250 kW-600 V, 1500 Vdc String Inverters for North America

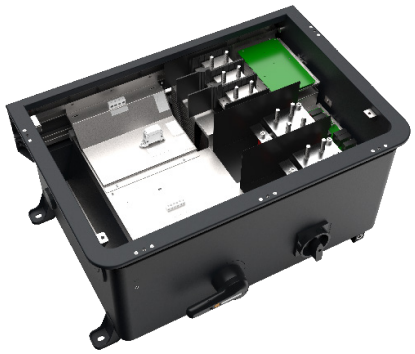
CPS SCH250K-T-US-600

The new CPS 250 kW-600 V three-phase string inverters are designed for ground mount applications. The units are high performance, advanced, and reliable inverters designed specifically for the North American environment and grid. High efficiency at 98.83% peak and 98.4% CEC, wide operating voltages, broad temperature ranges, and a NEMA Type 4X enclosure enable this inverter platform to operate at high performance across many applications. The CPS 250 kW-600 V products ship with the Distributed or Centralized Wire Box, each fully integrated and separable with AC and DC disconnect switches. Enhanced DC wire boxes allow DC disconnection under short circuit conditions. The CPS FlexOM Gateway enables communication, controls, and remote product upgrades.

Key Features

- UL 1741-SA/SB and IEEE1547-2018 certified
- Touch-safe DC Fuse holders add convenience and safety
- CPS FlexOM Gateway enables remote firmware upgrades
- Integrated AC and DC disconnect switches
- Enhanced DC wire boxes
- Copper- and aluminum-compatible AC connections
- NEMA Type 4X outdoor rated enclosure
- Advanced Smart-Grid features
- kVA headroom yields 250 kW @ 0.95 PF
- PID mitigation function
- Separable wire box design for fast service
- Distributed or Centralized wire box options

250 kW-600 V Distributed Wire Box



250 kW-600 V Centralized Wire Box

This device complies with part 15 of the FCC Rules

Chint Power Systems America
1380 Presidential Drive, Suite 100, Richardson, TX 75081
Tel: 855-584-7168 Mail: AmericaSales@chintpower.com Web: www.chintpowersystems.com

Model Name	CPS SCH250K-T-US-600
DC Input	
Max. PV power	425 kW
Max. DC input voltage	1500 V
Operating DC input voltage range	860-1450 Vdc
Start-up DC input voltage / power	900 V / 250 W
Number of MPP trackers	1
MPPT voltage range for Pnom[1]	900-1300 Vdc
Max. PV short-circuit current[2]	450 A
Number of DC inputs	Distributed Wire Box: 30 PV source circuits, fused Centralized Wire Box: 1 input circuit, 1-2 terminations per pole, non-fused
DC disconnection type	Distributed Wire box: Enhanced DC switches Centralized Wire Box: Enhanced DC disconnect
DC surge protection	Type II MOV
AC Output	
Rated AC output power	250 kW
Max. AC apparent power (selectable[3])	250 kVA / 264 kVA (@ PF >0.95)
Rated output voltage	600 Vac
Output voltage range[4]	528-660 Vac
Grid connection type[5]	3Φ / PE / N (neutral optional)
Max. AC output current @ 600 Vac	241 A (@ 250 kVA) / 254 A (@ 264 kVA)
Rated output frequency	60 Hz
Output frequency range[4]	57-63 Hz
Power factor	>0.99 (±0.8 adjustable)
Current TRD	< 3%
Max. OCPD rating	400 A
AC disconnection type	Load-rated AC switch
AC surge protection	Type II MOV
System	
Topology	Transformerless
Max. efficiency	98.83%
CEC efficiency	98.4%
Standby / night consumption	< 30 W
Environment	
Enclosure protection degree	NEMA Type 4X
Cooling method	Variable speed cooling fans
Operating temperature range	-22°F to 140°F / -30°C to 60°C (derating from 108°F / 42°C)
Non-operating temperature range[6]	-40°F to 158°F / -40°C to 70°C
Operating humidity	0-95%
Operating altitude	6562 ft / 2000 m (no derating)
Audible noise	< 80 dBA @ 1 m and 77°F (25°C)
Display and Communication	
User interface and display	LED indicators; Bluetooth and app
Inverter monitoring	Modbus RS485
Site-level monitoring	CPS FlexOM Gateway (1 per 32 inverters)
Modbus data mapping	SunSpec / CPS
Remote diagnostics / firmware upgrade functions	Standard / (with FlexOM Gateway)
Mechanical	
Dimensions (W × H × D)	Powerhead: 28.46 × 33 × 13.98 in (723 × 840 × 355 mm) Wire Box: 23.11 × 33 × 13.98 in (587 × 840 × 355 mm)
Weight (approximate)	Powerhead: 175 lb (79.5 kg) Wire Box: 106 lb (48 kg)
Mounting / installation angle	Vertical
AC termination	M12 stud type terminal [3Φ] (wire range: 500 kcmil-750 kcmil CU/AL; lugs not supplied) Screw clamp terminal block [N] (#12-1/0 AWG CU/AL)
DC termination	Distributed Wire Box: Screw clamp fuse holder (wire range: #14-#8 AWG CU) Centralized Wire Box: Busbar (<600 kcmil CU/AL [2 terminations per pole]; lugs not supplied)
Fused string inputs	Distributed Wire Boxes: 30 A fuses provided
Safety	
Certifications and standards	UL 1741-SA/SB Ed. 3, CSA-C22.2 NO.107.1-01, IEEE 1547-2018, FCC Part 15, UL 1699B[7]
Selectable grid standard	IEEE 1547a-2014, IEEE 1547-2018, CA Rule 21, ISO-NE
Smart-grid features	Volt-RideThru, Freq-RideThru, Ramp-Rate, Specified-PF, Volt-VAR, Freq-Watt, Vol-Watt
Warranty	
Standard	5 years
Extended terms	10, 15, and 20 years

