

Preliminary



Energy Storage Solution

Megawatt PCS / EPCS1500

- 1200-1725 kVA power capacity with 480-690 VAC
- 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 1200 kVA to 1725 kVA with 98.5% efficiency.

Featuring high availability and adaptability, the PCS is battery technology independent and can precisely connect AC and DC power of an energy storage system.



Applications



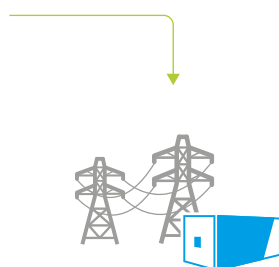
Renewable Power Plant Integration

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



Hybridized Thermal Power Plant

- Black start
- AGC improvement



Grid Ancillary Control

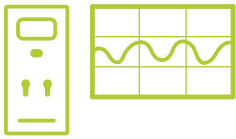
- Frequency regulation
- Peak shaving



Distributed Network and Microgrid

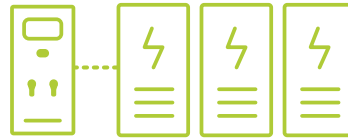
- Peak shaving
- Autonomous operation

Features



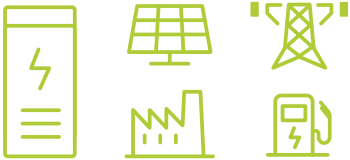
Efficient and Precise Power Control

- Power capacity: 1200-1725 kVA
- DC Voltage up to 1500V
- AC voltage: 480-690 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 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, off-grid operation

Supported Applications

1. Power Dispatch

Respond to external power commands and meet the system load with short reaction time.

2. Peak Shaving

Scheduled operation for shaving load peaks to avoid costly demand surcharges.

3. Hertz-Watt, Volt-Watt, Volt-VAr

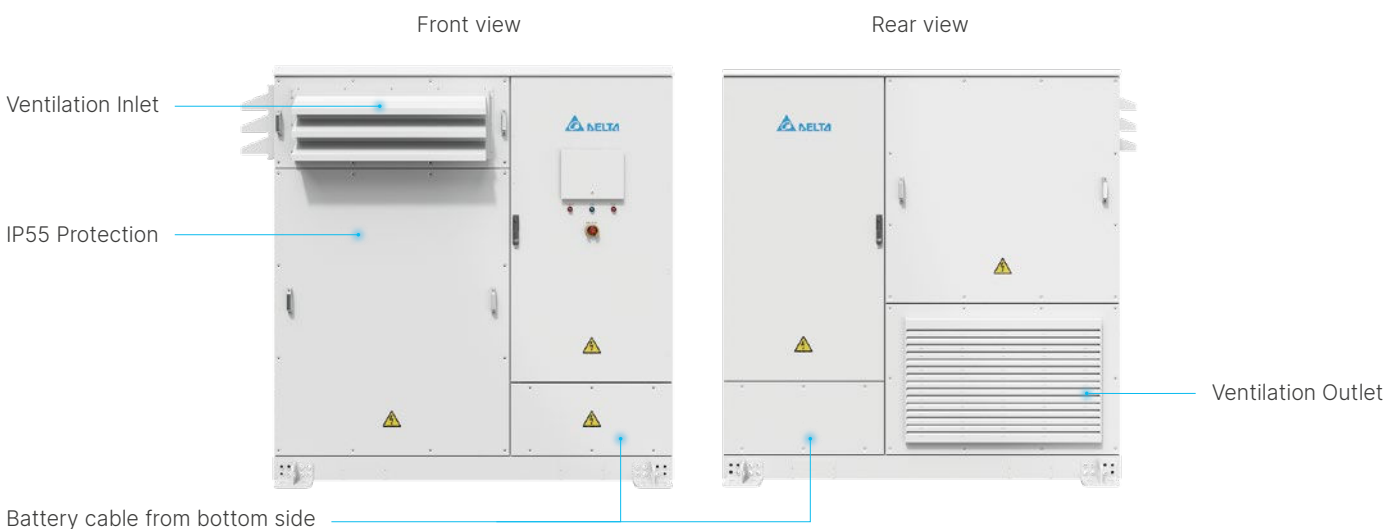
Monitor grid frequency or voltage continuously and adjust its output power based on the user-configured parameters dynamically.

4. Off-grid

By using an internal UPS supplying emergency power, PCS can black start and provide power from battery to local loads.

And more...

Product at a Glance



Specifications

Part Number	EPCS-1200US	EPCS-1500US	EPCS-1725US
DC Connection			
Full Power DC Voltage Range ⁽¹⁾	679 - 1500 V	849 - 1500 V	976 - 1500V
Max DC Charge Current @50°C		1741 A	1741 A / 870.5 A x 2
Max DC Discharge Current @50°C		1794 A	1794 A / 897.5 A x 2
AC Connection			
AC Output Power @50°C	1200 kW / kVA	1500 kW / kVA	1725 kW / kVA
Max AC Output Continuous Current @50°C		1604 A	
Normal Grid Voltage Vrms ⁽²⁾	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	98.35%	98.50%	98.52%
CEC Efficiency	98.14%	98.37%	98.38%
Protection			
DC Side	DC load switch + DC fuse		
AC Side	AC circuit breaker		
DC Overvoltage	Surge arrester, Type 1 (as UL 1449)		
AC Overvoltage	Surge arrester, Type 1 (as UL 1449)		
Ingress Protection	Type 3R / IP55 / IP34 / IP34 electronics / air duct / connection area		
General			
Dimensions (W x H x D)	2200 × 2280 × 1100 mm (without protection shed) 2420 × 2280 × 1436 mm (with protection shed)		
Weight Appr.	2600 kg		
Environment			
Operating Temperature ⁽⁴⁾	-30°C to +55°C		
Storage Temperature	-30°C to +70°C		
Relative Humidity	0% to 100% RH, non-condensing		
Altitude ⁽⁵⁾	< 4000 m		
Acoustic Noise (1m)	< 79 dB(A) @25°C, full power		
Cooling	Forced air cooling		
Compliance			
Safety	UL 1741		
Grid Interconnection	IEEE1547 : 2018 / UL1741 SB		

* 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) An isolation transformer is required between the PCS and loads.

(3) THDi at nominal power

(4) Power de-rating above 50°C

(5) 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

More information

www.delta-americas.com



2024/01