

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

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 P _{nom} 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.

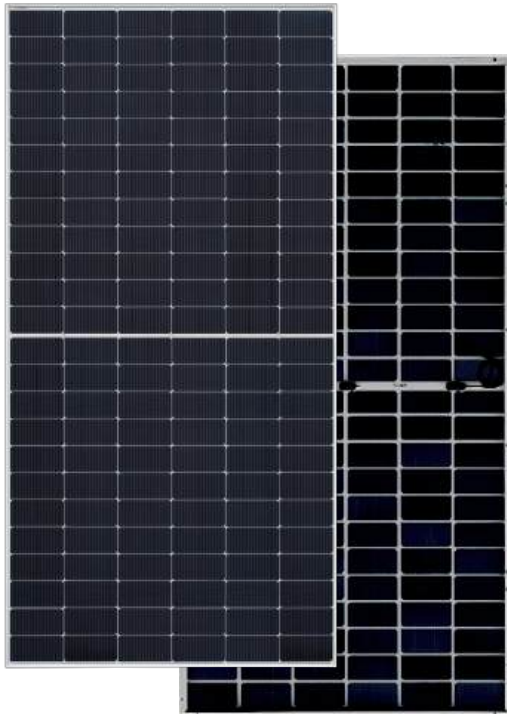
Jupiter

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



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 °C to +85 °C				

* STC: Irradiance 1000W/m², module temperature 25°C, 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 °C				

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

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	4mm ² (UL / IEC); length: ±1200mm / customized length
Connectors	MC4-EVO2/MC4 Compatible
Packaging Configuration	37pcs/box, 814pcs/truck

Temperature Characteristics

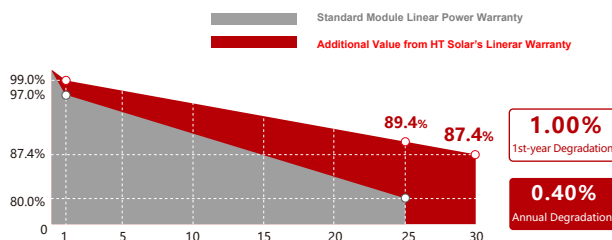
Temperature Coefficient of Pmax	-0.29%/°C
Temperature Coefficient of Voc	-0.23%/°C
Temperature Coefficient of Isc	+0.046%/°C

Warranty

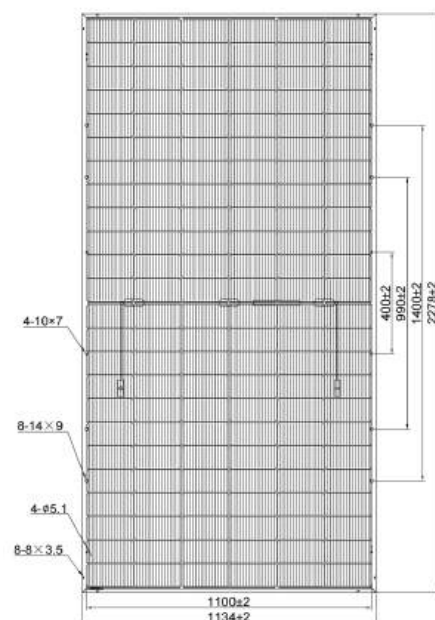
15 - years
product warranty

30 - years
warranty on power output

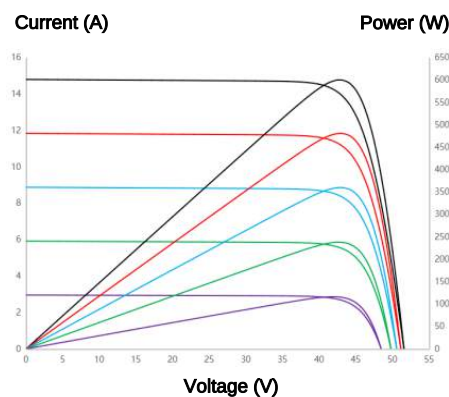
Specific information is referred to
the product quality guarantee



Engineering Drawing



IV Curves



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