

• Inverter-Korea • System Product



PV Inverter for Korea



2018-2019

SHANGHAI CHINT POWER SYSTEMS CO.,LTD. INDIA OFFICE

Unit No. 1009, 10th floor, Tower B4, Spaze i-Tech park, sohna road, Gurgaon 122018

Tel : +91 8128219691 +86 13701985096

Mail : market.cps@chint.com

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Chint Power Quality, PHOTON Lab Identify!

12kW



CPS SCA12KTL-DOHE

Photon
The Solar Power Magazine
International

Chint Power Systems CPS SCA12KTL-DOHE

A

97.2 % at medium irradiation

www.photon.info/laboratory

Photon
The Solar Power Magazine
International

Chint Power Systems CPS SCA12KTL-DOHE

A

97.4 % at high irradiation

www.photon.info/laboratory

Medium irradiation efficiency: 97.2%

High irradiation efficiency: 97.4%

Maximum conversion efficiency: 98.6%

CPS SCA12KTL-DOHE PV inverter awarded Double A by PHOTON

Chint Power Systems' SCA12KTL-DOHE PV inverter was awarded Double A ratings by the prestigious PHOTON laboratory. The medium irradiation efficiency of the inverter reaches 97.2% and its high irradiation efficiency even achieves 97.4%. This is the second time that Chint Power's product receives the Double A ratings following the 20kW model.

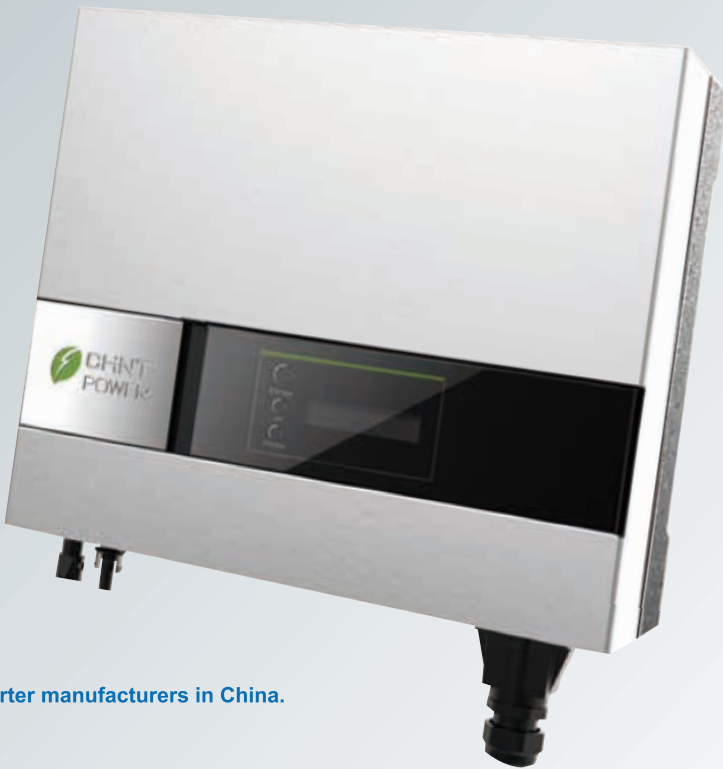
CPS SCA12KTL-DOHE is a transformerless designed three phase grid-tied PV inverter. The MPP range spans 430 to 800V, where upon the maximum MPP voltage of 800V is at a pleasant distance from the maximum input voltage of 1,000V. As a dual MPPT inverter, it can be operated with its two trackers under parallel, symmetric or asymmetric load distribution and its Max. Efficiency can achieve up to 98.6% under the parallel mode. The overall efficiency curve is almost identical to the conversion efficiency curve due to the very good MPPT adjustment efficiency.

In the power element, the manufacturer only uses film capacitors, which, in contrast to electrolytic capacitors, have no danger of drying out. This increases the lifetime of the device. Since the housing was designed for protection type IP65 and the permissible outside temperature extends from -25 to +60°C, installation outdoors is possible. Among the tested three phase PV inverters under 15kW in the PHOTON Laboratory, CPS SCA12KTL-DOHE has the best performance and highest efficiency.

Chint Power Quality, reddot Recognition!



reddot design award
honourable mention



The first red dot award winner of inverter manufacturers in China.

Chint Power Systems Won the reddot Design Award

Chint Power SC Series inverters won the German top industrial design award "reddot design award". Approximately 1,700 companies from 60 countries have taken part with 4,433 entries in total; only the very best products managed to convince the expert jury.

The industrial design of the award-winning products of Chint Power combine concise straight lines and high-quality aluminum plate, which conveys to the client meaning of "technology, reliability, user friendliness", fully embodying Chint Power's brand culture of Chint Power.

red dot Design Award- the "Oscar" Awards in the Design Field

redd ot design award was founded by the famous German Association of Design "Zentrum Nordrhein Westfalen". With more than 50 years of history, it is the world's largest and most renowned design award, joining the "iF Award" German, "IDEA Award" the United States to be called the world's three major design awards, which is known as the design world's "Oscar".

World Class Performance - GTM Award



RESEARCH

The CPS performance is increasing year by year. 2014, According to the Total Shipment, Chint Power rank 13 of global PV Inverter market announced by GTM. In 2015, CPS three phase string inverter dominated commercial segment of US market.

2013, Chint Power System Selected to be Top 10 of the Most Competitive PV Inverter Companies by GTM. GTM released the ranking list based on key qualitative metrics that measure each company's product quality, reliability, bankability, growth prospect alignment and integrated competitiveness. The ranking list shows a key assessment factor of the potential competitiveness in the future.

GTM 2014 Global Top-20 Inverter Companies by MW Shipped



GTM 2014 Global Top-20 Inverter Companies by MW Shipped

Company	2014 Rank	2014 Shipments (MWac)	2014 Global Market Share ¹	2015 Market Share Trend	Company	2014 Rank	2014 Shipments (MWac)	2014 Global Market Share ¹	2015 Market Share Trend
SMA	1	5,051	12.5%	↑	Emerson (Sineng)	11	1000*	2.5%	↓
SunGrow Power Supply	2	4,307	10.7%	-	Power Electronics	12	963	2.4%	↑
Huawei	3	4,030*	10.0%	↑	Chint Power	13	929	2.3%	↑
ABB - Power-One	4	3,692	9.2%	-	KACO New Energy	14	900*	2.2%	↑
TBEA SunOasis	5	2,500*	6.2%	↓	KStar	15	861	2.1%	↓
TMEIC	6	2,244	5.6%	↑	Ingeteam	16	748	1.9%	↑
Omron Corporation	7	1,775	4.4%	-	Hitachi	17	716	1.8%	-
Schneider Electric	8	1,655	4.1%	↑	Fuji Electric	18	657	1.6%	↓
Tabuchi Electric	9	1,411	3.5%	-	Fronius	19	621	1.5%	↑
Advanced Energy	10	1,304*	3.2%	↓	SolarEdge Technologies	20	601	1.5%	↑

Chint Power Systems Innovation

Heritage

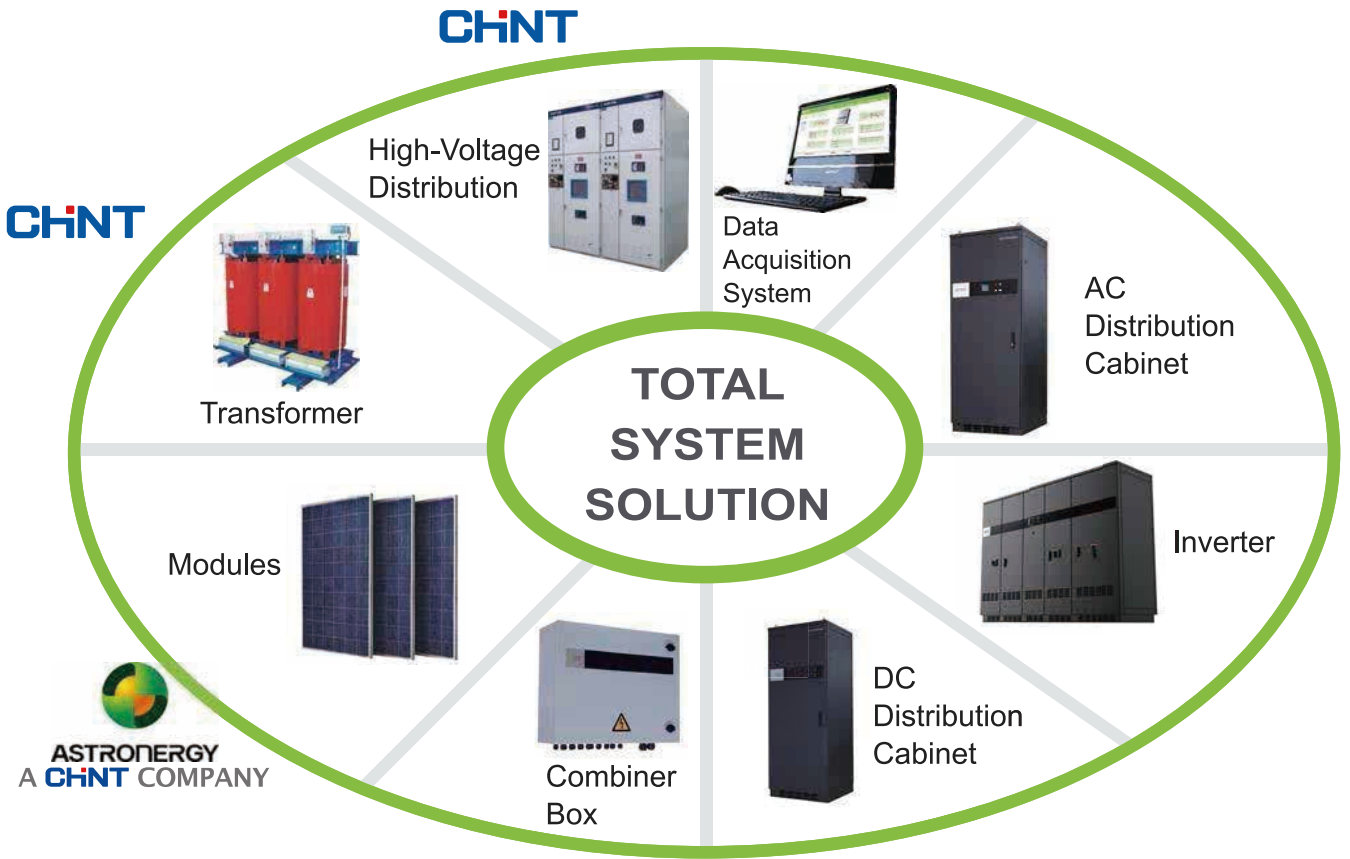
Shanghai Chint Power Systems is a solar power system solution provider, designing, manufacturing, and supplying high reliability 1kW ~3MW PV inverters and power solutions for customers. An international senior management team, experienced and solid research and development resources, advanced component control and design-for-reliability, strong financial support from Chint Group, and inheritance of Chint 33 years' manufacturing experiences and volume, have founded Chint Power System's brand in the field of renewable energy.

