

PRODUCT CATALOGUE

ADVANCED ENERGYSTORAGE SOLUTIONS

- + Residential
- + Commercial
- + Industrial



HUBBLE ENERGY DESIGNS, ENGINEERS AND SUPPLIES LITHIUM BATTERIES FOR THE SOLAR, RENEWABLE AND POWER BACK UP INDUSTRY IN SOUTH AFRICA, SUB-SAHARAN AFRICA AND EUROPE.

INNOVATION

Our in-house R&D engineers and software developers design custom energy storage and monitoring solutions tailored for the renewable energy and power backup sectors.



QUALITY

We only use the highest quality prismatic cells from leading manufacturers. This includes BYD, CATL and NMC prismatic Li-lon cells, which are known to be the leaders in high quality lithium cells.



COMPREHENSIVE SUPPORT AND TRAINING

Our local presence ensures a commitment to quality and after-sales support, with accessible customer support readily available and informative training events held regularly.

LOCAL REPAIR CENTRES

The presence of our local repair centers in Cape Town and Johannesburg, along with our extensive inventory of spare parts, guarantees swift turnaround times and localized assistance.





CONTENTS

____02 MONITORING, MANAGEMENT AND DIAGNOSIS

+ The Cloudlink

A key innovation is the Cloudlink, a cutting-edge remote monitoring and management platform. It provides real-time and historical data, enabling the management of batteries and compatible inverters.

+ Proactive Monitoring Services

Harnessing the power of the Cloudlink, Hubble can provide state of the art
proactive, bespoke monitoring, management and diagnostics solutions.

____04 LOW VOLTAGE SOLUTIONS

POWERING YOUR HOME

(1.2kWh - 10kWh)

- + S-Series and Balancers
- + AM-Series
- + X-Series
- + Blade

12 HIGH VOLTAGE SOLUTIONS

POWERING YOUR BUSINESS (20.4kWh - 61.5kWh)

- + HV-204
- + HV-410
- + HV-512
- + HV-615

16 CONTAINER SOLUTIONS

POWERING INDUSTRY

- + 215kWh
- +860kWh



MONITOR | MANAGE | DIAGNOSE

- + Cloud monitoring of batteries and inverters
- + Compatible with leading inverter brands
- + Installer site management dashboards
- + Engineered, designed and assembled in South Africa
- + Smart 1 Phase and 3 Phase meter ready for Cloud monitoring
- + RS232, CAN bus, 3G, RS485 Modbus communication port



Industry Leading Data Resolution

Captures data every 5 seconds, allowing for exceptional accurary in monitoring, assessment, and diagnostics

24/7 Real-time and Historical Data

Access to both live and historical data from both inverters and batteries

Remote Diagnosis

Technical support team able to provide rapid and accurate remote diagnostic services

Global Oversight

The ability to manage, oversee and automate power systems at scale with the Cloudlink's Fleet Management capabilities

Operational Flexibility

Remotely control supported inverters with the ability to switch between different operation modes and alter configuration settings

Advanced Management Features

Access advanced management features such as smart SOC prioritisation, dynamic charge control and adaptive limits



PROACTIVEMONITORING SERVICE

Harnessing the power of the Cloudlink to provide state of the art proactive, bespoke monitoring, management and diagnostics solutions.



Bespoke Solutions

We offer personalised support and solutions
to meet unique needs and challenges
promptly and effectively



Dedicated Support

Operations centre is staffed by highly experienced Hubble technicians, ensuring quick and accurate assistance







Proactive Monitoring

Our team proactively monitors and manages your system, ensuring optimal performance and swift resolution of any potential issues



Industrial Grade Security

The Cloudlink system boasts end-to-end encryption from server to software, ensuring data confidentiality and protection

LOW VOLTAGE SOLUTIONS

1.2kWh - 10kWh



Versatile Range

Spanning from 12V to 51V, with versatile mounting options and standalone configurations to suit your needs.

