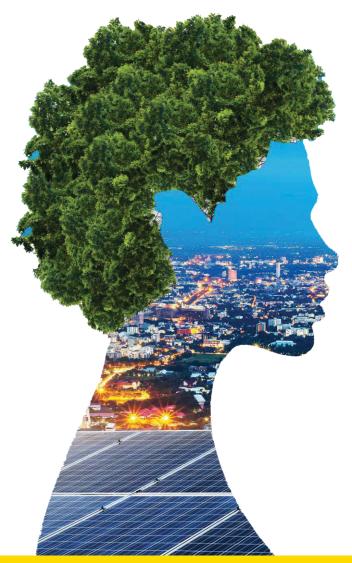




EASTMAN WORLD

Welcome to Eastman World - Your Global Partner in Energy Solutions!





Energy Storage System

Single Phase
3.6/5/6kW

Three Phase 4/5/6/8/10kW

Eastman Introduction

Founded in 2006

Established in 2006, Eastman Auto & Power Limited is a well-known name in the field of solar energy, energy storage, and power electronics, boasting a USD 300 million revenue and a dedicated workforce of over 3,000 professionals. Building on the group's decades-long success and maintaining the trust of our partners, Mr. Jagdish Rai Singal ventured into the future of energy with Eastman Auto & Power Limited. Today, the solar business spans over 25 countries across Asia, Africa, Middle East, and Europe and provides the world with cutting-edge products that have set new benchmarks in their respective segments. Driven by innovation, we continually set industry standards, ensuring uninterrupted power supply for residential, commercial, and industrial applications.

Our global solar distribution business provides reliable and high-quality solar solutions, including solar inverters, solar panels, solar batteries (carbon, gel, lithium, and tubular), solar pump inverters, solar charge controllers, and more. Our products offer a range of solutions to help you make the switch to clean energy. With us as your unwavering partners, we forge a sustainable future, amplifying global excellence through transformative products and services.



ENERGY STORAGE SYSTEM







PRODUCT FEATURES



HIGH PERFORMANCE

- 200% PV over management.
- 200% backup overload capacity, 60A battery current.
- Max. efficiency 97.3%, Battery efficiency 97%.
- Load monitoring accuracy 10W, Battery discharging threshold 10W.



HIGH RELIABILITY

- UPS level redundant protection against backup load breakdown.
- Three-level firmware and two-level hardware battery protection.
- Multiple temperature monitoring, delicate thermal management.
- Max. 6 Inverters in parallel to increase power availability.



HIGH INTELLIGENCE

- Internal EMS optimizes home energy supply automatically.
- PV production forecast.
- Built-in electric power service, FCAS, VPP, etc.
- Online monitoring, online diagnosis, online service.

ENERGY STORAGE SYSTEM(SINGLE PHASE)

