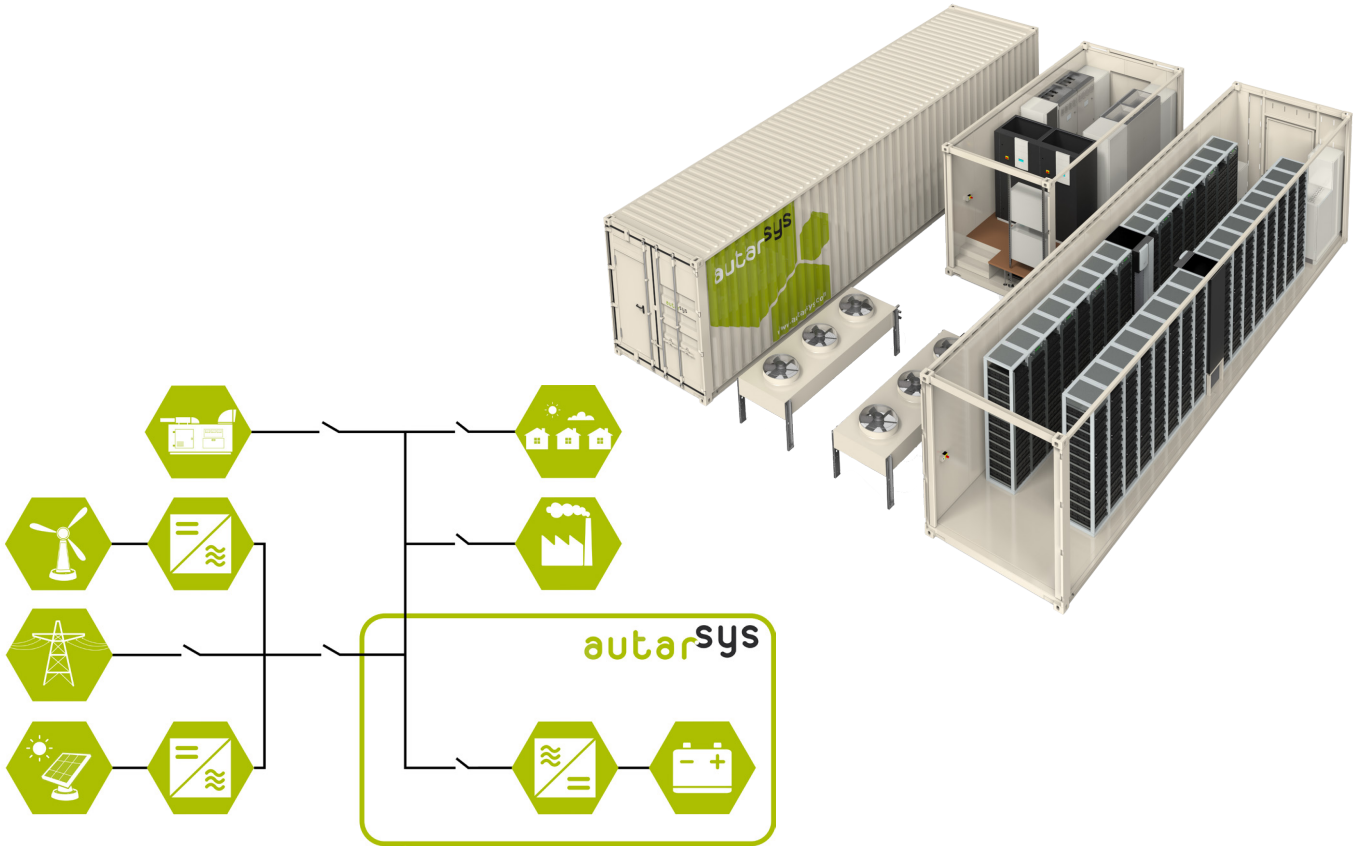
Large Energy Storage Systems

Productsheet

Renewable energy supply with next generation technology

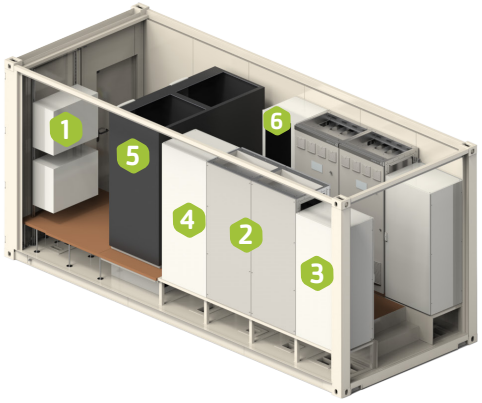
Overview Autarsys Large Energy Storage System (ESS)



The Autarsys Energy Storage System (ESS) Nucleon represents a modular concept, in which one System Container housing inverters combined with up to two Battery Containers fully equipped with batteries.

The Autarsys ESS Nucleon has been designed especially for the large utility scale projects. The Nucleon is easily scalable on the MW+/MWh+ level with shorter lead times. The modularity permits the combination of several power ratings with different energy capacities, ensuring the most economic and ecological solution for every project. Based on the requirements of the application, the Nucleon can be used for both On-Grid and Off-Grid modes of operation owing to its flexible control mechanisms.

