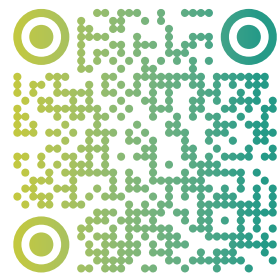




WE MAKE GREEN ENERGY STRONG



STRONG Energy

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Three Phase Hybrid ESS  
Single Phase Hybrid ESS  
Three-Phase Hybrid Energy Storage Inverter  
Single-Phase Hybrid Energy Storage Inverter  
Single-Phase String Inverter

High-Voltage Residential Energy Storage  
Low-Voltage Residential Energy Storage

# STRONG Energy Household ESS Solution

Product Brochure



reddot winner 2024







# ABOUT STRONG Energy

Strong Energy, as part of the [Strong Group](#), has deep roots in the European market since 1986, serving more than 20 million European families. Based on the advantages and experience of the parent company [Skyworth](#) in the field of new energies and its service team localized in Europe, Strong Energy started to introduce inverters, energy storage batteries and system solutions in Europe from mid-2023, following the trend of clean energy development to make a positive contribution to global environmental protection. Strong Energy's parent company [Skyworth](#) is already world-renowned as a consumer electronics company for its smart tvs, digital set-top boxes and other products.

The company has more than 40,000 employees worldwide, 20 national high-tech companies and two publicly traded companies. With its powerful intelligent manufacturing and its system integration and supply chain management capabilities, the company entered the household photovoltaic market in 2020.

## Why STRONG Energy?

We Make Green Energy Strong

### Service

We give our customers confidence and security based on our high-quality requirements. Our local Germany team offers 360° premium quality in pre-sales and after-sales support.

### Experience

As part of the Strong Group, we have been deeply rooted in the European market since 1986, supporting more than 20 million European families. We are a fast-growing group with more than 5 GW of experience in photovoltaic construction from our parent company Skyworth.

### Strong Capacity

Our production capacity allows us to manufacture over 20,000 photovoltaic systems in a single month.

### Single Source

We offer our customers, tailor-made clean energy solutions and comprehensive services from a single source.



