

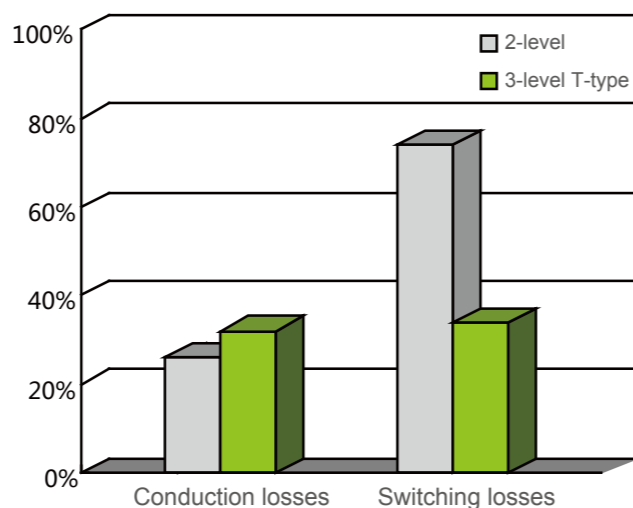
500/630/1000kW Grid-tied PV Inverters



CPS SCA500/630/1000KTL-H is designed for big commercial 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.

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



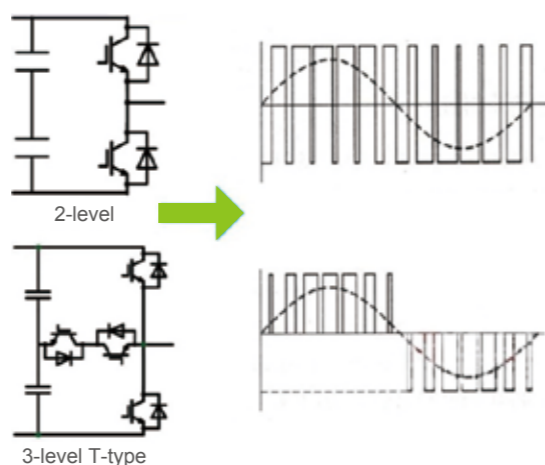
Less losses, higher conversion efficiency

High Reliability

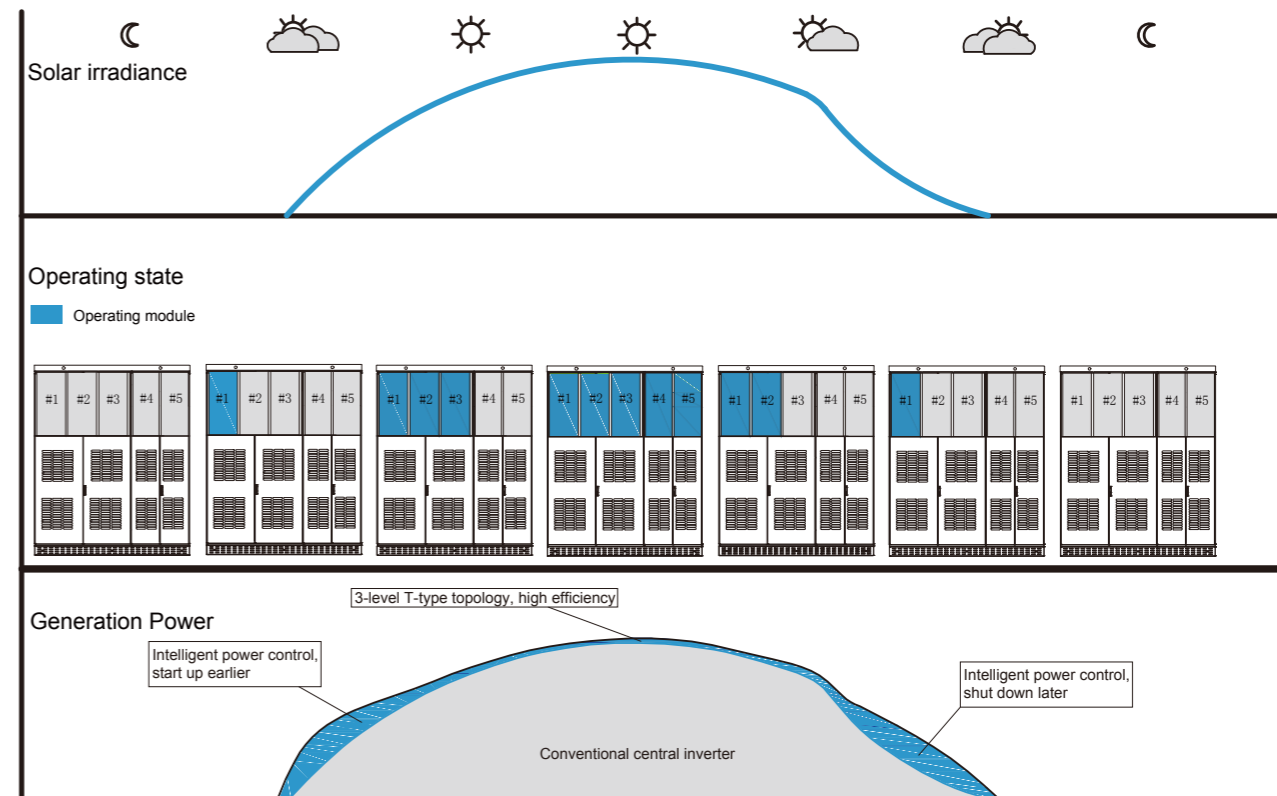
- Modular design, reducing the impact of faults
- Comprehensive protection functions
- Advanced thermal design, auto speed adjustable fan
- Embedded ground-fault circuit & Interrupter

