

IGBT Boost Rectifier

The world's most flexible utility scale power converter

Featuring a highly efficient three-level topology, the CPS series IGBT Boost Rectifier is purpose-built for hydrogen production applications, providing the perfect balance of efficiency, reliability, and cost-effectiveness.

Our newest models, the CPS-1250 and CPS-2500, are 1300kVA to 2668kVA bidirectional four-quadrant capable rectifiers, with a maximum DC current rating of 1720ADC. Available in outdoor-rated configurations, modular units can be paralleled to scale with project size and to meet electrolyzer requirements.

Capable of connecting to a range of VAC 3 phase grid connections, the CPS series offers industry-leading power density and efficiency. The series has all the pros of IGBT Choppers, including no power factor correction requirements, no need for additional harmonic filtering, low DC ripple, simple transformer requirements, easy operation and maintenance, excellent control of load current, and rapid software protections.

CPS rectifiers include all required protective features, including an AC output breaker and DC disconnect switch. A modular standardized product designed for utility interconnection, the CPS series is optimal for large-scale projects where DC and AC power quality are key. The CPS has consistently great performance across its output range and offers a solution for Higher DC voltage electrolyzer arrays.



Key Technologies

- VDC Mode
- Active Power Factor Correction
- Programmable Ramp Functions

System Advantages

- High efficiency and high power factor
- Low harmonics and low DC ripple
- Seamless transfer from grid-tied to stand-alone mode with patented Dynamic Transfer feature
- Scalable to any application with paralleled units
- Cost savings by eliminating additional purchase of protective features



CPS-2500 TECHNICAL SPECIFICATIONS

Electrical

DC Voltage Range:	511–1500V _{DC} (@350-800V _{AC})
Maximum DC Current:	2340V _{DC}
Power Factor:	Four quadrant capable
Current Harmonics:	IEEE 1547 Compliant, <5% TDD
AC Input Voltage:	800V _{AC} / 690V _{AC} / 660V _{AC} / 630V _{AC} / 600V _{AC} / 540V _{AC} / 480V _{AC} / 415V _{AC} / 350V _{AC}
Grid Frequency:	60Hz, 50Hz available in 2024
Maximum Apparent Power:	2672 kVA (@ 800V _{AC}) 2304 kVA (@ 690V _{AC}) 2204 kVA (@ 660V _{AC}) 2104 kVA (@ 630V _{AC}) 2004 kVA (@ 600V _{AC}) 1803 kVA (@ 540V _{AC}) 1603 kVA (@ 480V _{AC}) 1386 kVA (@ 415V _{AC}) 1169 kVA (@ 350V _{AC})
Maximum Real Power:	2672 KW (@ 800V _{AC}) 2304 KW (@ 690V _{AC}) 2204 KW (@ 660V _{AC}) 2104 KW (@ 630V _{AC}) 2004 KW (@ 600V _{AC}) 1803 KW (@ 540V _{AC}) 1603 KW (@ 480V _{AC}) 1386 KW (@ 415V _{AC}) 1169 KW (@ 350V _{AC})
Maximum AC Current:	1928A _{RMS}
Maximum Projected Efficiency:	98.58 @800V _{AC}

Environmental

Operating Temp:	-30 to +60°C, De-rated above +45°C
Max Elevation:	1000 Meters Full Power Up to 3000 Meters with De-rating
Cooling:	Forced Air Cooled
Enclosure:	NEMA 3R/IP 54
Dimensions (HxWxD):	80" x 85" x 49"
Weight:	3970 lbs

Certifications & Standards Compliance*

UL1741 Ed. 3
UL1012 and IEC 62477 for unidirectional operation
CE
IEEE 1547
CSA 22.2 #107.1
IEEE 519

Hardware Protections

AC Breaker with Shunt Trip
AC Surge Protection
DC Input Fuses
DC Pre-Charge

Software Protections

AC Current Limiting Pending
DC Over/Under Voltage, Over Current Faults
AC Over/Under Voltage, Over/Under Frequency, Over Current Faults
Anti-islanding Protection (Open Phase at Rectifier Terminals)
Temperature Monitoring and Protective Power Curtailment

*Pending



CPS-1 250 TECHNICAL SPECIFICATIONS

Electrical

DC Voltage Range:	511–1500V _{DC} (@350-800V _{AC})
Maximum DC Current:	1170A _{DC}
Power Factor:	Four quadrant capable
Current Harmonics:	IEEE 1547 Compliant, <5% TDD
AC Input Voltage:	800V _{AC} / 690V _{AC} / 660V _{AC} / 630V _{AC} / 600V _{AC} / 540V _{AC} / 480V _{AC} / 415V _{AC} / 350V _{AC}
Grid Frequency:	60Hz, 50Hz available in 2024
Maximum Apparent Power:	1336 kVA (@ 800V _{AC}) 1152 kVA (@ 690V _{AC}) 1102 kVA (@ 660V _{AC}) 1052 kVA (@ 630V _{AC}) 1002 kVA (@ 600V _{AC}) 902 kVA (@ 540V _{AC}) 802 kVA (@ 480V _{AC}) 693 kVA (@ 415V _{AC}) 585 kVA (@ 350V _{AC})
Maximum Real Power:	1336 KW (@ 800V _{AC}) 1152 KW (@ 690V _{AC}) 1102 KW (@ 660V _{AC}) 1052 KW (@ 630V _{AC}) 1002 KW (@ 600V _{AC}) 902 KW (@ 540V _{AC}) 802 KW (@ 480V _{AC}) 693 KW (@ 415V _{AC}) 585 KW (@ 350V _{AC})
Maximum AC Current:	964A _{RMS}
Maximum Projected Efficiency:	98.58 @800V _{AC}

Environmental

Operating Temp:	-30 to +60°C, De-rated above +45°C
Max Elevation:	1000 Meters Full Power Up to 3000 Meters with De-rating
Cooling:	Forced Air Cooled
Enclosure:	NEMA 3R/IP 54
Dimensions (HxWxD):	80" x 43" x 49"
Weight:	1980lbs

Certifications & Standards Compliance*

UL1741 Ed. 3
UL1012 and IEC 62477 for unidirectional operation
CE
IEEE 1547
CSA 22.2 #107.1
IEEE 519

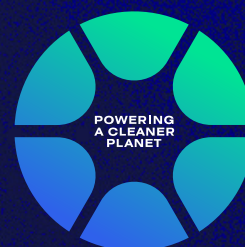
Hardware Protections

AC Breaker with Shunt Trip
AC Surge Protection
DC Input Fuses
DC Pre-Charge

Software Protections

AC Current Limiting Pending
DC Over/Under Voltage, Over Current Faults
AC Over/Under Voltage, Over/Under Frequency, Over Current Faults
Anti-Islanding Protection (Open Phase at Inverter Terminals)
Temperature Monitoring and Protective Power Curtailment

*Pending



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