Our Business

The state-of-art newly designed CPS SCA/SCH family of Grid-tie PV Inverter features itself with full load high efficiency, high reliability and user-friendly interface. Patented 3-level NPC technology and control algorithm lead high efficiency. CPS provides comprehensive solutions for the development of solar power projects. For clients, who are keen about establishing a long-term sustainable solution through investment in solar power generation, CPS offers complete end-to-end solutions, right from site evaluation and construction to maintenance of solar farms.

Our Advantages

Offer full product line from PV module, cable, DC&AC panel, inverter, monitoring system and power T&D products. Provide reliable, green and high efficiency power solutions. Equip with a number of patented technologies and is certified for VDE, G83, G59, ENEL, RD1663, UL/CSA, FCC part15, ETL, C10/11 and Golden Sun etc.

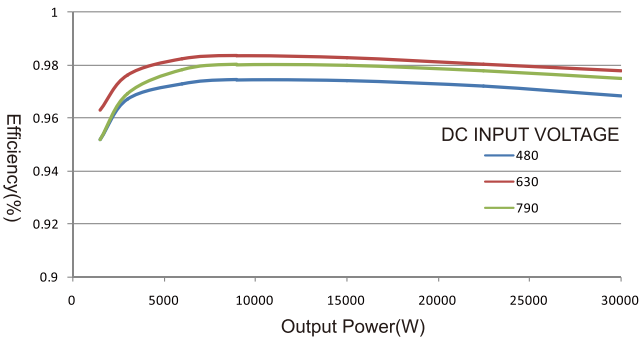


20/25/30/36kW Three Phase Grid-tied PV Inverters

CPS SCA20/25/30KTL-DO and SCA36KTL-DO grid-tied PV inverters are transformerless, three phase products. The maximum input voltage is 1000V which makes the configuration more flexible. Patented 3-level control algorithm and thermal design provide 98.6% maximum efficiency and 98.1% Euro efficiency. This type three phase string inverters are designed with the DC switch integrated. And provide a standard for fuse which designed in the wiring box. Integrated PV input string fault detection circuit and PV input arcing fault detection circuit to ensure the safety.

Efficiency Curve

CPS SCA30KTL-DO @400Vac



High Efficiency

- Maximum efficiency of 98.6%, Euro efficiency of 98.1%
- 3-level technology and enhanced control mechanism to achieve high efficiency over wide load range
- 2 MPP trackers to achieve higher system efficiency
- Transformerless design

High Reliability

- Comprehensive protection functions
- Enhanced DSP system
- Integrated PV input string fault detection
- Integrated PV input arcing fault detection and interruption circuit
- Anti-Islanding protection
- Ground-fault detection and interruption circuit
- Optional DC SPD
- Electrolyte-free design” for improved long-term reliability
- 5 years standard warranty, optional extension up to 20 years

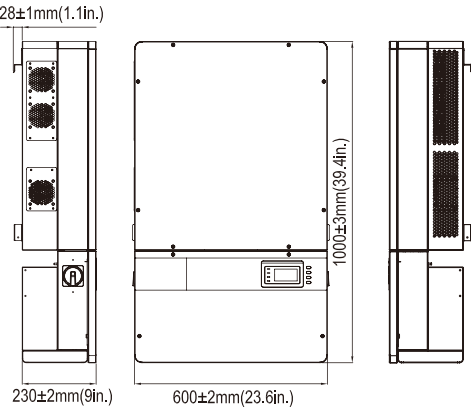


CPS SCA20KTL-DO CPS SCA30KTL-DO
CPS SCA25KTL-DO CPS SCA36KTL-DO

Broad Adaptability

- Integrated String Current and Arc Fault Detecting
- Advanced PID Solutions
- Separate wiring box design
- Low voltage ride through, and provide reactive power to support the grid
- IP65, outdoor application
- Active power derating and Reactive power adjustable
- BDEW compatible
- 1000V maximum input voltage enable flexible configuration
- Broad MPPT range enable flexible PV string configuration
- Suitable for multi-inverter parallel application

Dimensions



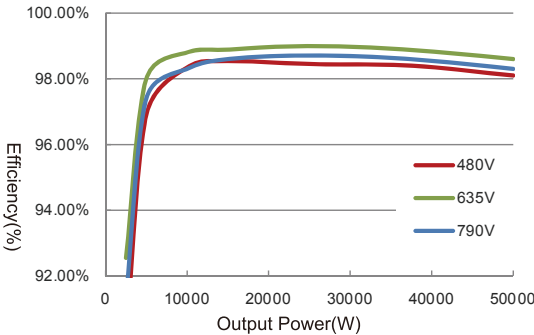
Model Name	CPS SCA20KTL-DO	CPS SCA25KTL-DO	CPS SCA30KTL-DO	CPS SCA36KTL-DO-480
DC Input				
Nominal DC Input Power	21kW	26kW	31kW	37kW
Max. DC Input Power for each MPPT	12kW	14kW	16kW	19kW
Max. DC Input Voltage	1000Vdc	1000Vdc	1000Vdc	1000Vdc
Operating DC Input Voltage Range	300-900Vdc			
Start-up DC Input Voltage / Power	330V/300W			
Nominal DC Input Voltage	635Vdc			710Vdc
Number of MPP Trackers	2			
MPPT Voltage Range	400-800Vdc		480-800Vdc	
Max. Input Current	2x27A	2x32A	2x32A	2x34A
Number of DC Inputs	4 strings x 2			
DC Disconnection Type	Integrated DC switch			
AC Output				
Rated AC Output Power	20kW	25kW	30kW	36kW
Max. AC Output Power	20kW	25kW	30kW	36kW
Rated Output Voltage	230/400Vac			277/480Vac
Output Voltage Range*	320-460Vac			422-528Vac
Grid Connection Type	3Φ/N/PE	3Φ/N/PE	3Φ/PE	3Φ/PE
Max AC Output Current	32A	40A	43.3A	43.3A
Rated Output Frequency	50Hz/60Hz			
Output Frequency Range*	47-53Hz/57-63Hz			
Power Factor	>0.99 (±0.8 adjustable)			
Current THD	<3%			
AC Inrush Current	99A Peak/203us		149A Peak/211us	
Maximum Output Fault Current	L-N/PE:100A Peak@320ms;56.6A RMS@20ms; L1/L2/L3 158A Peak@992ms; 70.4A RMS@20ms			
System				
Topology	Transformerless			
Max. Efficiency	98.4%			98.6%
Euro Efficiency	98.0%			98.1%
Stand-by / Night Consumption	<20W/<2W			
Protective Class	I			
Overvoltage Category	PV(II), Mains(III)			
Environment				
Protection Degree	IP65			
Cooling	Variable speed cooling fans			
Operating Temperature Range	- 25°C to +60°C (derating from +45°C)			
Operating Humidity	0-100%, non-condensing			
Operating Altitude	4000m (derating from 2000m)			
Display and Communication				
Display	LCD+LED			
Communication	Standard: RS485, USB, Multit-function Relay		Option: Ethernet, Zigbee	
Mechanical Data				
Dimensions (WxHxD) (mm)	600x1000x230			
Weight (kg)	50 (Inverter)+5 (Wiring Box)			
Safety				
Safety and EMC Standard	LVD: 2006/95/EC EMC: 2004/108/EC, IEC/EN 62109-1: 2010, IEC/EN 62109-2: 2011; IEC/EN61000-6-2: 2005, IEC/EN61000-6-3: 2007			
Grid Standard	BDEW; VDE AR-N-4105/VDE 0126-1-1/A1; G83/1/1; G59/2; C10/11; NB/T32004; GB/T19964; NRS097			
* The "Output Voltage Range" and "Output Frequency Range" may differ according to specific grid codes.				
* MAX recommended PV array power ≤ 1.3P(P for Rated AC output power), PV array power range depend on the type of installation and geographical location.				