Advanced lithium technology

Engineered with advanced first-life prismatic lithium-ion cells, Hubble Energy's batteries deliver unparalleled reliability and performance across a wide range of applications.

Seamless Integration

Seamless integration with a variety of inverters through CAN bus communications and voltage settings.

Remote Monitoring Capabilities

These advanced low voltage batteries are designed to connect effortlessly with the Hubble Cloudlink, enabling convenient remote monitoring. Notably, the Blade battery comes with a built-in Cloudlink.



S - SERIES

Our S-100A is a high performing, lead acid drop-in replacement. Featuring first life cells, this powerful little battery is perfect for golf carts, small residences and can be paralleled up to 16 batteries in 48V configuration.



^{*} When paired with lithium compatible inverters

Item	Specifications	
Model	Hubble S-100A	
*Rated Capacity (5HR)	100 Ah	
Nominal Voltage	12.8 V	
Discharge Ending Voltage	12 V	
Charging Limited Voltage	14 V	
Max. Continuous Charging Current	100 A	
Max. Continuous Discharging Current	100 A	
C Rating	1.0 C	
Depth of Discharge	100%	
Weight	Approx. 10.5 Kg	
Configuration	4 in series with 4 banks in parallel for maximum 16 batteries	
Parallel	Parallel connection is up to 4 strings	
Dimensions (WxDxH) mm	305mm x 170mm x 220mm	
Maximum DC Limits	Max 100A charge per bank & 100A discharge per bank	
Cells	1st Life Prismatic LiFePO4	
Design Life	+/- 15 Years	
Cycle Life @ 1C	+/- 4000 Cycles	
Certification	CE, UN38.3, GBT31484-2015, GBT31485-2015, GBT31486-2015	
Outer Package Material	Black Polypropylene Plastic	
Operating Temperature	Charging: 0 to +55°C Discharging: -20 to +55°C Storage: -20 to +55°C	
Protection	Electronic Circuit Breaker, BMS Voltage Protection, Current Limiting	
IP Rating) IP65	

^{*} Due to continuous product improvements specifications are subject to change without prior notice.

^{**} When connecting multiple batteries in series, ensure you use a battery balancer else the warranty will be void.

^{***} To prolong battery life the recommended charging current is 30A.

BALANCERS

It is required to install an active balancer when the S-Series batteries are connected in series. The active balancer ensures that the batteries are equalised and are in a good condition when operating in series.





AM - SERIES

The any mount series of lithium batteries range from 2.75kWh – 10kWh and are designed with industry leading first life prismatic lithium cells. Easily wall mounted or shelf installed in a standard rack.





Item	AM-2	AM-4	
Design Capacity	5.5 kWh	3 kWh	
*Rated Capacity (5HR)	116 Ah	120 Ah	
Nominal Voltage	48 V	25 V	
Equalized Charge Voltage	53.8 V	29 V	
Max. Continuous Charging Current	105 A	100 A	
Max. Continuous Discharging Current	105 A	115 A	
Depth of Discharge	J	00%	
C Rating	1	.0 C	
Cells	New Li-ion	New Li-ion Prismatic Cells	
Cycle Life @ 1C	+/- 6000 Cycles @ 50% DOD,	+/- 6000 Cycles @ 50% DOD, Above 3000 cycles @ 100% DOD	
Design Life	+/- 1	+/- 15 Years	
Parallel	Parallel connection up to 15 p	oacks with full communications	
Ports	1x CAN-bus, 2x	Battery Link Ports	
Protection	Electronic Circuit Breaker, BMS \	/oltage Protection, Current Limiting	
Operating Temperature	Charging: 0 to +55°C Discharging: -20 to +55°C Storage: -20 to +55°C	Charging: 0 to +55°C Discharging: -10 to +55°C Storage: -10 to +55°C	
Weight	Approx. 42 Kg	Approx. 21 Kg	
Dimensions (WxDxH) mm	375mm x 145mm x 467mm	375mm x 147mm x 371mm	
Outer Package Material	White bake lacquer steel case		
Certification	CE, UN38.3, GBT31484-2015, GBT31485-2015, GBT31486-2015		

- Due to continuous product improvements specifications are subject to change without prior notice.
- ** To prolong battery life the recommended charge current is 30A. *** Ah design capacity nominally is between 110Ah and 120Ah.

