C&I Hybrid&DG Microgrid BESS RENA5000

125kWp / 125kW / 261kWh
250kWp / 250kW / 522kWh
375kWp / 375kW / 783kWh
500kWp / 500kW / 1044kWh

Product Application

- Considering the project's requirements and the product's characteristics, we recommend the following configuration of the RENA5000 system. When there is sufficient sunlight, the photovoltaic system mainly supplies power to the load and stores the excess energy in the battery during the day. When there is insufficient sunlight, the system supplies power to the loads by discharging the batteries. The system also provides backup power when the utility grid fails. When the utility grid fails and no energy is in the BESS, the diesel generator will begin to support load operation. The generator will begin to support load operation and charge the batteries. See the entire system diagram. The Intelligent Photovoltaic Controller (DC/DC) PVS-125K is mounted outside the RENA5000 unit, and all other components are integrated and mounted inside the unit for plug-and-play operation at the project site.

Product Features

All-in-1 PV&ESS&DG All-in-one design

<20ms On/off-grid auto-transfer time

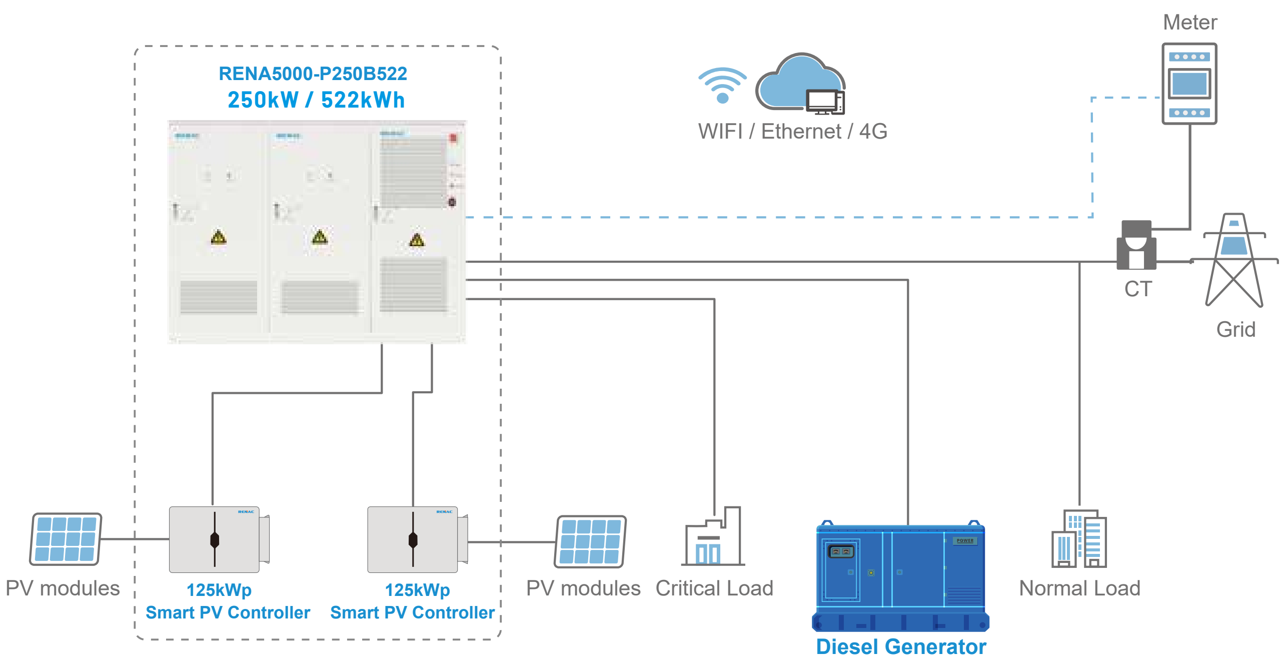
2H Quick Installation

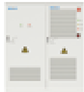
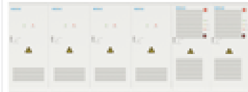
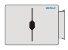
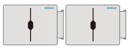
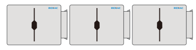
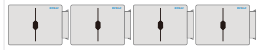
100% Off-grid unbalanced loads transformerless