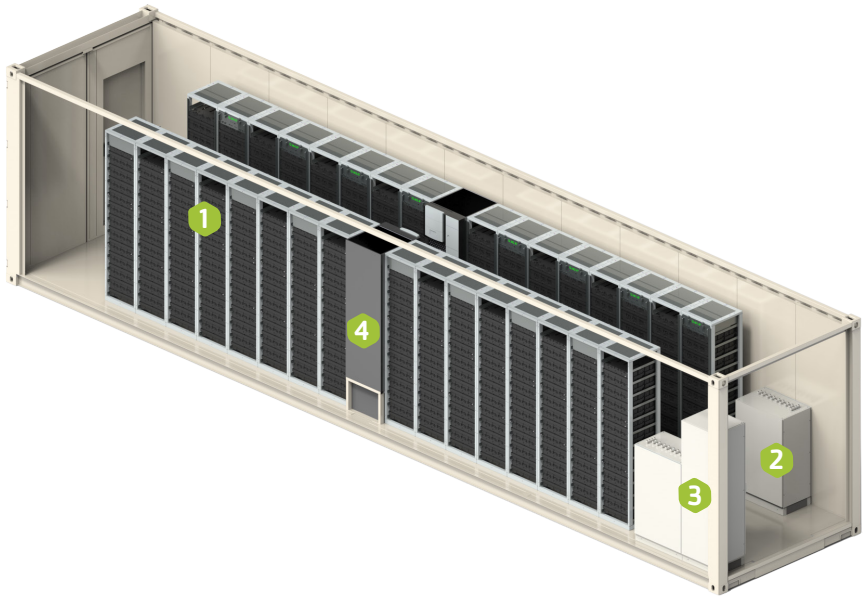
CONTROL	ENERGY MANAGEMENT	MONITORING	SERVICE
Frequency control (P(f))	Renewable (e.g. Sun, Wind), conventional (e.g. Diesel) energy sources	Actual/historical operating data	User administration and logging of user interactions
Voltage control (Q(U))	Optimal use of distributed energy sources	Logging of power data related to the guarantee	Alarms (fault, sabotage, fire) with different escalation levels
Harmonic compensation	Direct communication between renewable/conventional sources and the ESS	Control and monitoring via HMI, local and per remote access	Logging of all events and data



1. Heat Exchanger cabinet
2. Battery inverter
3. AC connections
4. Control cabinet
5. Air Conditioning system
6. UPS

	System-Container	
Power Specifications		
Rated Power [kVA]	≤ 3325	
AC Voltage [V]	≤ 480 ± 10%	
Input DC Voltage Range [V]	655-1450	
Phases	3 + N(optional)	
Rated current [A]	≤ 4000	
Peak current (1s) [A]	≤ 5660	
Frequency [Hz]	50/60	
Power Factor Correction (PFC)	-1 to +1 lagging and leading	
THD_U [%]	< 2	
Inverter efficiency [%]	> 97.5	
Operating temperature[1] [°C]	-10/+50	
Dimensions (LxWxH) [m]	12.12x2.44x2.90	
Max. weight [t]	up to 17	
Application	**Standard**	**Optional**
Off-Grid	√	
On-Grid	√	
Black start capability		√
Islanding		√
Fuel save		√
Energy management	√	
Renewable Control Mode[2]		√
Arbitrage / Load shifting		√
Frequency regulation (P(f))		√
Voltage stabilization (Q(U))		√
Harmonic compensation up to 51st	√	
Reactive power compensation		√
UPS functionality		√
Interface		
Touch display	√	
Data monitoring (SCADA/HMI)	√	
Ethernet (LWL optional)	√	
Modbus	√	
GMS (GPRS) / Satellite communication	√	
Standard (additional available on request)		
EN 61000-6-2, EN 61000-6-4, CE-Conformity		
Installation Requirements		
Location	Outdoor	
Max. altitude above MSL [m]	1000	
Noise emission (10m distance) [dB]	<60	

[1] Can be modified upon request
[2] e.g. Peak shaving, Smoothing, Ramp-rate control



1. Battery racks
2. DC cabinet
3. Control Cabinet
4. Air Conditioning system

	Energy Cell (0.5 C)	Medium Cell (1 C)	Power Cell (2 C)
Power Specifications			
Nominal Capacity [kWh]	≤ 3652	≤ 3652	2620 ≥ ≤ 1572
No. of Strings	≤ 40	≤ 40	40 ≥ ≤ 24
Operating temperature [°C]		-10/+50	
Voltage Range String [V]	844.8-1095.6	844.8-1095.6	818.4-1082.46
Continuous current String [A]	47	94	170
Dimensions (LxWxH) [m]		12.2x2.44x2.90	
Weight max. (w/o batteries) [t]	≤ 36.5 (11)	≤ 37 (11)	≤ 30.5 (10.5)
Battery			
Cell Chemistry		NCM	
Cell manufacturer		Samsung SDI	
String Design	264S1P	264S1P	264S1P
Cell Capacity	94Ah	94Ah	68Ah
Specified cycles[1][2]		6000	
Calendar life[1][2]		20	
Operating temperature [°C]		23 ±5	
Efficiency [%]	>96	>95	>93
Standard (additional available on request)			
EN 61000-6-2, EN 61000-6-4, CE-Conformity			
Installation Requirements			
Location		outside	
Max. altitude above MSL [m]		1000	
Noise emission (10m distance) [dB]		<60	

Details:

- [1] Full cycle per day
- [2] Depends on the application

autarsys
Make your own energy.

Contact

Headquarters
Autarsys GmbH

Johann-Hittorf-Str. 8
12489 Berlin, Germany

mail@autarsys.com
www.autarsys.com

Phone
+49(0)30.609849800