CPS SCA50/60KTL-DO

CPS SCA50/60KTL-DO grid-tied PV inverters are transformerless, three phase products. The maximum input voltage is 1000V which makes the configuration more flexible. Patented 3-level control algorithm and thermal design provide 99% maximum efficiency and 98.5% Euro efficiency. This type three phase string inverters are esigned with the DC switch and DC fuse integrated. And Integrated PV input string fault detection circuit and PV input arcing fault detection circuit to ensure the safety.

Efficiency Curve

CPS SCA50KTL-DO @400Vac



High Reliability

- Comprehensive protection functions
- Enhanced DSP system
- Integrated PV input string fault detection
- Integrated PV input arcing fault detection and interruption circuit
- Advanced thermal design, with variable speed fans
- Anti-Islanding protection
- Ground-fault detection and interruption circuit
- Integrated DC SPD
- 5 years standard warranty, optional extension up to 20 years

High Reliability

- Maximum efficiency of 99%, Euro efficiency of 98.5%
- 3-level technology and enhanced control mechanism to achieve high efficiency over wide load range
- 3 MPP trackers to achieve higher system efficiency
- Transformerless design

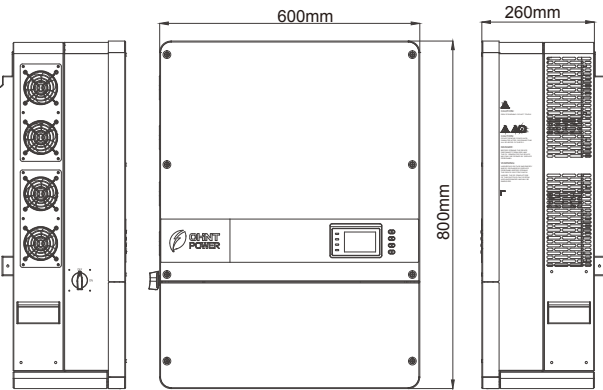


CPS SCA50KTL-DO
CPS SCA60KTL-DO

Broad Adaptability

- Advanced PID Solutions
- Low voltage ride through, and provide reactive power to support the grid
- IP65, outdoor application
- Active power derating and Reactive power adjustable
- BDEW compatible
- 1000V maximum input voltage enable flexible configuration
- Broad MPPT range enable flexible PV string configuration Suitable for multi-inverter parallel application

Dimensions



Mode Name	CPS SCA50KTL-DO	CPS SCA60KTL-DO
DC Input		
Nominal DC Input Power	51kW	61kW
Max.DC Input Power/ each MTTP	67.5kW/22.5KW	81kW/27KW
Max.DC Input Voltage	1000Vdc	
Operating DC Input Voltage Range	300-950Vdc	
MPPT Voltage Range(Full Load)	540-850Vdc	
Start-up DC Input Voltage / Power	330V/300W	
Nominal DC Input Voltage	635Vdc	710V
Number of MPPT/Number of DC Input	3/4	3/4
Max. Input Current	103A	124A
DC Disconnection Type	Integrated DC Switch	
AC Output		
Rated AC Output Power	50kW	60kW
Max. AC Output Power	55kVA	66kVA
Rated AC Output Voltage	230/400Vac	277/480Vac
Output Voltage Range*	320-460Vac	422~528Vac
Grid Connection Type	3Φ/N(Optional)/PE	
Max. AC Output Current	80A	
Rated Output Frequency	50Hz/60Hz	
Output Frequency Range*	47-53Hz/57-63Hz	
Power Factor	>0.99 (±0.8 adjustable)	
Current THD	<3%	
AC Disconnecation Type	-	
System		
Topology	Transformerless	
Max. Efficiency	99.0%	
Euro Efficiency	98.5%	
Stand-by / Night Consumption	<20W/<1W	
Environment		
Protection Degree	IP65	
Cooling	Variable speed cooling fans	
Operating Temperature Range	-25°C - +60°C (derating from +45°C)	
Operating Humidity	0-100%, Non-condensing	
Operating Altitude	4000m 13123ft (derating from 3000m 9842ft)	
Display and Communication		
Display	LCD+LED	
Communication	Standard: RS485 / Option: 4G Ethernet	
Mechanical Data		
Dimensions (WxHxD) (mm)	600x800x230	
Weight (kg)	60Kg	
Safety		
Safety and EMC Standard	LVD: 2006/95/EC EMC: 2004/108/EC, IEC/EN 62109-1: 2010, IEC/EN 62109-2: 2011; IEC/EN61000-6-2: 2005, IEC/EN61000-6-3: 2007	
Grid Standard	VDE AR-N-4105/VDE 0126-1-1/A1	

* "Output Voltage Range" and "Output Frequency Range" may be differ according to specific grid codes.

500/630/1000kW Grid-tied PV Inverters



High Efficiency

- 3-level T-type topology
- Power density increased by more than 50%
- Optimized MPPT control technology
- Space vector PWM, decreasing switching losses
- Intelligent power control

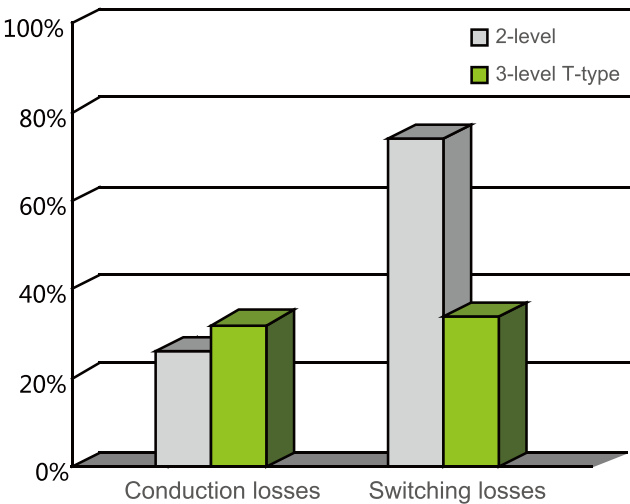
High Reliability

- Modular design, reducing the impact of faults
- Comprehensive protection functions
- Advanced thermal design, auto speed adjustable fan
- Embedded ground-fault circuit & Interrupter

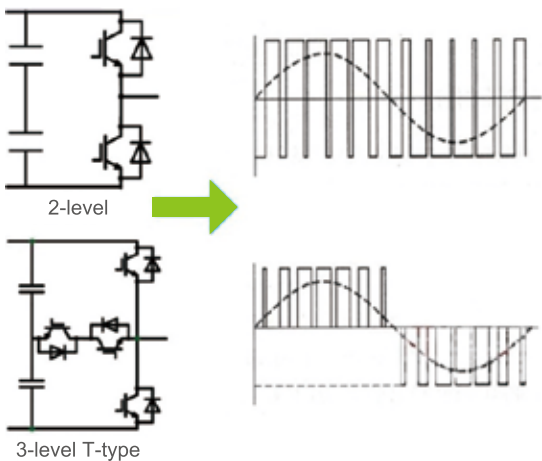
Broad Adaptability

- DC breaker integrated, reducing the initial investment
- Supporting dual-winding or double split transformer
- High altitude application in long-term and reliable operation
- Active power continuously adjustable
- Reactive power adjustable and the power factor range from -0.9 to +0.9
- Reactive power compensation at night
- 1 or multi-MPPTs, more flexible application

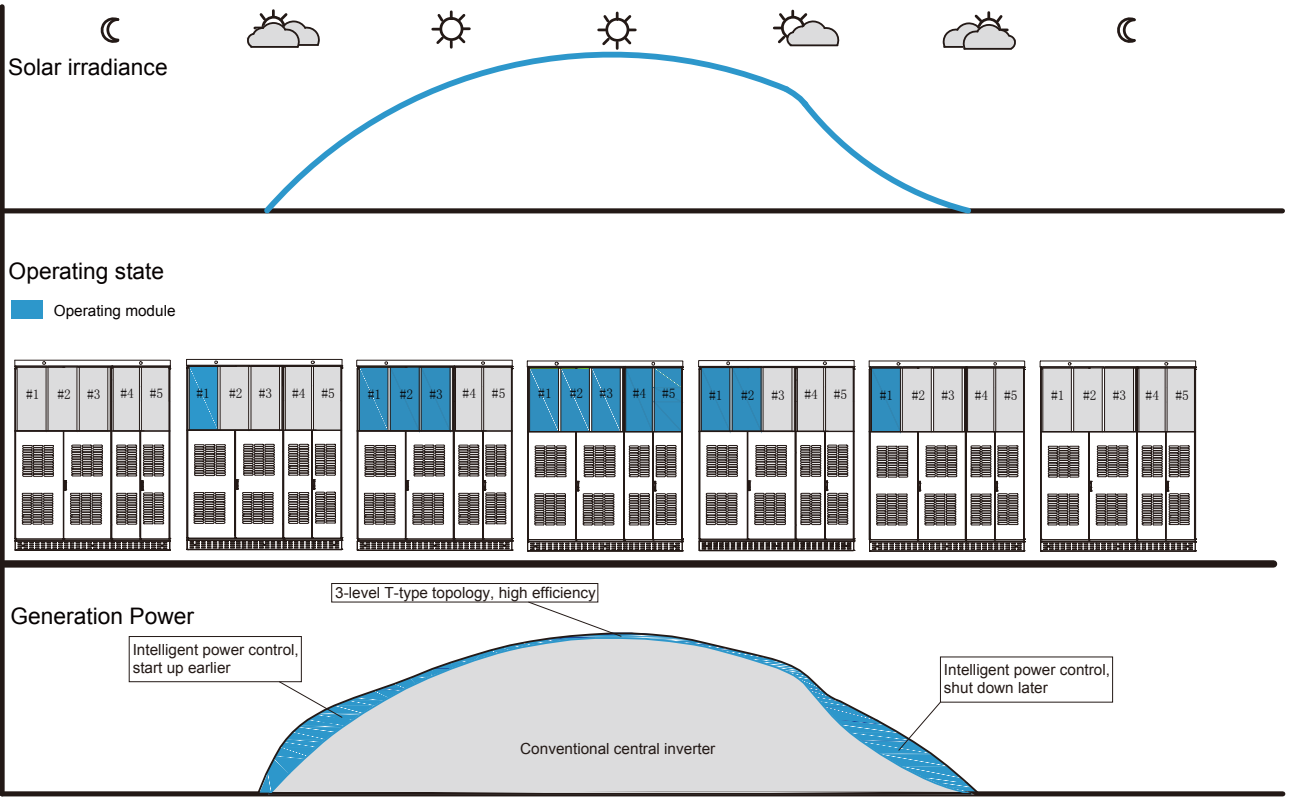
CPS SCA500/630/1000KTL-H is designed for big ommercial rooftop and utility scale PV systems.The inverters adopt 3-level T-type topology,max.efficiency up to 99%,Euro efficiency up to 98.5%.Intelligent power control can get higher efficiency,better power quality,and expanded service time under low power conditions.Modular design ensures that the other modules will keep working when any module fails.This can reduce the impact of faults.