# Product Family

Three Phase Hybrid ESS



Single Phase Hybrid ESS



Single-Phase Hybrid Energy Storage Inverter



Single-Phase String Inverter



Three-Phase Hybrid Energy Storage Inverter



High-Voltage Residential Energy Storage



Low-Voltage Residential Energy Storage

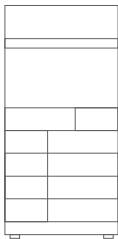


# Three Phase Hybrid ESS

## ALFRED Datasheet

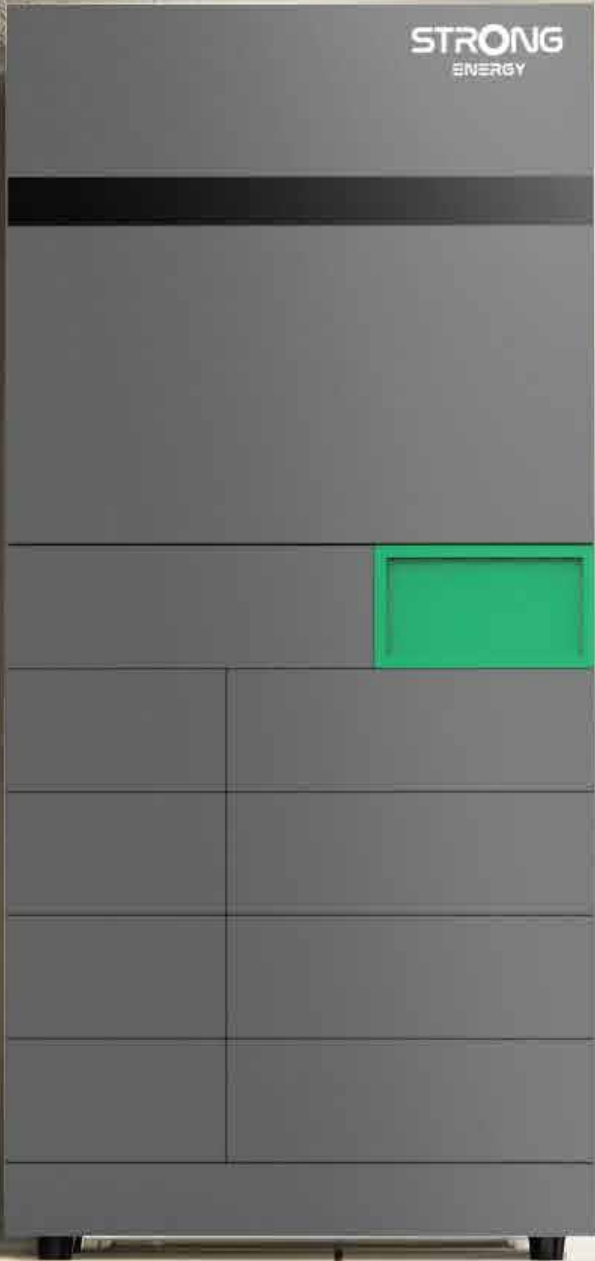
### Specification

System Schematic



ALFRED-10

System Parameters	
Number of Batteries	5 - 10
Battery Total Energy	12-24 kWh
Degree of Protection	IP65
Operation Temperature Range	-25°C ~ 60°C
Allowable Relative Humidity Range	5% - 95%
Max. Operating Altitude	4000 m
Weight (Standard Package)	215.3 kg / 6 Batteries
Dimension (W) x (H) x (D) (Standard Package)	780 x 1760 x 240mm / 6 Batteries
Display	APP & LED indicator
Communication	RS485/CAN (for BMS), RS485, DRM, RS485 (for Meter), Wi-Fi & LAN
Inverter Module	
Nominal AC Output Power	10,000 W
Max. AC Apparent Power	11,000 VA
Max. AC Output Power (PF=1)	11,000 W
Max. AC Output Current	3*16.7 A
Nominal Grid Voltge	3/N/PE, Three Phase 380V / 400V / 415V
Grid Voltage Range	260V - 520V (Adjustable)
Nominal Output Frequency	50Hz / 60Hz
Nominal Load Output Power	10,000 W
Nominal Load Output Current	3*15.2 A
Peak Output Apparent Power (10S)	15,000 VA
Max. PV Input Power	15,000 W
Max. PV Voltage	1000 V
Start-up Voltage	150 V
MPPT Voltage Range	160V - 950V
Max. Input Current Per MPPT	20A / 30A
Max. Short Circuit Current	30A / 40A
No. of MPPT	2
Transfer Time	<10 ms
Max. Efficiency (PV to AC)	98.4 %
European Efficiency (PV to AC)	97.9 %
Dimension (W) x (H) x (D)	780 x 680 x 240mm
Weight	47.3 kg



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\*Pictures may differ from real products

Product Image of Three Phase Hybrid ESS ALFRED



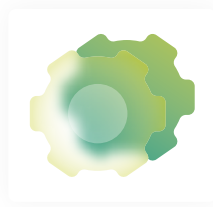
Specification

Battery Module	
Battery Type	LFP
Battery Capacity	2.4 kWh
Rated Power	2000 W
Max.Charge / Discharge Current	50A / 50A
Max.Charge / Discharge Power	2,400W / 2,400W
Dimensions (W) x (H) x (D)	780 x 140 x 240mm
Weight	25 kg
Certification	
Grid	VDE4105, IEC61727/62116, AS4777.2, EN50549-1, C10/11, G98/G100, CEI 0-21, PPDS, RD1699/661/647/413, UNE217002
Safety	IEC62109-1&2, IEC62477-1
Warranty	5/10 Years

Features

Easy Installation

- Wireless design with pin-to-pin connection allows for installation in just 30 minutes.



Stress-Free Power

- Innovatively provides a power switching system to ensure worry-free power consumption forhousehold loads.