3.6 / 5 kW

PRODUCT SPECIFICATIONS

INVERTER MODEL	ES-INV-SPH3.6K		ES-INV-SPH5K
PV INPUT			
Max. PV Input Power	7.36kW		10kW
Max. PV Input Voltage	580V		580V
MPPT Range	100~550V		100~550V
Max. Input Current	15A / 15A		15A / 15A
Max. Short Circuit Current	18.75A / 18.75A		18.75A / 18.75A
MPPT Trackers	2		2
Strings Per MPPT Tracker	1/1		1/1
AC PORT			
Rated Grid Output Power	3.68kVA		5kVA / 4.6kVA(DE)
Max. Grid Input Power	7.36kVA		10kVA
Rated Grid / Backup Voltage		230Vac	
Rated Grid / Backup Frequency		50/60Hz	
Surge Backup Power	7.36kVA		10kVA
Rated Backup Power	3.68kVA		5kVA
THDi		<3%	
THDv		<3% (Linear Load) / <5% (Non-linear Load)	
DCV		<100mV	
Crest Ratio		3:1	
Transfer Time		<10ms	
EFFICIENCY			
Max. Efficiency	97.3%		97.3%
Max. Round Trip Efficiency	90%		90%
GENERAL DATA			
Operating Temperature Range		-20~60°C	
Topology		Transformerless	
Dimensions (W*H*D)		590×405×205mm	
Weight	19.5kg		19.5kg
Load Monitoring	· ·	Meter / CT / Backup box	·
External Communication		RS-485 / WIFI / 4G / Ethernet	
Crid Demulation	,	VDE-AR-N 4105:2018, G98, G99, C10/11:2021, NTS 631, RD647:202	20
Grid Regulation			20
Grid Regulation			
		2:2020, CEI 0-21, VDE 0126-1-1, NRS 097-2-1, AS/NZS 4777.2:2020 IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 62477-1:2012	
Safety Regulation	UNE 21700:	2:2020, CEI 0-21, VDE 0126-1-1, NRS 097-2-1, AS/NZS 4777.2:2020), EN 50549-1
Safety Regulation BATTERY MODEL		2:2020, CEI 0-21, VDE 0126-1-1, NRS 097-2-1, AS/NZS 4777.2:2020 IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 62477-1:2012	
Safety Regulation BATTERY MODEL Battery Type	UNE 21700; ES-BAT-4.8S	2:2020, CEI 0-21, VDE 0126-1-1, NRS 097-2-1, AS/NZS 4777.2:2020), EN 50549-1 ES-BAT-10.1P
Safety Regulation BATTERY MODEL Battery Type Battery Capacity	UNE 21700; ES-BAT-4.8S 4.8kWh	2:2020, CEI 0-21, VDE 0126-1-1, NRS 097-2-1, AS/NZS 4777.2:2020 IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 62477-1:2012	ES-BAT-10.1P
Safety Regulation BATTERY MODEL Battery Type Battery Capacity Usable Capacity	UNE 21700; ES-BAT-4.8S	2:2020, CEI 0-21, VDE 0126-1-1, NRS 097-2-1, AS/NZS 4777.2:2020 IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 62477-1:2012 LFP), EN 50549-1 ES-BAT-10.1P
Safety Regulation BATTERY MODEL Battery Type Battery Capacity Usable Capacity Depth of Discharge (DoD)	UNE 21700; ES-BAT-4.8S 4.8kWh	2:2020, CEI 0-21, VDE 0126-1-1, NRS 097-2-1, AS/NZS 4777.2:2020 IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 62477-1:2012 LFP 95%	ES-BAT-10.1P
Safety Regulation BATTERY MODEL Battery Type Battery Capacity Usable Capacity Depth of Discharge (DoD) Nominal Battery Voltage	UNE 21700; ES-BAT-4.8S 4.8kWh	2:2020, CEI 0-21, VDE 0126-1-1, NRS 097-2-1, AS/NZS 4777.2:2020 IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 62477-1:2012 LFP 95% 96V	ES-BAT-10.1P
Safety Regulation BATTERY MODEL Battery Type Battery Capacity Usable Capacity Depth of Discharge (DoD) Nominal Battery Voltage Operating Voltage Range	UNE 21700: ES-BAT-4.8S 4.8kWh 4.6kWh	2:2020, CEI 0-21, VDE 0126-1-1, NRS 097-2-1, AS/NZS 4777.2:2020 IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 62477-1:2012 LFP 95%	ES-BAT-10.1P 10.1kWh 9.6kWh
