



## Energy Storage Solution

# Power Conditioning System / PCS3000

- 3110-4150 kVA power capacity with 600 VAC
- Scalable system configuration and battery technology independence
- Designed for utility-grade energy storage applications



Utility Grid



Factory



Solar Power



# 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 PCS provides power capacity from 3110 to 4150 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



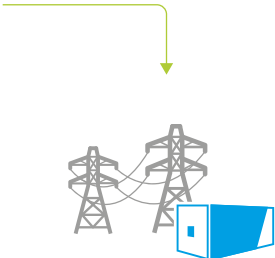
### Renewable Power Plant Integration

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



### Hybridized Thermal Power Plant

- Black start



### Grid Ancillary Control

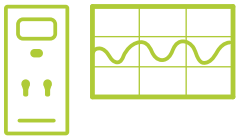
- Frequency regulation
- Peak shaving



### Distributed Network and Microgrid

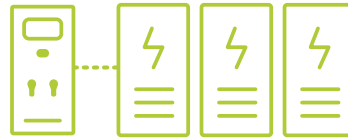
- Peak shaving

## Features



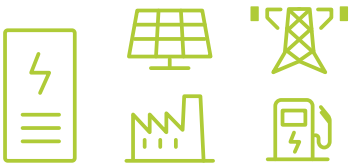
### Efficient and Precise Power Control

- Power Capacity: 3110-4150 kVA
- AC Voltage: 600 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 and Frequency/Voltage
- Utility-grade protection designed for harsh environment
- AC coupled storage application
- 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	DWE3110-EV-US	DWE4150-EV-US
<b>DC Connection</b>		
Input Voltage VDC Range <sup>(1)</sup>	875 - 1500 V	
Input Voltage VDC, max	1500 V	
Max. Input Current IDC, max (at 50°C)	3269 A	4359 A
Number of DC Inputs	1/2 (optional)	
<b>AC Connection</b>		
AC Power (25°C / 35°C / 50°C)@ PF=1, 600Vac	3117 kVA / 3117 kVA / 2805 kVA	4156 kVA / 4156 kVA / 3741 kVA
Max. AC Current IAC, max (25°C / 35°C / 50°C)	3000A / 3000A / 2700A	4000A / 4000A / 3600A
Max. Total Harmonic Distortion <sup>(2)</sup>	< 3% at full load	
Nominal AC Voltage	600 V	
AC Power Frequency	60 Hz	
Power Factor (depending on voltage)	0 to 1 leading or lagging	
<b>Performance</b>		
Max. Efficiency <sup>(3)</sup>	98.4%	
CEC Efficiency	98%	
Standby Loss <sup>(4)</sup>	< 350 W	
<b>Protection</b>		
Input-side DC	DC switch + fuses	
Output-side AC	AC circuit breaker	
DC Overvoltage	Surge arrester, class II	
AC Overvoltage	Surge arrester, class II	
Ingress Protection	Type 4X	
<b>General</b>		
Dimensions (W x H x D)	4450 × 2300 × 1650 mm / 175 × 90.5 × 65 inches	
Weight	5830 kg / 12853 lbs	6330 kg / 13955 lbs
Power Module	3	4
<b>Environment</b>		
Operating Temperature	-30°C to +60°C, de-rating > 50°C	
Storage Temperature	-40°C to +70°C	
Relative Humidity	5 to 100% RH	
Altitude	< 3000 m, de-rating > 2000 m	
Acoustic Noise <sup>(5)</sup>	< 79 dB(A)	
Cooling	Liquid cooling (integration)	
<b>Compliance</b>		
Safety	UL 1741	
EMC	FCC class A	
Grid Interconnection	IEEE 1547	

\* This is a draft version and subject to change based on customer's final specification.

\* Specifications are subject to change without prior notice.

(1) Consult Delta for derating curves

(2) I<sub>thd</sub> measured under grid short current ratio ≥ 5

(3) Efficiency measured without internal auxiliary power loss

(4) Standby loss measured under external power supply

(5) Readings taken 1 meter from the front of the unit



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