1) See user manual for further information regarding MPPT voltage range when operating at non-unity PF.
2) The sum of parallel-connected PV module short-circuit currents.
3) Inverter is factory set to 250 kVA by default. Contact CPS to enable the 264 kVA setting.
4) The "output voltage range" and "output frequency range" may differ according to the specific grid standard.
5) Delta configurations must not be corner-grounded.
6) See user manual for further requirements regarding non-operating conditions.
7) AFCI function available for Distributed wire boxes only.

Certificate of Compliance

Certificate: 80224569 **Master Contract:** 255045

Project: 80224570 **Date Issued:** 2025-01-06

Issued To: **Shanghai CHINT Power Systems Co., Ltd.**
No. 5999, Guangfulin Road
Songjiang District, Shanghai, 201616
China

Attention: Huan Cai

The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.

Issued by: Hart Cai
Hart Cai

PRODUCTS

CLASS - C531109 - POWER SUPPLIES - Distributed Generation Power Systems Equipment
CLASS - C531189 - POWER SUPPLIES - Distributed Generation Power Systems Equipment - Certified to U.S. Standards

Transformerless Grid Support Utility Interactive PV Inverter, model: SCH250K-T-US-600. Permanently connected for outdoor use.

For details related to rating, size, configuration, etc., reference should be made to the CSA Certification Record, Certificate of Compliance, or the Descriptive Report.

Certificate: 80224569
Project: 80224570

Master Contract: 255045
Date Issued: 2025-01-06

APPLICABLE REQUIREMENTS

CSA C22.2 No. 107.1-16	-	Power conversion equipment
*UL Std No. 1741	-	Inverters, Converters, Controllers and Interconnection System Equipment for Use With Distributed Energy Resources (Third Edition, Revision Dated May 19, 2023.)
**UL 1741 CRD	-	Non-Isolated EPS Interactive PV Inverters Rated Less Than 30Kva (Dated April 01, 2024)
**UL Std No.1699B	-	Photovoltaic (PV) DC Arc-Fault Circuit Protection (First Edition, Dated May 18, 2021)

*Note:

1. Grid support function is verified according to UL 1741 Supplement SB and IEEE 1547.1-2020 and Rule 21 with the SRDs of IEEE 1547-2018, IEEE 1547a-2020 and Hawaiian Electric Co. SRD-V2.0.
2. While the grid support function is evaluated according to IEEE 1547.1-2020, the interoperability is verified with IEEE 2030.5-2018 communication protocol.
3. Grid support function is verified according to UL 1741 Supplement SA8-SA18 with the SRDs of California Electric Rule 21.