Safety Regulation BATTERY MODEL Battery Type Battery Capacity Usable Capacity Depth of Discharge (DoD) Nominal Battery Voltage Operating Voltage Range Max. Charging Current	UNE 21700: ES-BAT-4.8S 4.8kWh 4.6kWh	2:2020, CEI 0-21, VDE 0126-1-1, NRS 097-2-1, AS/NZS 4777.2:2020 IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 62477-1:2012 LFP 95% 96V	ES-BAT-10.1P 10.1kWh 9.6kWh
Safety Regulation BATTERY MODEL Battery Type Battery Capacity Usable Capacity Depth of Discharge (DoD) Nominal Battery Voltage Operating Voltage Range Max. Charging Current Max. Discharging Current	UNE 21700: ES-BAT-4.8S 4.8kWh 4.6kWh	2:2020, CEI 0-21, VDE 0126-1-1, NRS 097-2-1, AS/NZS 4777.2:2020 IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 62477-1:2012 LFP 95% 96V 90~108V	ES-BAT-10.1P 10.1kWh 9.6kWh
Safety Regulation BATTERY MODEL Battery Type Battery Capacity Usable Capacity Depth of Discharge (DoD) Nominal Battery Voltage Operating Voltage Range Max. Charging Current Max. Discharging Current Operating Temperature Range	UNE 21700: ES-BAT-4.8S 4.8kWh 4.6kWh	2:2020, CEI 0-21, VDE 0126-1-1, NRS 097-2-1, AS/NZS 4777.2:2020 IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 62477-1:2012 LFP 95% 96V 90~108V Charge:0°C<50°C / Discharge:-10°C <t<50°c< td=""><td>ES-BAT-10.1P 10.1kWh 9.6kWh</td></t<50°c<>	ES-BAT-10.1P 10.1kWh 9.6kWh
BATTERY MODEL Battery Type Battery Capacity Usable Capacity Depth of Discharge (DoD) Nominal Battery Voltage Operating Voltage Range Max. Charging Current Max. Discharging Current Operating Temperature Range Cycle Lifetime	UNE 21700: ES-BAT-4.8S 4.8kWh 4.6kWh 50A 50A	2:2020, CEI 0-21, VDE 0126-1-1, NRS 097-2-1, AS/NZS 4777.2:2020 IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 62477-1:2012 LFP 95% 96V 90~108V	ES-BAT-10.1P 10.1kWh 9.6kWh 52.5A 52.5A
Safety Regulation BATTERY MODEL Battery Type Battery Capacity Usable Capacity Depth of Discharge (DoD) Nominal Battery Voltage Operating Voltage Range Max. Charging Current Max. Discharging Current Operating Temperature Range Cycle Lifetime Parallel / Series	UNE 21700: ES-BAT-4.8S 4.8kWh 4.6kWh 50A 50A	2:2020, CEI 0-21, VDE 0126-1-1, NRS 097-2-1, AS/NZS 4777.2:2020 IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 62477-1:2012 LFP 95% 96V 90~108V Charge:0°C<50°C / Discharge:-10°C <t<50°c< td=""><td>10, EN 50549-1 ES-BAT-10.1P 10.1kWh 9.6kWh 52.5A 52.5A 1~6 in parallel</td></t<50°c<>	10, EN 50549-1 ES-BAT-10.1P 10.1kWh 9.6kWh 52.5A 52.5A 1~6 in parallel
Safety Regulation BATTERY MODEL Battery Type Battery Capacity Usable Capacity Depth of Discharge (DoD) Nominal Battery Voltage Operating Voltage Range Max. Charging Current Max. Discharging Current Operating Temperature Range Cycle Lifetime Parallel / Series Dimensions (W*H*D)	UNE 21700: ES-BAT-4.8S 4.8kWh 4.6kWh 50A 50A 1 ~ 4 in series 590×430×205mm	2:2020, CEI 0-21, VDE 0126-1-1, NRS 097-2-1, AS/NZS 4777.2:2020 IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 62477-1:2012 LFP 95% 96V 90~108V Charge:0°C<50°C / Discharge:-10°C <t<50°c< td=""><td>ES-BAT-10.1P 10.1kWh 9.6kWh 52.5A 52.5A 1~6 in parallel 590×750×205mm</td></t<50°c<>	ES-BAT-10.1P 10.1kWh 9.6kWh 52.5A 52.5A 1~6 in parallel 590×750×205mm
