



AlphaESS
your smart energy

STORION – TB187.5 / 375 / 500

187.5 / 375 / 500 kW | 0.23 ~ 1.6 MWh

STORION – TB187.5/375/500 20ft / 40ft container is an AlphaESS standardized product for large-scale C&I application, the container has built-in batteries, EMS, PCS, STS, transformer, air conditioner, fire extinguishing devices and other equipment. Customers can choose different capacity containers according to their needs, to meet the required application scenarios.

► Easy Installation

Most devices are pre-assembled at the factory
Just install the battery and external wiring at first installation

► Flexible Configuration

PCS is available in 187.5/375/500kVA three options
The battery capacity ranges from 0.23 MWh ~ 1.6 MWh

► Safety

Constant temperature control at $23\pm 2^{\circ}\text{C}$, air-conditioning system self-checking & EMS cell-level detection
Smoke & temperature detection, automatic alarm system + manual one-touch fire suppression
Support fully submerged HFC-propane fire extinguisher

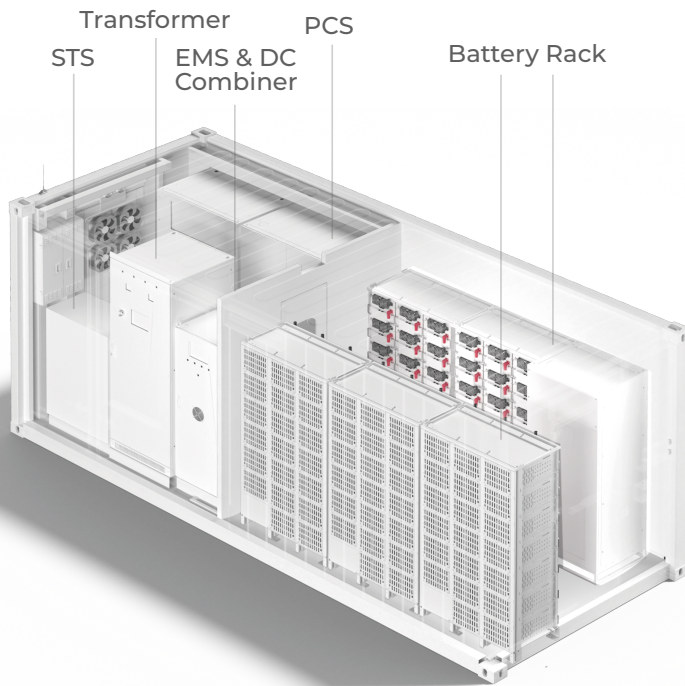
► Outdoor Installation

The IP54 rating supports installation in various environments



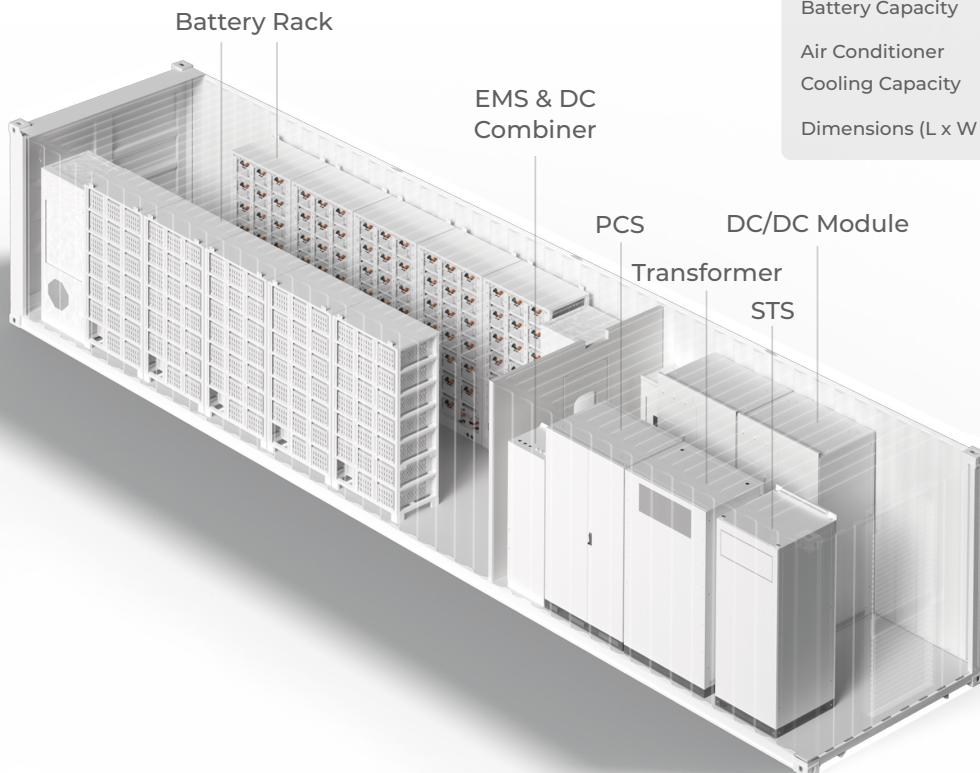
OUTDOOR SOLUTION

20FT / 40FT CONTAINER



Inverter Power	187.5/375/500 kW
Battery Capacity	0.5C, Max. 806 kWh 1C, Max. 553 kWh
Air Conditioner	12.5 kW*1 (0.5C)
Cooling Capacity	7.5 kW*2 (1C)
Dimensions (L x W x H)	6058 x 2438 x 2591 mm

20ft Container



Inverter Power	187.5/375/500 kW
Battery Capacity	0.5C, Max. 1.61 MWh
Air Conditioner	7.5 kW * 2
Cooling Capacity	