Less losses, higher conversion efficiency



Lower current THD, better power quality



Operating diagram of 1MW 3-level modular inverter

Start up earlier, shut down later, longer production time

Model	Start-up power	Comparison
Conventional 500kW inverter	about 2-3kW	The start-up power of 1MW 3-level modular inverter is lower than conventional 500kW, so 1MW inverter starts up earlier, shuts down later and products more power.
1MW 3-level modular inverter	about 0.4kW per module	

Intelligent power control, higher power generation, better power quality

Model	Output Power	Efficiency	iTHD
Conventional 500kW*2	50kW (5% power point of the 500kW inverter)	96%	3.8%
1MW 3-level modular inverter	50kW (25% power point of one 200kW module)	98.5%	1.4%

Modular design, longer service time, less power loss under fault conditions

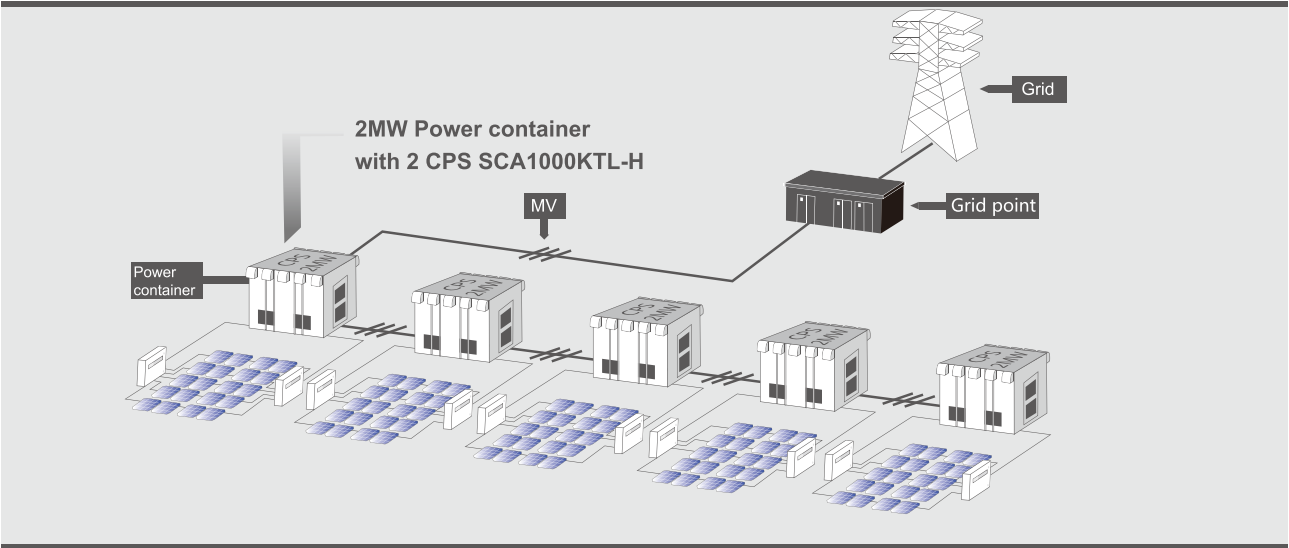
Modular inverters can control the number of operating modules according to the power during the day, which can effectively reduce the operating time of each module and extend the service life of the inverter.

For conventional central inverter, the power loss caused by a fault can be equal to the total output power for the entire downtime. For modular inverter, only the faulty module stops, while other modules keep operating. This greatly reduces power loss under fault conditions.

Comparison of 10MW PV plant solution

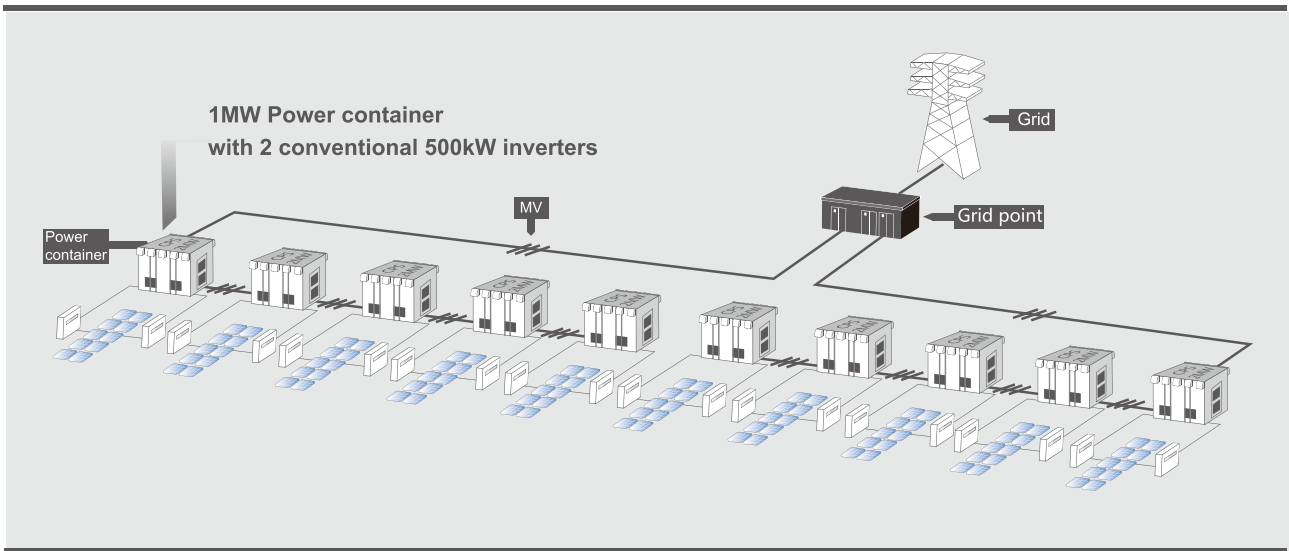
CPS 2MW solution :

PV Plant Power:	10MW AC	MPPT Quantity:	10
Inverter Container Quantity:	5	Transformer Quantity:	5
Inverter Quantity:	10	Connection:	5 in parallel



1MW solution :

PV Plant Power:	10MW AC	MPPT Quantity:	20
Inverter Container Quantity:	10	Transformer Quantity:	10
Inverter Quantity:	20	Connection:	10 in parallel



2MW solution has lower cost of system than conventional 1MW solution

Since the output voltage of 1MW 3-level modular inverter increases to 380Vac, the number of PV modules in series increases from 20~22 to 22~24. It also reduces the power loss of AC/DC lines and the number of junction boxes. In summary, The scheme of adopting 2MW unit has lower cost of system than conventional 1MW unit.

Model Name	CPS SCA500KTL-H	CPS SCA630KTL-H	CPS SCA1000KTL-H
DC Input			
Nominal DC Input Power	512kW	650kW	1030kW
Max. DC Input Voltage		1000Vdc	
Operating DC Input Voltage Range	480-940Vdc		575-940Vdc
Start-up DC Input Voltage	520Vdc		595Vdc
Number of MPP Tracker	1/3	1/3	1
MPPT Voltage Range	500-850Vdc		585-850Vdc
Max. Input Current	1200A	1300A	2000A
Number of DC Inputs(Max.)	9	9	15
DC Disconnection Type		Breaker	
PV Array Configuration		Floating/Negative grounded	
AC Output			
Rated AC Output Power	500kW	630kW	1000kW
Max. AC Output Power	550kW	660kW	1100kW
Rated Output Voltage	320Vac		380Vac
Output Voltage Range*		-15%,+10%	
Grid Connection Type		3Φ/PE	
Max AC Output Current	992A	1003A	1520A
Rated Output Frequency		50Hz/60Hz	
Output Frequency Range*		47-51.5Hz/57-62Hz	
Power Factor		>0.99 (±0.9 adjustable)	
Current THD		<3%	
AC Disconnection Type		Breaker	
System			
Topology		Transformerless	
Max. Efficiency		99.0%	
Euro Efficiency		98.5%	
Stand-by / Night Consumption	<100W	<100W	<200W
Environment			
Protection Degree		IP20	
Cooling		Variable speed cooling fans	
Operating Temperature Range		-25°C to +60°C (derating from 50°C) -40°C - +60°C (optional heater)	
Operating Humidity		0-95%, non-condensing	
Operating Altitude		4000m (derating from 3000m)	
Display and Communication			
Display		Touchscreen	
Communication		Standard: RS485, Ethernet	
Mechanical Data			
Dimensions (WxHxD) (mm)	1110x1967x800	1110x1967x800	1810x1967x800
Weight (kg)	900	900	1400
Safety			
Safety and EMC Standard	LVD: 2006/95/EC, IEC/EN 62109-1: 2010, IEC/EN 62109-2: 2011. EMC: 2004/108/EC; IEC/EN61000-6-2: 2005, IEC/EN61000-6-4: 2007		
Grid Standard	IEC61727: 2004, GB/T19964-2012, NB/T32004-2013		
* The “Output Voltage Range” and “Output Frequency Range” may differ according to specific grid standards.			