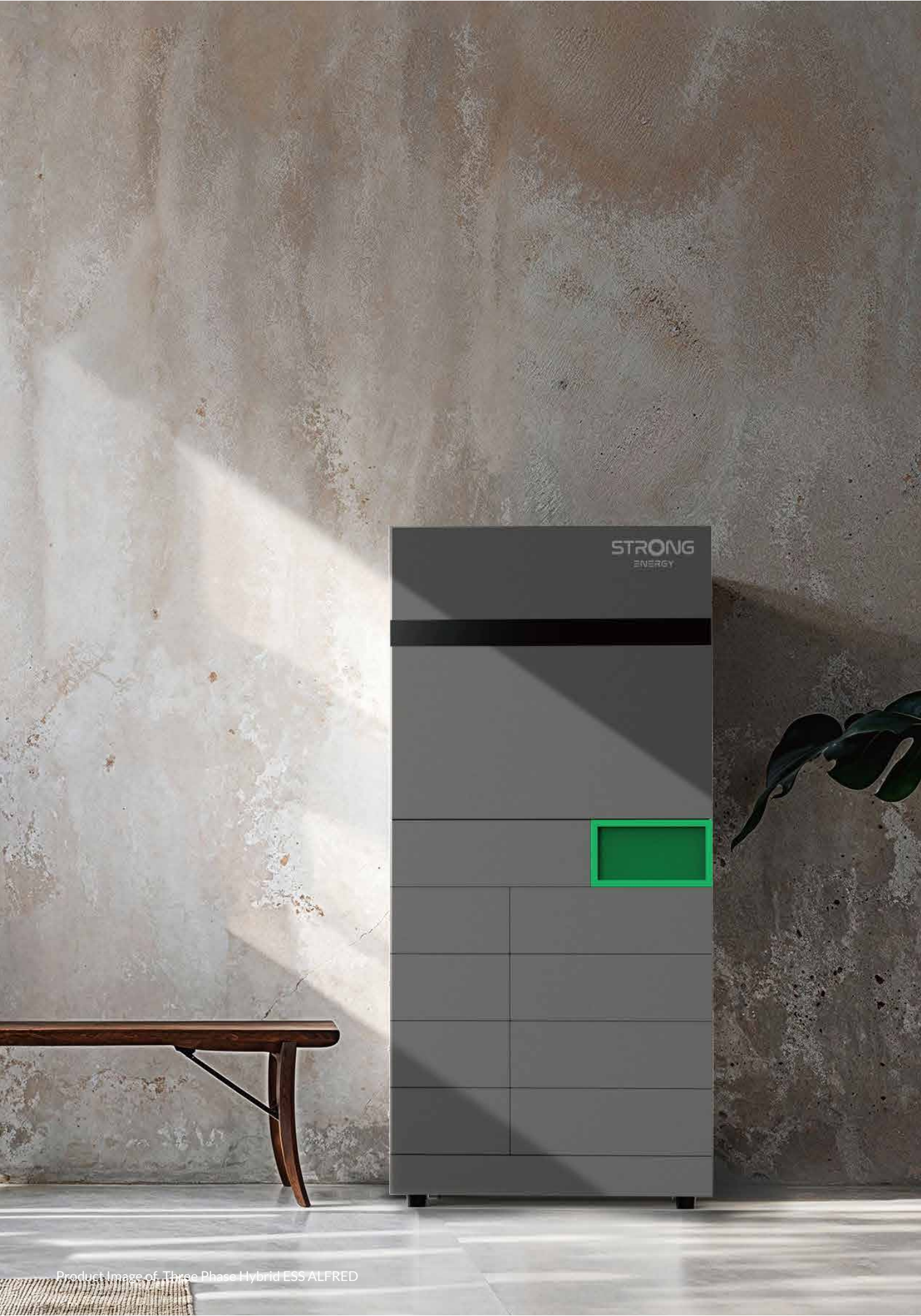
Ultra-thin Design

- Sleek and compact design, just 24cm thin, requiring minimal wall space for installation.



