METROBIT
Since 2002

METROVA-1725-PCS

UTILITY SCALE

Product Description

The METROVA-1725-PCS Series Bidirectional Power Conversion System (PCS) is designed to facilitate energy exchange between the power grid and battery energy storage systems. It enables both battery charging and discharging by converting DC power from the battery into grid-compatible AC power and rectifying AC power from the grid into DC power for battery charging.

The METROVA-1725-PCS Series can operate in both grid-connected (on-grid) and off-grid modes, providing flexible energy management for various applications.
The PCS features a modular bidirectional design and consists of multiple AC power modules. It is equipped with surge protection devices (SPDs), AC and DC disconnect switches, and an auxiliary power distribution unit.

Utilizing a three-phase, three-level topology, the system supports both rectification and inversion functions. The battery interface can be directly connected to the battery system, while the AC interface can be connected to the utility grid or AC loads through an isolation transformer or step-up transformer, depending on system requirements.

Operating Modes

- Local manual
- Local automatic
- Remote control
- On/off-grid control
- Charge and Discharge Control
- Reactive power control
- Output voltage & frequency stabilization

Key Features

Flexible Configuration:

- Modular design with up to 8 modules
- Direct interconnection with 690Vac
- Power range: 215kW-1.72MW

High Efficiency & Stability:

- Maximum efficiency can reach 98.5%, @ DC 1070V
- Multi-string technology for better battery safety and performance
- Extensive Use: Automatic operation strategy of peak shaving and load shifting

Safety & Compatibility:

- Fast response time less than 20ms
- Grid-support function built-in
- Global grid certified & listed