- * Due to continuous product improvements specifications are subject
- to change without prior notice.

 ** To prolong battery life the recommended charge current is 30A.



- + 1C Rating
- + Cloudlink-ready
- + LFP Prismatic Cells
- Parallel up to 8 units with full comms
- + Unlimited Cycle Warranty (Ts & Cs Apply)





10kWh | 51.2V

- + 1C Rating
- + Cloudlink-ready
- + LFP Prismatic Cells
- Parallel up to 8 units with full comms
- + Unlimited Cycle Warranty (Ts & Cs Apply)



Item	AM-5	AM-10	
Design Capacity	5.12 kWh	10 kWh	
*Rated Capacity (5HR)	100 Ah	200 Ah	
Nominal Voltage	51.2 V	51.2 V	
Equalized Charge Voltage	55.2 V	55.2 V	
Max. Continuous Charging Current	100 A	200 A	
Max. Continuous Discharging Current	100 A	200 A	
Depth of Discharge	1	00%	
C Rating		1.0 C	
Cells	New Li-ion Prismatic Cells		
Cycle Life @ 1C	Unlimited cycles within the Hubble Lithium 10 year warranty (Ts & Cs Apply)		
Design Life	+/- 15 Years		
Parallel	Parallel connection up to 8 packs with full communications		
Ports	CAN-bus, Battery link ports		
Protection	Electronic Circuit Breaker, BMS Voltage Protection, Current Limiting		
Operating Temperature	Charging: -10 to +50°C Discharging: 10 to +50°C Humifity: 15% to 75%		
Weight	Approx. 51 Kg	Approx. 89 Kg	
Dimensions (WxDxH) mm	509.62mm x 173mm x 599.67mm	673mm x 618mm x 193mm	
Outer Package Material	White bake lacquer steel case		
Certification	CE IEC UN38.3		

- **AM-5:** Due to continuous product improvements specifications are subject to change without prior notice.

 ** To prolong battery life the recommended charge current is 30A.
- * Due to continuous product improvements specifications are subject to change without prior notice.

 ** To prolong battery life the recommended charge current is 60A.

X - SERIES

The X-101 is the next generation of the popular X-100 model. The X-101 now has CAN bus built in and is a higher density Lithium Battery, using advanced cell technology.



Item	Specifications
Model	Hubble X-101
*Rated Capacity (5HR)	116 Ah
Nominal Voltage	48 V
Design Capacity	5.5 kWh
Equalized Charge Voltage	53.8 V
Max. Continuous Charging Current	105 A
Max. Continuous Discharging Current	105 A
C Rating	1.0 C
Depth of Discharge	100%
Weight	Approx. 42 Kg
Monitoring	Optional Cloudlink
Parallel	Parallel connection up to 15 packs with full communications
Dimensions (WxDxH) mm	442mm x 495mm x 177.5mm
Ports	1x CAN-bus, 2x Battery Link Ports
Cells	New Li-ion Prismatic Cells
Design Life	+/- 15 Years
Cycle Life @ 1C	+/- 6000 Cycles @ 50% DOD, Above 3000 cycles @ 100% DOD
Outer Package Material	White bake lacquer steel case
Operating Temperature	Charging: 0 to +55°C Discharging: -20 to +55°C Storage: -20 to +55°C
Protection	Electronic Circuit Breaker, BMS Voltage Protection, Current Limiting
Certification	CE, UN38.3, GBT31484-2015, GBT31485-2015, GBT31486-2015

 $^{^*\}quad \hbox{Due to continuous product improvements specifications are subject to change without prior notice.}$

^{**} To prolong battery life the recommended charge current is 30A.

^{***} Ah design capacity nominally is between 110Ah and 120Ah.