* The “Output Voltage Range” and “Output Frequency Range” may differ according to specific grid standards.

1MW/1.26MW PV Power Container

Product Introduction

- **Superior integration and turn-key design**
1MW/1.26MW integrated PV turn-key design system with all equipments in one container, including PV inverter, communication cabinet (option), and auxiliary power supply unit
- **Professional Integration**
Container solution for outdoor use with professional factory integration and differentiated design to meet special customers' needs
- **High environmental adaptability and applicability**
Standard 10 feet container design. IP54 protection degree for outdoor use in extreme operational environments. Suitable for locations subject to strong winds, blown sand and/or high altitude
- **Remote operation through smart monitoring system(option)**
Highly automated and remote controlled integrated SCADA monitoring system compatible with smart grids
- **Simple engineering for fast-track station installation**
Only DC, AC and communication connections are required after container allocation; No need to build a dedicated shelter or house
- **High level safety and reliability**
Integrated intelligent access control system and smoke alarm as well as various kinds of protection measures against fire, rain, dust and small animals ensure the safety of system

Utility Interactive

- Active power continuously adjustable
- Reactive power control with power factor from -0.9 to +0.9
- Give reactive power compensation to the grid at night according to directive
- Comprehensive grid management functions including complete dynamic grid support

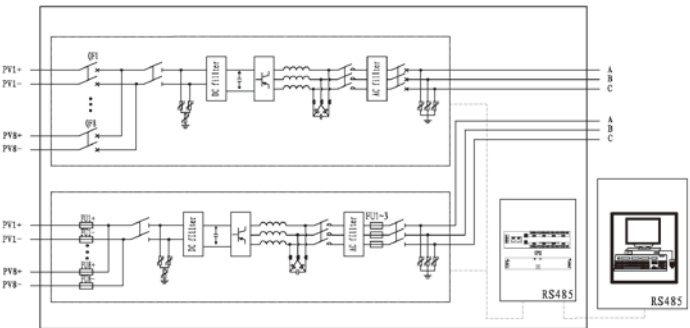


Adaptable

- Thanks to their steel monoblocks structure they can be easily transported by sea or road to any place, guaranteeing the maximum air-tightness and durability
- Diverse installation methods, including mounting on steel bracket or concrete slab
- The AC output of the power container can match different types of dual secondary winding transformers with various primary winding medium voltage rating
- Convenient access for repair and maintenance to minimize operational cost

High Reliability

- Turn-key solution, Integrated design for ventilation, anti-corrosion, anti-low temperature and other application requirement
- Smoke detector, intelligent access control system
- Automatic control of temperature and humidity ventilation system



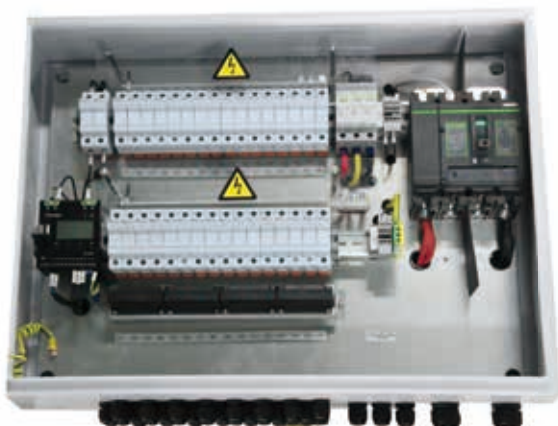
Model Name	CPS PSW1M	CPS PSW1.26M
DC Input		
Nominal DC Input Power	1030kW	2 x 650kw
Max. DC Input Voltage		1000Vdc
Operating DC Input Voltage Range		575-940Vdc
Start-up DC Input Voltage		595Vdc
Number of MPP Tracker	1	2
MPPT Voltage Range		585-850Vdc
Max. Input Current	2000A	2 x 1300A
Number of DC Inputs(Max.)	15	2 x 9
DC Disconnection Type		Breaker
PV Array Configuration		Floating/Negative grounded
AC Output		
Rated AC Output Power	1000kW	2 x 630kw
Max. AC Output Power	1100kW	2 x 660kw
Rated Output Voltage		380Vac
Output Voltage Range*		-15%,+10%
Grid Connection Type		3Φ/PE
Max AC Output Current	1520A	2 x 1003A
Rated Output Frequency		50Hz/60Hz
Output Frequency Range*		47-51.5Hz/57-62Hz
Power Factor		>0.99 (±0.9 adjustable)
Current THD		<3%
AC Disconnection Type		Breaker
System		
Topology		Transformerless
Max. Efficiency		99.0%
Euro Efficiency		98.5%
Stand-by / Night Consumption		<200W
Environment		
Protection Degree		IP54
Cooling		Forced air cooling
Operating Temperature Range		-25°C to +60°C (derating from 50°C) -40°C to +60°C (optional heater)
Operating Humidity		0-95%, non-condensing
Operating Altitude		4000m (derating from 3000m)
Display and Communication		
Display		Touchscreen
Communication		Standard: RS485, Ethernet
Mechanical Data		
Dimensions (WxHxD) (mm)		2991x2591x2438
Weight (t)	3.6	4
Safety		
Safety and EMC Standard		LVD: 2006/95/EC, IEC/EN 62109-1: 2010, IEC/EN 62109-2: 2011. EMC: 2004/108/EC; IEC/EN61000-6-2: 2005, IEC/EN61000-6-4: 2007.
Grid Standard		IEC61727: 2004, GB/T19964-2012, NB/T32004-2013

* The "Output Voltage Range" and "Output Frequency Range" may differ according to specific grid standards.

PV Combiner Box



External Appearance

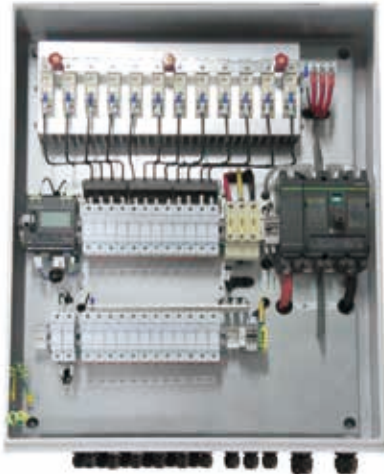


Internal View

For a large-scale grid-tied PV system , it is general to install a DC combining device between the PV arrays and inverters to minimize the cable distance, facilitate maintenance and improve reliability. Chint Power PV combiner box is a highly reliable and practical product to meet CHINA PV industry standard and power electric regulations. A number of PV modules with same features connected in series to the fuse in combiner box, then total amount of 16/12/8 strings connected in parallel which protected by SPD through positive and negative bus to the circuit breaker to upgrade safety of the system.

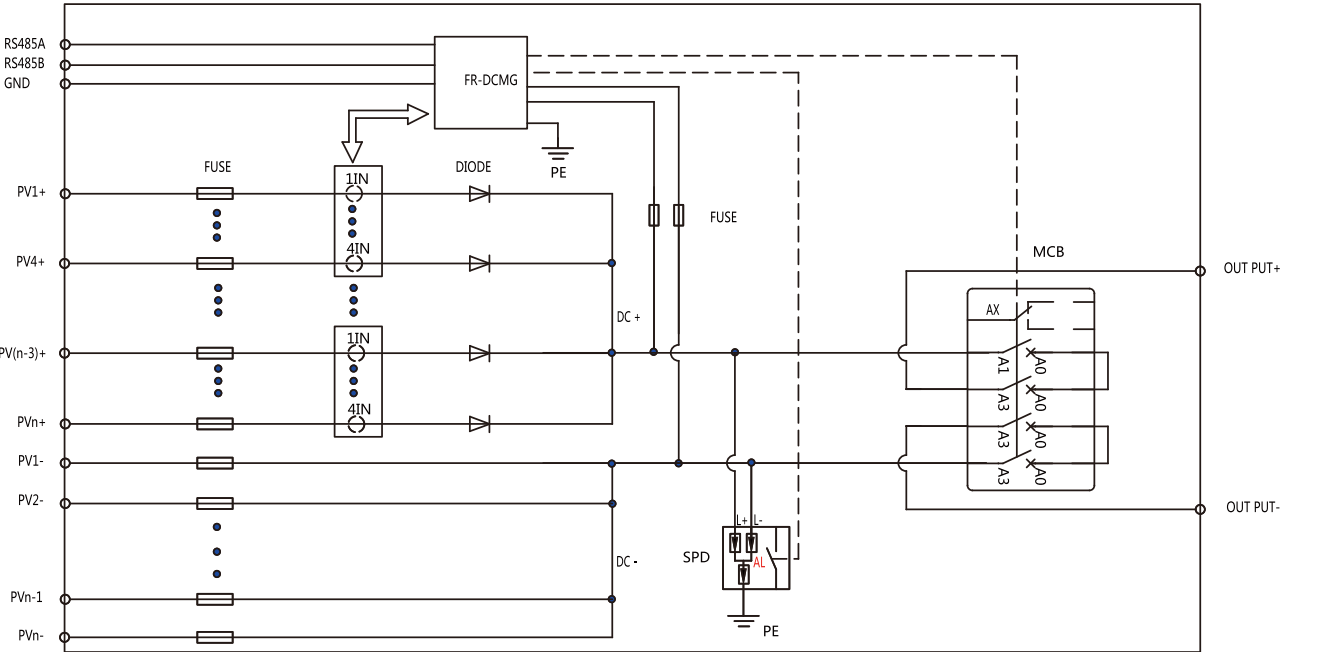
Chint Power PV combiner box configure with DC SPD, fuse, anti-reverse diode and circuit breaker.The smart detection module in the PV combiner box can monitor PV string current, BUS voltage, device status and failure, etc. The fault alarm and communication functions help users to accurately monitor the PV arrays on time, maximize PV system efficiency and troubleshoot failures.

