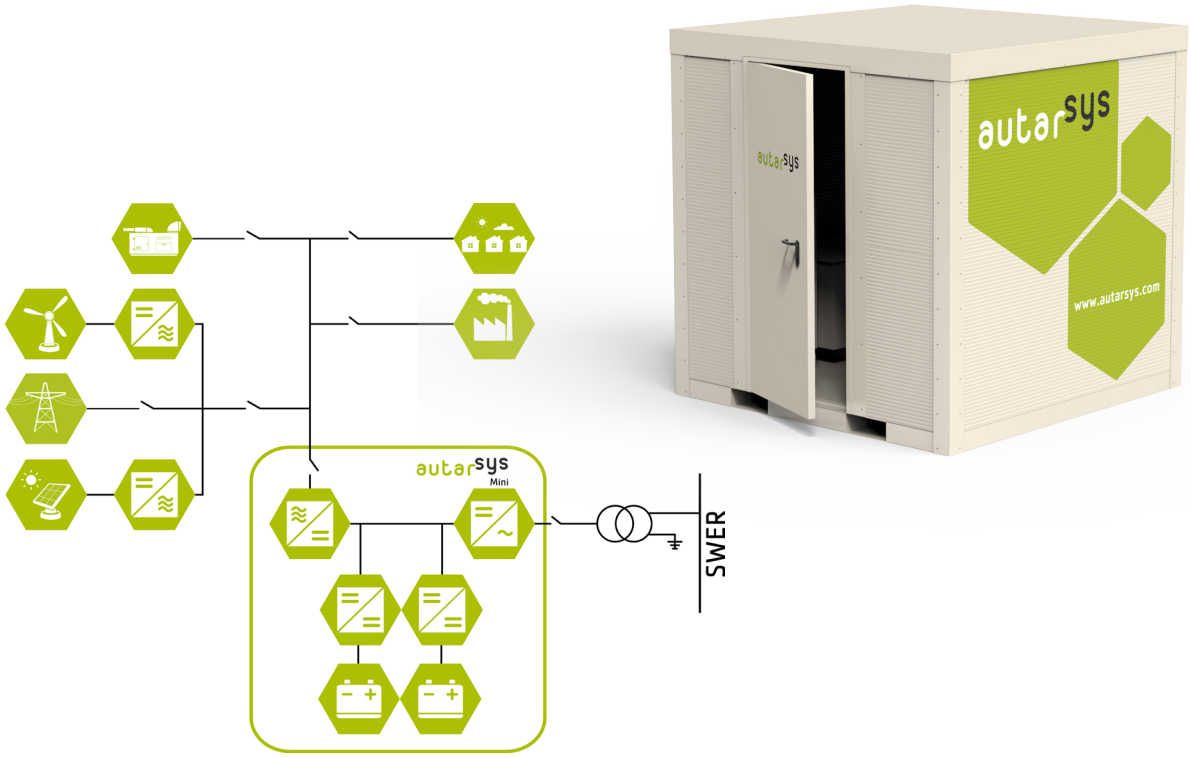
Mini Energy Storage Systems

Productsheet

Renewable energy supply with next generation technology

Overview Autarsys Mini Energy Storage System (ESS)



The Autarsys Mini is a modular Energy Storage System (ESS) and serves different applications. As a turnkey solution, it is possible to integrate the Autarsys Mini into both an Off-Grid and On-Grid application. Independent of the grid, the consumer gets Uninterrupted Power Supply (UPS) with stable voltage and frequency. Combined with conventional (e.g. Diesel) or renewable (e.g. PV, Wind, Biogas) energy sources the system offers a project specific energy management function. Connected to a Single Wire Earth Return (SWER) - Grid, it is possible to use the Autarsys Mini under optimal conditions as Online-UPS and offer a real three phase grid to the consumer with all advantages.
The system has a rated power of 30 to 90 kW and an energy storage capacity between 33 and 274 kWh, depending on the cell type and the application of the ESS. It is housed in an 8 Ft storage container which is protected and isolated to harsh environment. The military grade air conditioning system allows operation under ambient temperatures up to 55 °C. Because of the optimal working condition for the electronics the supplier of battery and inverter offer an extended warranty of up to ten years .

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 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

1The warranty is related to an optional service agreement between Autarsys and the end customer.

1. Battery racks
2. Precharge
3. Transformer
4. Battery inverter
5. Control cabinet

Standard Configurations*								
	Energy Cell (≤0.5C | 0.5-1C)				Power Cell (2.5C)			
	Capacity [kWh]				Capacity [kWh]			
	45-68.5	91 - 137	137 - 205	182 - 274	33 - 49	66 - 98	98 - 147	131 - 197
30 kW	√	√	√	√	√	(√)	(√)	(√)
60 kW	√	√	√	√	√	√	(√)	(√)
90 kW	-	√	√	√	√	√	√	√

– not possible, **(√)** optional, **√** possible. Project specific modifications are possible.
*The standard solution and configuration may vary depending upon the application required.

	Mini-ESS 30	Mini-ESS 60	Mini-ESS 90
System Parameters			
Rated Power [kVA]	30	60	90
AC Voltage [V]		400 (max. 415) ± 10%	
Nominal current [A]	43.5	87	130.5
Frequency [Hz]	50/60	50/60	50/60
THD_U [%]	<2	<2	<2
Operating temperature[1] [°C]	-10/+55	-10/+55	-10/+55
Inverter efficiency [%]	>96	>96	>96
Overall efficiency (round trip) [%]	>85	>85	>85
Dimensions (LxWxH) [m]	2.44 x 2.20 x 2.26	2.44 x 2.20 x 2.26	2.44 x 2.20 x 2.26
Maximum weight [t]	1.8	2.5	3.2
Storage Battery			
Cell Chemistry	Li-ion NCM	Li-ion NCM	Li-ion NCM
Cell manufacturer	Samsung SDI	Samsung SDI	Samsung SDI
Specified cycles (Energy / Power)[2]	4000 / 6000	4000 / 6000	4000 / 6000
Calendar life [years][2][3]	20	20	20
Operating temperature [°C]	23 ±5	23 ±5	23 ±5
Efficiency @ 0.5C / 1.0 C / 2.5C [%]	>96 / >95 / >93	>96 / >95 / >93	>96 / >95 / >93
Applications*	**Standard**		**Optional**
Off-Grid	√		
On-Grid	√		
Black start capability			√
Islanding			√
Fuel save			√
Energy Management	√		
Renewable Control Mode[4]			√
Abitrage / Load shifting			√
Frequency regulation P(f)			√
Voltage stabilization Q(U)			√
Harmonic compensation up to 51st	√		
Reactive power compensation			√
UPS-functionality			√
SWER-net integration			√
Interface			
Touch display	√	√	√
Data monitoring (SCADA)	√	√	√
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			
Max. altitude above MSL [m]	1000	1000	1000
Noise emission (1m distance) [dB]	<60	<60	<60

Details:

- [1] Project specific modifications are possible
- [2] Depends on the application
- [3] Full cycle per day
- [4] Peak shaving, Smoothing, Ramp-rate control
- *The standard solution and configuration may vary depending upon the application required

autarsys
Make your own energy.

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