

100 kW-480 V, 1500 Vdc String Inverters for North America



CPS SCH100KTL-DO/US-480

The CPS 100 kW-480 V three-phase string inverters are designed for ground-mount applications with 480 Vac service voltage. The units are high performance, advanced, and reliable inverters designed specifically for the North American environment and grid. High efficiencies, 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 100 kW products ship with the Distributed or Centralized wire box, each fully integrated and separable with AC and DC disconnect switches. Enhanced DC wire boxes are available to allow DC disconnection under short circuit conditions.

Key Features

- UL 1741-SA/SB and IEEE 1547-2018 certified
- Touch-safe DC fuse holders adds convenience and safety
- Integrated AC and DC disconnect switches
- 1 MPPT with 20 fused inputs for maximum flexibility
- Copper- and aluminum-compatible AC connections
- NEMA Type 4X outdoor rated, tough tested enclosure
- Advanced Smart-Grid features (CA Rule 21 certified)
- kVA headroom yields 100 kW @ 0.95 PF
- Generous DC/AC inverter load ratios
- Separable wire box design for fast service
- Enhanced DC wire boxes available



Distributed



Centralized

Standard Wire Boxes



Distributed



Centralized

Enhanced DC Wire Boxes

Model Name	CPS SCH100KTL-DO/US-480
DC Input	
Max. DC input voltage	1500 Vdc
Operating DC input voltage range	750-1450 Vdc
Startup DC input voltage / power	900 Vdc / 200 W
Number of MPP trackers	1
MPPT voltage range for P _{nom} @ PF > 0.99 ¹	760-1300 Vdc
Max. operating current	136 A
Max. PV short-circuit current ²	220 A
Number of DC inputs	Distributed Wire Box: 20 PV source circuits, positive and negative fused Centralized Wire Box: 1 input circuit, 1-2 terminations per pole, non-fused
DC disconnection type	Load-rated DC switch
DC surge protection	Type II MOV (with indicator/remote signaling)
AC Output	
Rated AC output power ³	100 kW
Max. AC apparent power (selectable ⁴)	100 kVA / 105.3 kVA (@ PF > 0.95)
Rated output voltage	480 Vac
Output voltage range ⁵	423-528 Vac
Grid connection type ⁶	3-Phase / PE / N (neutral optional)
Max. AC output current @ 480 Vac	120.3 A (@ 100 kVA) / 126.7 A (@ 105.3 kVA)
Rated output frequency	60 Hz
Output frequency range ⁵	57-63 Hz
Power factor	> 0.99 (±0.8 adjustable)
Current TRD @ rated load	< 3%
Max. fault current contribution (1 cycle RMS)	41.47 A
Max. OCPD rating	200 A
AC disconnection type	Load-rated AC switch
AC surge protection	Type II MOV (with indicator/remote signaling)
System and Performance	
Topology	Transformerless
Max. efficiency	98.9%
CEC efficiency	98.0%
Night consumption	< 2 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
Non-operating temperature range	-40°F to 158°F (-40°C to 70°C)
Operating humidity	0-100%
Operating altitude	8202 ft / 2500 m (no derating)
Audible noise	< 65 dBA @ 1 m and 77°F (25°C)
Display and Communication	
User interface and display	LED indicators, Wi-Fi and app
Inverter communication	Modbus RS485
Modbus data mapping	CPS
Mechanical	
Dimensions (W × H × D)	Distributed Wire Box: 45.28 × 24.25 × 9.84 in (1150 × 616 × 250 mm) Centralized Wire Box: 39.37 × 24.25 × 9.84 in (1000 × 616 × 250 mm)
Weight	Inverter: 121 lbs (55 kg) Distributed Wire Box: 55 lbs (25 kg) Centralized Wire Box: 33 lbs (15 kg)
Mounting / installation angle	15-90 degrees from horizontal (vertical or angled)
AC termination	M10 stud type terminal [3Φ] (wire range: 1/0 AWG-500 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: #12-#6 AWG CU) Centralized Wire Box: Busbar, M10 bolts (wire range: #1 AWG-500 kcmil CU/AL [1 termination per pole], #1 AWG-300 kcmil CU/AL [2 terminations per pole]; lugs not supplied)
Fused string inputs	Distributed Wire Boxes: 20 A or 25 A fuses provided (fuse values up to 30 A acceptable)
Safety	
Certifications and standards	UL 1741-SA/SB Ed. 3, CSA-C22.2 NO.107.1-01, IEEE 1547-2018, FCC PART15
Selectable grid standards	IEEE 1547a-2014, IEEE 1547-2018 ⁷ , CA Rule 21, ISO-NE
Smart-grid features	Volt-RideThru, Freq-RideThru, Ramp-Rate, Specified-PF, Volt-VAR, Freq-Watt, Volt-Watt
Warranty	
Standard	5 years

1) See user manual for information regarding MPPT voltage range when operating at non-unity PF.

2) The sum of parallel-connected PV module short-circuit currents.

3) 100 kW-480 V active power derating begins at 107.6°F (42°C) when PF = ±0.9 and MPPT ≥ V_{min}; at 113°F (45°C) when PF=1 and MPPT ≥ V_{min}.

4) Inverter is factory set at 100 kVA by default. Contact CPS to enable the 105.3 kVA setting.

5) The "output voltage range" and "output frequency range" may differ according to the specific grid standard.

6) Delta configurations must not be corner-grounded.

7) Firmware version 12.0 or later required.