## Your gateway to a more resilient supply of clean energy.

Adding an Evolve energy storage system to your new or existing solar PV system has never been easier with the Evolve Hub. Loaded with an energy management controller & gateway, an automatic bypass switch, and an 8-channel programmable power meter, multi-mode solar plus storage configurations are more flexible than ever. The AC coupled architecture ensures compatibility with your preferred solar PV inverter brand.

EGUANA

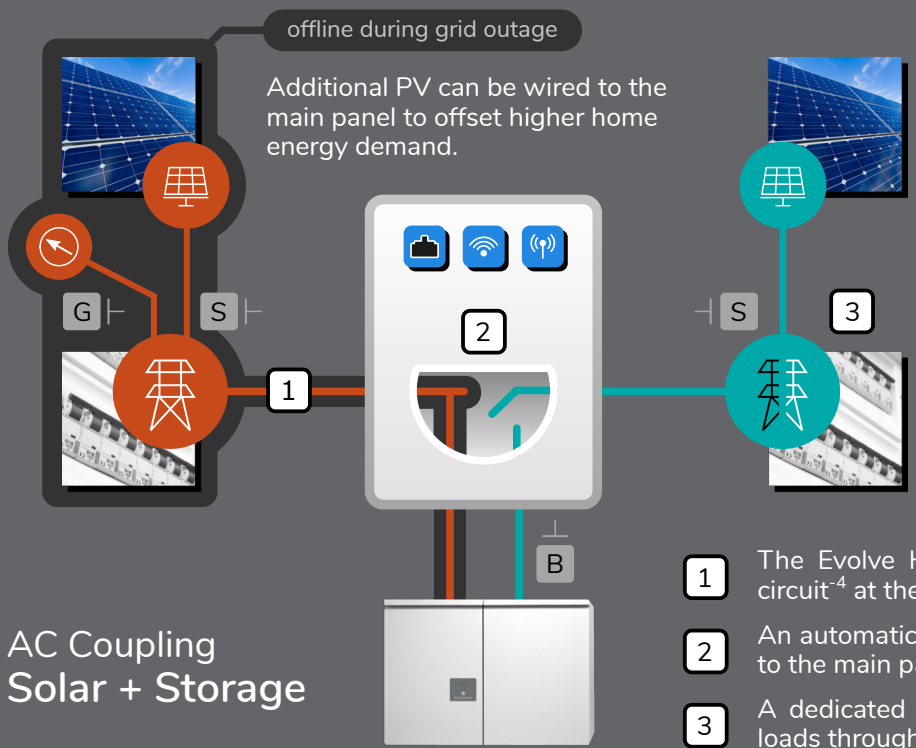
## Flexible local and fleet controls unleash maximum value from your PV solar system.

Evolve's energy management controller algorithms include solar self-consumption mode with or without time-of-use scheduling. For high priority energy resiliency, the Evolve ESS can also be run purely as a backup battery. Certified as an Open ADR 2.0b VEN client[-1] and Sunspec IEEE 2030.5/CSIP compliant, it is fleet ready for demand response and other grid service applications.

Model
**Evolve Hub**
* For use with the Evolve ESS.

## Powerful monitoring tools for the fleet manager and system owner.

Online monitoring, diagnostic, and service alarm tools ensure installers can deliver proactive customer service with confidence. System owner tools include real-time and historical energy consumption and performance data from solar, battery, and utility power. Emergency power reserve controls allow users to maximize backup reserve capacity in advance of an extreme weather event or planned outage.




AC Coupling
Solar + Storage

PV inverters rated up to 7.6 kW AC with power limiting[-2] to 5 kW AC during backup operation may be connected to the backup panel.

G B S

Energy savings algorithms are performed via CT measurement of the grid, battery, and solar PV. The on-board 8-channel power meter provides flexibility for any solar plus storage configuration.

Internet connected via wi-fi, ethernet, and/or cellular[-3] ensures the monitoring system is available when you need it most.

