



ENERGY STORAGE SOLUTION

Megawatt PCS / PCS2000

Features

- Power capacity 1385-3500 kVA
- 98% efficiency for bi-directional power conversion
- Advanced P/Q, Frequency/Voltage, VSG control increase power quality
- Modular design realizes scalability and non-stop availability
- Battery independence provide high adaptability for energy storage
- Utility-grade protection designed for harsh environment



Utility Grid



PV Plant

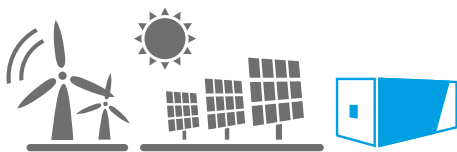


Optimizing the Value & Efficiency of Energy Storage System in Grid Applications

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 PCS provides power capacity from 1385 to 3500 kVA with 98% efficiency. Featuring high availability and adaptability, it is battery technology independent and can control energy storage system exactly when it is required.

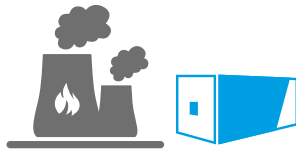


Applications



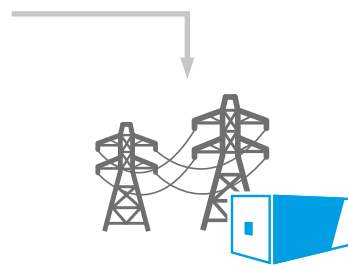
Renewable Power Plant Integration

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



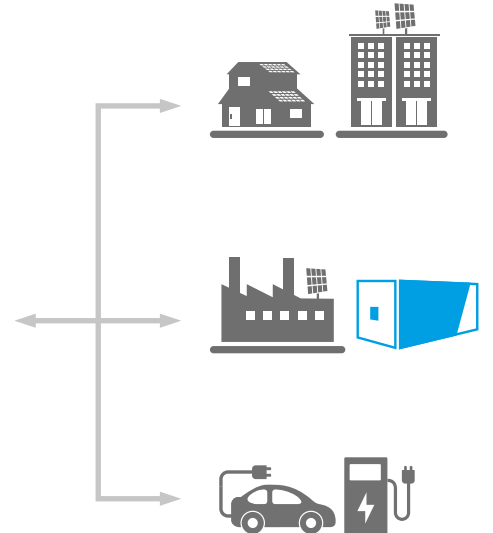
Hybridized Thermal Power Plant

- 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	DWE3500-CE	DWE3172-CE	DWE2917-CE	DWE2771-CE
DC Connection				
Input Voltage $V_{DC, min}$	760 V	695 V	640 V	611 V
Input Voltage $V_{DC, max}$	1200 V			
Nominal DC Voltage	900 V			
DC Voltage Ripple	< 1%			
Max. Input Current $I_{DC, max}$ (at 40°C)	4724 A			
AC Connection				
AC Power (at 40°C)	3500 kVA	3172 kVA	2917 kVA	2771 kVA
AC Power (at 50°C)	3150 kVA	2855 kVA	2625 kVA	2494 kVA
Max. AC Current $I_{AC, max}$ (at 40°C)	4200 A			
Max. AC Current $I_{AC, max}$ (at 50°C)	3789 A			
Max. Total Harmonic Distortion	< 3% at full load			
Nominal AC Voltage	480 V	435 V	400 V	380 V
AC Power Frequency	50 Hz / 60 Hz			
Power Factor	0 to 1 leading or lagging			
Performance				
Max. Efficiency	> 98%			
CEC Efficiency	> 97%			
Protection				
Input-side DC	DC load breaker switch + fuses			
Output-side AC	AC circuit breaker			
DC Overvoltage	Surge arrester, class II			
AC Overvoltage	Surge arrester, class II			
Ingress Protection	IP 65			
General				
Dimensions (W x H x D)	2830 x 2240 x 1650 mm			
Weight	5500 kg			
Number of Power Units	4			
Standby Power Loss	< 200 W			
Environment				
Operating Temperature	-30°C to +60°C, de-rating > 50°C			
Storage Temperature	-40°C to +70°C			
Relative Humidity	0% to 100%			
Altitude	< 3000 m, de-rating > 2000 m			
Acoustic Noise	< 79 dB(A)			
Cooling	Liquid cooling (integration)			
Compliance				
Safety	IEC 62477			
EMC	IEC 61000			
Grid Interconnection	VDE-AR-N 4110 / TS131 / G99(optional)			