**Note:

1. The functional safety has been evaluated according to applicable requirement of UL 1998-Edition 3 and UL 991-Edition 3 as required by the product standard.

Notes:

Products certified under Class C531109 have been certified under CSA's ISO/IEC 17065 accreditation with the Standards Council of Canada (SCC). www.scc.ca

Supplement to Certificate of Compliance

Certificate: 80224569 **Master Contract:** 255045

The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.

Product Certification History

Project	Date	Description
80224570	2025-01-06	Update the report 80224569 to add the evaluation of AFCI function. WMTC assessment to Test Facility.
80224569	2024-12-03	cCSAus certification to Transformerless Grid Support Utility Interactive PV Inverter, model: SCH250K-T-US-600.Firmware: 2.0 WMTC assessment to Test Facility.

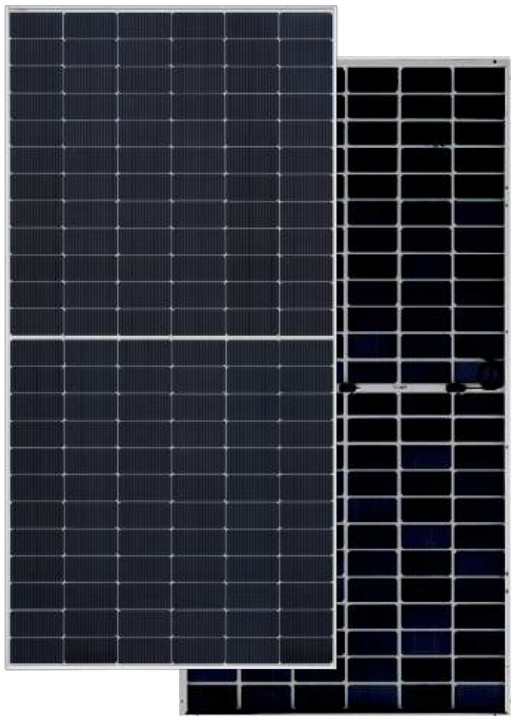
HT-SAAE

Jupiter

HT72-18X(ND)-F Double Glass

High Efficiency Lower LID and TOPCon cell with Half-cut Technology
Big Size : Cell 182 × 91.875mm Monocrystalline

580W / 585W
590W / 595W / 600W



- Module Efficiency
  23.2%
- No. of Cells
  144 (6 × 24)
- Weight
  32.0±0.5kg
- Dimensions
  2278 × 1134 × 30mm

10-30% Additional Power Generation
10-30% additional power generation comparing with conventional P-type module

Lower LID (Light Induced Degradation)
N-type modules with Tunnel Oxide Passivating Contacts (TOPCon) technology offer lower LID/LeTID degradation and better low light performance

Lower LCOE
Higher power output and lower BOS cost

Better Weak Illumination Response
Higher power output even under low-light environment

Better Temperature Coefficient
Higher power generation under normal working conditions

Enhanced Mechanical Load
Certified to withstand: wind load (2400 Pascal) and snow load (5400 Pascal)

Comprehensive and First-rate Certification System

IEC61215: 2021 . IEC61730: 2023 . UL61730: 2017 . IEC62804: 2015
ISO9001 . ISO14001 . and . ISO45001

www.htsolar.com.tr
Turkey HT Solar Energy Joint Stock Company

Jupiter

Better Choice For Higher Efficiency

HT-SAAE

Electrical Characteristics

Module			HT72-18X(ND)-F		
Maximum Power at STC (Pmax)	580W	585W	590W	595W	600W
Open - Circuit Voltage (Voc)	51.30V	51.50V	51.70V	51.85V	52.00V
Short - Circuit Current (Isc)	14.39A	14.47A	14.55A	14.62A	14.70A
Optimum Operating Voltage (Vmp)	43.10V	43.30V	43.50V	43.55V	43.70V
Optimum Operating Current (Imp)	13.47A	13.53A	13.59A	13.67A	13.73A
Module efficiency	22.5%	22.6%	22.8%	23.0%	23.2%
Power Tolerance			0 ~ +3%		
Maximum System Voltage			1500V DC (UL / IEC)		
Maximum Series Fuse Rating			25A		
Operating Temperature			-40 ℃to +85 ℃		