BLADE

The Blade Battery features revolutionary blade cell technology, which is known to be the safest in the industry. Providing an incredible 10KW and 51.2 voltage power, this 1.5C battery is leading the energy industry with ground-breaking performance.



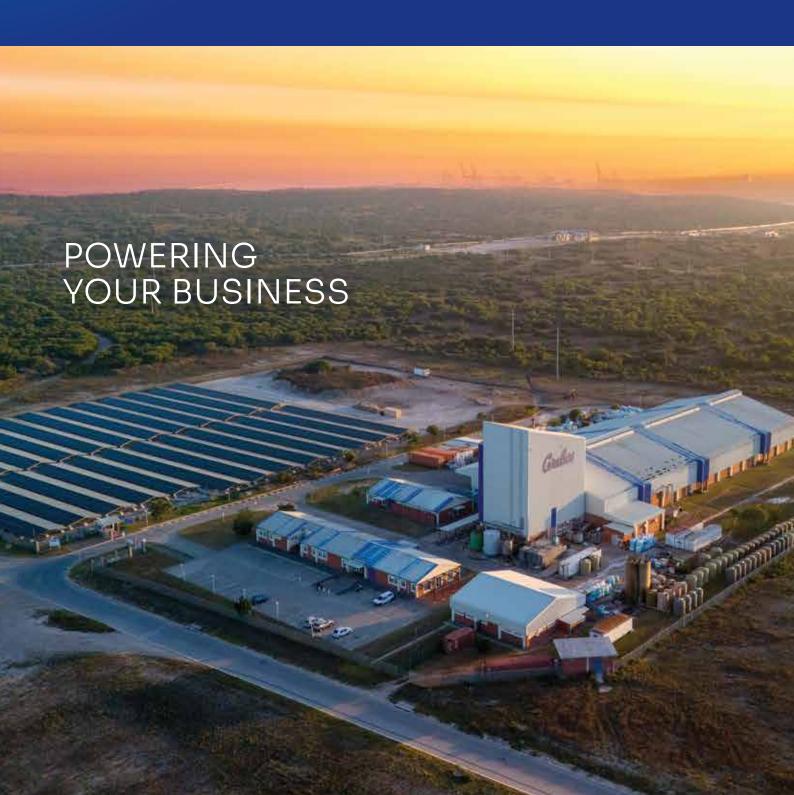
Item	Specifications
Model	Hubble Blade
*Rated Capacity (5HR)	137 Ah
Nominal Voltage	51.2 V
Design Capacity	7.2 kWh
Equalized Charge Voltage	55.8 V
Max. Continuous Charging Current	140 A
Max. Continuous Discharging Current	200 A
C Rating	1.5 C
Depth of Discharge	100%
Weight	Approx. 64 Kg
Monitoring	Built-in Wi-Fi enabled cloud monitoring
Parallel	Parallel connection up to 15 packs with full communications
Dimensions (WxDxH) mm	1125mm x 175mm x 340mm
Ports	1x CAN-bus, 2x Battery Link Ports, 1x Axpert Inverter Port
Cells	16 Cells. New Li-ion LiFePO4 Blade Prismatic Cells
Design Life	+/- 15 Years
Cycle Life @ 1C	Unlimited cycles within the Hubble Lithium 10 year warranty (Ts & Cs Apply)
Outer Package Material	White bake lacquer steel case
Operating Temperature	Charging: -20 to +55°C Discharging: -30 to +55°C Storage: -30 to +55°C
Protection	Electronic Circuit Breaker, BMS Voltage Protection, Current Limiting
Certification	CE IEC UN38.3

^{*} Due to continuous product improvements specifications are subject to change without prior notice.

^{**} To prolong battery life the recommended charge current is 50A.

HIGH VOLTAGE SOLUTIONS

20.4kWh – 61.5kWh



The Hubble High Voltage System uses innovative smart technology to bring you an easily upgradeable solution, with an advanced BMU that automatically detects the number of modules connected. It is easy to transport and install with a modular, buildable design that fits into standard server cabinets.