* Specifications are subject to change without prior notice

Specifications

Part Number	DWE2625-CE	DWE2379-CE	DWE2188-CE	DWE2078-CE
DC Connection				
Input Voltage V _{DC, min}	760 V	695 V	640 V	611 V
Input Voltage V _{DC, max}	1200 V			
Nominal DC Voltage	900 V			
DC Voltage Ripple	< 1%			
Max. Input Current I _{DC, max} (at 40°C)	3543 A			
AC Connection				
AC Power (at 40°C)	2625 kVA	2379 kVA	2188 kVA	2078 kVA
AC Power (at 50°C)	2363 kVA	2141 kVA	1969 kVA	1870 kVA
Max. AC Current I _{AC, max} (at 40°C)	3150 A			
Max. AC Current I _{AC, max} (at 50°C)	2842 A			
Max. Total Harmonic Distortion	< 3% at full load			
Nominal AC Voltage	480 V	435 V	400 V	380 V
AC Power Frequency	50 Hz / 60 Hz			
Power Factor	0 to 1 leading or lagging			
Performance				
Max. Efficiency	> 98%			
CEC Efficiency	> 97%			
Protection				
Input-side DC	DC load breaker switch + fuses			
Output-side AC	AC circuit breaker			
DC Overvoltage	Surge arrester, class II			
AC Overvoltage	Surge arrester, class II			
Ingress Protection	IP 65			
General				
Dimensions (W x H x D)	2830 x 2240 x 1650 mm			
Weight	5000 kg			
Number of Power Units	3			
Standby Power Loss	< 200 W			
Environment				
Operating Temperature	-30°C to +60°C, de-rating > 50°C			
Storage Temperature	-40°C to +70°C			
Relative Humidity	0% to 100%			
Altitude	< 3000 m, de-rating > 2000 m			
Acoustic Noise	< 79 dB(A)			
Cooling	Liquid cooling (integration)			
Compliance				
Safety	IEC 62477			
EMC	IEC 61000			
Grid Interconnection	VDE-AR-N 4110 / TS131 / G99(optional)			

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Specifications

Part Number	DWE1750-CE	DWE1586-CE	DWE1458-CE	DWE1385-CE
DC Connection				
Input Voltage $V_{DC, min}$	760 V	695 V	640 V	611 V
Input Voltage $V_{DC, max}$	1200 V			
Nominal DC Voltage	900 V			
DC Voltage Ripple	< 1%			
Max. Input Current $I_{DC, max}$ (at 40°C)	2362 A			
AC Connection				
AC Power (at 40°C)	1750 kVA	1586 kVA	1458 kVA	1385 kVA
AC Power (at 50°C)	1575 kVA	1427 kVA	1313 kVA	1247 kVA
Max. AC Current $I_{AC, max}$ (at 40°C)	2100 A			
Max. AC Current $I_{AC, max}$ (at 50°C)	1894 A			
Max. Total Harmonic Distortion	< 3% at full load			
Nominal AC Voltage	480 V	435 V	400 V	380 V
AC Power Frequency	50 Hz / 60 Hz			
Power Factor	0 to 1 leading or lagging			
Performance				
Max. Efficiency	> 98%			
CEC Efficiency	> 97%			
Protection				
Input-side DC	DC load breaker switch + fuses			
Output-side AC	AC circuit breaker			
DC Overvoltage	Surge arrester, class II			
AC Overvoltage	Surge arrester, class II			
Ingress Protection	IP 65			
General				
Dimensions (W x H x D)	2830 x 2240 x 825 mm			
Weight	4500 kg			
Number of Power Units	2			
Standby Power Loss	< 200 W			
Environment				
Operating Temperature	-30°C to +60°C, de-rating > 50°C			
Storage Temperature	-40°C to +70°C			
Relative Humidity	0% to 100%			
Altitude	< 3000 m, de-rating > 2000 m			
Acoustic Noise	< 79 dB(A)			
Cooling	Liquid cooling (integration)			
Compliance				
Safety	IEC 62477			
EMC	IEC 61000			
Grid Interconnection	VDE-AR-N 4110 / TS131 / G99(optional)			

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