



Powerblocks - General Overview of Operation

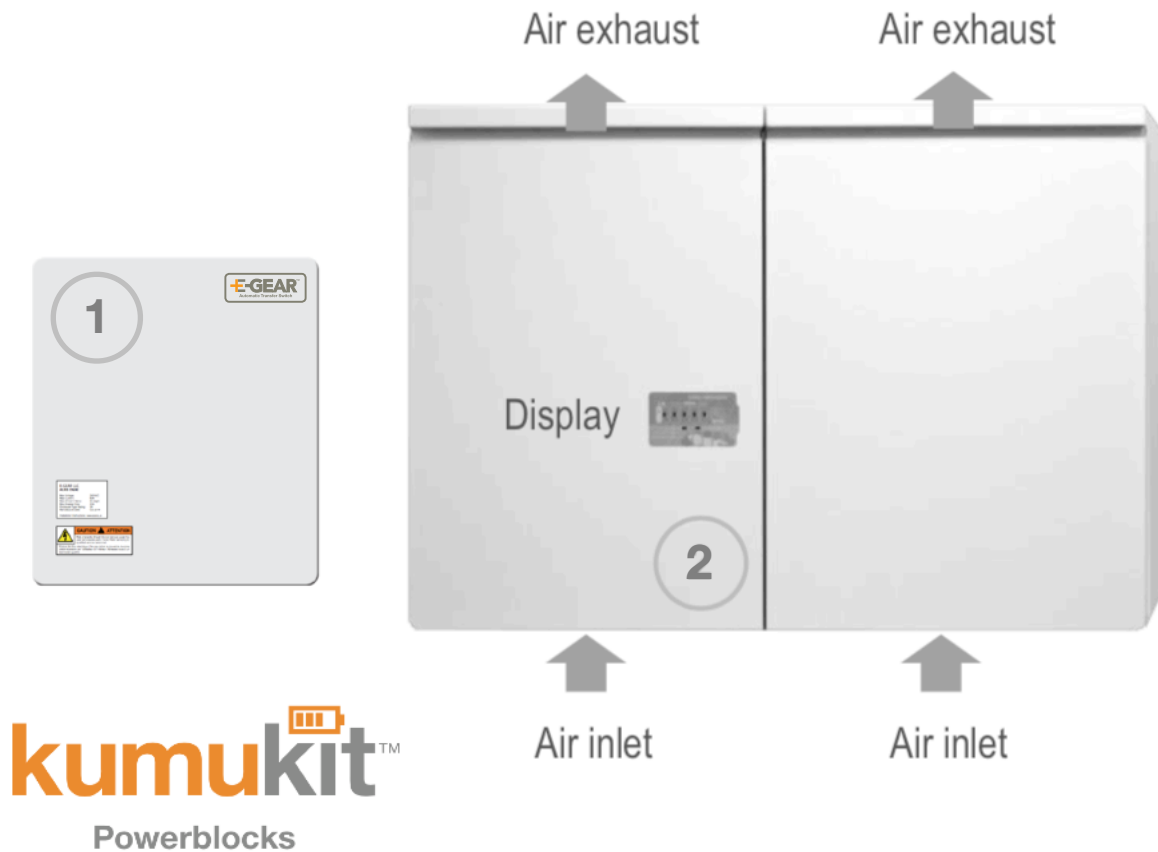
This operational overview applies to the following products:

Powerblocks 3.2 based on Eguana Evolve with LG Chem 3.2kWh battery modules

Powerblocks 6.5 based on Eguana Evolve with LG Chem 6.5kWh battery modules

This overview contains instructions for the operation of the Powerblocks home energy storage system. This product, when installed, is permanently wired to the home electrical panel.

There are two main components as shown below, including the energy management system with auto transfer switch (1), and the battery system (2).



System Monitoring

The system can be viewed online via desktop or mobile by signing into your account at www.mypowermyway.com.

You will receive an automated invitation to setup your account after the installer has completed the system installation.

From the monitoring system, you will be able to:
 Monitor your solar, battery, and home energy consumption.
 Manually adjust the backup battery reserve capacity in case of weather events.



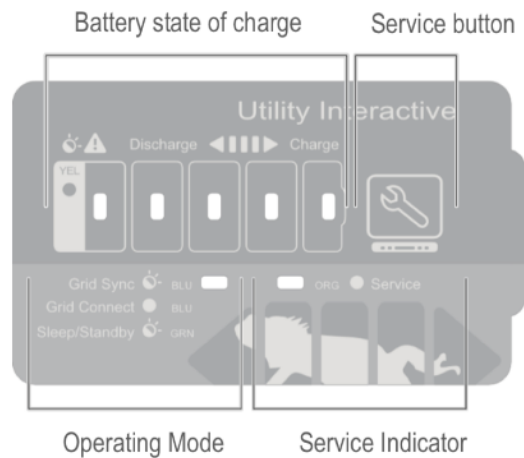
For a complete tutorial on the monitoring system, login to your account, and select [Tutorial] in the support widget at the center of the dashboard menu.