Safety Regulation BATTERY MODEL Battery Type Battery Capacity Usable Capacity Depth of Discharge (DoD) Nominal Battery Voltage Operating Voltage Range Max. Charging Current Max. Discharging Current Operating Temperature Range Cycle Lifetime Parallel / Series Dimensions (W*H*D) Weight	UNE 21700: ES-BAT-4.8S 4.8kWh 4.6kWh 50A 50A 1 ~ 4 in series 590×430×205mm 53.4kg	2:2020, CEI 0-21, VDE 0126-1-1, NRS 097-2-1, AS/NZS 4777.2:2020 IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 62477-1:2012 LFP 95% 96V 90~108V Charge:0°C<50°C / Discharge:-10°C <t<50°c< td=""><td>ES-BAT-10.1P 10.1kWh 9.6kWh 52.5A 52.5A 1~6 in parallel 590×750×205mm 90kg</td></t<50°c<>	ES-BAT-10.1P 10.1kWh 9.6kWh 52.5A 52.5A 1~6 in parallel 590×750×205mm 90kg
Safety Regulation BATTERY MODEL Battery Type Battery Capacity Usable Capacity Depth of Discharge (DoD) Nominal Battery Voltage Operating Voltage Range Max. Charging Current Max. Discharging Current Operating Temperature Range Cycle Lifetime Parallel / Series Dimensions (W*H*D) Weight	UNE 21700: ES-BAT-4.8S 4.8kWh 4.6kWh 50A 50A 1 ~ 4 in series 590×430×205mm	2:2020, CEI 0-21, VDE 0126-1-1, NRS 097-2-1, AS/NZS 4777.2:2020 IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 62477-1:2012 LFP 95% 96V 90~108V Charge:0°C<50°C / Discharge:-10°C <t<50°c 8000<="" td=""><td>ES-BAT-10.1P 10.1kWh 9.6kWh 52.5A 52.5A 1~6 in parallel 590×750×205mm</td></t<50°c>	ES-BAT-10.1P 10.1kWh 9.6kWh 52.5A 52.5A 1~6 in parallel 590×750×205mm
Safety Regulation BATTERY MODEL Battery Type Battery Capacity Usable Capacity Depth of Discharge (DoD) Nominal Battery Voltage Operating Voltage Range Max. Charging Current Max. Discharging Current Operating Temperature Range Cycle Lifetime Parallel / Series Dimensions (W*H*D) Weight Colour	UNE 21700: ES-BAT-4.8S 4.8kWh 4.6kWh 50A 50A 1 ~ 4 in series 590×430×205mm 53.4kg	2:2020, CEI 0-21, VDE 0126-1-1, NRS 097-2-1, AS/NZS 4777.2:2020 IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 62477-1:2012 LFP 95% 96V 90~108V Charge:0°C<50°C / Discharge:-10°C <t<50°c< td=""><td>ES-BAT-10.1P 10.1kWh 9.6kWh 52.5A 52.5A 1~6 in parallel 590×750×205mm 90kg</td></t<50°c<>	ES-BAT-10.1P 10.1kWh 9.6kWh 52.5A 52.5A 1~6 in parallel 590×750×205mm 90kg
Safety Regulation BATTERY MODEL Battery Type Battery Capacity Usable Capacity Depth of Discharge (DoD) Nominal Battery Voltage Operating Voltage Range Max. Charging Current Max. Discharging Current Operating Temperature Range Cycle Lifetime Parallel / Series Dimensions (W*H*D) Weight Colour Communication	UNE 21700: ES-BAT-4.8S 4.8kWh 4.6kWh 50A 50A 1 ~ 4 in series 590×430×205mm 53.4kg	2:2020, CEI 0-21, VDE 0126-1-1, NRS 097-2-1, AS/NZS 4777.2:2020 IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 62477-1:2012 LFP 95% 96V 90~108V Charge:0°C<50°C / Discharge:-10°C <t<50°c 8000<="" td=""><td>ES-BAT-10.1P 10.1kWh 9.6kWh 52.5A 52.5A 1~6 in parallel 590×750×205mm 90kg</td></t<50°c>	ES-BAT-10.1P 10.1kWh 9.6kWh 52.5A 52.5A 1~6 in parallel 590×750×205mm 90kg