1. The Evolve Hub can be installed behind a single 40-Amp circuit[-4] at the main electrical panel.
2. An automatic bypass switch routes the backup panel directly to the main panel until a grid outage.
3. A dedicated backup panel[-5] powers the home's emergency loads through a grid outage.

| | | |
|---|---|---|
| **AC RATINGS** | | |
| Rated voltage, frequency | [V], [Hz] | 240/120 split-phase, 60 |
| Maximum continuous operating current | [A] | 40.0 |
| Maximum continuous operating power | [kVA] | 9.6 |
| Voltage operating range (power supply) | [V] | 100 - 264 |
| Frequency operating range (power supply) | [Hz] | 47 - 63 |
| Maximum output over-current rating | [A] | 40.0 |
| Protective class (I, II, or III) | | Class I |
| Over-voltage category (OVC I, II, III, or IV) | | OVC III |
| Pollution degree | | 3 |
| Lightning protection | | IEEE 62.41.2, location category B, low exposure |
| **GENERAL RATINGS** | | |
| Mounting method | | Wall-mount |
| Ambient operating temperature range | [°C] | -20 to +50 |
| Maximum relative air humidity, altitude | [%], [m] | 95 (non-condensing), 2000 |
| Protection degree | | Type 3R (NEMA), Indoor / Outdoor |
| Cooling method | | Convection |
| Energy consumption | [W] | 15 |
| Dimensions, W x H x D | [in] / [mm] | 15.3 x 17.3 x 6.7 / 389 x 440 x 170 |
| Weight | [lb] / [kg] | 23 / 10.5 |
| **ENERGY MANAGEMENT - MONITORING & CONTROL** | | |
| Device management interface | | Cloud-based fleet management and consumer interface |
| Web browsers supported | | Chrome, Firefox, Safari |
| Local operating modes | | PV self consumption, TOU scheduling, backup power |
| Fleet aggregation control | | Open ADR 2.0 VEN client |
| Monitoring - network | | Ethernet, Wi-Fi (802.11 a/b/g/n 2.4/5.0 GHz)<br>Security: WEP, WPA-PSK / WPA2 - Personal, WPA / WPA2 |
| Monitoring - cellular | | GSM / GPRS / EDGE / UMTS / HSPA |
| Energy storage system communication | | Modbus RS-485 |
| Current transformer type and rating | | Split-core, 333 mV, 200 A (x2), 50 A (x3) |
| Power meter | | 8 channel, 4 quadrant: V, A, kVA, kVAR, kWh |
| Backup battery - controller / gateway | | AGM sealed lead-acid, 12 V, 9 Ah |
| **CERTIFICATIONS & WARRANTY** | | |
| EMC | | FCC Part 15 Class B |
| Safety | | UL 1741, CSA 22.2 No 107.1 |
| Warranty | | 10 years |
| Utility | | Rule 21 CSIP, IEEE 2030.5 |

The Evolve Hub is a peripheral of the Evolve ESS home energy storage system. This product is defined under the category of Interconnection System Equipment (ISE) for use in utility interactive and/or stand alone power systems under the scope of the UL 1741 standard, and is intended to be operated in parallel with an electric power system (EPS) to supply power to common loads.

1- Demand response requires integration with a third party energy service provider. Consult Eguana Technologies for more information.
2- The maximum PV breaker rating input to the backup panel is 40-Amp. PV inverters rated higher than 5 kW AC connected to the backup panel must be equipped with an active power limiting feature (hardware or software) that does not exceed the Evolve ESS charge rating of 5 kW during backup operation. PV inverters without active power limiting must not exceed the 5 kW AC nameplate rating.
3- Cellular connection is via an AT&T network with on-board SIM. Data plan not included.
4- The Evolve ESS is controlled by the Evolve Hub's energy management controller to limit the combined output of the Evolve ESS and the backup-connected PV to 80% of the circuit protection rating (125% rule). A back-feed rated breaker is required. Consult the elecrical code regarding breaker placement based on the electrical service and busbar ratings of the electrical panel.
5- Customer supplied. The sum of all load circuits must not exceed the Evolve ESS backup continuous output rating of 5 kW AC.

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