

DIESEL-STORAGE HYBRID SYSTEM



Diesel-Storage Hybrid System

More energy-efficient power generation

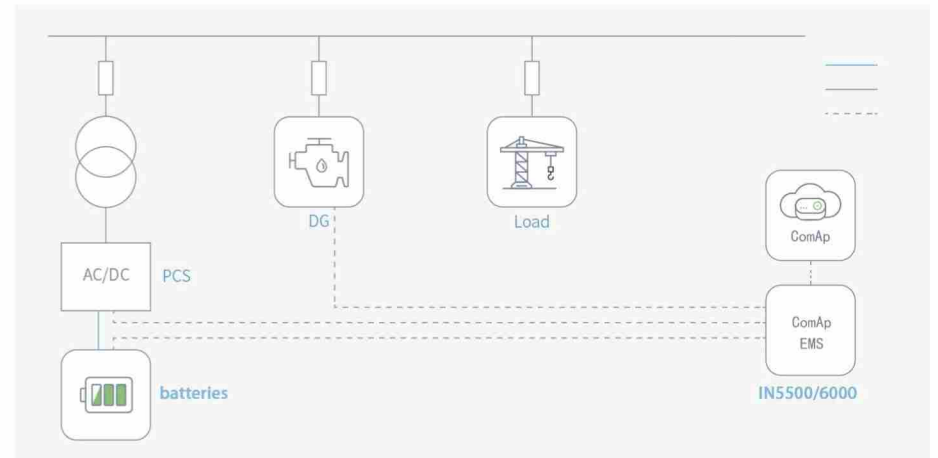


Long-lasting and reliable power solutions

Green and low-carbon Diesel-Storage Hybrid System



Principle



Operational Data



System Advantages

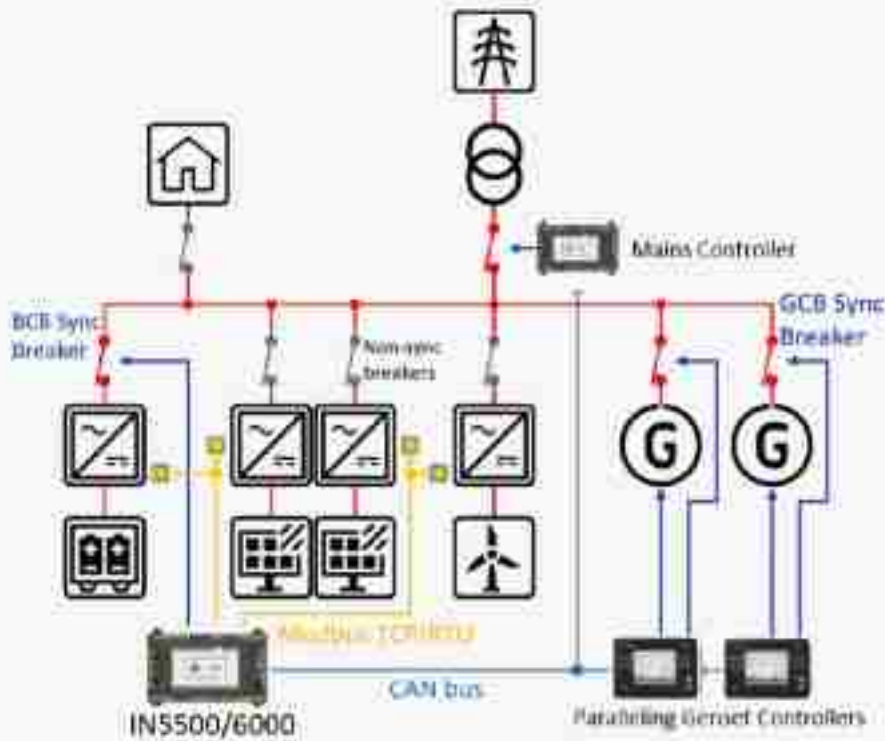
Reliable structure	<ul style="list-style-type: none"> · Conforms to Falling Object Certification (IEC 62133) · Meets export standards
Low carbon and fuel efficient	<ul style="list-style-type: none"> · Co2 emission reductions can be achieved · Savings in fuel consumption (over 25%)
Easy to operate	<ul style="list-style-type: none"> · Equipped with an intuitive, easy-to-use user interface · Adoption of Comel EMS for fast parallelization · Uses aviation plugs for easy external connection
Easy maintenance	<ul style="list-style-type: none"> · Front and rear door design for easy equipment maintenance · Built-in maintenance reminders to ensure reliable operation
Reliable products	<ul style="list-style-type: none"> · Electric cell, PCS, EMS adopt first-line brands · Equipped with air-conditioning cooling system to ensure stable operation of the battery
High quality power supply	<ul style="list-style-type: none"> · Sinusoidal harmonic distortion rate $\leq 3\%$

