50/60kW, 1000Vdc String Inverters for North America

The 50 & 60kW (55 & 66kVA) medium power CPS three phase string inverters are designed for ground mount, large rooftop and carport applications. The units are high performance, advanced and reliable inverters designed specifically for the North American environment and grid. High efficiency at 98.8% peak and 98.5% 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 50/60kW products ship with either the standard wire-box or the H4 style wire-box, each fully integrated and separable with touch safe fusing, monitoring, and AC and DC disconnect switches. The CPS Flex Gateway enables monitoring, controls and remote product upgrades.

Key Features

- 55 & 66kVA rating allows max rated Active Power @±0.91PF
- Selectable Max AC Apparent Power of 50/55kVA and 60/66kVA
- NEC 2014/17 compliant & UL listed Arc-Fault circuit protection
- 0-90° Mounting orientation for lay flat roof installs
- Touch safe DC Fuse holders adds convenience and safety
- Optional Flex Gateway enables remote FW upgrades
- Integrated AC & DC disconnect switches
- 3 MPPT’s with 5 inputs each for maximum flexibility
- Copper and Aluminum compatible AC connections
- NEMA Type 4X outdoor rated, tough tested enclosure
- UL1741 SA Certified to CA Rule 21
- Separable wire-box design for fast service
- Standard 10 year warranty with extensions to 20 years
- Generous 1.5 DC/AC Inverter Load Ratio
## Technical Data

### DC Input
- **Model Name**: CPS SCA50KTL-DO/US-480, CPS SCA60KTL-DO/US-480
- **Max. PV Power**: 75kW (30kW per MPPT) / 90kW (33kW per MPPT)
- **Max. DC Input Voltage**: 1000Vdc
- **Operating DC Input Voltage Range**: 100-950Vdc
- **Start-up DC Input Voltage / Power**: 330V / 80W
- **Number of MPP Trackers**: 3
- **MPPT Voltage Range @ PF>0.99**: 480-850Vdc / 540-850Vdc
- **Max. PV Short-Circuit Current (Isc x 1.25)**: 204A (68A per MPPT)
- **Number of DC Inputs**: 15 inputs, 5 per MPPT
- **DC Disconnection Type**: Load rated DC switch
- **DC Surge Protection**: Type II MOV, 2800V<sub>C</sub>, 20kA I<sub>1M</sub> (8/20μs)

### AC Output
- **Rated AC Output Power @ PF>0.99 to ±0.91**: 50kW / 60kW
- **Max. AC Apparent Power (Selectable)**: 50/55kVA / 60/66kVA
- **Rated Output Voltage**:
  - CPS SCA50KTL-DO/US-480: 204V / 3Φ / PE / N (Neutral optional)
  - CPS SCA60KTL-DO/US-480: 240V / 3Φ / PE / N (Neutral optional)
- **Output Voltage Range**:
  - CPS SCA50KTL-DO/US-480: 422-528Vac
  - CPS SCA60KTL-DO/US-480: 480Vac / 422-528Vac
- **Grid Connection Type**: 3Φ / PE / N (Neutral optional)
- **Max. AC Output Current @480Vac**: 60.2/66.2A / 72.2/79.4A
- **Rated Output Frequency**: 60Hz
- **Output Frequency Range**:
  - CPS SCA50KTL-DO/US-480: 57 - 63Hz
  - CPS SCA60KTL-DO/US-480: 57 - 63Hz
- **Power Factor**: >0.99 (±0.8 adjustable)
- **Current THD @ Rated Load**: <3%
- **Max. Fault Current Contribution (1 Cycle RMS)**: 64.1A
- **Max. OCPD Rating**: 110A / 125A
- **AC Disconnection Type**: Load rated AC switch
- **AC Surge Protection**: Type II MOV, 1240V<sub>C</sub>, 15kA I<sub>1M</sub> (8/20μS)

### System and Performance
- **Topology**: Transformerless
- **Max. Efficiency**: 98.8%
- **CEC Efficiency**: 98.5%
- **Stand-by / Night Consumption**: <1W

### Environment
- **Enclosure Protection Degree**: NEMA Type 4X
- **Cooling Method**: Variable speed cooling fans
- **Operating Temperature Range**:
  - CPS SCA50KTL-DO/US-480: -22°F to +140°F / -30°C to +60°C
- **Non-Operating Temperature Range**: No low temp minimum to +158°F / +70°C maximum
- **Operating Humidity**: 0 to 100%
- **Operating Altitude**: 13,123.4ft / 4000m (derating from 9842.5ft / 3000m)
- **Audible Noise**: <60dBa @ 1m and 25°C

### Display and Communication
- **User Interface and Display**: LCD+LED
- **Inverter Monitoring**: SunSpec, Modbus RS485
- **Site Level Monitoring**: CPS Flex Gateway (1 per 70 inverters)
- **Modbus Data Mapping**: CPS
- **Remote Diagnostics / FW Upgrade Functions**: Standard / (with Flex Gateway)

### Mechanical
- **Dimensions (HxWxD)**: 39.4 x 23.6 x 10.24in. (1000 x 600 x 260mm)
- **Weight**: Inverter: 123.5lbs/56kg; Wire-box: 33lbs/15kg
- **Mounting / Installation Angle**: 0 to 90 degrees from horizontal (vertical, angled, or lay flat)
- **AC Termination**: M8 Stud Type Terminal Block (Wire range: #6 - 3/0AWG CU/AL, Lugs not supplied)
- **DC Termination**: Screw Clamp Fuse Holder (Wire range: #14 - #6AWG CU), Optional H4 (Amphenol)
- **Fused String Inputs (5 per MPPT)**: 15A fuses provided (Fuse values up to 30A acceptable)

### Safety
- **Certifications and Standards**: UL1741SA-2016, UL1699B, CSA-C22.2 NO.107.1-01, IEEE1547a-2014; FCC PART15
- **Selectable Grid Standard and SRD**: IEEE1547a-2014, CA Rule 21
- **Smart-Grid Features**: Voltage-RideThru, Frequency-RideThru, Soft-Start, Volt-Var, Frequency-Watt, Volt-Watt

### Warranty
- **Standard**: 10 years
- **Extended Terms**: 15 and 20 years

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1) See user manual for further information regarding MPPT Voltage Range when operating at non-unity PF.
2) Active Power Derating begins; at PF=0.9 to ±0.8 when Max AC Apparent Power is set to 55 or 66kVA.
3) See user manual for further requirements regarding non-operating conditions.
6) Shade Cover accessory required for installation angles of 75 degrees or less.
7) AL requires bi-metallic compression lug or bi-metallic adapter.
8) Fuses values above 20A have additional spacing requirements or require the use of the Y-comb adapter. See user manual for details.