- DC Anti-Arc function(option)
- 8, 16 basic input strings (customizable)
- Min.1000V DC high voltage circuit breaker, safe and reliable
- Specified high voltage DC fuse protection
- SPD protection on both positive and negative poles
- Optional detection module for string current and bus voltage with remote monitoring and status display functions. Fault alarm will be given through communication system when a failure is detected
- The high-precision CPU of detection module features with high performance, wide measuring range, sensitive and accurate current measurement components
- LED user interface for real-time operation status and parameters display, precise and concise, convenient for operation and debugging
- Wall mounting available, water and rust proof, IP65 protection class for outdoor use
- Optional embedded diode for reverse polarity protection
- Convenient for installation and maintenance



Model Name	CPS CB08	CPS CB16
Electric Property		
Max. Input Strings	8	16
Max. DC Voltage	1000V	1000V
Rated Current for Each String (Replaceable)	15A	15A
SPD	Yes	Yes
DC Circuit Breaker	Yes	Yes
Environmental Property		
Protection Degree	IP65	IP65
Operating Temperature Range	-25°C to +55°C	-25°C to +55°C
Operating Humidity	0-95%, non-condensing	0-95%, non-condensing
Operating Altitude	4000m	4000m
Cooling	Natural	Natural
Installation	Wall mounting	Wall mounting
Optional Function		
Anti-reverse diode	Yes	Yes
String Current Measurement	Yes	Yes
SPD Failure Detection	Yes	Yes
Switch Status Detection	Yes	Yes
Communication	Standard: RS485/Optional: Zigbee	Standard: RS485/Optional: Zigbee
Working Power Supply	PV	PV
Mechanical Data		
Dimensions(WxHxD) (mm)	550x450x180/600x700x180(with diode)	680x500x180/600x700x180(with diode)
Weight (kg)	22/36	32/38

Schematic Diagram



1500V PV Combiner Box



External Appearance

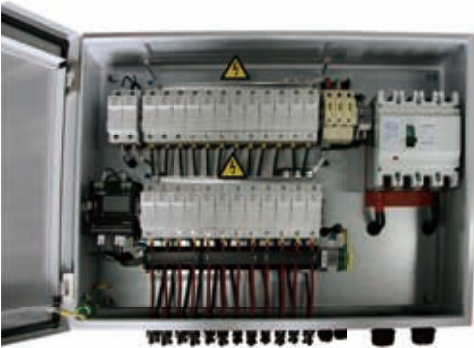


Internal View

For a large-scale grid-tied PV system, it is general to install a DC combining device between the PV arrays and inverters to minimize the cable distance, facilitate maintenance and improve reliability. Chint Power PV combiner box is a highly reliable and practical product to meet CHINA PV industry standard and power electric regulations. A number of PV modules with same features connected in series to the fuse in combiner box, then total amount of 16/1 2/8 strings connected in parallel which protected by SPD through positive and negative bus to the circuit breaker to upgrade safety of the system.

Chint Power 1500V PV combiner box configure with DC SPD, 1500V fuse, and circuit breaker. The smart detection module in the PV combiner box can monitor PV string current, BUS voltage, device status and failure, etc. The fault alarm and communication functions help users to accurately monitor the PV arrays on time, maximize PV system efficiency,significantly reduce the cost of whole PV system.

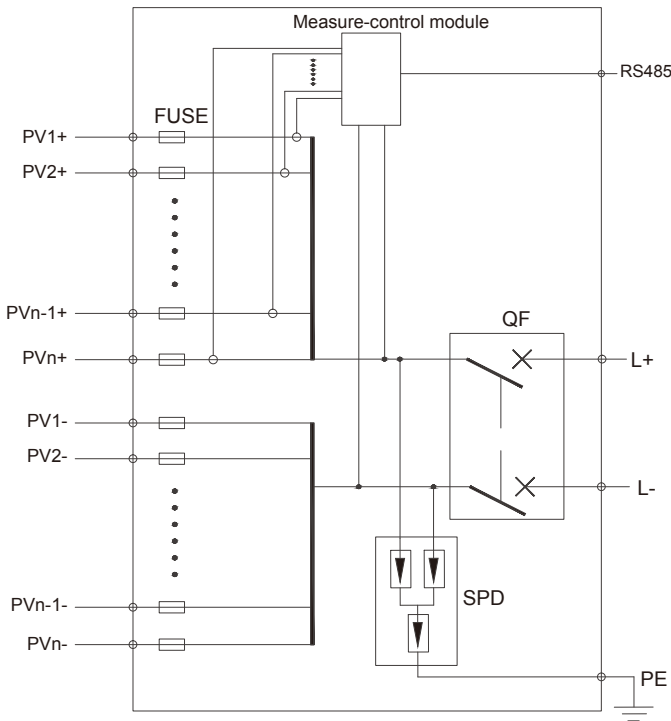
- DC Anti-Arc function(option)
- 16 basic input strings (customizable)
- Min.1 500V DC high voltage circuit breaker, safe and reliable
- Specified high voltage DC fuse protection
- 1500V SPD protection on both positive and negative poles
- Optional detection module for string current and bus voltage with remote monitoring and status display functions. Fault alarm will be given through communication system when a failure is detected
- Direct power supply from PV input with SPD protection.
- LED user interface for real-time operation status and parameters display, precise and concise, convenient for operation and debugging
- Wall mounting available, water and rust proof, IP65 protection class for outdoor use
- Convenient for installation and maintenance



Model Name	CPS CB16S-1500VE1	CPS CB16S-1500VE2
Electric Property		
Max. Input Strings*	16	16
Max. DC Voltage	1500	1500
Rated Current for Each String(Replaceable)	15A	15A
Input Cable	4~6mm ²	4~6mm ²
Output Cable	70mm ²	70mm ²
SPD	Yes	Yes
DC Circuit Breaker	Yes	Yes
Environmental Property		
Protection Degree	IP65	IP65
Operating Temperature Range	-25°C to +55°C	-25°C to +55°C
Operating Humidity	0-95%, non-condensing	0-95%, non-condensing
Operating Altitude	4000m	4000m
Cooling	Natural	Natural
Installation	Wall mounting	Wall mounting
Optional Function		
Anti-reverse diode	Yes	Yes
SPD Failure Detection	Yes	Yes
Switch Status Detection	Yes	Yes
Communication	Standard: RS485/Optional:Zigbee	Standard: RS485/Optional:Zigbee
Working Power Supply	PV	PV
Mechanical Data		
Dimensions (WxHxD) (mm)	680x500x180	800x500x180
Weight (kg)	32	35

*Flexible input string number according to client demand.

Schematic Diagram

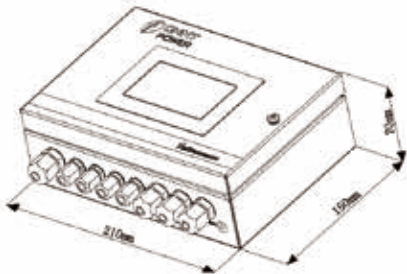


Intersensor

Intersensor



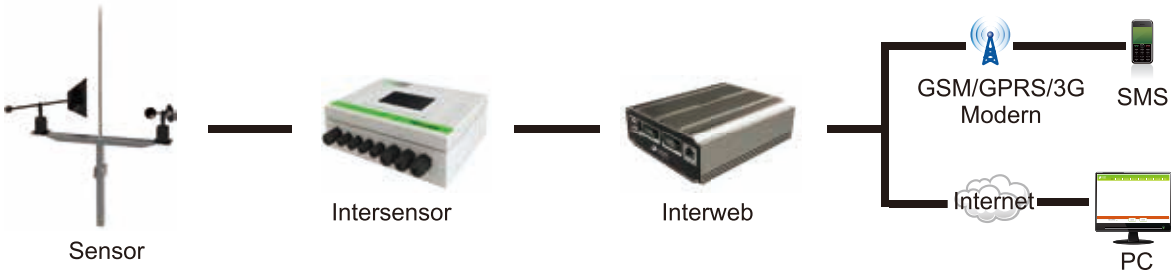
Dimensions (mm)



CPS Intersensor can perform real-time monitoring on the environmental data, including irradiance, environmental temperature, PV module temperature, wind speed and direction through various pre-installed sensors. Besides, Intersensor provides with friendly user interface and sends the data to the CPS datalogger via specific protocol.

CPS Intersensor can work together with the CPS datalogger, providing targeted analysis and comparison for the actual operation performance of the inverter. In addition, the ambient temperature sensor, wind speed sensor, and wind direction sensor included in the Intersensor can provide customers with more accurate environmental detection and data analysis.