BATTERY MODEL Battery Type Battery Capacity Usable Capacity Depth of Discharge (DoD) Nominal Battery Voltage Operating Voltage Range Max. Charging Current Max. Discharging Current Operating Temperature Range Cycle Lifetime Parallel / Series Dimensions (W*H*D) Weight Colour Communication Safety Regulation	UNE 21700: ES-BAT-4.8S 4.8kWh 4.6kWh 50A 50A 1 ~ 4 in series 590×430×205mm 53.4kg	2:2020, CEI 0-21, VDE 0126-1-1, NRS 097-2-1, AS/NZS 4777.2:2020 IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 62477-1:2012 LFP 95% 96V 90~108V Charge:0°C<50°C / Discharge:-10°C <t<50°c (optional)<="" 8000="" can="" rs-485="" td=""><td>ES-BAT-10.1P 10.1kWh 9.6kWh 52.5A 52.5A 1~6 in parallel 590×750×205mm 90kg</td></t<50°c>	ES-BAT-10.1P 10.1kWh 9.6kWh 52.5A 52.5A 1~6 in parallel 590×750×205mm 90kg
Safety Regulation BATTERY MODEL Battery Type Battery Capacity Usable Capacity Depth of Discharge (DoD) Nominal Battery Voltage Operating Voltage Range Max. Charging Current Max. Discharging Current Operating Temperature Range Cycle Lifetime Parallel / Series Dimensions (W*H*D) Weight Colour Communication Safety Regulation Transportation	UNE 21700: ES-BAT-4.8S 4.8kWh 4.6kWh 50A 50A 1 ~ 4 in series 590×430×205mm 53.4kg	2:2020, CEI 0-21, VDE 0126-1-1, NRS 097-2-1, AS/NZS 4777.2:2020 IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 62477-1:2012 LFP 95% 96V 90~108V Charge:0°C<50°C / Discharge:-10°C <t<50°c (optional)="" 62040:2017<="" 62619:2017,="" 8000="" can="" iec="" rs-485="" td=""><td>ES-BAT-10.1P 10.1kWh 9.6kWh 52.5A 52.5A 1~6 in parallel 590×750×205mm 90kg</td></t<50°c>	ES-BAT-10.1P 10.1kWh 9.6kWh 52.5A 52.5A 1~6 in parallel 590×750×205mm 90kg
Safety Regulation BATTERY MODEL Battery Type Battery Capacity Usable Capacity Depth of Discharge (DoD) Nominal Battery Voltage Operating Voltage Range Max. Charging Current Max. Discharging Current Operating Temperature Range Cycle Lifetime Parallel / Series Dimensions (W*H*D) Weight Colour Communication Safety Regulation Transportation	UNE 21700: ES-BAT-4.8S 4.8kWh 4.6kWh 50A 50A 1 ~ 4 in series 590×430×205mm 53.4kg	2:2020, CEI 0-21, VDE 0126-1-1, NRS 097-2-1, AS/NZS 4777.2:2020 IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 62477-1:2012 LFP 95% 96V 90~108V Charge:0°C<50°C / Discharge:-10°C <t<50°c (optional)="" 62040:2017<="" 62619:2017,="" 8000="" can="" iec="" rs-485="" td=""><td>ES-BAT-10.1P 10.1kWh 9.6kWh 52.5A 52.5A 1~6 in parallel 590×750×205mm 90kg</td></t<50°c>	ES-BAT-10.1P 10.1kWh 9.6kWh 52.5A 52.5A 1~6 in parallel 590×750×205mm 90kg
Safety Regulation BATTERY MODEL Battery Type Battery Capacity Usable Capacity Depth of Discharge (DoD) Nominal Battery Voltage Operating Voltage Range Max. Charging Current Max. Discharging Current Operating Temperature Range Cycle Lifetime Parallel / Series Dimensions (W*H*D) Weight Colour Communication Safety Regulation Transportation SYSTEM Operating Altitude	UNE 21700: ES-BAT-4.8S 4.8kWh 4.6kWh 50A 50A 1 ~ 4 in series 590×430×205mm 53.4kg	2:2020, CEI 0-21, VDE 0126-1-1, NRS 097-2-1, AS/NZS 4777.2:2020 IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 62477-1:2012 LFP 95% 96V 90~108V Charge:0°C<50°C / Discharge:-10°C <t<50°c (optional)="" 62040:2017="" 62619:2017,="" 8000="" can="" iec="" rs-485="" td="" un38.3<=""><td>ES-BAT-10.1P 10.1kWh 9.6kWh 52.5A 52.5A 1~6 in parallel 590×750×205mm 90kg</td></t<50°c>	ES-BAT-10.1P 10.1kWh 9.6kWh 52.5A 52.5A 1~6 in parallel 590×750×205mm 90kg