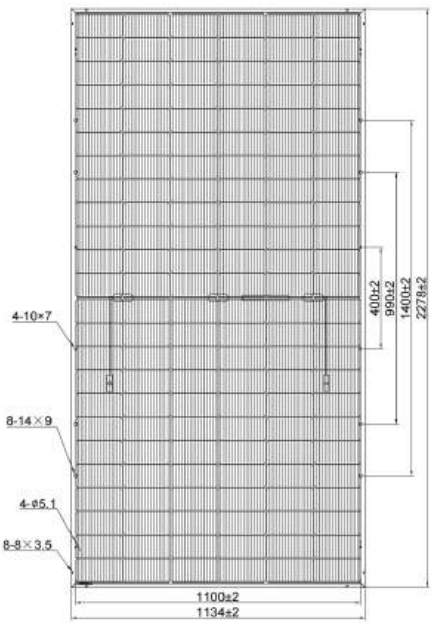
* STC: Irradiance 1000W/m², module temperature 25℃, AM=1.5
Optional black frame or white frame module according to customer requirements

NMOT

Module	HT72-18X(ND)-F (Bifaciality 80±10%)				
Maximum Power	441W	445W	449W	453W	457W
Open - Circuit Voltage (Voc)	49.20V	49.40V	49.60V	49.80V	50.00V
Short - Circuit Current (Isc)	11.60A	11.66A	11.73A	11.79A	11.86A
Optimum Operating Voltage (Vmp)	41.40V	41.60V	41.70V	41.90V	42.10V
Optimum Operating Current (Imp)	10.65A	10.70A	10.77A	10.82A	10.89A
NMOT			45±2 ℃		

* NMOT: Irradiance 800W/m², ambient temperature 20℃, wind speed 1m/s

Engineering Drawing



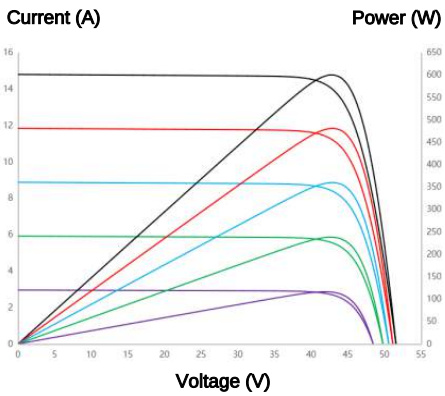
Mechanical Characteristics

Solar Cells	Monocrystalline 182 × 91.875mm
No. of Cells	144 (6 × 24)
Dimensions	2278 × 1134 × 30mm
Weight	32.0±0.5kg
Glass (Front/Back)	High transmission tempered glass; thickness: 2.0mm
Frame	Anodized aluminium alloy
Junction Box	IP68
Cable	4mm² (UL / IEC); length: ±1200mm / customized length
Connectors	MC4-EVO2/MC4 Compatible
Packaging Configuration	37pcs/box, 814pcs/truck

Temperature Characteristics

Temperature Coefficient of Pmax	-0.29%/℃
Temperature Coefficient of Voc	-0.23%/℃
Temperature Coefficient of Isc	+0 .046%/℃

IV Curves

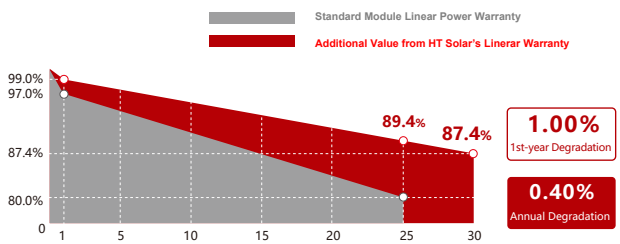


Warranty

15 - years
product warranty

30 - years
warranty on power output

Specific information is referred to
the product quality guarantee



The module recycling should be carried out by the professional institutions at the end of module life cycle

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Turkey HT Solar Energy Joint Stock Company