Featuring an intelligent touchscreen display and Wi-Fi-enabled monitoring for both live and historical data and improved control over mission-critical features. The range currently includes four models, ranging from 204-615V, built with a 1C rating, a rated capacity (5hr) of 100Ah, and can be paralleled with up to 8 ESS systems with full communications.



13

HV - SERIES







EASY INSTALLATION



SCALABLE



SAFE + RELIABLE

Item	HV-204	HV-410	HV-512	HV-615
Design Capacity	20.4 kWh	41.0 kWh	51.2 kWh	61.5 kWh
*Rated Capacity (5HR)		10	0 Ah	
Nominal Voltage	204 V	410 V	512 V	615 V
Discharge Cutoff Voltage	179 V	358 V	448 V	576 V
Equalized Charge Voltage	223 V	446 V	557 V	668 V
Max. Continuous Charging Current		10	00 A	
Max. Continuous Discharging Current		10	AOC	
C Rating		1.	.0 C	
Depth of Discharge		10	00%	
Cycle Life @ 1C	+/- 6000 C	+/- 6000 Cycles @ 50% DOD, Above 3000 cycles @ 100% DOD		
Design Life		+/- 15 Years		
Monitoring		Wi-Fi enabled cloud monitoring		
Parallel	Parallel c	onnection up to 8 p	eacks with full comm	nunications
Ports		1x CAN-bus, 2x	Battery Link Ports	
Cells		New Li-ion Prism	natic LiFePO4 Cells	
Cells Per Pack		16 Cells	per pack	
Total Cells	64 Cells Total	128 Cells Total	160 Cells Total	192 Cells Tota
Protection	Electronic Cir	rcuit Breaker, BMS V	· 'oltage Protection, C	urrent Limiting
Operating Temperature	Charging: 0 to	Charging: 0 to +55°C Discharging: 0 to +55°C Storage: 0 to +55°C		
Weight	Approx. 230kg without cabinet	Approx. 500kg without cabinet	Approx. 600kg without cabinet	Approx. 650kg without cabine
Dimensions (WxDxH) mm	22U Cabinet: 1200 x 693 x 1102	1 4/11 Cabinet: 2090 x 693 x 1102		
Outer Package Material		Black Baked Lacquer Steel Case		
Certification	CE, UN38	CE, UN38.3, GBT31484-2015, GBT31485-2015, GBT31486-2015		

 $^{{}^*\,\}mathsf{Due}\,\mathsf{to}\,\mathsf{continuous}\,\mathsf{product}\,\mathsf{improvements}\,\mathsf{specifications}\,\mathsf{are}\,\mathsf{subject}\,\mathsf{to}\,\mathsf{change}\,\mathsf{without}\,\mathsf{prior}\,\mathsf{notice}.$







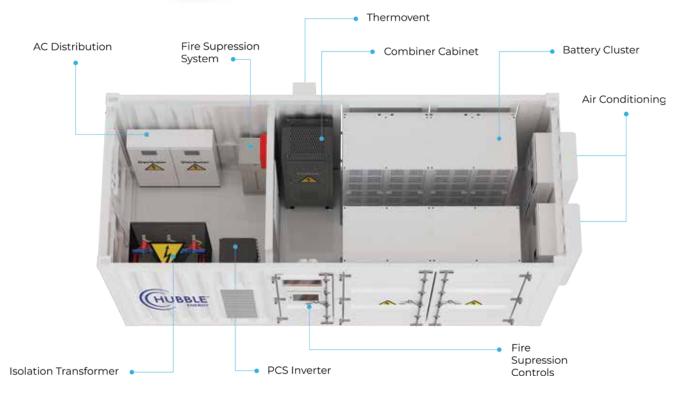


CONTAINER SOLUTIONS

SCALABLE 215kWh – 860kWh

860kWh





215kWh



Crus and

- + Tested and Certified
- + On-site Assistance and Commissioning
- + Fire Detection and Fire Suppresant System
- + Insulated Walls and Temperature Controlled
- + Remote Monitoring, Management and Diagnostics
- + Off Grid, On Grid and Solar Ready

Bespoke Solutions

Our dedicated team can create custom solutions that match your distinct requirements.