Hybrid System Solutions

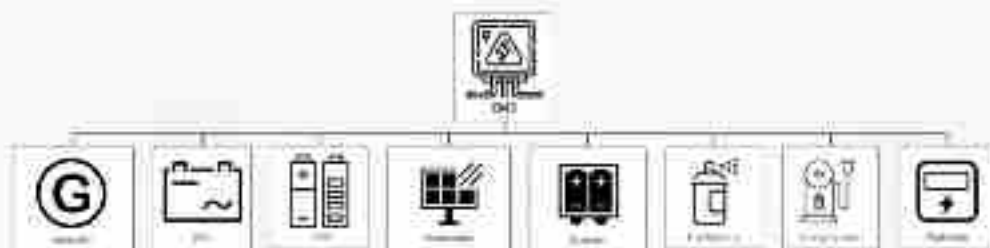


Products

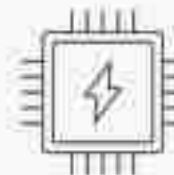
System Architecture



Control Structure



The control architecture of the energy storage cabinet consists of an energy management system, a battery management system and a monitoring system to ensure the safe and efficient operation of the energy storage system.



virtual synchronous machine (VSG)



Cloud Platform



data monitoring



data encryption

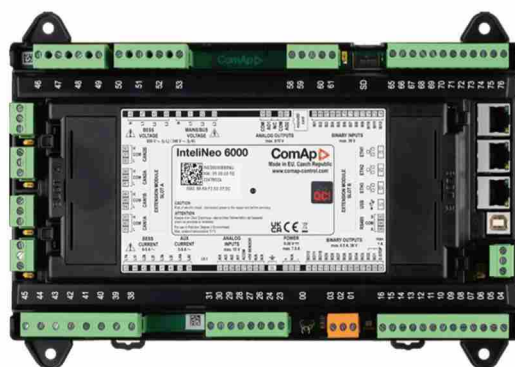
ComAp Controller Selection >>>>>>>

Controllers with native microgrid applications allow customers to quickly and easily configure microgrid systems with setpoints, which is more convenient than using a PLC.

Another part of the controller is open to the customer to meet individual requirements via the PLC editor. Customers are able to create microgrid systems with customized functionality, saving time, money, and ensuring professionalism.



ComAp IN5500



ComAp IN6000

functionality	IN6000	IN5500
CU Platform	IG1000	IG500
Panel Mounting	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Demonstrate	External	color video screen
AC 3x U, 3x I	<input checked="" type="checkbox"/> 0,5%	<input checked="" type="checkbox"/> 1%
AC 3x U, 1x I	<input checked="" type="checkbox"/> 0,5%	<input checked="" type="checkbox"/> 1%
AC I _{aux} (EFC)	<input checked="" type="checkbox"/> 0,5%	<input checked="" type="checkbox"/> 1%
AIn / AOut	4 / 2	4 / 2
BIn / BOut	12 / 12	8 / 8
CAN I/O (CAN1)	<input checked="" type="checkbox"/> IFG/IG supported	<input checked="" type="checkbox"/> No IFG/IG support
CAN IC (CAN2) IG/IM	<input checked="" type="checkbox"/> 32/64	<input checked="" type="checkbox"/> 4/8*
DeepSea CAN	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CAN line redundancy	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Controller redundancy	<input checked="" type="checkbox"/>	<input type="checkbox"/>
RJ45	3	1
RS485	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Modbus TCP	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Modbus RTU	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Modbus devices	16 [^]	9
Modbus List	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
mandatory parameter	32	24
Shared I/O	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Grid Codes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SunSpec	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
WSV	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ISCADA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
IV10 & IV18	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Spot Price Dispatch	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Battery performance