Operation

The Powerblocks home energy storage system is fully automated. The energy management controller (EMC) will be programmed to connect the system to the grid after AC connection and DC battery source is applied. While the monitoring system provides a complete dashboard of your system’s operating state, the LED display on the front of the battery system can be used to determine its present operating conditions.

The display panel provides indication of the following:
 Battery state of charge
 System operating mode
 (out of) Service Indicator

To conserve energy, the LEDs may turn off after 5 minutes from being activated. They can be re-activated by pressing the service button.



Indicator	Status	Display type	Color
Battery Status	State of charge	(L-R): 5 LEDs, 20% SOC per LED	Green (Yellow indicates <20%)
	Initialized	One time blink	Multi
	Charging	Blinking pattern - right	Green
	Discharging	Blinking pattern - left	Green
System Operating Mode	Sleep/Standby	Blinking pattern	Green
	Pre grid-connect notification	Blinking pattern	Blue
	Grid connected	On	Blue
	Off-grid mode	ON or Blinking pattern	Green/Yellow
Service Status	Service	On	Orange

The service button can be used to wake the LED display, and either put the system into or out of service mode, as well as cycle through various operating modes.

IMPORTANT! In the event that the system has gone out of service, please consult your installer for guidance. Depending on the nature of the service fault, our technical department may advise you to reset the system on your own, or schedule a service visit.

Observed state	Action	Service button command
All panel lights off	Wake panel display	Press and release
Service light on	Exit service mode	Press and hold 5 seconds

Backup Power Operation

This system will provide limited backup power to dedicated electrical outlets located inside the protected loads electrical sub panel. **The Powerblocks battery energy storage system will not supply power to the entire home during a grid outage.** There is an option to hard wire limited emergency circuits from within the home to this protected load panel for an additional fee. The power source is limited in power rating and duration, both of which are dependent on the nature of the loads connected to the system, and the available solar supply. This system is designed to reliably provide power to a refrigerator, home lighting, home electronics, and small appliances. Please refer to the document titled [Powerblocks - Understanding Protected Loads] for more information.



NOTE: While the battery system does provide grid quality backup power (pure sine wave) following a grid outage, the power in the home will be interrupted for up to four seconds before backup power generation commences. As a result of this interruption, a desktop or portable Uninterruptible Power Supply (UPS) is recommended if continuous operation is desired for any electronic devices.

IMPORTANT! Surge rated loads (compressor and motor type loads) may greatly reduce the power output capability of the battery system, and cause premature overload conditions. Equipment of this type that is connected to the backup panel should be inspected and tested regularly as per manufacturer suggested schedules. Do not attempt to add loads of this type to the backup panel without consulting your installer. Permanent damage to the battery system and/or your equipment may occur if exposed to chronic overloading cycles.

IMPORTANT! Portable extension cords connected to a backup circuit should be limited to 30 feet.

If you experience nuisance power trips while in backup operation, you may need to reduce the power requirement by turning off some devices to prevent further power tripping events. The energy storage system will automatically reset after a short period of time and reattempt to meet the power requirement. After several attempts to automatically reset power within a short period, the system will protect itself by going into maintenance mode. The service light on the LED display will come ON.

If the service light comes ON while in backup mode, there may be an overload condition which prevents the system from operating safely. If the battery state-of-charge (SOC) is greater than 20% (one or more Green LEDs), reduce the load by shutting off circuits in the backup electrical panel, then press and hold the service button 5 seconds to resume backup power operation. If the battery SOC is less than 20% (SOC Led is yellow), do not attempt to resume backup operation until sunlight is present to provide a solar charge of the battery.

If you do not have power to connected devices while in backup mode, please check to see if any circuit breakers may need to be reset in the protected loads panel. Some breakers and outlets may also have built in ground fault Interrupt (GFI) circuitry for additional protection and safety that may need to be reset.

In the event that there is not enough solar generation to maintain battery operation in an extended duration grid outage, the battery system will automatically shutdown to a standby state with a minimum operating reserve, and attempt to restart at the beginning of the next solar charge cycle. During the standby state, there will no longer be any backup power available. This cycle will repeat until, a) the grid power returns, or b) the battery depletes to a hibernation state, where no backup power is available. In the event that the battery reaches hibernation, the grid power must be available to restart the battery system.

IMPORTANT! This product does not support automatic gas generator integration. Do not attempt to connect a gas generator to the battery system. If generator support is required, consult your installer regarding a separate manual transfer to your backup electrical panel.

Maintenance

The Powerblocks home energy storage system is a maintenance free product. Regularly scheduled inspection of the airflow path for the active cooling fans on the bottom side of the PCS cabinet is all that is required. This inspection should occur on an annual basis. If the fan ventilation holes are obstructed with dust / debris, a soft-bristled brush can be used to wipe them clean.

If the monitoring system is not accessible, check the internet connection. If connection is via wi-fi, reboot wireless router, and make sure login user and password have not been changed since time of original installation. Please refer to the document. [E-Gear - EMC Power Cycle] for instructions on how to reboot the EMC device. If first attempts are not successful, try again the following day then contact our service department for additional assistance. Note: monitoring system servers may occasionally be down for service or system updates.

IMPORTANT! An internet connection is required in order to make warranty claims for defective battery modules. The system supports wired, wi-fi, and cellular internet connection options.