250kW/275kVA, 1500Vdc String Inverters for North America

CPS SCH275KTL-DO/US-800

The 250kW/275kVA high power CPS 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 efficiencies, wide operating voltages, broad temperature ranges and NEMA Type 4X enclosure enable this inverter platform to operate at high performance across many applications.

The SCH275KTL inverters are rated for 250kW. A maximum of 275kVA is available to support fixed power factor operation at rated power. Each inverter include 12 MPPTs and is available with either 36 fused PV string inputs or 24 unfused PV string inputs. The CPS FlexOM solution enables communication, controls and remote product upgrades.

Key Features

- NFPA 70, NEC 2017/2020 compliant
- Touch-safe DC fuse holders adds convenience and safety
- CPS FlexOM Gateway enables remote firmware upgrades
- Integrated DC disconnect switches
- Protection functions for enhanced reliability and safety
- UL 1741-SA certified to CA Rule 21, including SA14-SA18
- UL 1741-SB and IEEE 1547-2018 certified
- 12 MPPTs with 36 fused inputs or 24 unfused inputs
- Copper and Aluminum compatible AC connections
- NEMA Type 4X outdoor rated, tough tested enclosure
- Full power capacity up to 42°C
- Standard 5-year warranty with extensions to 20 years
- Supported comm protocols (Modbus RTU & PLC)

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This device complies with part 15 of the FCC Rules

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Model Name	CPS SCH275KTL-DO/US-800-36	CPS SCH275KTL-DO/US-800-24
DC Input		
Max. DC input voltage	1500 V	
Operating DC input voltage range	500-1450 Vdc	
Start-up DC input voltage / power	550 Vdc / 500 W	
MPPT voltage range @ PF>0.99[1]	900-1300 Vdc	
Number of MPP trackers	12	12
Max. PV input current (clipping point)	26 A per MPPT	26 A per MPPT
Max. PV short-circuit current	600 A, 50 A per MPPT	600 A, 50 A per MPPT
Number of DC inputs	36 fused inputs, 3 per MPPT	24 non-fused inputs, 2 per MPPT
DC disconnection type	Load-rated DC switches	
DC surge protection	Type II	
AC Output		
Max AC output power (selectable) @ PF>0.99	250 kW	
Max. AC apparent power	275 kVA	
Rated output voltage	800 Vac	
Output voltage range[2]	704-880 Vac	
Grid connection type	3-phase / PE	
Max. AC output current @ 800 Vac	198.5 A	
Rated output frequency	60 Hz	
Output frequency range[2]	57 - 63 Hz	
Power factor	>0.99 (±0.8 adjustable)	
Current THD @ rated load	<3%	
Max. fault current contribution (1 cycle RMS)	215.2 A	
Max. OCPD rating	300 A	
AC surge protection	Type II	
System and Performance		
Max. efficiency	99.0%	
CEC efficiency	98.5%	
Stand-by / night consumption	5 W	
Environment		
Enclosure protection degree	NEMA Type 4X	
Cooling method	Variable speed cooling fans	
Operating temperature range[3]	-22°F to +140°F / -30°C to +60°C (derating from +107°F / +42°C)	
Non-operating temperature range[3]	-40°F to +140°F / -40°C to +60°C	
Operating humidity	0-100%	
Operating altitude	8202 ft / 2500 m (no derating)	
Audible noise	<80 dBA @ 1 m and 25°C	
Display and Communication		
User interface and display	LED indicators, WiFi + App	
Inverter monitoring	Modbus RS485 / PLC[4]	
Site-level monitoring	CPS FlexOM (1 per 32 inverters)	
Modbus data mapping	SunSpec / CPS	
Remote diagnostics / firmware upgrade functions	Standard / (with FlexOM Gateway)	
Mechanical		
Dimensions (H x W x D)	27.2 x 41.3 x 15.7 in (690 x 1050 x 400 mm)	
Weight	Approx. 262 lbs (119 kg)	
Mounting / installation angle	Vertical installation	
AC termination	Stud type terminal (wire range: 3/0 AWG – 750 kcmil AL/CU, lugs not supplied)	
DC termination	36 fused input: screw clamp fuse holder (wire range: #14 - #8 AWG CU) 24 non-fused input: screw clamp terminal (wire range: #14 - #8 and #6 - #4 AWG CU)[6]	
Fused string inputs (3 per MPPT)[7]	20 A fuses provided (fuse values up to 30 A acceptable)	
Safety		
Certifications and standards	UL 1741-SA/SB Ed. 3, CSA-22.2 NO.107.1-16, IEEE 1547a-2014, IEEE 1547-2018, FCC PART 15	
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, Volt-Watt	
Protection Functions		
Insulation resistance monitoring	Yes	
Onboard fault oscillography	Yes	
PV MPPT current monitoring	Yes	
Residual current monitoring	Yes	
Output overcurrent protection	Yes	
Output short-circuit protection	Yes	
Output overvoltage protection	Yes	

Warranty	
Standard	5 years
Extended terms	10, 15 and 20 years

1) See user manual for information regarding MPPT voltage range when operating at non-unity PF.
2) The output voltage and frequency ranges may differ according to the specific grid standard.
3) See user manual for further requirements regarding non-operating conditions.
4) CPS AC-PLC Kit required for AC PLC communication.
5) One threaded hole per MPPT for connecting #6 - #4 AWG CU.
6) Fused string inputs only applicable to the SCH275KTL 36-input model.
7) CPS FlexOM Gateway and Portal access required for IV curve tracing.