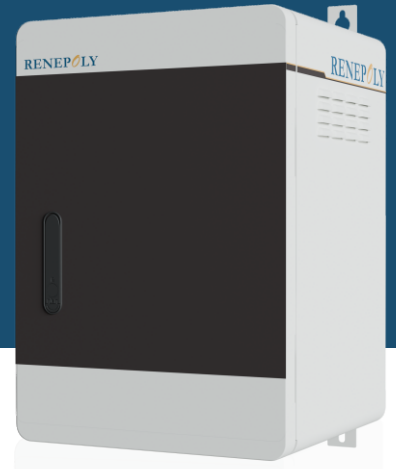


Renepoly Power Grid Detection Cabinet



Product Introduction

Renepoly Power Grid Detection Cabinet is a grid monitoring device developed by Guangzhou Renepoly Energy Technology Co., Ltd. This cabinet is designed for grid detection and safe interconnection control in energy storage systems, microgrids, and distributed energy applications.

The cabinet integrates a Microcomputer-based Synchronization and a Power Failure Detection Device. It continuously monitors the grid state at the point of interconnection. In the event of grid anomalies or outages, it can identify the state within milliseconds or sub-milliseconds and output isolation control signals to achieve fast physical separation from the public grid. Working in coordination with a microgrid controller, the cabinet enables true engineering-grade, scalable zero-second switching while ensuring no overload, backfeed, or instability.

The cabinet features a modular design, with detection and control logic operating independently yet highly coordinated, making it suitable for a variety of energy storage and microgrid applications.

Product Applications:

- Seamless switching for grid-forming energy storage: Suitable for industrial and commercial storage, hospitals, data centers, or other scenarios requiring uninterrupted power supply.
- Safe interconnection of distributed microgrids: Ideal for integrated solar-storage stations or off-grid microgrids reconnecting to the public grid.
- Multi-energy complementary coordination: Applicable to hybrid multi-energy microgrids in remote areas, mines, islands, and other complex energy scenarios.

Main Functions

- Continuous monitoring of key grid parameters including voltage, frequency, and phase, providing real-time data for interconnection and disconnection control.
- Output “close permission” signals when synchronization conditions are met, supporting safe connection of energy storage systems.
- Rapid detection and determination logic to output disconnection signals in milliseconds or sub-milliseconds during grid outages or abnormal conditions.
- Fast disconnection control to prevent the energy storage system from feeding the public grid after an outage, avoiding islanding risks.
- Provision of operational status, grid connection status, and alarm information through indicator lights or communication interfaces.



Guangzhou Renepoly Energy Technology Co., Ltd.

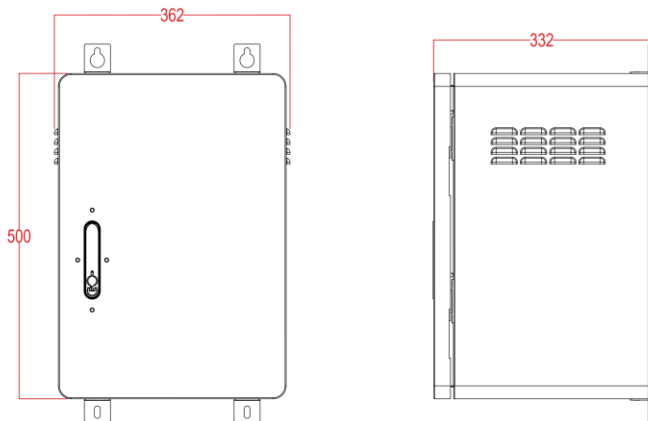
U3 Building, No.6 Lianpu Street, Huangpu District, Guangzhou, China
+86 (020)31800796 Info@renepoly.com

Product Features

- Sub-millisecond rapid recognition technology: Power Failure Detection Device responds at sub-millisecond speed.
- Intelligent closing logic: Fully automated time-slot control ensures grid connection without oscillation or impact.
- Highly integrated modular design: Isolation and interconnection functions operate independently yet in close coordination. Wide-voltage power supply support.
- Digital monitoring and multi-mode interaction: Integrates with on-site controllers via Modbus protocol.

Product external dimensions

The product dimensions are 362 × 332 × 500 mm, as illustrated below.



Product dimensions

The front of the cabinet features a double-layer door that can be opened for equipment operation and maintenance. The interior employs a modular layout, facilitating the installation of functional units and subsequent maintenance.

Technical Parameters

Rated Power	~15W	
Power Supply Parameters	AC Voltage Range	85V~265VAC
	Maximum AC Current	10A
Power Grid Detection Cabinet Parameters	Input Operating Power	85V~265VDC
	Output Contact Capacity	25A,28VDC /240VDC
	Closing Phase Error	<2°
	Frequency Judgment Error	<0.02Hz
	Voltage Judgment Error	<1%
	Frequency Deviation Setting Range	0.01Hz~0.5Hz, Continuously adjustable
	Voltage Deviation Setting Range	1%~10%, Continuously adjustable
Closing Advance Time Setting Range	10ms~500ms	
Power Failure Detection Device Parameters	AC Interface	3W+N
	Number of Digital Input Interfaces	2
	Number of Mechanical Relay Outputs	2
General Parameters	Applicable Grounding System	IT
	Ambient Temperature Range	-10°C~50°C
	Relative Humidity	~85%
	Wiring Method	Bottom-in / Bottom-out
	Protection Level	IP54
	Cooling Method	Natural Air Cooling
	Communication Interfaces	Ethernet, RS485
	Communication Protocol	Modbus TCP/RTU
	Dimensions	362*332*500mm (excluding mounting panel)
Weight	≤18kg	