

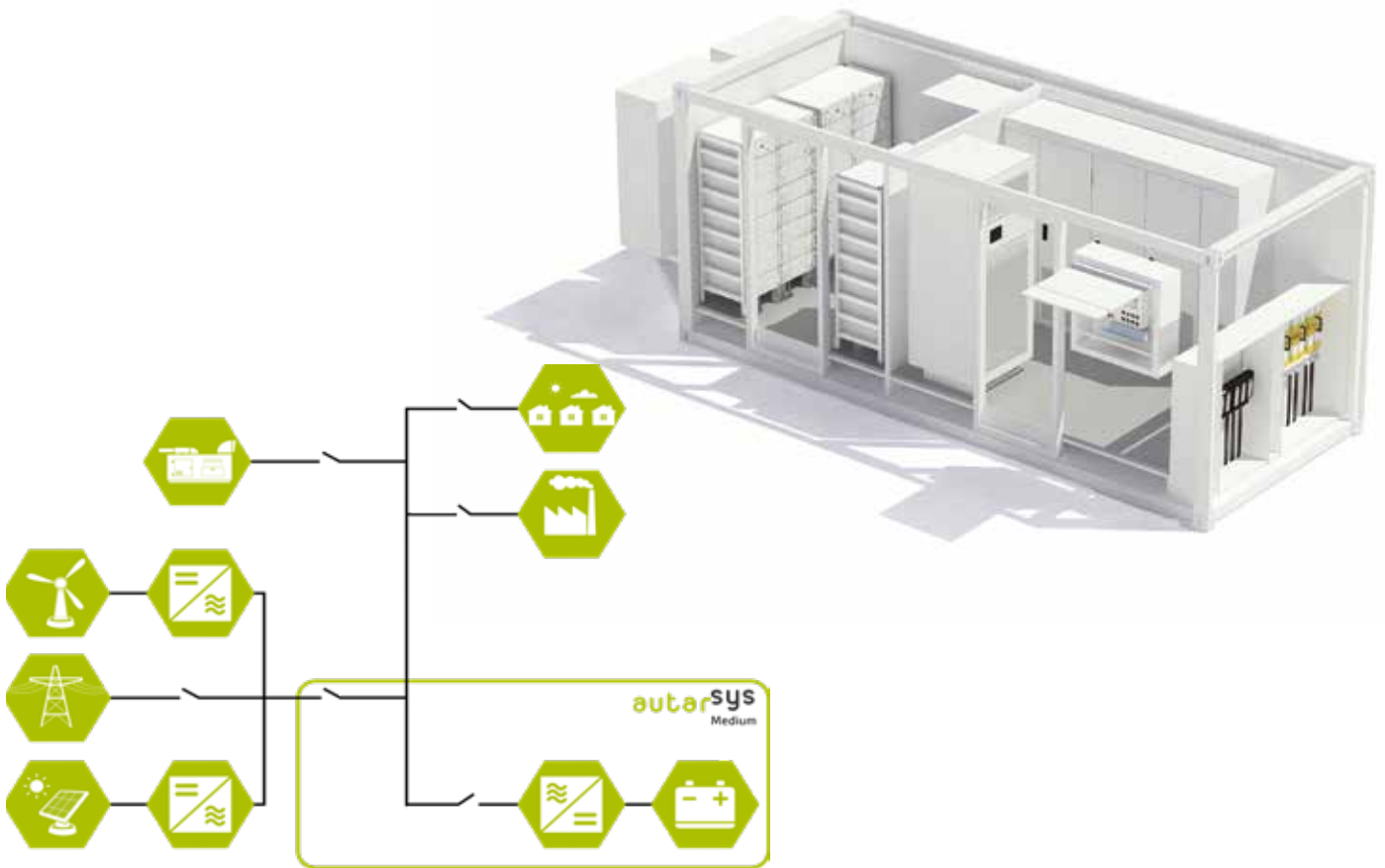
# Medium Energy Storage Systems



## Product Sheet

Making renewables the power supply of the future





The Autarsys Medium provides 100 to 800 kW of power with an energy storage capacity between 65 and 1,092 kWh, depending on the cell type and the application of the ESS.

