



## ❖ Evolve Owner's Manual

Model  
Evolve 0513

## IMPORTANT INSTRUCTIONS

This manual contains important product information for your Evolve home energy storage system. This document is accurate at the time of publishing. Eguana reserves the right to make updates to the product without notice. For the latest Evolve documents, please visit our website at [www.eguanatech.com](http://www.eguanatech.com)

**WARNING! Read this document in its entirety before using this product.** Failure to follow instructions or warnings can result in electrical shock, serious injury, or death. Operating the product in a way that it was not intended can also result in permanent damage to the product.

This manual applies to the following products:

Evolve 0513 Energy Storage System

### **Warranty**

The Eguana Evolve includes a 10 year standard warranty with performance pro-rating for the battery modules. Please review the warranty statement included with your product.

**IMPORTANT! An internet connection is required in order to make warranty claims for defective battery modules.** The Evolve system supports wired and/or wi-fi internet connection options. Please consult your installer regarding your preferred internet connection method.




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# 1 Safety

Throughout this manual, the following symbols will be used to highlight important information and procedures:

Symbol	Definition
	<b>WARNING!</b> A dangerous voltage or other condition exists. Use extreme caution when performing these tasks.
	<b>CAUTION!</b> This information is critical to the safe installation and or operation of the system. Follow these instructions closely.
	<b>NOTE:</b> This statement is important. Follow instructions closely.

## 1.1 In case of emergency

### **In all cases:**

If safe to do so, switch off the AC breakers (external to the system) for the system.  
Contact the fire department or other required emergency response team.  
Evacuate the area, and if applicable, follow your emergency evacuation plan if others are in proximity to the installed location.

### **In case of fire:**

When safe, use a fire extinguisher suitable for use; including A, B, and C dry chemical fire extinguishers or carbon dioxide extinguishers. Do not use type D extinguishers.

### **In case of flooding:**

Stay out of water if any part of the system or wiring is submerged.  
Do not attempt to operate batteries that have been submerged in water even after they have been dried.

### **In case of unusual noise, smell or smoke:**

If safe to do so, ventilate the area.

### **In case of weather alerts including tornado, hurricane or potentially wind-damaging risk:**

The system is capable of automatically generating emergency backup power on loss of grid, however, in the case where winds are potentially threatening to your building structure and safety, it is recommended to shut down your system in advance of, and for the duration of, the extreme weather event, and to return to operation only after it appears safe to do so.

## 1.2 General safety precautions



**Important!** Never operate the system in a manner not described by this manual.



Only qualified personnel should service this product.

### Risks of Fire

Do not expose the system to temperatures exceeding 45 degrees Celsius.

Avoid installation in direct sunlight.

Do not store objects on top of the cabinet.

Do not obstruct the intake or exhaust of the forced airflow system.

Do not store combustible objects and corrosive chemicals directly adjacent to the system.



### Risks of Shock

**WARNING! Hazardous Voltages. The Inverter contains hazardous voltage and energy that may be lethal.** It may only be installed by qualified personnel who have read this manual and are familiar with its operation and hazards.



Only connect the PCS cabinet to a compatible electrical service as defined in the model specifications. The PCS must be connected to a dedicated branch circuit in the main electrical panel.

Ensure proper electrical grounding in accordance with code requirements.



**CAUTION!** Both AC and DC voltage sources are terminated inside this equipment. Each circuit must be disconnected before servicing.

### Risks of Damage

The PCS is compatible with the LG Chem battery model EM048126P3S7 only. Do not attempt to connect any other battery to the system.

Do not connect any other loads directly to the battery power bus.



Do not drop, tip, or puncture the cabinet during transport and installation. Visible damage to the cabinet and/or internal components should be reported to the manufacturer immediately.

Do not store this system for periods longer than six months without a battery maintenance charge. This may result in permanent damage to the batteries.

