

Preliminary



ENERGY STORAGE SOLUTION

Megawatt PCS / PCS1500

Features

- Power capacity 1200-1500 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



Factory

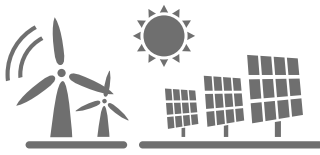


Optimizing the Value & Efficiency of Energy Storage System in Grid Applications

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 1200 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.

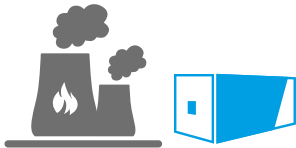


Applications



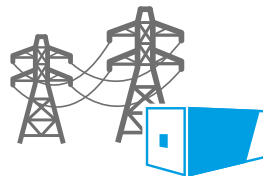
Renewable Power Plant Integration

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



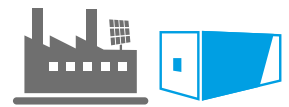
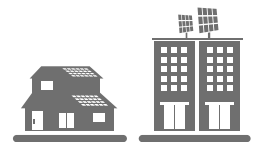
Hybridized Thermal Power Plant

- 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	EPCS1200-US	EPCS1500-US
DC Connection		
Full Power DC Voltage Range ⁽¹⁾	695-1400 V	865 - 1400 V
Max. DC Voltage	1500 V	
Max DC Continuous Current @50°C	1778 A	
Max DC Continuous Current @35°C	1866 A	
Max DC Continuous Current @25°C	1955 A	
AC Connection		
AC Output Power @50°C	1200 kW / kVA	1500 kW / kVA
AC Output Power @35°C	1260 kW / kVA	1575 kW / kVA
AC Output Power @25°C	1320 kW / kVA	1650 kW / kVA
Max Ac Output Continuous Current @50°C	1473 A	
Max Ac Output Continuous Current @35°C	1547 A	
Max Ac Output Continuous Current @25°C	1620 A	
Normal Grid Voltage Vrms	480 V	600 V
Normal Grid Frequency	50 / 60 Hz	
Current Harmonic Distortion (THDi) ⁽²⁾	<3% IEEE519	
Power Factor	Four quadrants	
Efficiency		
Max. Efficiency	98.35%	98.50%
CEC Efficiency	98.14%	98.37%
Standby Loss	< 300 W	< 300 W
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	Type 3R / IP55 / IP34 / IP34 electronics / air duct / connection area	
General		
Dimensions (W x H x D)	2200 x 2260 x 1100 mm	
Weight Appr.	2600 kg	
Environment		
Operating Temperature ⁽³⁾	-30°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	UL 1741, CSA-C22.2 No.107.1-16 /IEC 61000-6-2, IEC 61000-6-4	
Grid Interconnection	IEEE1547/UL1741SA	

* 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



Delta Electronics (Americas), Ltd.

46101 Fremont Blvd, Fremont, CA 94538, U.S.A.

Sales : (510) -668-5118

Support : (877) 442-4732

PCS@deltaww.com

www.delta-americas.com