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



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

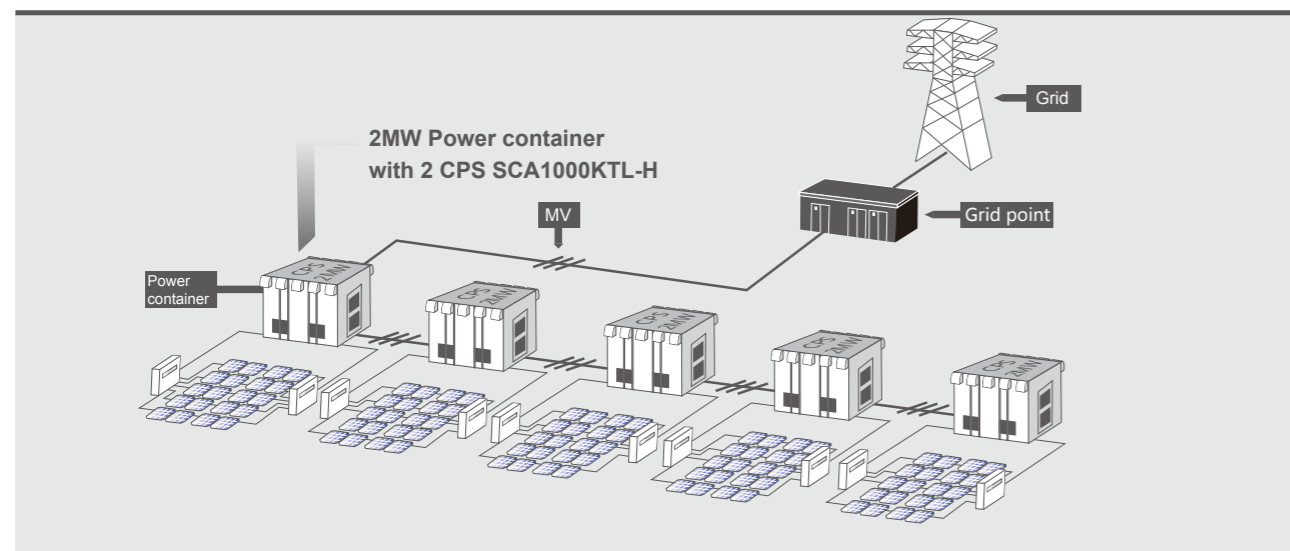
Modular inverters can control the number of operating modules according to the power during the day, which can effectively reduce the operating time of each module and extend the service life of the inverter.

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

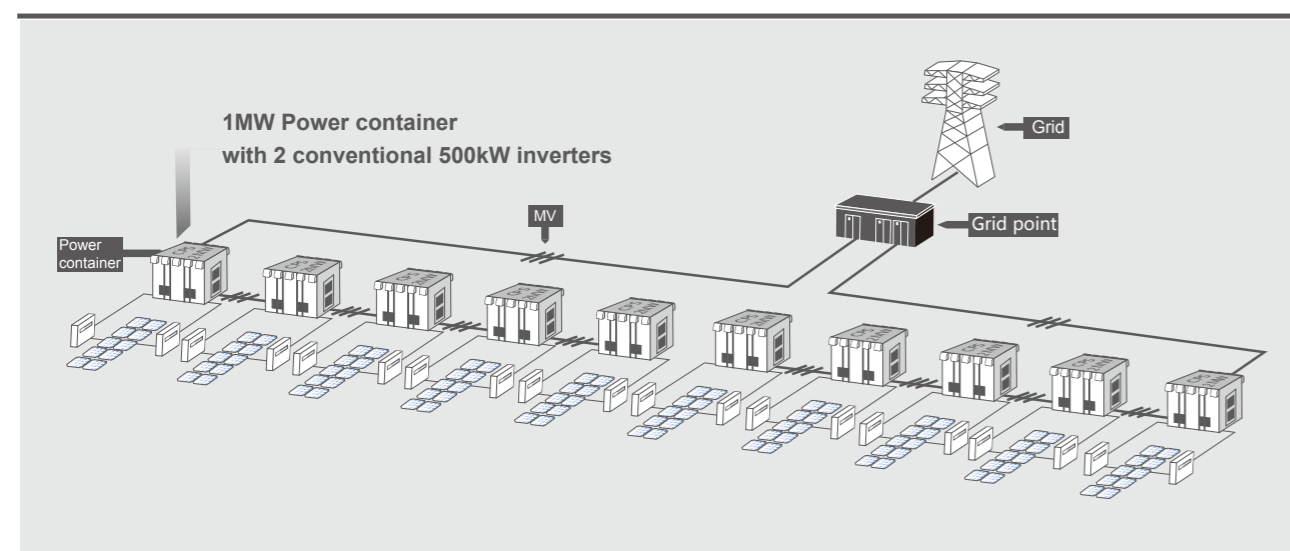
CPS 2MW solution :

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.

Inverter

Inverter