Do not operate the system outside the operating temperature range (-10 to 45C)



## 1.3 Environmental Protection

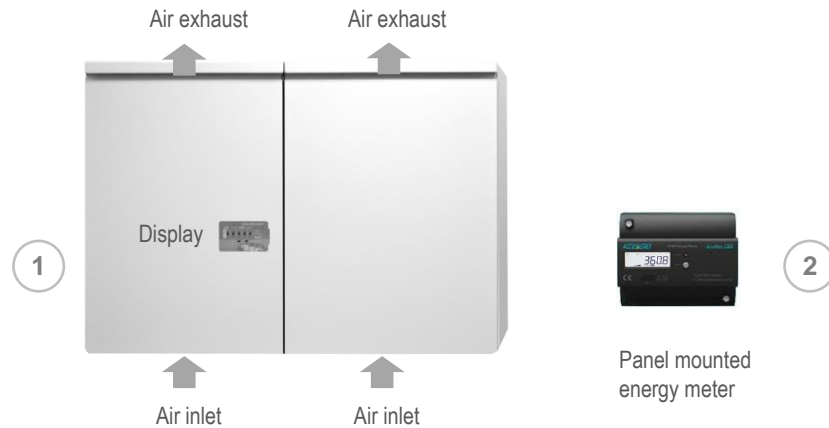
Do not dispose of the system or any of the components within the cabinet. Batteries, electronics, cables, and metal parts are recyclable. Consult your municipal waste management authority to determine required methods of component recycling.

## 2 INTRODUCTION

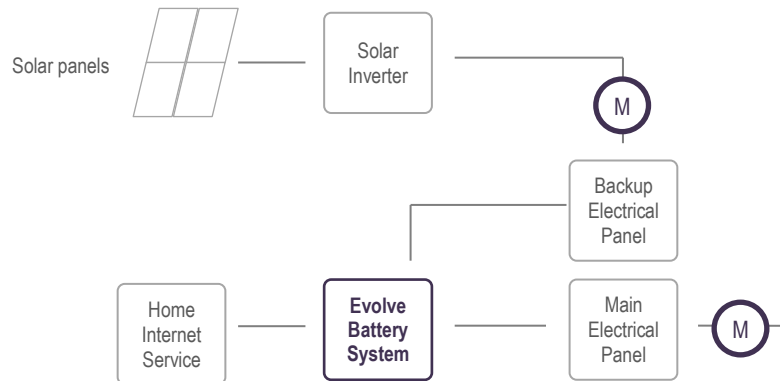
### 2.1 Overview

This manual contains instructions for the operation of the Eguana Evolve™ 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 storage system (1), and the energy meters installed in the main electrical panel (2). Your system may include one or two meters, depending on the solar system that is installed.



This product is intended to operate in parallel with a utility connected solar PV system, and is designed to manage the consumption of utility or solar energy within the home. The system is capable of providing limited backup power to the home in case of a grid outage, as well as charge batteries from the solar system. A sample diagram below shows a typical layout of an AC coupled solar plus storage system.



Your system may be installed in a manner differently than shown above. In addition, in accordance with your local electrical code, your installer may have included dedicated emergency disconnect switches for your battery and solar systems. Consult your system installer regarding the application and installation setup of your specific system. Refer to the Installer Checklist at the end of this document regarding information to be provided to you from your certified system installer.

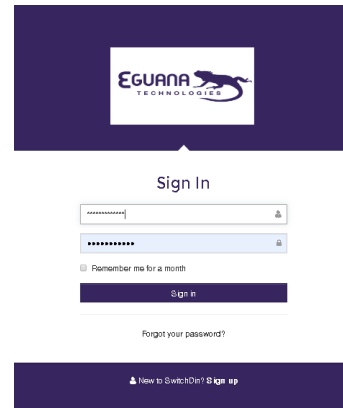
The backup electrical panel shown is a dedicated electrical bus separated from the main electrical bus. While they are shown as two independent panels above, in many cases, the backup bus resides within the main panel.

## 2.2 System Monitoring – Account Setup

The system can be viewed online via desktop or mobile by signing into your account at:

<https://app.switchdin.com/accounts/sign-in?profile=eguana>.

