

# 1500V Energy Storage PCS

TPCS-2500



## Product Overview

The 1500 V energy storage inverter is a bidirectional AC/DC inverter with a wide DC voltage range, featuring high power density and a compact footprint. It is suitable for both grid-connected and off-grid applications.

### High Efficiency

- ANPC three-level topology with peak efficiency up to 99%
- Wide DC voltage range enabling full-power operation at 1500 V
- Smart air cooling with no derating up to 50°C ambient temperature

### Safety & Reliability

- High protection rating (IP54, C3)
- DC fault waveform recording and analysis capability up to 250 kA
- Integrated with BMS and EMS for multi-level system protection

### Flexible Applications

- Four-quadrant operation with advanced charge/discharge management
- Supports multiple operating modes, including SVG, VF, and PQ
- Black start capability supported

### Grid Support

- Fast active/reactive power response for grid support
- Supports dynamic control of voltage, frequency, and power

Model	TPCS-2500
<b>DC Parameters</b>	
Maximum DC Voltage	1500V
DC Voltage Range	1000-1500V
Maximum DC Current	3000A
<b>AC Grid-connected Parameters</b>	
Rated Power	2500kW
Maximum Capacity	3000kVA
Maximum Current	2092A @ 45°C / 2510A @ 30°C
Grid Connection Method	Three-phase, three-wire
Isolation Method	Transformerless
Active Power Control	-100%-100%
Rated Voltage	690V
Voltage Range	607-759V
Rated Frequency	50Hz/60Hz
Frequency Range	±5Hz
Maximum Output Harmonic Distortion	≤3% (at rated power)
Power Factor	>0.99 (at rated power)
Charge/Discharge Response Time	<100ms
<b>AC Off-grid Parameters</b>	
Rated Voltage	690V
Voltage Deviation	<1%UN (linear balanced load)
Voltage Unbalance	<0.5%UN (linear balanced load)
THDU	<3% (linear load)
Rated Frequency	50Hz/60Hz
Unbalanced Load Capability	100%
<b>Protection &amp; Monitoring</b>	
DC Input Protection	Isolation switch + fuse
AC Output Protection	Circuit breaker
Surge Protection	DC Type II / AC Type II
Insulation Monitoring	Available
Overtemperature Protection	Available
<b>System</b>	
Cable Entry Method	Bottom cable entry
Maximum Efficiency	>99%
Overload Capacity	1.1x overload for continuous operation, 1.2x overload for 1 min
Allowable Ambient Temperature	-35°C to 60°C (<45°C derating, <-20°C heating start-up)
Allowable Relative Humidity	0-100% RH, non-condensing
Maximum Operating Altitude	5000 m (>2000 m derating)
Noise (dB)	<80
Dimensions (W x D x H)	1080x2380x2444mm
IP Rating	>Ip54
Cooling Method	Smart air cooling
Communication Interface	Rs485, Ethernet
Communication Protocol	MODBUS-RTU, MODBUS-TCP, IEC 61850 (GOOSE & MMS dual-network), IEC 104
<b>Certification</b>	
Standards	GB/T 34120, GB/T 34133

