



ENERGY STORAGE SOLUTION

Megawatt PCS / PCS1500

Features

- Power capacity 1000-1500 kVA
- High DC voltage up to 1500V
- 98.4% efficiency for bi-directional power conversion
- Advanced P/Q, Frequency/Voltage, VSG control increase power quality
- Modular design realizes scalability and easy maintenance
- Utility-grade protection designed for outdoor use in harsh environment
- DC and AC coupled storage application



Utility Grid



PV Plant

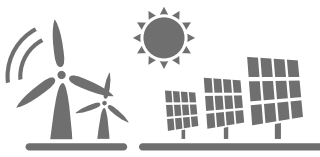


Optimizing the Value & Efficiency of Energy Storage System in Grid Applications

Delta Power Conditioning System (PCS) is a bi-directional energy storage inverter for grid applications including power backup, peak shaving, PV self-consumption, PV smoothing, etc. Delta Megawatt PCS1500 series provides power capacity from 1000 to 1500 kVA with maximum efficiency 98.4%. Featuring high availability and adaptability, it is battery technology independent and can control energy storage system exactly when it is required.

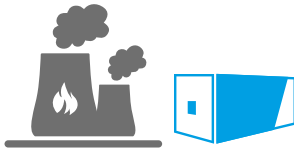


Applications



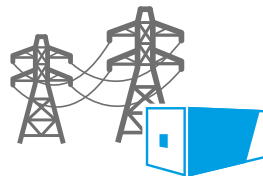
Renewable Power Plant Integration

- Ramp rate control
- Energy shifting
- Smoothing
- Capacity firming



Hybridized Thermal Power Plant

- Black start
- AGC improvement



Grid Ancillary Control

- Frequency regulation
- Peak shaving



Distributed Network and Microgrid

- Peak shaving
- Autonomous operation

Operating Modes

1. Power Dispatch Mode

Respond to External Power Demand

PCS can provide the optimal output to meet the system load at the short-term determination

3. Frequency-Watt / Voltage-Watt / Voltage-Var Mode

Dynamically Output Power Adjustment

PCS can monitor grid frequency or voltage continuously and adjust its output power based on the user-configured parameters dynamically

2. Peak Shaving Mode

Schedule for Demand Charge Reduction

PCS will dispatch battery power to shave the peak and avoid high demand charge once detected consumption overload

4. Standalone Mode

A Reliable Backup Power

PCS will disconnect itself from grid when grid blackouts. With an external UPS supplying emergency power, PCS can black start and continuously provide power from battery to critical loads

Advance Power Control for Improving Power Quality

- Automatic voltage and frequency regulation
- Active and reactive power compensation
- Anti-Islanding detection, islanding control operation
- VSG control

Specifications

Part Number	EPCS1000-IEC	EPCS1200-IEC	EPCS1500-IEC
DC Connection			
Full Power DC Voltage Range ⁽¹⁾	623 - 1500 V	762-1500 V	952 - 1500 V
Max DC Charge Continuous Current	1617A		
Max DC Discharge Continuous Current	1666A		
AC Connection			
AC Output Power (@50°C)	1042 kW / kVA	1250 kW / kVA	1563 kW / kVA
Max AC Output Continuous Current	1672A		
Normal Grid Voltage Vrms	400 V	480 V	600 V
Normal Grid Frequency	50 / 60 Hz		
Current Harmonic Distortion (THDi) ⁽²⁾	<3% IEEE519		
Power Factor	Four quadrants		
Efficiency			
Max. Efficiency	98.30%	98.35%	98.50%
CEC Efficiency	98.00%	98.14%	98.37%
Protection			
DC Side	DC Load breaker + DC Fuse		
AC Side	AC circuit breaker		
DC Overvoltage	Surge arrester, class II as standard		
AC Overvoltage	Surge arrester, class II as standard		
Ingress Protection	IP55/IP34/IP34 electronics/air duct /connection area		
General			
Dimensions (W x H x D)	2200 x 2280 x 1100 mm		
Weight Appr.	2600 kg		
Environment			
Operating Temperature ⁽³⁾	-20°C to +60°C		
Storage Temperature	-30°C to +70°C		
Relative Humidity	0% to 100% RH, non-condensing		
Altitude ⁽⁴⁾	< 4000 m		
Acoustic Noise (1m)	< 79 dB(A) @25°C, full power		
Cooling	Forced air cooling		
Compliance			
Safety / EMC	IEC 62477 / IEC 61000-6-2, IEC 61000-6-4		
Grid Interconnection	VDE AR-N 4110		

* Specifications are subject to change without prior notice

* Subject to change based on customer's requirements

(1) Minimum DC voltage for normal grid AC voltage and power factor=1, The minimum DC voltage depends on AC voltage and power factor

(2) THDi at nominal power

(3) Power de-rating above 50°C

(4) Power de-rating above 2000m



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