Intelligent Monitoring

- Track equipment's status anywhere, anytime, with latest smart app and monitoring system.



Product Image of Three Phase Hybrid ESS ALFRED





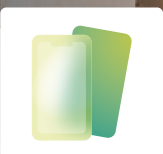
Excellent Performance

- Maximum efficiency of 97.3% and battery efficiency of 94.3%
- Maximum 6.3kW PV input power
- Large MPPT current, compatible with high-power solar panels
- Advanced parallel function



High Reliability

- Key components from international renowned brands
- IP65 Protection adaptable for both indoor and outdoor environment
- Multiple built-in protections



Intelligent Maintenance

- Quick commission via mobile app, 24/7 remote monitoring, configuration and upgrade
- Advanced energy management mechanism, with multiple built-in working modes and flexible customized settings



\*Pictures may differ from real products

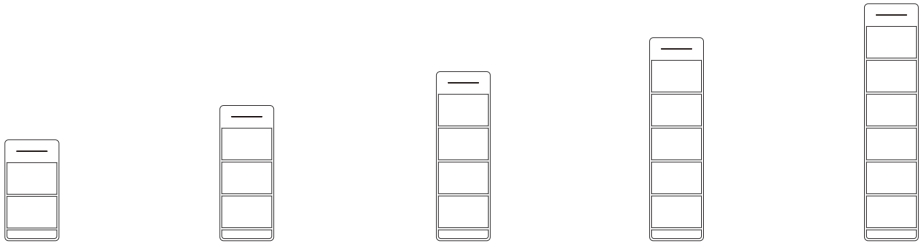
Product Image of CRM2ST-5120WH & CVG5ST-3K6W60

Single Phase Hybrid ESS  
CVG5ST-3K6W60 Datasheet

Specification

System Parameters

Stacking Method



Model	CRM2ST-5120WH	CRM3ST-7680WH	CRM4ST-10240WH	CRM5ST-12800WH	CRM6ST-15360WH
Number of Batteries	2	3	4	5	6
Battery Total Energy	5.12 kWh	7.68 kWh	10.24 kWh	12.80 kWh	15.36 kWh
Degree of Protection	IP65				
Max Operating Altitude	4,000 m				
Weight	70 kg	95 kg	120 kg	145 kg	170 kg
Dimension (W) x (H) x (D) mm	350 x 700 x 220	350 x 900 x 220	350 x 1100 x 220	350 x 1300 x 220	350 x 1500 x 2200
Number of Inverters used in Conjunction	1	1	1	1	1
Display of Inverter	LCD Screen & APP				
Communication of Inverter	DRM/RS485 (for Meter), Wi-Fi (For App control)				
Warranty	10 Years				

Battery Module			
Battery Type	LFP	Dimension (W) x (H) x (D)	350 x 200 x 220mm
Battery Capacity	2.5 kWh	Charging Temperature Range	-10 ~ 50°C
Rated Power	1800 W	Discharging Temperature Range	-20 ~ 55°C
Max. Charge / Discharge Current	50A/50A (Also depends on inverter module)	Weight	25 kg
Max. Charge / Discharge Power	2500W / 2500W	Cycle Life	6000 cycles @ 25°C 0.5C

Certification	
Grid	EN 50549-1, G98
Safety	IEC 62109-1&2, IEC62619, UN38.3, MSDS, RoHS
Other	EMC

