Renepoly Microgrid Energy Management System

Introduction

Remote microgrids that are poorly managed may suffer system reliability and performance sustainability issues.

Renepoly technology provides data-driven management and control services tailored to suit each customer's requirements.

The foundation of Renepoly's data acquisition hardware is built upon 5 years of in-house R&D and rigorous field testing. Data can be acquired from remotely located microgrids or grid-connected urban installations with the same level of ease and security.

Its hardware includes EMS local controller, EMS local display and control terminal, and 4G router device.

Its software includes microgrid management program deployed locally on EMS local controller, EMS cloud platform deployed on remote server, and mobile APP.

The full set of Renepoly EMS products ensures the normal operation of microgrid system and meets the real-time monitoring of microgrid by operation and maintenance personnel anytime and anywhere.

Applications

• All on-grid and off-grid applications

• Weak-grid / islanded mode

• Diesel-off operation for load following or cycle charging

• Revenue-grade metering for financial analytics; KPIs

• Changing or defining setpoints to control charge-discharge cycles and other parameters

• Peak-shaving and self-consumption maximisation

Functions

• Technology-agnostic and cost-effective hardware

• Continuously acquires data even during low connectivity or no internet

• Able to interface with any on-site installed component

• Robust hardware and secure gateway

• Rapid delivery and commissioning

• Scalable, modular design

• Bidirectional communication with components, such as PV inverters, controllers, BMS, etc.

RENEPOLY
Key to tomorrow

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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

- Modular, needs-based add-ons available

- 1-year local data storage capability

- 1 year warranty on product workmanship (excludes wear and tear)

- 5 years warranty on central computing module

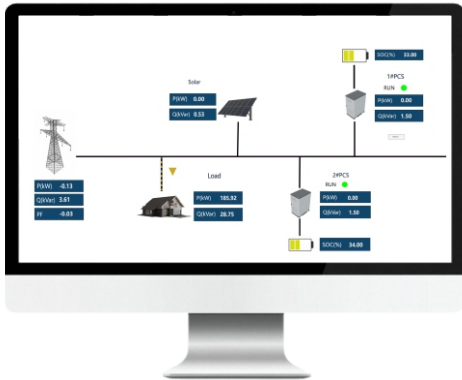- Interfaces seamlessly with Renepoly Portal for a fully- integrated EMS SaaS offering

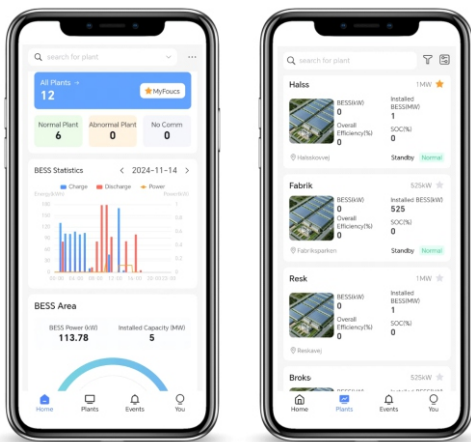*Fig.1 - Advanced monitoring and control via ReneCloud*

Fig.2 – Fast and flexible management via ReneApp

Specifications

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Main Power Supply	AC220V, 20A (30mA Earth leakage protection)
Surge Protection	In≥20kA, Iimp≥40kA, Up≤1.75kV
Alarm	1 Unit of Buzzer, 3 Units of Light
Communication Protocols	Modbus RTU, Modbus TCP/IP, Digital
Modbus RTU Inputs	8 Nos
Modbus TCP/IP Inputs	2 Nos
Digital Inputs/Outputs	4 DI, 4 DO
Back-up Supply (UPS not supplied)	AC Input of 230VAC DC Output of 23VDC (10A max.)
Power Consumption	36W
Touch Screen	10.1-inch
Operating System	Linux 3.12
CPU & Controller	ARM9 400MHz
Memory	128MB DDR2 SDRAM, 256MB NAND Flash
Size (W x D x H)	500*322*700mm
Weight (kg)	≤30kg
Mounting	Wall Mounted
Enclosure Protection	IP55
Operating Temperature	−40 ~ 80 °C
Operating Humidity	5 ~ 95% RH
Installation Location	Indoor/Outdoor
Anti-corrosion Level	C3/C5
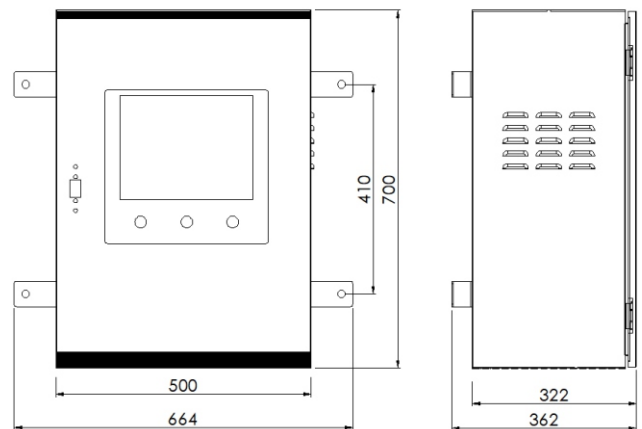
Fig. 3 – Product dimensions with HMI touch screen

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