VSG ESS&DG cooperation

4units Flexible parallel connection

System Diagram | 250kWp / 250kW / 522kWh



ESS Model	RENA5000-P125B261	RENA5000-P250B522	RENA5000-P375B783 [1]	RENA5000-P500B1044 [1]
System Demo	 125kW / 261kWh	 250kW / 522kWh	 375kW / 783kWh	 500kW / 1044kWh
PV Smart Controller (Optional)	PVS-125K*1	PVS-125K*2	PVS-125K*3	PVS-125K*4
PVS Demo	 125kWp	 250kWp	 375kWp	 500kWp
PV Input				
Max. Recommended PV Power [Wp]	187500	375000	562500	750000
Max. PV Power for Single MPPT [Wp]	20000			
Max. PV Input Voltage [V]	730			
MPPT Voltage Range [V]	180 ~ 600			
Rated PV Input Voltage [V]	550			
Start-up Voltage [V]	200			
No. of MPP Trackers	10	10 * 2	10 * 3	10 * 4
No. of Input Strings per Tracker	2			
Max. PV Input Current per MPPT [A]	40			
Max. Short-circuit Current per MPPT [A]	50			
Battery				
Battery Technology	$LiFePO_4$			
Nominal Capacity [Ah]	314			
Battery Configuration	1P260S * 1	1P260S * 2	1P260S * 3	1P260S * 4
Nominal Energy [kWh]	261	522	783	1044
Norminal Voltage [V]	832			
Voltage Range [V]	728 ~ 949			
Max. Continuous Charging / Discharging Current [A]	157 / 157	314 / 314	471 / 471	628 / 628
Depth of Discharge	95%			
Cycle Life	6000 @90% DOD / 25 ℃ / 0.5C			
AC Output				
Max. AC Apparent Power [kVA]	138	276	414	552
Rated AC Power [kW]	125	250	375	500
Max. AC Current [A]	208	416	624	832
Rated AC Voltage [V]	3 / N / PE, 400			
Grid Frequency [Hz]	50			
Adjustable Power Factor [cosφ]	-1 ~ +1			
Output THDi (@Rated Output)	< 3%			
Charging and Discharging Switch Time [ms]	< 100			
AC Input				
Max. AC Input Power [kVA]	250	500	750	800
Max. AC Input Current [A]	362	724	1086	1160
Rated AC Voltage [V]	3 / N / PE, 400			
Grid Frequency [Hz]	50			
Backup Output				
Rated Power [kW]	125	250	375	500
Rated Voltage [V]	3 / N / PE, 400			
Rated Frequency [Hz]	50			
Rated Current [A]	181	362	543	724
Output THDv (@Linear Load)	< 3%			
Automatic Switch Time [ms]	< 20			
Overload Capability	1.1 times rated long term, 1.2 times rated not less than 1 minute.			
Generator Input				
Max. Power [kW]	125	250	375	500
Rated Current [A]	181	362	543	724
Rated Voltage [V]	3 / N / PE, 400			
Rated Frequency [Hz]	50			
General Data				
Dimensions (W * H * D) [mm]	1850 * 2100 * 1400	2800 * 2100 * 1400	6058 * 2591 * 2438	6058 * 2591 * 2438
Weight [kg]	3000	5500	9500	12000
Ambient Temperature Range [°C]	-20 ~ +50			
Relative Humidity	0 ~ 95%			
Operation Altitude [m]	≤ 2000			
Topology	Transformerless			
Cooling	Fan + Liquid (Battery)			
Fire Protection	Aerosol			
Communication	CAN, RS485, USB Update, WiFi, 4G, Ethernet			
Ingress Protection	IP54			

[1] These two models are slated to launch in June 2025.