Safety Regulation BATTERY MODEL Battery Type Battery Capacity Usable Capacity Depth of Discharge (DoD) Nominal Battery Voltage Operating Voltage Range Max. Charging Current Max. Discharging Current Operating Temperature Range Cycle Lifetime Parallel / Series Dimensions (W*H*D) Weight Colour Communication Safety Regulation Transportation SYSTEM Operating Altitude Relative Humidity	UNE 21700: ES-BAT-4.8S 4.8kWh 4.6kWh 50A 50A 1 ~ 4 in series 590×430×205mm 53.4kg	2:2020, CEI 0-21, VDE 0126-1-1, NRS 097-2-1, AS/NZS 4777.2:2020 IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 62477-1:2012 LFP 95% 96V 90~108V Charge:0°C<50°C / Discharge:-10°C <t<50°c (="" (optional)="" 62040:2017="" 62619:2017,="" 8000="" can="" iec="" rs-485="" un38.3="" ≤3000m="">3000m Derating)</t<50°c>	ES-BAT-10.1P 10.1kWh 9.6kWh 52.5A 52.5A 1~6 in parallel 590×750×205mm 90kg
Safety Regulation BATTERY MODEL Battery Type Battery Capacity Usable Capacity Depth of Discharge (DoD) Nominal Battery Voltage Operating Voltage Range Max. Charging Current Max. Discharging Current Operating Temperature Range Cycle Lifetime Parallel / Series Dimensions (W*H*D) Weight Colour Communication Safety Regulation Transportation SYSTEM Operating Altitude Relative Humidity Protection Degree	UNE 21700: ES-BAT-4.8S 4.8kWh 4.6kWh 50A 50A 1 ~ 4 in series 590×430×205mm 53.4kg	2:2020, CEI 0-21, VDE 0126-1-1, NRS 097-2-1, AS/NZS 4777.2:2020 IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 62477-1:2012 LFP 95% 96V 90~108V Charge:0°C<50°C / Discharge:-10°C <t<50°c (="" (optional)="" 62040:2017="" 62619:2017,="" 8000="" can="" iec="" rs-485="" un38.3="" ≤3000m="">3000m Derating) 0~95% (No Condensing)</t<50°c>	ES-BAT-10.1P 10.1kWh 9.6kWh 52.5A 52.5A 1~6 in parallel 590×750×205mm 90kg
Safety Regulation BATTERY MODEL Battery Type Battery Capacity Usable Capacity Depth of Discharge (DoD) Nominal Battery Voltage Operating Voltage Range Max. Charging Current Max. Discharging Current Operating Temperature Range Cycle Lifetime Parallel / Series Dimensions (W*H*D) Weight Colour Communication Safety Regulation Transportation SYSTEM Operating Altitude Relative Humidity Protection Degree Cooling	UNE 21700: ES-BAT-4.8S 4.8kWh 4.6kWh 50A 50A 1 ~ 4 in series 590×430×205mm 53.4kg	2:2020, CEI 0-21, VDE 0126-1-1, NRS 097-2-1, AS/NZS 4777.2:2020 IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 62477-1:2012 LFP 95% 96V 90~108V Charge:0°C<50°C / Discharge:-10°C <t<50°c (="" (optional)="" 62040:2017="" 62619:2017,="" 8000="" can="" iec="" rs-485="" un38.3="" ≤3000m="">3000m Derating) 0~95% (No Condensing) IP65</t<50°c>	ES-BAT-10.1P 10.1kWh 9.6kWh 52.5A 52.5A 1~6 in parallel 590×750×205mm 90kg
Safety Regulation BATTERY MODEL Battery Type Battery Capacity Usable Capacity Depth of Discharge (DoD) Nominal Battery Voltage Operating Voltage Range	UNE 21700: ES-BAT-4.8S 4.8kWh 4.6kWh 50A 50A 1 ~ 4 in series 590×430×205mm 53.4kg	2:2020, CEI 0-21, VDE 0126-1-1, NRS 097-2-1, AS/NZS 4777.2:2020 IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 62477-1:2012 LFP 95% 96V 90~108V Charge:0°C<50°C / Discharge:-10°C <t<50°c (="" (optional)="" 62040:2017="" 62619:2017,="" 8000="" can="" iec="" rs-485="" un38.3="" ≤3000m="">3000m Derating) 0~95% (No Condensing) IP65 Natural Convection</t<50°c>	ES-BAT-10.1P 10.1kWh 9.6kWh 52.5A 52.5A 1~6 in parallel 590×750×205mm 90kg