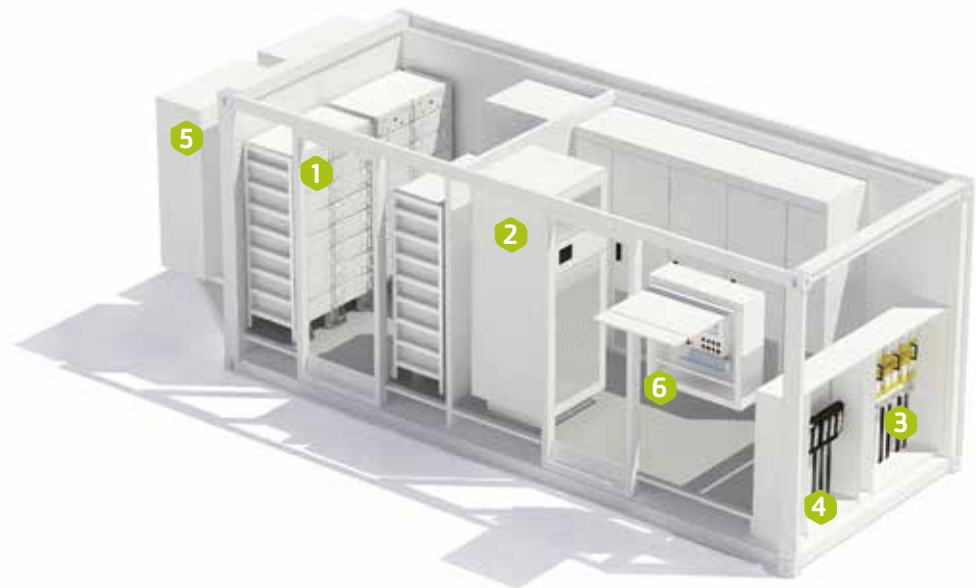
Like all Autarsys ESS, the Medium:

- Serves a variety of on-grid and off-grid applications, and
- Can operate in three-phase electrical power systems.
- The system’s inverter design allows customers to have a stable supply of voltage with constant frequency.
- Battery and inverter suppliers offer an extended warranty of up to ten years, because Autarsys designs optimal operating conditions for its electronics.
- The air conditioning system operates under ambient temperatures of up to 55 °C to cool the battery system.
- The system integrates energy sources, like renewable (e.g. photovoltaic, wind, biogas) and conventional (e.g. diesel) sources and offers project-specific energy management functions.

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 admin services, including record keeping of interactions
Voltage control (Q(U))	Optimal use of energy sources	Records power data necessary for all component warranties	Alarm chain, with various escalation levels, in cases of faults, fires, etc.
Harmonic compensation	Direct communication between renewable/conventional sources and the ESSmanagement through product lifetime	Control and monitoring via HMI, local and per remote access	Record-keeping for all actions and data



- ① Battery racks
- ② Battery inverter
- ③ AC connections
- ④ DC connections
- ⑤ Air Conditioning system
- ⑥ Control interface



System Ranges*	Minimum	Maximum
Power [kVA]	100	800
Energy capacity [kWh]	65	1092
C-rate (continuous)	≤ 2.5	

\*The Autarsys Medium ESS power, energy capacity and C-rate can lie between the ranges mentioned above. Example configurations of the Medium ESS for different C-rates are described below.

	Medium-ESS <0.5C	Medium-ESS <1C	Medium-ESS <2.5C
<b>System Parameters</b>			
Rated power [kVA]	100	200	300
Energy capacity [kWh]	273	273	131
AC voltage [V]		480 ± 10%	
Nominal current [A]	125	250	375
Peak current [A]	175	350	525
Frequency [Hz]	50/60	50/60	50/60
Power factor correction (PFC)		-1 to +1 lagging and leading	
THD <sub>U</sub> [%]	<2	<2	<2
Operating temperature <sup>1</sup> [°C]	-10/+50	-10/+50	-10/+50
Inverter efficiency [%]	>96	>96	>96
Overall efficiency (round trip) [%]	88	88	88
Dimensions (LxWxH) [m]	6.06x2.44x2.90	6.06x2.44x2.90	6.06x2.44x2,90
Max. weight (without batteries) [t]	15.4 (7.7)	15.4 (7.7)	15.4 (7.7)
<b>Storage Battery</b>			
Cell chemistry	Li-ion NCM	Li-ion NCM	Li-ion NCM
Cell manufacturer	Samsung	Samsung	Samsung
Specified cycles (Energy / Power) <sup>2</sup>	4000	4000	6000
Calendar life <sup>2,3</sup>	20	20	20
Operating temperature [°C]	23 ±5	23 ±5	23 ±5
Efficiency [%]	>96	>95	>93
<b>Applications*</b>			
	Standard		Optional
Off-Grid	✓		
On-Grid	✓		
Black start capability			✓
Islanding			✓
Fuel save			✓
Energy management	✓		
Renewable control mode <sup>4</sup>			✓
Arbitrage / Load shifting			✓
Frequency regulation P(f)			✓
Voltage stabilization Q(U)			✓
Harmonic compensation up to 51 <sup>st</sup>	✓		
Reactive power compensation			✓
UPS-functionality			✓
SWER-net integration			✓
<b>Interface</b>			
Touch display		✓	
Data monitoring (SCADA)		✓	
Ethernet (LWL optional)		✓	
Modbus		✓	
GMS (GPRS)/ Satellite communication		✓	
<b>Standard (additional available on request)</b>			
EN 61000-6-2, EN 61000-6-4, CE-Conformity			
<b>Installation Requirements</b>			
Max. altitude above MSL [m]		1000	
Noise emission (1m distance) [dB]		<60	

## Details:

- <sup>1</sup> Project specific modifications are possible
- <sup>2</sup> Depends on the application
- <sup>3</sup> Full cycle per day
- \*The standard solution and configuration may vary depending upon the application required



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