Inverter Module			
Model		CVG5ST-3K6W60	
Output (Grid)		PV Input	
Nominal AC Output Power	3600 W	Max. PV Input Power	6300 W
Max. AC Apparent Power	3960 VA	Max. PV Voltage	550 V
Max. AC Output Current	18 A	Start-up Voltage	90 V
Nominal Grid Voltage	220V/230V/240V, L+N+PE	MPPT Voltage Range	70V - 540V
Grid Voltage Range	150V-300V (Adjustable)	Full Load MPPT Voltage Range	280 - 480V
Nominal Output Frequency	50Hz / 60Hz	Max Input Current Per MPPT	15A / 15A
Battery		Max. Short Circuit Current	20A / 20A
Max. Charge / Discharge Current	50A / 50A	No. of MPPT Strings	2
Input Voltage Range	40 - 65V	General	
Output (Backup)		Max. Efficiency (PV to AC)	97.3 %
Nominal Load Output Power	3000 W	Euro. Efficiency (PV - AC)	96.8 %
Nominal Load Output Current	13 A	Max. Efficiency (BAT to AC)	94.3 %
Nominal Output Voltage	220V / 230V / 240V, L+N+PE	Dimension (W) x (H) x (D) mm	570 x 495 x 175
Nominal Output Frequency	50Hz / 60Hz	Weight	20 kg
Transfer Time	<10 ms		





\*Pictures may differ from real products

Product Image of CVT3ST-8K3P

# Three Phase Hybrid Energy Storage Inverter

## CVT Series Datasheet

### Specification

Model	CVT3ST-8K3P	CVT5ST-15K3P
AC Output (Grid)		
Rated AC Output Power	8,000 W	15,000 W
Rated Output Current	11.6A	21.7A
Max. AC Apparent Power	8,800 VA	16,500 VA
Max. AC Output Current	13 A	24 A
Rated Grid Voltage	3L/N/PE 230V/400V AC	
Rated Grid Frequency	50 / 60Hz	
AC Output (Backup)		
Rated Output Power	8,000 W	15,000 W
Rated Output Current	11.6 A	21.7 A
Max Output Apparent Power	8,800 W	16,500 W
Max. Output Current	13 A	24 A
Rated Output Voltage	3/N/PE, 230/400Vac	
Rated Output Frequency	50/60Hz	
Transfer Time	< 10ms when active, ~60s from standby	
THDV	< 3%	
Battery Input / Output		
Battery Type	Lithium Iron Phosphate (LFP)	
Battery Voltage Range	180 - 800V	
Max. Charge/Discharge Current	25 A	50A (25A / 25A)
Max. Charge/Discharge Power	8,000 W	15,000 W
Communication Mode	CAN, RS485	
PV Input		
Recommended Max. PV Input Power	12,000Wp (6,000Wp / 6,000Wp)	22,500Wp (11,250Wp / 11,250Wp)
Max. Input Voltage	1,000 V	
Start-up Voltage	200 V	
Rated input voltage	600 V	
MPPT Voltage Range	180 - 960V	
Nos. of MPPT	2	
String per MPPT	1 / 1	2 / 2
Max. Input Current per MPPT	12.5A / 12.5A	25A / 25A
Max. Short Circuit Current per MPPT	15A / 15A	30A / 30A
System Efficiency		
Max. MPPT Efficiency	99.9%	99.9%
Max. Efficiency	98.0%	98.2%
European Efficiency	97.5%	97.7%
Max. Efficiency of Charging/Discharging	97.6%	97.8%

Model	CVT3ST-8K3P		CVT5ST-15K3P
Protection			
DC Switch			Yes
PV Reverse Connection Protection			Yes
Battery Reverse Connection Protection			Yes
Output Short Circuit Protection			Yes
Output Overcurrent Protection			Yes
Output Overvoltage Protection			Yes
Insulation Impedance Detection			Yes
Residual Current Detection			Yes
Anti-island Protection			Yes
Surge Protection	PV: Type II, AC: Type II		
General			
Operating Temperature Range	-30°C ~ 60°C		
Relative Humidity Range	5% - 95%		
Max. Operation Altitude	< 4,000m		
Standby Self-consumption	< 25W		
Installation Method	Wall-mounted		
Max. Number of Parallel Units	10 pcs		
Dimensions (W) x (H) x (D)	586.6 x 515 x 261.2mm		
Cooling Mode	Natural	Forced Airflow	
Weight	33 kg	37 kg	
Ingress Protection Degree	IP65		
HMI & COM			
Display	LCD & Bluetooth + APP		
Communication Interface	RS485/CAN/WiFi		
Standard		IEC/EN 62109, IEC/EN 61000, EN50549-1, RED, ROHS, IEC 60529, VDE 4105, Tor Erzeuger TypeA	