Free Remote Monitoring

Cloudlink allows for real-time and historical data monitoring. Our internal control room and dedicated monitoring team can quickly provide diagnosis and support.

Durability

Our containers are built to withstand tough conditions, ensuring uninterrupted power when you need it the most.



HIGH EFFICIENCY

Cooling system ensures higher efficiency and longer battery life cycle.



EASY INSTALLATION

Highly integrated ESS for easy transportation and O&M. All pre-assembled, no battery module handling on site.



VARIOUS SOLUTIONS

Variety of applications are supported such as peak-shift, peak-cut, frequency regulation etc.



SAFETY + RELIABILITY

Multi-level battery protection layers formed by discreet standalone systems offer impeccable safety.



ESS Parameters	215kWh Solution	860kWh Solution		
Design Capacity	215 kWh	860 kWh		
Rated Capacity	280 Ah (0,5 C)			
Nominal Voltage	768	768 V		
Max. Continuous Charging Current	0,5 C @	ე 25°C		
Max. Continuous Discharging Current	0,5 C @	ე 25°C		
Depth of Discharge	Recommend	led 80% DoD		
C Rating	0,5	5 C		
Cells	LiFe	PO4		
Cycle Life	6000 Cycles @ 0.5	C, 25°C, 80% DoD		
Design Life	+/- 15	Years		
Communication	Two-Way CAN2.0/RS485	CAN/RS485/RS232		
Total Cells	240 Cells	960 Cells		
Protection	IP65			
Operating Temperature	-30°C t	o 60°C		
Battery Cluster Weight	+/- 2200 kg	+/- 8800 kg		
Dimensions	7,5 ft Container	20 ft Container		
Operating Humidity Range	0 to 95% withou	t Condensation		
Max. Working Altitude	300	0 m		
Installation Environment Requirements	Outdoor Installation Forced Air Cooling, Industrial Air Conditioner	Outdoor Installation Forced Air Cooling, Industrial Air Conditioner (9,3KW*2)		
BESS Fire Supression	Supported (Heptafluoropropane)			
Auxiliary Power Supply	220Vac, ≤4.2KW			
ESS Communication Protocol	Modbus TCP			
EMC Level Requirements	Class A			
DC Side Lightning Protection Level	Type II			
Certification	UN 38.3, IEC 62619, NB/T 42091-2016, 51048-2014, NB-T 31016-2011, GB 4208- GB 14048.1-2006, GB/	2008, NBT 33014-2014, DL/T 614-2007,		

Cell Parameters	215kWh Solution	860kWh Solution
Battery Dimension	72mm(D)*174mm(W)*207mm(H)	
Nominal Capacity	280Ah @0.5C 25 °C	
Nominal Voltage	3.20V @0.5C, 25 °C	
Operating Voltage Range	2.50V-3.65V	
Continuous Charge Rate	0.5C 25°C	
Continuous Discharge Rate	0.5C 25°C	
Pulse Discharge Rate	1C 25°C, ≤3min	
Cycle Life	6000 Cycles @0.5C, 25 80%DoD	