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PRODUCT FEATURES



HIGH PERFORMANCE

- 166% PV over management.
- 200% backup overload capacity, 60A battery current.
- Max. efficiency 97.3%, Battery efficiency 97%.
- Load monitoring accuracy 10W, Battery discharging threshold 10W.



HIGH RELIABILITY

- UPS level redundant protection against backup load breakdown.
- Three-level firmware and two-level hardware battery protection.
- Multiple temperature monitoring, delicate thermal management.



HIGH INTELLIGENCE

- Internal EMS optimizes home energy supply automatically.
- PV production forecast.
- Built-in electric power service, FCAS, VPP, etc.
- Online monitoring, online diagnosis, online service.

ENERGY STORAGE SYSTEM(SINGLE PHASE)

6 kW

PRODUCT SPECIFICATIONS

INVERTER MODEL		ES-INV-SPH6K						
PV INPUT								
Max. PV Input Power		10kW						
Max. PV Input Voltage		580V						
MPPT Range	100~550V							
Max. Input Current	15A / 15A							
Max. Short Circuit Current		15A / 15A 22.5A / 22.5A						
MPPT Trackers		2						
Strings Per MPPT Tracker		1/1						
AC PORT								
Rated Grid Output Power		647/7						
Max. Grid Input Power	6kVA							
·	11.5kVA							
Rated Grid / Backup Voltage	230Vac							
Rated Grid / Backup Frequency	50/60Hz							
Surge Backup Power	11.5kVA							
Rated Backup Power		6kVA						
THDi		<3%						
THDv		<3% (Linear Load) / <5% (Non-linear Load)						
DCV		<100mV						
Crest Ratio		3:1						
Transfer Time		<10ms						
EFFICIENCY								
Max. Efficiency		97.3%						
Max. Round Trip Efficiency		90%						
GENERAL DATA								
Operating Temperature Range		-20~60°C						
Topology		Transformerless						
Dimensions (W*H*D)		590×405×205mm						
Weight	20kg							
Load Monitoring	Meter / CT / Backup box							
External Communication	RS-485 / WIFI / 4G / Ethernet							
Grid Regulation	CEI 0-21, NRS 097-2-1, IEC 62116, IEC 61727							
Safety Regulation	IEC/EN 62109-1, IEC/EN 62109-2							
BATTERY MODEL	ES-BAT-4.8S		ES-BAT-10.1P					
Battery Type		LFP						
Battery Capacity	4.8kWh		10.1kWh					
Usable Capacity	4.6kWh		9.6kWh					
Depth of Discharge (DoD)		95%						
Nominal Battery Voltage								
Operating Voltage Range	96V 90~108V							
Max. Charging Current	50A	90°-100V						
			EO EA					
Max. Discharging Current Operating Temperature Range			52.5A					
	50A 50A	01 000 (T000 LD) 1 1000 T (T000	52.5A 52.5A					
		Charge:0°C<50°C / Discharge:-10°C <t<50°c< td=""><td></td></t<50°c<>						
Cycle Lifetime	50A	Charge:0°C<50°C / Discharge:-10°C <t<50°c 8000</t<50°c 	52.5A					
Cycle Lifetime Parallel / Series	50A 1~4 in series		52.5A 1∼6 in parallel					
Cycle Lifetime Parallel / Series Dimensions (W*H*D)	50A 1∼4 in series 590×430×205mm		52.5A 1∼6 in parallel 590×750×205mm					
Cycle Lifetime Parallel / Series Dimensions (W*H*D) Weight	50A 1~4 in series 590×430×205mm 53.4kg		52.5A 1∼6 in parallel 590×750×205mm 90kg					
Cycle Lifetime Parallel / Series Dimensions (W*H*D) Weight Colour	50A 1∼4 in series 590×430×205mm		52.5A 1∼6 in parallel 590×750×205mm					
Cycle Lifetime Parallel / Series Dimensions (W*H*D) Weight Colour Communication	50A 1~4 in series 590×430×205mm 53.4kg		52.5A 1∼6 in parallel 590×750×205mm 90kg					
Cycle Lifetime Parallel / Series Dimensions (W*H*D) Weight Colour	50A 1~4 in series 590×430×205mm 53.4kg	8000	52.5A 1∼6 in parallel 590×750×205mm 90kg					
Cycle Lifetime Parallel / Series Dimensions (W*H*D) Weight Colour Communication Safety Regulation Transportation	50A 1~4 in series 590×430×205mm 53.4kg	8000 CAN / RS-485 (Optional)	52.5A 1∼6 in parallel 590×750×205mm 90kg					
Cycle Lifetime Parallel / Series Dimensions (W*H*D) Weight Colour Communication Safety Regulation Transportation	50A 1~4 in series 590×430×205mm 53.4kg	8000 CAN / RS-485 (Optional) IEC 62619:2017, IEC 62040:2017	52.5A 1∼6 in parallel 590×750×205mm 90kg					
Cycle Lifetime Parallel / Series Dimensions (W*H*D) Weight Colour Communication Safety Regulation Transportation SYSTEM	50A 1~4 in series 590×430×205mm 53.4kg	8000 CAN / RS-485 (Optional) IEC 62619:2017, IEC 62040:2017	52.5A 1∼6 in parallel 590×750×205mm 90kg					
Cycle Lifetime Parallel / Series Dimensions (W*H*D) Weight Colour Communication Safety Regulation Transportation SYSTEM Operating Altitude	50A 1~4 in series 590×430×205mm 53.4kg	8000 CAN / RS-485 (Optional) IEC 62619:2017, IEC 62040:2017 UN38.3	52.5A 1∼6 in parallel 590×750×205mm 90kg					
Cycle Lifetime Parallel / Series Dimensions (W*H*D) Weight Colour Communication Safety Regulation Transportation SYSTEM Operating Altitude Relative Humidity	50A 1~4 in series 590×430×205mm 53.4kg	8000 CAN / RS-485 (Optional) IEC 62619:2017, IEC 62040:2017 UN38.3 ≤3000m (>3000m Derating)	52.5A 1∼6 in parallel 590×750×205mm 90kg					
Cycle Lifetime Parallel / Series Dimensions (W*H*D) Weight Colour Communication Safety Regulation	50A 1~4 in series 590×430×205mm 53.4kg	8000 CAN / RS-485 (Optional) IEC 62619:2017, IEC 62040:2017 UN38.3 ≤3000m (>3000m Derating) 0~95% (No Condensing)	52.5A 1∼6 in parallel 590×750×205mm 90kg					
Cycle Lifetime Parallel / Series Dimensions (W*H*D) Weight Colour Communication Safety Regulation Transportation SYSTEM Operating Altitude Relative Humidity Protection Degree	50A 1~4 in series 590×430×205mm 53.4kg	8000 CAN / RS-485 (Optional) IEC 62619:2017, IEC 62040:2017 UN38.3 ≤3000m (>3000m Derating) 0~95% (No Condensing) IP65	52.5A 1∼6 in parallel 590×750×205mm 90kg					
Cycle Lifetime Parallel / Series Dimensions (W*H*D) Weight Colour Communication Safety Regulation Transportation SYSTEM Operating Altitude Relative Humidity Protection Degree Cooling	50A 1~4 in series 590×430×205mm 53.4kg	8000 CAN / RS-485 (Optional) IEC 62619:2017, IEC 62040:2017 UN38.3 ≤3000m (>3000m Derating) 0~95% (No Condensing) IP65 Natural Convection	52.5A 1∼6 in parallel 590×750×205mm 90kg					

Note: Specifications are subject to change without advance notice.