System Schematic



Intersensor

- IP65, outdoor application
 - Comply with RoHS & CE
 - Acquisition of precise sensor values
 - Data analysis on any PC
- Scientific interface design, easy to install
 - Easy to communication via Modbus-RTU
 - Professional industrial design, well-shaped



Model Name Intersensor

Communication

Standard Modbus-RTU

Power Supply

Rated Voltage 85-264V/AC, 50/60Hz

Environment

Operating Temperature Range -20°C to +50°C

Protection Degree IP65

Mechanical Data

WxDxH(mm) 210X150X70






Weight(kg) 1.65

Accessories(including sensors)

Irradiation Sensor	●
PV module Temperature Sensor	●
Environmental Temperature Sensor	●
Wind Speed Sensor	●
Wind Direction Sensor	●
Sensor Frame	●
High-precision Irradiation Sensor	○

● Standard features ○ Optional features

Sensor Type and Data

Sensor Type	Irradiation Sensor	PV Module Temp. Sensor	Environmental Temp. Sensor	Wind Speed Sensor	Wind Direction Sensor	High-precision Irradiation Sensor
						
Technical Data						
Material	Polysilicon	PT100		Plastic	Plastic	Steel
Working Temp.	-40 to +85°C	-20 to +110°C		-40 to +80°C	-40 to +80°C	-40 to +60°C
Measuring Range	0-1500W/m²	-20 to +100°C	-20 to +85°C	0-70m/s	0-360°	0-2000W/m²
Measuring Accuracy	±5%	±0.1°C		±0.1m/s	0.1%	±5%

External Data Logger



By collecting information from inverters including status and performance, CPS external data loggers make the long-term monitoring of PV systems feasible and efficient.

By connecting with single or multiple inverters through RS485/422/232 interface, the data logger can collect information of PV systems from inverters. In addition, Portal can provide powerful data support for users. Data collected by the data logger can be transmitted to the monitoring portal via Ethernet, WiFi and GPRS, etc. Both real-time and historical data can be displayed with transparent graphs. Customized alerts can notify users of any malfunction or defect immediately via SMS and emails.

CPS WiFi Kit is suitable for homes and office buildings where WiFi network is available. A WiFi module is integrated in the data logger, enabling data transmission via WiFi network. No additional wiring or software is required, far simplifying installation and reducing costs for users. Furthermore, an independent web server is integrated in the data logger, which enables users to directly connect to the WiFi Access Point of the data logger and to check the performance and yield of the inverter even without any outer network.

CPS GPRS Kit is suitable for standalone plants or buildings where no network connection is available. A GPRS module is integrated in the data logger, and with a valid SIM card, the data logger can transmit data via mobile network. CPS can provide users of GPRS data logger with the most cost-effective global roaming SIM cards which support GPRS data roaming in almost all countries around the world. We will provide the most favorable tariff and the best package for users to ensure the long-term and stable data acquisition from data loggers, therefore ensuring continuous monitoring of PV systems.

S-G01

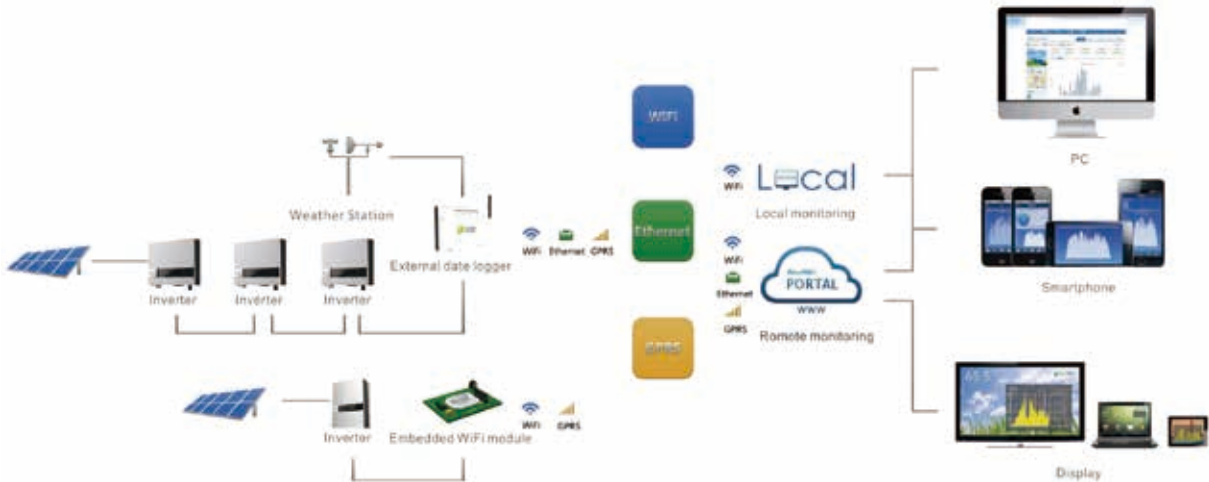
- Devices such as combiner box, electric meter and weather station, etc. can be connected
- Quick installation and easy operation with "Plug & Play" function
- Data storage of over 25 years
- Global roaming enables perfect operation for plant sites all over the world

S-WE01S

- Devices such as combiner box, electric meter and weather station, etc. can be connected
- Two communication methods available, including Ethernet and WiFi
- Data storage of over 25 years
- Check real-time data of data logger and inverter via embedded Web Server
- Dual mode of local monitoring and remote monitoring

Model Name	S-WE01	S-G01
General		
Max. Number of Inverters	1-10	1-10
Inverter Communication	RS485/422	RS485/422
Remote Communication	WiFi(802.11 b/g/n)/Ethernet	GPRS
Max. Communication Range	<1km	<1km
Communication Rate	1200-19200bps(Adjustable)	1200-19200bps(Adjustable)
WiFi Frequency	2.4GHz	800/900/1800/1900MHz
WiFi Communication Range	400m in outdoor open area without	-
WiFi Transmitting Power	802.11b/g/n: +20dBm/+18dBm/15dBm(Max)	Class 4(2W)/Class 1(1W)
Data Collection Intervals	5minutes(Default)/1-15minutes(Optional)	5minutes default/1-15minutes optional
Memory	SD Card/EEPROM(Optional)	SD Card/EEPROM(Optional)
Preferences Setting	Web Server/Serial port AT instruction	Serial port AT instruction
Firmware Updates	Serial port/Wireless	Serial port/Wireless
Data Access	Serial port/WiFi point-to-point/Remote server	Serial port/Remote server
Status Display	4 LEDs	4 LEDs
Electrical		
Input Voltage	DC 5V	DC 5V
Static Power Consumption	<1.6W	<2W
Max. Instantaneous Power Consumption	<2.5W	<3W
Environmental		
Operating Temperature	-10 to +65°C	-10 to +65°C
Operating Humidity	10%-90% Relative humidity, no condensation	10%-90% Relative humidity, no condensation
Storage Temperature	-40 to +85°C	-40 to +85°C
Storage Humidity	<40%	<40%
Protection Class	IP21	IP21
Physical		
Dimension(LxWxH)	110mmx80mmx26mm	110mmx80mmx26mm
Weight	108g	102g
Other		
Installation Method	Wall mounting, desktop device	Wall mounting, desktop device
Certificates	FCC, CE, RoHS	FCC, CE, RoHS

Monitoring System



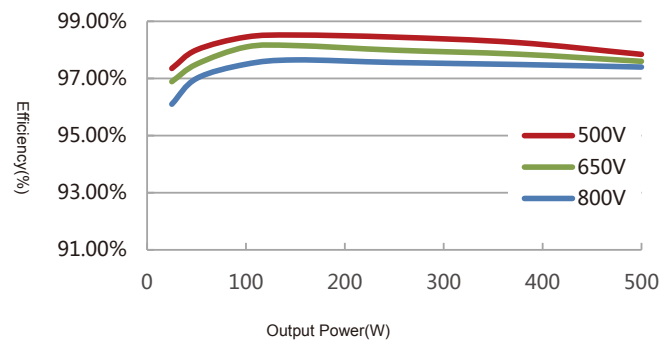
500kW/1MW Storage Bi-directional PCS

CPS energy storage inverter is mainly applicable to energy storage systems accounting for a major part in the smart grid. The battery in the energy storage system is used to recycle, convert and discharge the electricity power while the energy storage inverter can adjust the frequency and power during peak and trough hours in order to strengthen the regional grid adaptability lower the grid investment and further raise the safety, stability and electricity quality of the public grid. Besides, the energy storage system, together with the new energy power generation, composes the micro-grid, which can effectively resolve the power shortage in distant countryside and islands to raise the people’s living standard.