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



## 3 Operation

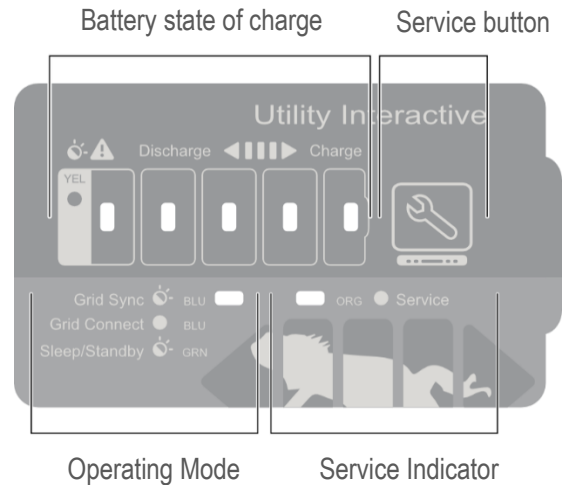
The Evolve home energy storage system is fully automated. The EMS will be programmed to connect the system to the grid after AC and DC sources are applied. While the monitoring system provides a complete dashboard of your system's operating state, the LED display on the front of the battery system can be used to determine its present operating conditions.

### 3.1 LED Display Indicators

The display panel provides indication of the following:

- Battery status (state of charge)
- System operating mode
- (out of) Service Indicator

To conserve energy, the LEDs will 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

## 3.2 Service Button

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, your installer 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

## 4 Backup Power Operation

This system will provide backup power to dedicated electrical circuits within the home via a permanently wired electrical sub-panel, referred to as the backup panel. 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.



**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 10 meters. Do not attempt to power loads to outbuildings while in backup mode.



**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 UPS is recommended if continuous, uninterrupted operation is desired for any sensitive electronic equipment.

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.

## 5 Maintenance

The Evolve 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, or coincide with PV inspection.

If the fan ventilation holes are obstructed with dust / debris, a soft-bristled brush can be used to wipe them clean. For heavy soiling use a soft, dry brush. Do not use any solvents, scouring, or corrosive materials to clean the unit. Never remove or unplug connections or plugs during cleaning.



## 6 Troubleshooting

System faults are reported and logged in the monitoring system. All fault logs are also accessible remotely by your installer.



**IMPORTANT!** Contact your system installer as recommended below if any of the following conditions are present on the front display of the inverter panel.

PCS indicator status	Definition
Service light ON in grid mode	System is prevented from normal operation due to internal fault. Notify service personnel.
Service light ON in backup mode	If the system faults into service in backup operating mode, there may be an overload condition which prevents the system from operating safely. If the battery SOC is greater than 20% (one or more Green battery status 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.
All panel lights flashing	System is attempting to communicate with the battery modules. Notify service personnel if this condition persists more than 30 minutes.
All panel lights OFF after service button wake command	This indicates loss of both AC And DC sources to the PCS.
Online monitoring system 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. Check power to the Evolve energy management system via the orange indicator light on the right side of the panel. Note: the energy management system may lose power after an extended grid outage where there is not enough solar generation to maintain battery system power. Note: monitoring system servers may occasionally be down for service. If first attempts are not successfully, try again the following day before contacting your installer.

## 7 Installer Checklist

Following the completion of your energy storage system installation, ensure your installer has provided you with the following information for your personal records. Note that we may ask you for this information in the event you need to make a warranty claim:

- Record of purchase, including date of installation, installer name and contact details.
- Copy of the electrical permit.
- Serial numbers for Battery System cabinets (PCS & Battery).
- EMS gateway UID – this is the unique identifier of your EMS gateway that connects to your internet service.

Further to the information provided above, ask your installer to identify the following within your system installation:

- Location of circuit breakers, and if applicable, installed emergency disconnect switches in case an emergency shutdown of the equipment is required.
- Location of the backup electrical panel, including a list and identifier of each circuit within the panel.
- Record of all loads tested at the time of installation.