PRODUCT FEATURES



HIGH PERFORMANCE

- 200% PV over management.
- 200% backup overload capacity, 50A battery current.
- Max. efficiency 98%, Battery efficiency 96%.
- Load monitoring accuracy 10W, Battery discharging threshold 10W.



HIGH RELIABILITY

- UPS level redundant protection against backup load breakdown.
- Three-level firmware and two-level hardware battery protection.
- Multiple temperature monitoring, delicate thermal management.
- Max. 3 Inverters in parallel to increase power availability.



HIGH INTELLIGENCE

- Internal EMS optimizes home energy supply automatically.
- PV production forecast.
- Built-in electric power service, FCAS, VPP, etc.
- Online monitoring, online diagnosis, online service.

ENERGY STORAGE SYSTEM(THREE PHASE)

4/5/6/8/10kW

PRODUCT SPECIFICATIONS

INVERTER MODEL	ES-INV-TPH4K	ES-INV-TPH5K	ES-INV-TPH6K	ES-INV-TPH8K	ES-INV-TPH10K			
PV INPUT								
Max. PV Input Power	8kW	10kW	12kW	16kW	20kW			
Max. PV Input Voltage			1100V					
MPPT Range		140~950V						
Max. Input Current	16A / 16A / 16A							
Max. Short Circuit Current			24A / 24A / 24A					
MPPT Trackers			3					
Strings Per MPPT Tracker			1/1/1					
AC PORT								
Rated Grid Output Power	4kVA	5kVA	6kVA	8kVA	10kVA			
Max. Grid Input Power	8kVA	10kVA	12kVA	16kVA	20kVA			
Rated Grid / Backup Voltage		220	0/380Vac, 230/400Vac, 3/N/PE					
Rated Grid / Backup Frequency	01374	401374	50/60Hz	401374	0011/4			
Surge Backup Power	8kVA	10kVA	12kVA	16kVA	20kVA			
Rated Backup Power	4kVA	5kVA	6kVA	8kVA	10kVA			
THDi		200/ /1:	<3%					
THDv		<3% (LII	near Load) / <5% (Non-linear I <100mV	_uau)				
Crest Ratio			3 : 1					
Transfer Time			3 : 1 <10ms					
			- 101115					
EFFICIENCY Max. Efficiency	98%	98%	98.2%	98.4%	98.4%			
Max. Round Trip Efficiency	30 /0	30 /0	96.2%	JU. 4 //	30. 4 /0			
GENERAL DATA			0070					
Operating Temperature Range			-20~60°C					
Topology								
Dimensions (W*H*D)	Transformerless E00×446×205mm							
Weight	590×416×205mm							
Load Monitoring	25kg Meter / CT / Backup box							
External Communication	RS-485 / WIFI / 4G / Ethernet							
Grid Regulation	VDE-AR-N 4105:2018, G98, C10/11:2021, NTS 631, RD647:2020, UNE 217002:2020, CEI 0-21,							
		0126-1-1, NRS 097-2-1, AS/N						
Safety Regulation		IEC	C/EN 62109-1, IEC/EN 62109-2	2				
BATTERY MODEL			ES-BAT-4.8S					
Battery Type			LFP					
Battery Capacity			4.8kWh					
Usable Capacity			4.6kWh					
Depth of Discharge (DoD)			95%					
Nominal Battery Voltage			96V					
Operating Voltage Range			90~108V					
Max. Charging Current		50A						
Max. Discharging Current			50A					
Operating Temperature Range		Charge:	0°C<50°C / Discharge:-10°C<	T<50°C				
Cycle Lifetime	8000							
Parallel / Series	1∼6 in series							
Dimensions (W*H*D)	590×430×205mm							
Weight	53.4kg							
Communication	CAN / RS-485 (Optional)							
Safety Regulation	IEC 62619:2017, IEC 62040:2017							
Transportation			UN38.3					
SYSTEM								
Operating Altitude			≤3000m (>3000m Derating)					
Relative Humidity		0∼95% (No Condensing)						
Protection Degree			IP65					
Cooling			Natural Convection					
Noise			<30dB					
Warranty			5 years / 10 years					
		IEC/E						

Note: Specifications are subject to change without advance notice.



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