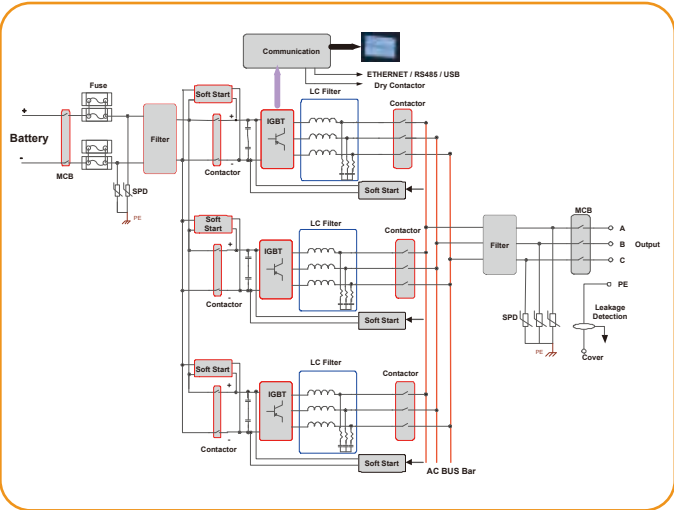


Efficiency Curve

CPS ECB500KTL-CN



Schematic Diagram



Efficiency Curve

- Max. efficiency of 98.8%, Euro efficiency of 98.5%
- Bi-directional energy flow, four quadrant inverter

High Reliability

- Short response time less than 20ms
- Support over-loading capacity, front-side service access
- Dual DSP and MCU design, double backups and multi-monitoring availabilities strengthen system reliability
- Support ZVRT, single and three phase voltage dip

Broad Adaptability

- Seamless switch between on/off grid mode
- Reactive power control, -0.8 to +0.8 power factor
- Active power derating from 0-100%
- Extreme low output current THD (1.3%)
- 3 independent Ethernet ports for MODBUS TCP protocol
- Advanced thermal design, fan speed control
- Support various energy storage systems, including fluid, lithium, plumbic acid and super capacitor, etc.

Model Name	CPS ECB 500KTL-CN	CPS ECB 1000KTL-CN
DC Input		
Max. Battery Voltage	900Vdc	900Vdc
Battery Voltage Range	500~850Vdc	585~850Vdc
Rated Battery Voltage	750Vdc	750Vdc
Battery Ripple voltage	<2%	<2%
Battery voltage Setpoint	<1%	<1%
Max. Battery current	1060A	2000A
AC Grid tied MODE		
Rated AC Power	500kW	1000kW
Rated Grid Voltage	320VAC/380VAC	380VAC
Grid Voltage Range*	-15%,+15%	-15%,+15%
Rated Grid Frequency *	50/60HZ	50/60HZ
Grid Frequency Range	47~51.5/57~63Hz	47~51.5/57~63Hz
Total Harmonic Distortion	<3%	<3%
Power Factor	±0.9(Adjustable)	±0.9(Adjustable)
Operating Performance		
Max. Efficiency	98.8%	98.8%
Euro. Efficiency	98.5%	98.5%
Chinese Efficiency	98.2%	98.2%
Protection Degree	IP20	IP20
Cooling	Variable speed cooling fans	Variable speed cooling fans
Operating Temperature Range	- 25°C to +60°C (derating from+45°C)	- 25°C to +60°C (derating from+45°C)
Storage Temperature Range	-40°C to +70°C	-40°C to +70°C
Operating Humidity	0-95%, non-condensing	0-95%, non-condensing
Operating Altitude	4000m (derating from 2000m)	4000m (derating from 2000m)
Display and Communication		
User Interface and Display	Touchscreen	Touchscreen
Communication	RS485 and Ethernet	RS485 and Ethernet
Modbus Data Mapping	MODBUS RTU / MODBUS TCP	MODBUS RTU / MODBUS TCP
Mechanical		
Dimensions (WxHxD)	1110x1967x800mm	1810x1967x800mm
Weight	900kg	1400kg
Safety		
Safety and EMC Standard	LVD:2014/35/EU, IEC/EN 62109-1:2010, IEC/EN 62109-1:2011 EMC:2014/30/EU;IEC/EU6100-6-2:2005,IEC/EU6100-6-4:2007	LVD:2014/35/EU, IEC/EN 62109-1:2010, IEC/EN 62109-1:2011 EMC:2014/30/EU;IEC/EU6100-6-2:2005,IEC/EU6100-6-4:2007
Grid Standard	IEC61727:2004,GB/T 19964-2012,NB/T31016-2011	IEC61727:2004,GB/T 19964-2012,NB/T31016-2011
Grid Support		
Features	Frequency ride-through (FRT); low voltage ride-through (LVRT); high voltage ride-through (HVRT); zero voltage ride-through (ZVRT);	Frequency ride-through (FRT); low voltage ride-through (LVRT); high voltage ride-through (HVRT); zero voltage ride-through (ZVRT);
Warranty		
Standard	5 years	5 years
Extended Terms	10 years	10 years

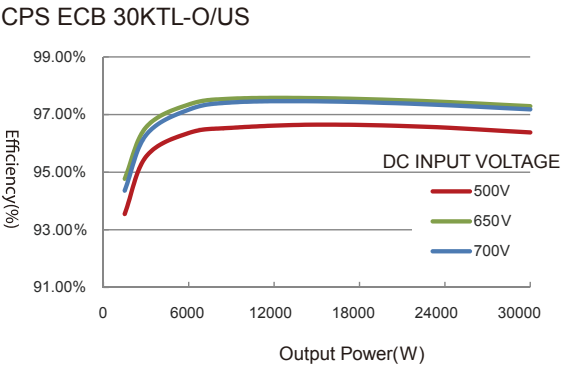
*The "Output Voltage Range" and "Output Frequency Range" may differ according to specific grid standard.
* The Min. operating voltage of battery depends on the grid voltage.

30kW, Storage Inverter

The CPS 30kW energy storage inverter is designed for use in commercial and industrial scale grid-tied energy storage systems. The inverter is optimized to meet the needs of the most demanding behind the meter energy storage applications including demand charge reduction, power quality, load shifting, and ancillary grid support services such as frequency response and voltage support. The CPS 30kW energy storage inverter is designed specifically for the North American environment and is based on the same platform as the >40,000 CPS commercial string inverters already operating on the US grid. High efficiency, parallel operation, wide operating voltages, broad temperature ranges and a NEMA 4X enclosure make this an ideal building block for any commercial or industrial energy storage application. The CPS 30kW energy storage inverters ship with touch safe fusing, monitoring, and load break AC and DC disconnect switches.



Efficiency Curve



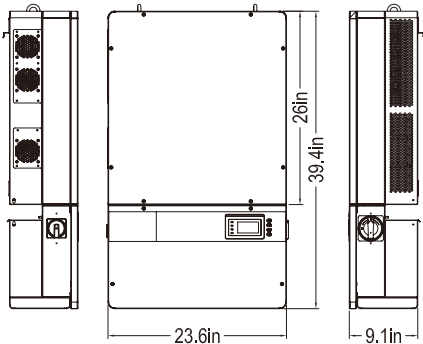
High Efficiency

- Maximum efficiency of 98% Discharge; 97.6% Charge
- 3-level topology with advanced controls
- Transformerless design

High Reliability

- “Electrolyte-free design” for long-term reliability
- Standard warranty: 5 years, extension up to 20 years
- Advanced thermal design with variable speed fans
- Ground-fault detection and interruption circuit

Dimensions



Broad Adaptability

- NEMA 4X, suitable for indoor and outdoor applications
- Utility interactive controls: Active power derating, reactive power control
- Optional CPS Flex Gateway enables remote FW upgrades Separate wiring box design
- Integrated load break AC and DC disconnects
- Advanced Smart-Grid features (CA Rule 21)
- 150ms response to set point commands
- Compatible with high voltage Li-Ion battery racks

Model Name	CPS ECB 30KTL-O/US
DC Input	
Nominal DC Input Power	31kW
Max. DC Input Voltage ¹	900Vdc
Nominal DC Input Voltage	650Vdc
DC Full Power Voltage Range	450~800Vdc
DC Operation Voltage Range ¹	250~900Vdc
Max. DC Input Current	70A
Number of DC Inputs	4 x 30A Fuse Holders
DC Disconnection Type	Load rated DC switch
AC Output	
Rated AC Output Power	29.99kW
Max. AC Output Power	33kVA
Rated Grid Voltage	480VAC
Grid Voltage Range ²	422-528Vac
Rated Grid Frequency	60HZ
Grid Frequency Range ²	57~63Hz
Continuous AC Power - Charge	20kW/25kVA
Continuous AC Power - Discharge	29.99kW
Maximum Continuous AC Current	40A
Grid Connection Type	3 phase/PE/N (Neutral optional)
Total Harmonic Distortion	<3%
Power Factor	>0.99 (±0.8 adjustable)
AC Disconnection Type	Load rated AC switch
DC Output	
Continuous DC Power - Charge	20kW/25kVA
Output Voltage Range	0~900V
System	
Topology	Transformerless
Max. Efficiency	97.5%
CEC Efficiency	97.0%
Environment	
Protection Degree	NEMA 4X
Cooling	Variable speed cooling fans
Operating Temperature Range	-22°F to +140°F/- 30°C to +60°C (derating from +113°F/+45°C)
Storage Temperature Range	-40°F to +158°F/-40°C to +70°C
Operating Humidity	0-95%, non-condensing
Operating Altitude	13123.4ft/4000m (derating from 6561.7ft/2000m)
Display and Communication	
User Interface and Display	LCD+LED
Communication	Modbus RS485 and Ethernet XML HTTPS
Modbus Data Mapping	CPS
Mechanical	
Dimensions (WxHxD)	600×1000×230mm
Weight	Inverter: 122lbs/55kg; Wirebox: 20lbs/9kg
AC Termination	Screw Clamp Terminal Block (Wire range: #8 - 1AWG CU, #6- 1AWG AL)
DC Termination	Screw Clamp Terminal Block (Wire range: #4- 1AWG CU, #3- 1AWG AL)
Safety	
Safety and EMC Standard	UL1741:2010, IEEE1547; FCC PART15
Grid Standard and SRD	IEEE 1547-2003 (R2008), IEEE 1547.1-2005(R2011), Rule 21
Warranty	
Standard	5 years
Extended Terms	Up to 20 years

1) Exceeding the Max. DC Input Voltage may cause permanent damage to the equipment.
2) The "Output Voltage Range" and "Output Frequency Range" may differ according to the specific grid standard.