Features

Excellent Performance

- Rated power output from 8kW to 15kW covers most of the power demand.
  - Maximum efficiency 97.7%, which can greatly reduce energy loss.
  - Max. 22.5kW PV input through 2 MPPTs maximizes usage of solar energy.
- Large MPPT current compatible with high-power solar panels.
  - Seamless Switch Over with 10ms transfer time when grid is off.
  - Advanced parallel connecting function allows future expansion.



Comprehensive Safety

- Class I Protection Category.
  - Anti-islanding Protection.
  - Surge Protection, Leakage Current Protection.
  - Overvoltage Protection, Overcurrent Protection, Short-Circuit Protection.
- PV Insulation Detection.
  - Reverse Connection Protection.
  - IP65 Protection adaptable for both indoor and outdoor environment.



Advanced Energy Management

- Realtime management on mobile App from anywhere.
- Multiple working modes and flexible customized settings built-in.







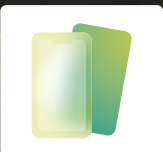
Excellent Performance

- Maximum efficiency of 98.2%
- Large string current, compatible with large PV modules
- Wide voltage rage, compatible with various power grids



High Reliability

- IP65 protection level for outdoor installation
- AFCI function integrated to keep safty
- IP65 Protection adaptable for both indoor and outdoor environment.



Intelligent Maintenance

- Power consumption monitoring
- Remote configuration and upgrade
- Quick commissioning via mobile APP



\*Pictures may differ from real products

Product Image of CVV1ST-3K68

# Single Phase String Inverter

## CVV1ST-3K68 Datasheet

Specification

Model		SE 3.68KTL-D1/G2P	
Efficiency			
Max. Efficiency		98.2 %	
European Efficiency		97.3 %	
Input (PV)			
Max. Input Voltage		550 V	
Max. PV Configuration (STC)		150 %	
Rated Input Voltage		360 V	
Max. Input Current		30A (2*15A)	
Max.Short Circuit Current		40A (2*20A)	
Start Input Voltage		90 V	
MPPT Operating Voltage Range		70V - 540V	
Max. Number of PV Strings		2 (1/1)	
No. of MPPTs		2	
Output (Grid)			
Rated AC Active Power		3680 W	
Max. AC Apparent Power		4048 VA	
Max. AC Active Power (PF=1)		4400 W	
Max. AC Output Current		18.4 A	
Rated AC Voltage		220V / 230V / 240, L+N+PE	
AC Voltage Range		160V - 300V(Adjustable)	
Rated Grid Frequency		50Hz / 60Hz	
Grid Frequency Range		45Hz - 55Hz / 55Hz - 65Hz (Adjustable)	
THDI		< 3% (Rated Power)	
DC Current Injection		< 0.5% In	
Power Factor		> 0.99 Rated Power (Adjustable 0.8 LD - 0.8LG)	
Protection		General	
DC switch	Support	Topology	Transformerless
Anti-islanding protection	Support	IP Rating	IP65
AC overcurrent protection	Support	Night Self Consumption	< 1W
AC short circuit protection	Support	Cooling	Natural Cooling
DC reverse connection	Support	Operating Temperature Range	-25°C ~ 60°C
Surge Arrester	AC Type III (Type II optional) /	Relative Humidity Range	0 - 100%
	DC Type III (Type II optional)	Max. Operating Altitude	4000 m
AFCI	Support	Noise(typical)	30 dB
Insulation detection	Support	Dimensions (W) x (H) x (D)	350 x 347 x 137mm
Leakage current protection	Support	Weight	8.5 kg
HMI & COM			
Display		Wireless & APP , LCD	
Communication		Optional: WiFi / GPRS / RS485 / LAN	
Certification			
Safety		IEC 62109-1, IEC 62109-2	
Grid Code		DE-AR-N 4105, EN 50549-1, CEI 0-21, UNE 2110001/217002, IEC 61727/62116,IEEE 1547, UL 1741,AS 4777, VDE 0126-1	
Warranty		10 Years	





