap bracket and dispose of wrapping material, setting aside the wall anchor bolts and toggle anchors.



The Savercell Wall Bracket comes with four wall anchors to secure the bracket to the wall. You may use either the ¼" slots or the ¼" holes located near the top of the bracket to secure the bracket to the wall (Highlighted in red below).



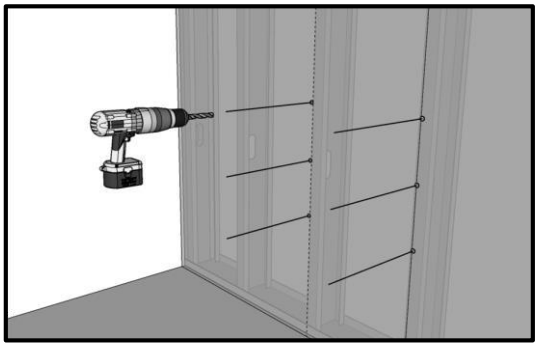
Hold the bracket up to the wall and mark each mounting hole. If possible be sure that at least one of the mounting points lines up with a wall stud, like in the image below.



INSTALLATION STEPS

Mounting Bracket to Wall:

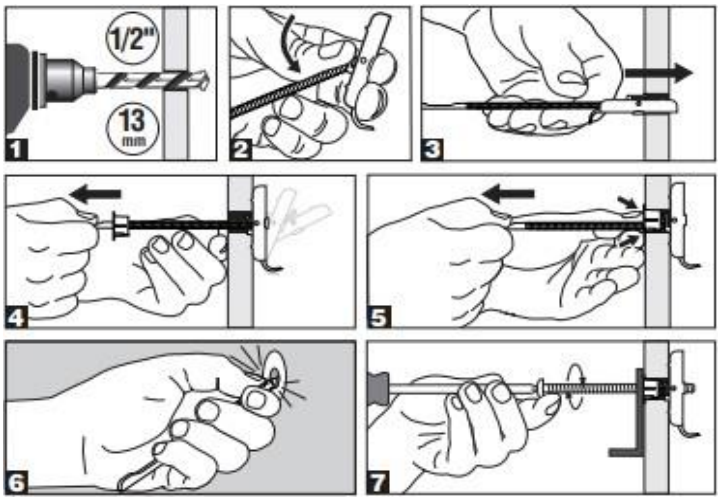
For installations that involve securing to metal studs, drill out the marked holes using a ½" drill bit, ensuring the hole is in the middle of the studs, if possible.



For installations that involve wood studs, pre-drill the marked holes with the appropriate bit for 3/8" lag bolts.

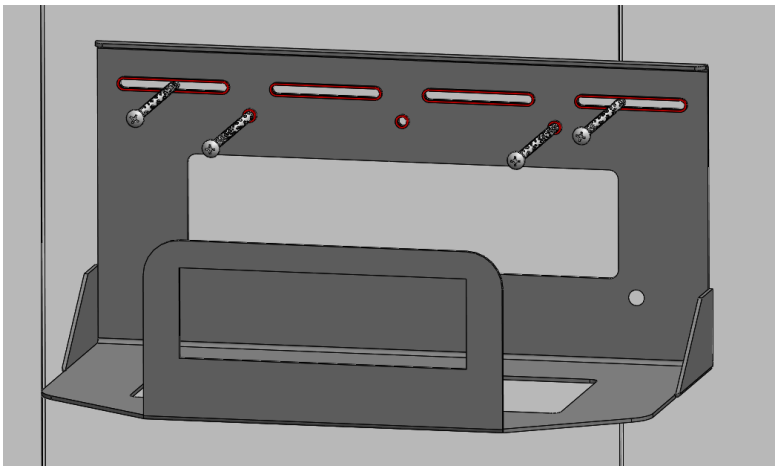
Install the provided toggle wall fasteners into the ½" holes ensuring the toggle plate is horizontal. Once the toggle is in the wall, pull slightly so the toggle is flat against the inside of the wall, and push the cap so it is tight to the outside of the wall. Snap off the excess sticking out of the hole.

Below is an image showing how to install the toggle wall fastener:



Mounting Bracket to Wall (continued):

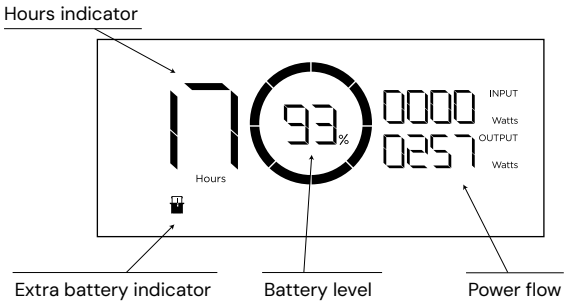
Once the wall fasteners are all in place, Hold the wall bracket against the wall and secure the bracket to the wall by screwing the ¼-20 anchor bolts into the holes, and tightening.



You can now place your Savercell system in the wall bracket.

Continue with the appropriate start up procedure, once again ensuring the Savercell can be plugged in to the wall outlet.

If installing a Savercell Plus, repeat these steps with the additional wall bracket for the extra battery cell. Once the second wall bracket is installed, you may place the extra battery into the bracket, and continue with the appropriate start up procedure, making sure the extra battery is connected to the Savercell system.



Hours indicator:

When the system is plugged into utility power, it shows the estimated time remaining until the battery is fully charged.

If utility power is lost or the system is unplugged, it displays the estimated number of hours of battery runtime remaining based on the current rate of discharge.

Battery level indicator:

Shows the battery level as a percentage, indicating the current state of charge.

Power flow indicator:

The input value shows how much power the system is drawing from utility power.

The output value shows how much power is being drawn by the connected appliance(s).