

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 50/60KTL products ship with either the Standard wire-box or the Rapid Shutdown wire-box, each fully integrated and separable with touch safe fusing, monitoring, and AC and DC disconnect switches. The integrated PLC transmitter in the Rapid Shutdown wire-box enables PVRSS certified module-level rapid shutdown when used with the Tigo TS4-F/TS4-A-F/TS4-A-2F products, APS RSD-S-PLC/RSD-D products, and NEP PVG-2 products. The CPS FlexOM Gateway enables monitoring, controls and remote product upgrades.

Key Features

- NEC 2017/2020 PVRSS certified for rapid shutdown
- 55 & 66kVA rating allows max rated active power @±0.91PF
- Selectable max AC apparent power of 50/55kVA and 60/66kVA
- NEC-compliant & UL listed Arc-Fault circuit protection
- 15-90° Mounting orientation for low profile roof installs
- Optional FlexOM Gateway enables remote firmware upgrades
- Integrated AC & DC disconnect switches
- 3 MPPTs with 5 inputs each for maximum flexibility
- NEMA Type 4X outdoor rated enclosure
- UL 1741-SA certified to CA Rule 21, including SA8 - SA18
- UL 1741-SB and IEEE 1547-2018 certified
- Separable wire-box design for fast service
- Standard 10-year warranty with extensions up to 20 years



CPS SCA50KTL-DO/US-480
CPS SCA60KTL-DO/US-480



50/60KTL Standard Wire-box



50/60KTL Rapid Shutdown Wire-box



Model Name	CPS SCA50KTL-DO/US-480	CPS SCA60KTL-DO/US-480
DC Input		
Max. PV power	90kW (33kW per MPPT)	
Max. DC input voltage	1000Vdc	
Operating DC input voltage range	200-950Vdc	
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 _C , 20kA I _{TM} (8/20μS)	
AC Output		
Rated AC output power @ PF>0.99 to ±0.91 ¹	50kW	60kW
Max. AC apparent power (selectable)	50/55kVA	60/66kVA
Rated output voltage	480Vac	
Output voltage range ²	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 ²	57 - 63Hz	
Power factor	>0.99 (±0.8 adjustable)	
Current THD @ rated load	<3%	
Max. fault current contribution (1 cycle RMS)	64.1A (1.06/0.88 PU)	
Max. OCPD rating	110A	125A
AC disconnection type	Load-break rated AC switch	
AC surge protection	Type II MOV, 1240V _C , 15kA I _{TM} (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 ³	-22°F to +140°F / - 30°C to +60°C	
Non-operating temperature range ⁴	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 FlexOM Gateway (1 per 32 inverters)	
Modbus data mapping	CPS	
Remote diagnostics / firmware upgrade functions	Standard / (with FlexOM Gateway)	
Mechanical		
Dimensions (H x W x D)	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 ⁵	15 to 90 degrees from horizontal (vertical or angled)	
AC termination	M8 stud type terminal block (wire range: #6 - 3/0AWG CU/AL; lugs not supplied)	
DC termination ⁶	Screw clamp, neg. busbar (RSD version ⁶); wire range: #14 - #6AWG CU	
Fused string inputs (5 per MPPT) ⁷	RSD ⁶ and Standard Wire-box: 20A fuses provided (fuse values up to 30A acceptable)	
Safety		
Certifications and standards	UL1741-SA/SB Ed. 3, UL1699B, CSA-C22.2 NO.107.1-01, IEEE1547-2018; FCC PART15	
Selectable grid standard	IEEE 1547a-2014, IEEE 1547-2018 ⁸ , CA Rule 21, ISO-NE	
Smart-grid features	Volt-RideThru, Freq-RideThru, Ramp-Rate, Specified-PF, Volt-VAR, Freq-Watt, Volt-Watt	
Warranty		
Standard	10 years	
Extended terms	15 and 20 years	

1) Active power derating begins at PF=±0.91 to ±0.8 when max AC apparent power is set to 55 or 66kVA.

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

3) Active power derating begins at 40°C when PF=±0.9 and MPPT ≥V_{min}; at 45°C when PF=1 and MPPT ≥V_{min}; and at 50°C when PF=1 and MPPT V ≥ 700Vdc.

4) See user manual for further requirements regarding non-operating conditions.

5) Shade cover accessory required for installation angles of 75 degrees or less.

6) RSD wire-box only includes fuses/fuseholders on the positive polarity, compliant with NEC 2017/2020.

7) Fuse values above 20A have additional spacing requirements or require the use of the Y-Comb Terminal Block. See user manual for details.

8) Firmware version 17.0 or later required.