Excellent Performance

- Maximum efficiency 97.3%, which can greatly reduce energy loss
- Max. 9kW PV input through 2 MPPTs maximizes usage of solar energy
- Large MPPT current compatible with high-power solar panels
- Seamless Switch Over with 10ms transfer time when grid is off
- Advanced parallel connecting function allows future expansion



Comprehensive Safety

- Anti-islanding Protection
- Surge Protection, Leakage Current Protection
- Overvoltage Protection, Overcurrent Protection, Short-Circuit Protection
- PV Insulation Detection
- Reverse Connection Protection
- IP65 Protection adaptable for both indoor and outdoor environment



Advanced Energy Management

- Realtime management on mobile App from anywhere
- Multiple working modes and flexible customized settings built-in



\*Pictures may differ from real products

Product Image of CVS7ST-6000EP

# Single Phase Hybrid Energy Storage Inverter CVS7ST-6000EP Datasheet

Specification

Model		CVS7ST-6000EP	
AC Output (Grid)		System Efficiency	
Rated AC Output Power	6000W (Limited to 4600W in Germany)	Max. MPPT Efficiency	99.9 %
Rated Output Current	Max 26.1A (Limited to 20A for Germany)	Max. Efficiency	97.8 %
Max. AC Apparent Power	6000VA (Limited to 4600VA in Germany)	European Efficiency	97.3 %
Max. AC Output Current	27.3 A	Max. Efficiency of Charging/Discharging	94.6 %
Rated Grid Voltage	230V, L/N/PE		
Rated Grid Frequency	50 Hz	Protection	Yes
Power Factor	1 (Adjustable +/- 0.8)	DC Switch	Yes
THDI	< 3%	PV Reverse Connection Protection	Yes
		Output Short Circuit Protection	Yes
AC Output (Backup)		Output Overcurrent Protection	Yes
Rated Output Power	4,600 W	Output Overvoltage Protection	Yes
Rated Output Current	21.7 A	Insulation Impedance Detection	Yes
Peak Output Apparent Power	6,000VA, 30s	Residual Current Detection	Yes
Max. Output Current	22.7 A	Anti-island Protection	PV: Type III, AC: Type III
Rated Output Voltage/Frequency	230V, L/N/PE 50/60Hz	Surge Protection	
Transfer Time	<10ms when active, ~60s from standby		
		General	
Battery Input / Output		Dimensions (W) x (H) x (D)	482 x 503 x 183mm
Battery Type	Lithium-ion & Lead Acid	Weight	21.5 kg
Battery Voltage Range	42 - 58V	Max. Operation Altitude	4,000 m
Max. Charge/Discharge Current	100 A	Ingress Protection Degree	IP65
Max. Charge/Discharge Power	4,600 W	Operating Temperature Range	-30°C ~ 60°C (> 45°C derating)
Communication Mode	CAN, RS485	Cooling	Natural
		Standby Self-consumption	< 10W
PV Input		Installation Method	Wall-mounted
Max. PV Input Power	9,000 Wp		
Max. PV Voltage	600 V	HMI & COM	
Start-up Voltage	100 V	Display	LCD & APP + Bluetooth
Rated input voltage	360 V	Communication Interface	RS485 / CAN / WiFi.
MPPT Voltage Range	90 - 550 V		
Nos. of MPPT	2	Standard	IEC/EN 62109, IEC/EN 61000, EN50549-1, RED,
Max. Input Current per MPPT	13A / 13A	ROHS, IEC 60529, VDE 4105	
Max. Short Circuit Current per MPPT	18A / 18A		





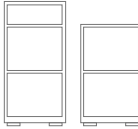
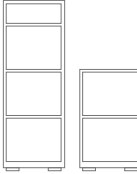


