

Renepoly EMS Cabinet



Introduction

Microgrids, whether on-grid or off-grid, require intelligent management to ensure reliability, efficiency, and economic viability.

Renepoly's Energy Management System (EMS) provides a comprehensive solution for real-time monitoring, control, and optimization, built on years of engineering expertise and field testing.

Renepoly's EMS is designed to optimize energy use, enhance system reliability, and maximize economic returns. It ensures efficient utilization and storage of renewable energy, facilitates load shifting, isolates from the grid during instabilities, and supports energy trading to generate revenue.

Renepoly's EMS features robust hardware, (e.g., local controller, interactive touchscreen, and internet router), along with ReneCloud for web control and ReneApp for mobile monitoring, enabling seamless management of microgrid operations. This helps owners maximize the uptime of optimal performance for the entire microgrid.

Applications

- All on-grid and off-grid applications
- Multiple energy systems: grid, solar, wind, battery, diesel generator, electric vehicle, etc.
- Renewable and battery storage power plants
- Critical commercial and industrial facilities
- Remote and island communities
- Green carpark and smart home

Functions

- **Remote Monitoring & Smart Control**
Allows real-time oversight and automated control of operations via a web portal and mobile apps.
- **Maximized Renewable Energy**
Optimizes renewable usage to reduce energy costs and promote a greener, sustainable future.
- **Peak-shaving & Self-Consumption Maximisation**
Shifts and balances power consumption to minimize peak demand and enhance efficiency.
- **Grid Independence & Resilience**
Isolates from the grid during instability, ensuring continuous power supply.
- **Intelligent Energy Trading**
Earns revenue through selling surplus power and energy arbitrage.
- **Grid Services & VPP Integration**
Provides frequency regulation and demand response services, enabling virtual power plants.



Renepoly Technology

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Features

- Human machine interface (HMI) with touch screen
- Robust surge protection for incoming AC, ethernet and serial signal
- Redundant power with UPS (provided separately)
- Integrates with existing on-site controller via Modbus
- Provides microgrid controller as an optional add-on
- Provides On-Demand Function Expansion Modules.
- Local and cloud-synchronized data storage
- 2 year warranty on product workmanship (excludes wear and tear)
- No subscription fees, with lifetime debugging support
- Interfaces seamlessly with ReneCloud and ReneApp from anywhere

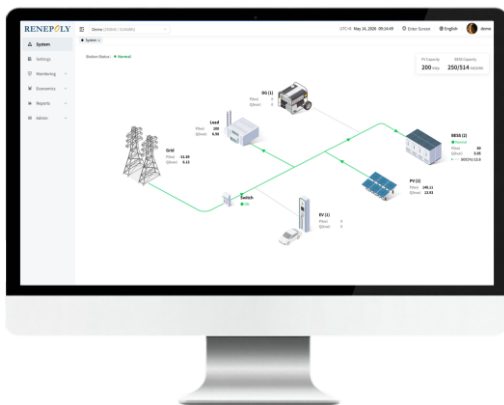


Fig.1 - Advanced monitoring and control via ReneCloud

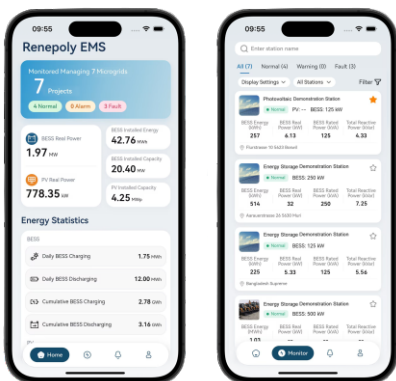


Fig.2 – Fast and flexible management via ReneApp

Specifications

Rated Input	2.6A/115VAC 1.7A/230VAC
Input Frequency	50/60Hz
Surge Protection	Imax:20kA In:10kA Up:1.5kV Uc:275V
RS485 Interfaces	10
Ethernet Interfaces	4
CAN Interface	1
Digital Inputs	8
Digital Outputs	8
Mechanical relays	4
Device System	Linux RT 6.6.48
Processor	Dual-core ARM Cortex-A7 (up to 650 MHz) + ARM Cortex-M4(up to 209 MHz)
RAM	1G DDR3L
Memory	8G EMMC
Dimensions	420*800*300mm
Weight	≤30kg
Cooling Method	Active Air Cooling
Operating Temperature	0°C~50°C
Operating Humidity	10%~90%RH
UPS Battery Capacity	5Ah
UPS Output Voltage Range	21~29Vdc/0~10A
Mounting Method	Wall-mounted

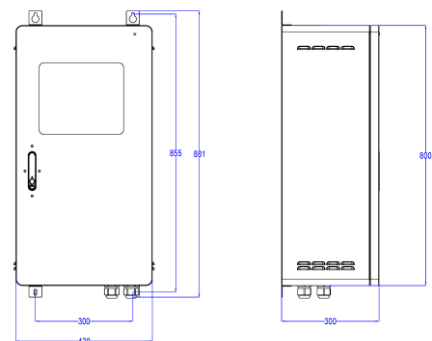


Fig. 3 – Product dimensions with HMI touch screen