Energy Storage Solution

Megawatt PCS / EPCS1500

- 1000-1725 kVA power capacity
- Scalable system configuration and battery technology independence
- Designed for utility-grade energy storage applications

Utility Grid

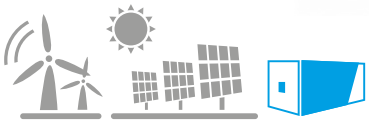
PV Plant

Optimizing the Value & Efficiency of Energy Storage System

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 PCS provides power capacity from 1000 to 1725 kVA with 98.4% efficiency.

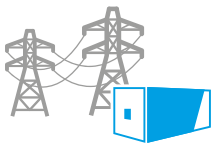
Featuring high availability and adaptability, the PCS is battery technology independent and can control energy storage system exactly when it is required.

Applications



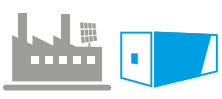
Renewable Power Plant Integration

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



Grid Ancillary Control

- Frequency regulation
- Peak shaving



Hybridized Thermal Power Plant

- Black start
- AGC improvement

Distributed Network and Microgrid

- Peak shaving
- Autonomous operation

Features

Efficient and Precise Power Control

- Power capacity: 1000-1725 kVA
- DC Voltage up to 1500V
- AC voltage: 400-690 Vac
- Peak efficiency: 98.4%

Flexible System Configuration

- Modular design realizes scalability and availability
- Battery independence provide high adaptability for energy storage

Designed for Energy Storage Applications

- Advanced P/Q, Frequency/Voltage, and VSG control
- Utility-grade protection designed for harsh environment
- DC and AC-coupled storage applications
- Automatic voltage and frequency regulation
- Active and reactive power compensation
- Anti-Islanding detection, islanding control operation

Operating Modes

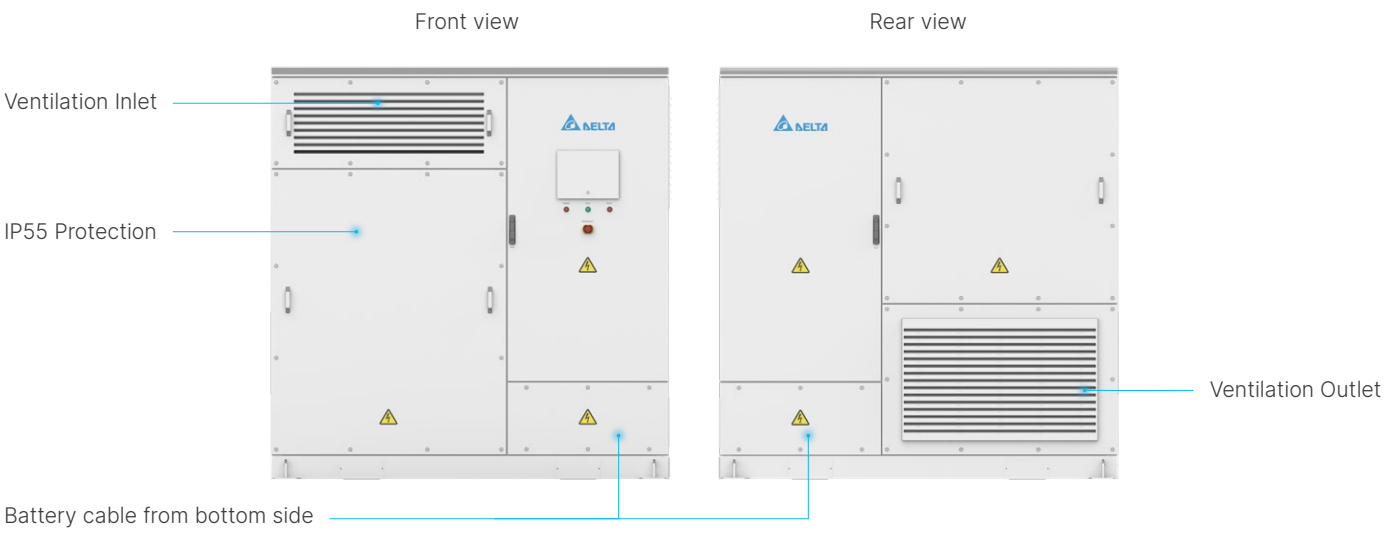
1. Power Dispatch
Respond to external power demand and meet the system load at the short-term determination.

2. Peak Shaving
Schedule for shaving the peak and avoiding high demand charge once detected consumption overload.

3. Frequency-Watt / Voltage-Watt / Voltage-Var
Monitor grid frequency or voltage continuously and adjust its output power based on the user-configured parameters dynamically.

4. Standalone
With an external UPS supplying emergency power, PCS can black start and continuously provide power from battery to critical loads.

Product at a Glance



Specifications

Part Number	EPCS1000-IEC	EPCS1200-IEC	EPCS1500-IEC	EPCS1725-IEC
DC Connection				
Full Power DC Voltage Range (1)	623 - 1500 V	762-1500 V	952 - 1500 V	1052 - 1500 V
Max DC Charge Continuous Current	1617 A			
Max DC Discharge Continuous Current	1666 A			
AC Connection				
AC Output Power	1000 kW / kVA	1200 kW / kVA	1500 kW / kVA	1725 kW / kVA
Max AC Output Continuous Current	1672 A			1448 A
Normal Grid Voltage Vrms (2)	400 V	480 V	600 V	690 V
Normal Grid Frequency	50 / 60 Hz			
Current Harmonic Distortion (THDi) (3)	<3% IEEE519			
Power Factor	Four quadrants			
Efficiency				
Max. Efficiency	98.30%	98.35%	98.50%	98.52%
CEC Efficiency	98.00%	98.14%	98.37%	98.38%
Protection				
DC Side	DC Load Switch + 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 × 2260 × 1100 mm			
Weight Appr.	2600 kg			
Environment				
Operating Temperature (4)	-30°C to +60°C			
Storage Temperature	-30°C to +70°C			
Relative Humidity	0% to 95% RH, non-condensing			
Altitude (5)	< 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 / G99			G99

* 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) The PCS only allows access to the distribution grid （e.g 400V,480V）through upstream isolated transformer
(3) THDi at nominal power
(4) Power de-rating above 50°C
(5) Power de-rating above 2000m

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