# High-Voltage Residential Energy Storage Battery

## CRN\*ST Datasheet

9.4-23.5kWh | Wall-mounted Floor-standing | Outdoor

### Specification

Model	CRN2ST-9.4kW	CRN3ST-14kWh	CRN4ST-18.8kWh	CRN5ST-23.5kWh
Stacking Method				
Scalability	2	3	4	5
Nominal Capacity	9.4 kWh	14 kWh	18.8 kWh	23.5 kWh
Operating Voltage Range	172.8 - 230.4	259.2 - 345.6	345.6 - 460.7	432 - 576
Standard Charge/Discharge Current	23 / 40A			
Max Charge/Discharge Current	36 / 40A			
Dimensions (W) x (H) x (D) mm	657 x 165 x 1351	657 x 165 x 1861	1657 x 165 x 1351	1657 x 165 x 1861
Weight	114 kg	163 kg	212 kg	261 kg
Communication Method	RS485/CAN/Ethernet (Remote Maintenance)			
Protection Class	IP66			
Opreating Ambient Temperature	-20°C ~ 50°C			
Opreating Ambient Humidity	5% - 95% (No Condensation)			
Operating Altitude	< 2,000m			
Life cycle	≥10000 @ 25°C			
Certification	IEC62619/UN38.3/CE-EMC/IEC 60730-1/VDE2510-50			
Compatibility	Strong CVT Series Inverter			

### Features



#### Innovative Easy Installation & Maintainance

- Super easy installation like building bricks.
- Enhanced reliability and easy maintenance.



#### Excellent Performance

- Maximum charge/discharge current up to 36A / 40A.
- Available at Low Temperature, Dischargeble and chargeable at -20°C.



#### Comprehensive Safety

- CATL EV-grade LFP cells, safe and stable
- Advanced BMS management mechnism.
- Overvoltage Protection, Overcurrent Protection.
- Short-Circuit Protection, Reverse Connection Protection.
- IP66 waterproof level for outdoor

\*Pictures may differ from real products

Product Image of CR03ST-4.7kWh





# Low-Voltage Residential Energy Storage Battery CR05ST-14.3kWh Datasheet

14.3-228.8kWh | Wall-mounted Floor-standing | Outdoor

## Specification

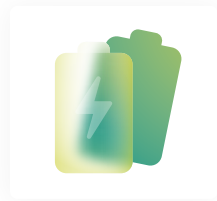
Model	BB-LFP-280Ah-P
Scalability	1 (Support for Parallel Expansion of 16 Units)
Nominal Capacity	14.3 kWh
Operating Voltage Range	44.8-57.6
Standard Charge/Discharge Current	140 A
Max Charge/Discharge Current	200 A
Max Charging/Discharging Power	10.24 kW
Dimensions (W) x (H) x (D)	642 x 203 x 1154mm
Weight	170 kg
Depth of Discharge	90 %
Communication Method	RS485/CAN/Ethernet (Remote Maintenance)
Protection Class	IP66
Opreating Ambient Temperature	Charge: -10°C ~ 45°C ; Discharge: -20°C ~ 45°C
Opreating Ambient Humidity	5% - 95% (No Condensation)
Operating Altitude	< 2,000m
Life cycle	≥12000 @ 25°C
Certification	IEC62619/UL1973/UN38.3/CE-EMC/FCC/UL 60730-1
Compatibility	Strong CVS7ST-6000EP Inverter

## Features



### Incredible High Capacity & Life

- 14.3kWh single battery pack, scalable to 228.8kWh.
- Life Cycle ≥12000 (70% SOH)



### Excellent Performance

- Maximum charge/discharge current up to 200A / 200A.
- Available at Low Temperature, dischargeable at -20°C, chargeable at -10°C



### Comprehensive Safety

- CATL EV-grade LFP cells, safe and stable
- Overvoltage Protection, Overcurrent Protection.
- Short-Circuit Protection, Reverse Connection Protection.
- IP66 waterproof level for outdoor

\*Pictures may differ from real products

Product Image of CR05ST-14kWh

Please note that products are subject to change, and errors may occur.