Dimensions (L x W x H)	12191 x 2438 x 2591 mm



40ft Container

STORION-TB187.5~500



(Indoor)




Battery

Item	Parameters	
		
Battery Module	M38180-S	M38210-S
Battery Type	LiFePO ₄	LiFePO ₄
Pack	3.2V / 90Ah@2P12S	3.2V / 105Ah@2P12S
Internal Resistance	≤10 mΩ	≤10 mΩ
Energy Capacity	6.912 kWh	8.064 kWh
Usable Capacity	6.22 kWh	7.25 kWh
Depth of Discharge (DoD)	90%	90%
Rated Voltage	38.4 V	38.4 V
Operating Voltage Range	36 ~ 43.2 V	36 ~ 43.2 V
Max. Charging / Discharging Current	180 A	105 A
Cycle Life	80%EOL with ≥ 6000@1C 25°C	80%EOL with ≥ 6000@0.5C 25°C
Operating Temperature Range	-10°C ~ 50°C	-10°C ~ 50°C
Ingress Protection	IP21	IP21
Relative Humidity	15% ~ 85%	15% ~ 85%
Warranty	3 Years Product Warranty, 10 Years Performance Warranty	
Communication	CAN	CAN
Dimensions (W×D×H)	326×654×250 mm	326×560×222 mm
Weight	64 kg	62 kg
String Pack Quantity	17 ~ 20	17 ~ 20
Certifications	IEC62619, IEC62477, UN38.3	


High Voltage Box

Item	Parameters	
		
Model	HV900180-II	HV900105-III
Rated Current	180 A	105 A
Max. Current	220 A	138 A
Rated Voltage	900 VDC	900 VDC
Ultimate Breaking Capacity	250 kA	250 kA
Dimensions (W×D×H)	91.5×440×250.1 mm	91.5×440×250.1 mm
Weight	20 kg	20 kg


Battery Cluster System

	Configuration	HV900180-II, M38180-S, Rack	HV900105-III, M38210-S, Rack
			Dimensions (W×D×H)
	Battery Racks	3×7	3×7
	Overall Weight	1233 ~ 1425 kg	1199 ~ 1385 kg
	Single Cluster Capacity	117.504 ~ 138.24 kWh	137.088 ~ 161.28 kWh
	Max. Charging / Discharging Current	180 A	105 A
	Battery Cluster Voltage Range	612 ~ 864 V	612 ~ 864 V