The battery module is composed of 16 lithium iron phosphate cells grouped in a 1P16S configuration, possessing characteristics such as high energy density, wide temperature range, long lifespan, lightweight, and high safety. The entire module consists of cells, series aluminum bars, end plates, plastic steel zip ties, casing, harnesses, and MBMU, adopting a modular design for convenient transportation, installation, and maintenance.

Specification



Battery Specifications	
Cell Type	LFP
Cell Model	3.2V/280Ah
Cell Weight	5.43±0.20kg
Factory Internal Resistance (1kHz)	0.18±0.05mΩ
Rated Capacity	280Ah
Rated Voltage	3.2V
Rated Energy	896Wh
Operating Voltage	2.5-3.65V, T>0℃ 2.0-3.65V, T≤0℃
Energy Density	≥160Wh/kg
Recommended SOC Range	10%~90%
Monthly Self-discharge	≤3.0%
Maximum Continuous Charging Power	0.5P
Maximum Continuous Discharging Power	0.5P
Discharge Temperature Range	-30~60℃
Charge Temperature Range	0-60℃
Specifications of the battery module	
Cell Capacity	280Ah
Series-Parallel Configuration	1P16S
Nominal Voltage	51.2V
Nominal Energy	14.336kWh
Dimensions	753.1mm420.0mm 230.0mm
Weight	103±1.5kg
Discharge Cut-off Voltage	40V, T>0℃ 32V, T≤0℃
Maximum Continuous Charge/Discharge Current	180A
Rated Charge/Discharge Current	140A
Operating Temperature Range (discharge)	-30~60℃
Storage Temperature Range	-20~45℃
Communication Protocol	modbus RTU
Guaranteed Operating Life	(25±2)℃

Diesel-Storage Hybrid System

Low carbon

Fuel-efficient
Expansion



Low carbon



Fuel-efficient



Expansion

Diesel-Storage Hybrid System

Specification

General technical data		BP50-50	BP100-600	BP150-600	BP250-600	BP500-400
Nominal rated power	KW	40	80	120	200	400
	KVA	50	100	150	250	500
Rated voltage	V	400	400	400	400	400
Battery system voltage	V	512	716.8	716.8	716.8	716.8
Nominal rated current	A	72	144	217	361	722
Operating temperature	°C	-35~65	-20~60	-20~60	-20~60	-20~60
Battery						
Quantity	Units	10	42	42	42	42
Cell chemistry		LiFePO4				
Nominal	V	51.2	51.2	51.2	51.2	51.2
Nominal capacity@25°C	Ah	102	280	280	280	280
DOD	%	90	90	90	90	90
Energy density	Wh/kg	≥160	≥160	≥160	≥160	≥160
Lifetime	Cycles	6000	6000	6000	6000	6000
Battery capacity@25°C	KW	52	602	602	602	602
Inverter						
Quantity	Units	1	1	1	1	1
Rated power	KW	40	80	120	200	400
Total peak power	KW	55	110	165	275	550
Charger voltage	V	512	716.8	716.8	716.8	716.8
Max passthrough current	A	110	220	330	440	916
Maximum conversion efficiency	%	97.3%	97.3%	97.3%	97.3%	98.3%
working parameters						
Discharge time (hours)- Take into account the efficiency of the inverter	100%	1.14	6.59	4.39	2.64	1.33
	75%	1.52	4.32	1.02	2.59	0.51
	50%	2.54	2.88	1.69	1.73	0.86
	25%	5.08	1.44	3.39	0.86	1.71
Recharging time / Parking mode	hr	0.83	3.44	2.29	1.72	0.83
Recommended generator size	KVA	60-120	≥20	≥30	≥50	≥50

Electrical Principle