Battery Module Parameters	215kWh Solution	860kWh Solution
Battery Module Dimension	550mm(W)*750mm(D)*270mm(H)	
Nominal Capacity	280Ah@0.5C, 25°C	
Nominal Voltage	51.2V (1	16 Cells)
Working Voltage Range	44.8V	7-58.4V
Continuous Charge Rate	0.50	@25°C
Continuous Discharge Rate	0.50	@25°C
Weight	115	iKg
Energy	14.33	6kWh
Max. Continuous Charge Rate	0.50	@25°C
Max. Continuous Discharge Rate	0.50	@25°C
Insulation Standards	Insulation Resistance of Battery Housing > 1G Ω (1000)	
Withstand Voltage Standard	3840VDC, no Breakdown or Flashover Occurring	
Max. Charge Voltage of a Single Cell	3.6	55V
Min. Discharge Voltage of a Single Cell	2.5V	
Instantaneous Max. Discharge Current	1804	A@5S
Instantaneous Max. Charge Current	1804	A@5S
High Temperature Protection during Charge	≥ 4	5°C
High Temperature Protection during Discharge	≥ 5	0°C
Low Temperature Protection during Charge	≤ (D°C
Low Temperature Protection during Discharge	≤-2	0°C
Cycle Times	≥ 6000 Cycle	
Application Environment	Indoor, Dry, Constant Temperature	
Waterproof Grade	IF	221
Working temperature Range (°C)		°C to 45°C ye to 50°C
Storage Temperature Range (°C)	-30°C 1	to 45°C
Storage Environment Humidity (RH)	5% to	95%

Battery Cluster BMS System Parameters	215kWh Solution 860kWh Solution	
Working Power Supply	DC 24V ±5%	
Cluster Voltage Collection Range	0-1000V	
Cluster Voltage Collection Accuracy	≤±0.2%FSR	
Current Collection Range	0-± 500A (CAN Communication Hall)	
Current Acquisition Accuracy	≤ <u>±</u> 7%	
Temperature Acquisition Accuracy	±3°C	
Balanced Current	2A	
SoC Estimation	≤10%	
Protection	Short Circuit, Overcharge, Over-Discharge, Over Temperature	
Communication Interface	CAN/RS485/RS232	



PCS - General	215kWh Solution	860kWh Solution
Allow Environment Temp.	-30-60%	С
Humidity	0-95%	
Noise	<70dB	
Protection Level	IP20	
Cooling Method	Air Coolii	ng

PCS - DC Input Side	215kWh Solution	860kWh Solution
Voltage	420-850VDC(768V)	350 - 1000 (768V)
Max. Power) 120kW	240kW

PCS - PV Input Side	215kWh Solution	860kWh Solution	
Max. Photovoltaic Power	120kW	240kW	
Max. Photovoltaic Voltage	1000V	1000V	
Starting Voltage	150V	200V	
MPPT Range	250-850VDC	250-850VDC	
Full Load DC Voltage	450-850VDC	350-1000VDC	
Rated DC Input	600V	800V	
PY Input Current	36A+36A+36A	86A+86A+86A	
PV Input Channels	4\	4 Ways	
Communication Method	Two Way C	Two Way CAN2.0/RS485	

PCS - AC Output Side (Off-Grid)	215kWh Solution	860kWh Solution
Rated AC Power	110kVA	264kVA
Active Power	100kW	240kW
Rated Voltage	400VAC	230/400VAC
Rated Current	144A	344A
THOU	<2% Linear	
Rated Frequency	50/60Hz	
Overload Capacity	110% Long-Term	

PCS - AC Side (On-Grid)	215kWh Solution	860kWh Solution	
Rated AC Power	110kVA	264kVA	
Active Power	100kW	240kW	
Rated Voltage	400VAC	230/400VAC	
Rated Current	144A	344A	
Voltage Range	320-4	320-460VAC	
Rated Frequency	50/6	50/60Hz	
THDi	<3% Linear	-	
Power Factor	Standard: 1.0; L	Standard: 1.0; Lead 0.8 /Lag 0.8	
AC Phase	Three-Phase Four - Wire+ Ground Wire (3 W+N+P E)	Three-Phase Four - Wire+ Ground Wire (3 W+N+P E)	
Working Temp. Range	-30-60°C, >45°C Freq. Reduction	-30-60°C, >45°C Freq. Reduction	

STS	215kWh Solution	860kWh Solution
Rated Output Power	120kW	240kW
Max Rated Current	172A	360A
Overload Capacity	1.1 (10%)	
AC Frequency	50 ± 5Hz	
Wiring Method	Three Phase, Three Wire	
On/Off Grid Switching Time	<20ms	