DC Junction Box

	TOP BMU Box	Junction Box	
			TOP BMU Power
	Communication	RS-485×6, CAN×3	
	SCADA Power	18 W	
	Max. Voltage	900 V	
	Max. Current	630 A / 1250 A	
	Operating Temperature Range	-30°C ~ 50°C	
	Weight	145 kg	
	Dimensions (W×D×H)	600×600×1650 mm	

Transformer

	Rated Capacity	500 kVA
	Input Voltage	380 V
	Output Voltage	400 V
	Group of Connections	Dyn11
	Insulation Class	H
	No-Load Current	5%
	Full-Load Efficiency	≥99.17%
	Ambient Temperature	-25 ~ 50°C
	Weight	1580 kg
	Dimensions (W×H×L)	1100×800×2160 mm

STORION-TB187.5~500 (Indoor)



Inverter



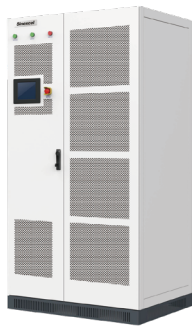
Model	PWSI-500KTL	PWSI-437.5KTL	PWSI-375KTL	PWSI-312.5KTL	PWSI-250KTL	PWSI-187.5KTL
Battery Voltage Range	600 ~ 900 V					
Max. Charging / Discharging Current	873 A	764 A	655 A	546 A	436 A	327 A
Nominal Power	500 kW	437.5kW	375 kW	312.5 kW	250 kW	187.5 kW
Rated Voltage	400 V					
Grid Voltage Range	340 ~ 460 V, 3L / N / PE					
Power Factor Range	0.99 / -1 ~ 1					
Overload Capacity	105%~115% (10 min); 115%~125% (1 min); 125%~150% (200ms)					
Rated AC Current	760 A	665 A	570 A	475 A	380 A	285 A
Off-Grid Output Voltage Range	360 ~ 440 V					
Rated Output Frequency	50 / 60 Hz					
Dimensions (W×D×H)	1100×800×2160 mm					

PV Inverter (AC Coupled)



Model	GW60KS-MT
Max. PV Input Power	90 kW
PV Voltage Range	200 ~ 950V
Max. Input Voltage	1100V
MPPT Number/String	6/2
Max. PV Input Current	30A
Nominal Output Power	60kVA
Max. AC Apparent Power	66 kVA
Grid Rated Voltage	320 ~ 460V 3L/N/PE
Operating Temperature Range (°C)	-30 ~ +60 C
Dimension (W×D×H)	520 × 660 × 220mm
Weight	55kg
Max Efficiency	98.60%
Ingress Protection	IP 65

DC / DC Converter (DC Coupled)



Model	PDS-400K
HV DC bus voltage	LV Voltage+40V ~ 850V
HV DC bus current	0~130A×8
Power rating	50kW×8
Cooling	Forced air cooling
Noise	< 75dB
Ingress Protection	IP20
Altitude	3000m
Peak Efficiency	98.60%
Operation temperature	-20°C to 50°C
Dimensions (W×H×L)	1100×2160×800mm
Weight	Cabinet 280kg + Module 40kg*n (n=1,2,...,8)

Meter (Optional)



Model	DTSU666	
Voltage Input	Rated Voltage	230V AC / 400V AC
	Accuracy Class	±1%
Communication Mode	RS485, Modbus RTU	
General Parameters	Dimensions (W×D×H)	72×101×80 mm
CT Model	AKH-0.66, K-60×40, AKH-0.66, K-100×40	
CT Current Ratio	800 / 5A, 1250 / 5A	
CT Perforation Size	60×40 mm, 100×40 mm	

STS



Model	PW_STS_300K	PW_STS_800K
Rated Capacity	300 kW	800 kW
Rated Voltage	400 V	400 V
Input Voltage Range	-48% ~ 20%	-15% ~ 15%
Output Voltage Range	-48% ~ 20%	-15% ~ 15%
Nominal Current	434.8 A	1155 A
AC Frequency	50Hz / 60Hz	50Hz / 60Hz±2.5Hz
Switching Time Gap	≤30 ms	≤20 ms
Ingress Protection	IP20	IP20
Wiring Mode	Three Phase, 4 Wires	Three Phase, 4 Wires
Max. Efficiency	99.5% (Full Load)	99.5% (Full Load)
Cooling Method	Forced Air Cooling	Forced Air Cooling
Dimensions (W×H×L)	440*300*645 mm	800×800×2160 mm
Weight	50 kg	450 kg
Altitude	3000 m	3000 m

STORION-TB187.5~500 (Indoor)



System Technical Specifications

Item	STORION-TB500 (Indoor)	STORION-TB437.5 (Indoor)	STORION-TB375 (Indoor)	STORION-TB312.5 (Indoor)	STORION-TB250 (Indoor)	STORION-TB187.5 (Indoor)
DC Data						
Battery Type	LiFePO ₄					
Depth of Discharge (DoD)	90% (On-Grid), 85% (Off-Grid)					
Battery Voltage Range	600 ~ 900 V					
Max. Battery Energy Range	117.5 ~ 1612.8 kWh					
Standard Battery Cluster	1 ~ 10					
AC Data - Grid						
Rated Power	500 kVA	437.5 kVA	375 kVA	312.5 kVA	250 kVA	187.5 kVA
Max. Output Power	550 kVA	481.25 kVA	412.5 kVA	343.75 kVA	275 kVA	206.25 kVA
Rated Grid Voltage	3L / N / PE, 340 ~ 460 V					
Rated Frequency	50 / 60 Hz					
Rated Current	760 A	665 A	570 A	475 A	380 A	285 A
General Data						
Ingress Protection	IP20					
Operating Temperature Range	-20°C ~ 50°C					
Relative Humidity	0 ~ 95% (No Condensation)					
Max. Working Altitude	3000m / 9842ft					
Warranty	3 Years Product Warranty					
Cooling Method	Forced Air Cooling / HVAC					
Communication Interfaces	RS485, CAN, Ethernet					
Certifications	NRS 097-2-1:2017 Edition 2.1, EN IEC 61000-6-2&4:2019, IEC 61727:2004, IEC 62116:2014, IEC62109-1:2010, IEC62109-2:2011					

* Please ensure proper system wiring by following the standard topology scheme to prevent potential issues.

**Under AC coupled condition, off-grid scenarios, it is essential to maintain a reasonable capacity ratio. The PV power must be less than the lower of the rated power of the battery and the PCS, and the load power must also be less than the lower of the rated power of the battery and the PCS.



Alpha ESS Co., Ltd.

+86 513 8060 6881
 info@alpha-ess.com
 www.alphaess.com
 No. 1086 Bihua Road, Tongzhou District, Nantong City, Jiangsu Province, China

Alpha ESS Europe GmbH

+49 610 3459 1601
 europe@alpha-ess.de
 www.alphaess.de
 Paul-Ehrlich-Straße 1a, Langen, Hessen D-63225 Germany

Alpha ESS Australia Pty. Ltd.

+61 02 9000 7676
 techsupport@alphaess.au
 www.alphaess.au
 8/15-21 Gibbes Street, Chatswood, NSW 2067 Australia

Alpha ESS International Pte. Ltd.

+65 6513 1125 / +65 6513 1126
 Singapore@alpha-ess.com
 2 Corporation Road #01-06A Corporation Place 618494 Singapore

Alpha ESS Italy S.r.l.

+39 339 462 4288
 info@alphaess.it
 www.alphaess.it
 Firenze & Milano instead Via Don Minzoni, 17, Calenzano Firenze 50041 Italy

Alpha ESS UK Ltd.

+44 330 043 2610
 info@alpha-ess.com
 Drake house, Long street, Dursley, GL11 4HH UK

Alpha ESS USA, Inc.

inquiry@alphaess.us
 www.alphaess.us
 2180 S Ivanhoe St. Unit 5 Denver.CO 80222 USA

Alpha ESS Korea Co., Ltd.

info@alpha-ess.com
 2F, 19-4, Nohyeong 11-gil, Jeju-si, Jeju-do, Republic of Korea

Alpha ESS South Africa (Pty.) Ltd.

SA.Sales@alpha-ess.com
 Johannesburg, South Africa