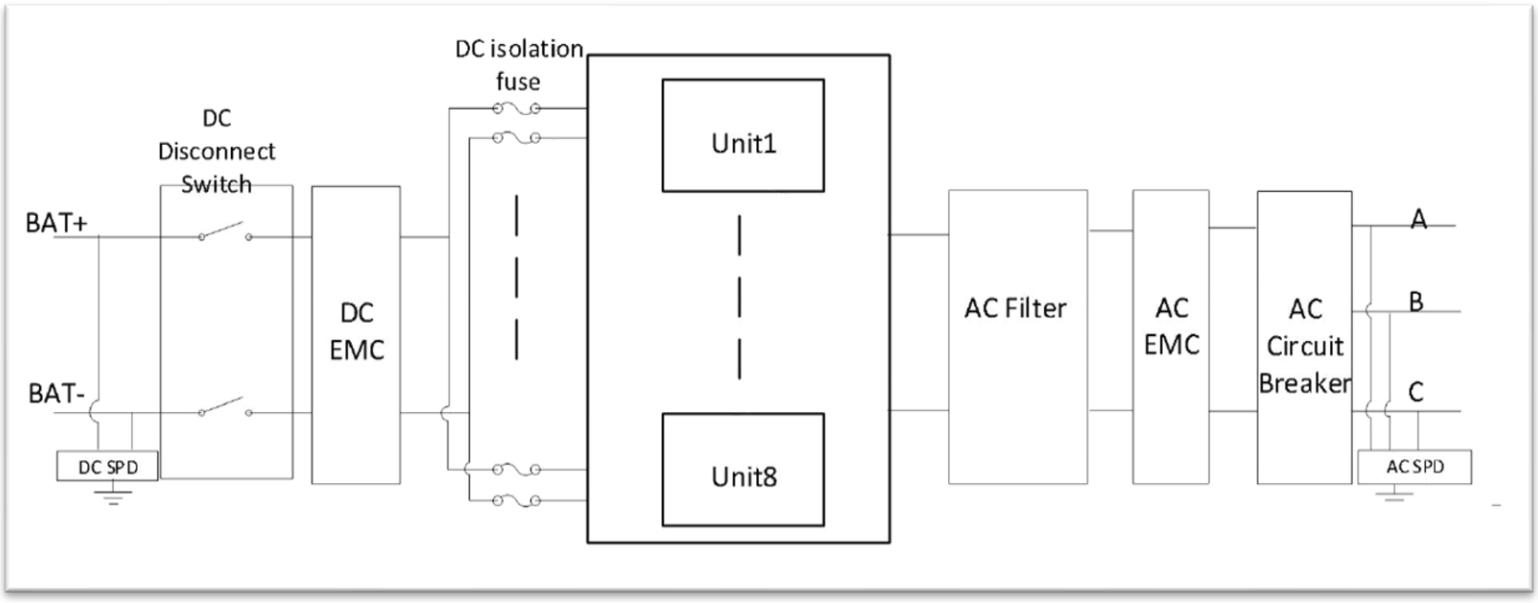
Certifications

IEEE1547

UL1741

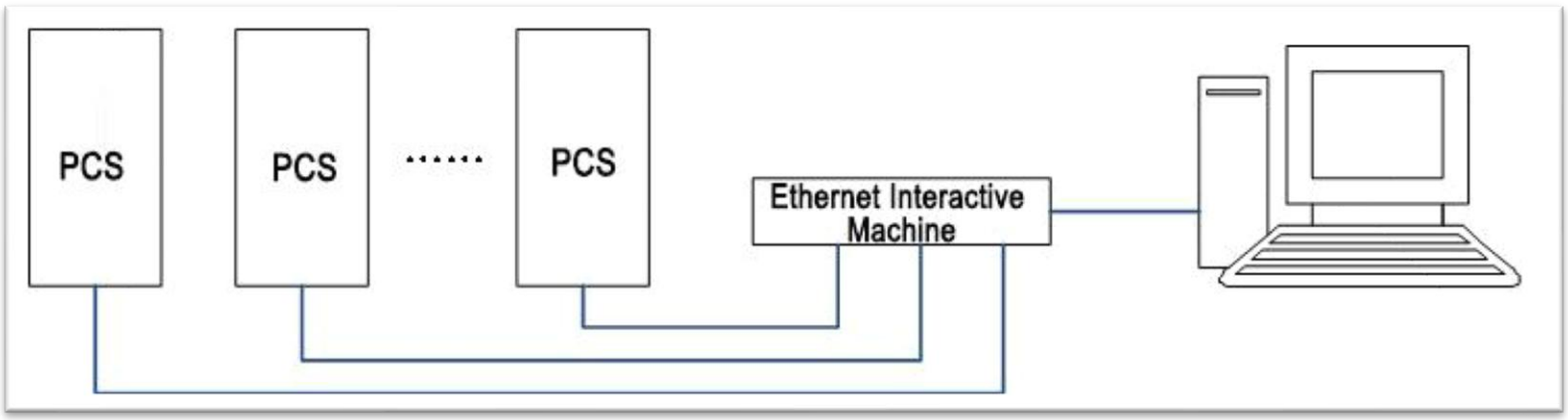
CSA22.2

System Block Diagram



MULTI MW PCS

When multiple PCS solution is selected to make multiples of MW PCS, the communication connection of multiple PCS needs to be configured with an Ethernet switch, and the communication network cables of multiple machines are connected to the same switch and then unified to the EMS system.



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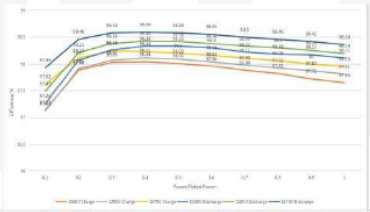
Technical Specifications

AC parameters								
Nominal AC power	215kVA	430kVA	645kVA	860kVA	1075kVA	1290kVA	1505kVA	1725kVA
AC connection	Three-phase three-wire (3P3W)							
Overload Capability	237kVA	473kVA	710kVA	946kVA	1183kVA	1419kVA	1656kVA	1898kVA
AC voltage	690(-15%~10%)V							
AC frequency	50/60（-5~5）Hz							
THDi	≤3%							
AC PF	0.9 leading to 0.9 lagging							
DC parameters								
Max DC power	237kW	473kW	710kW	946kW	1183kW	1419kW	1656kW	1898kW
DC voltage range	1000~1500V (full power charging)							
Full load voltage range	1070~1500V (full power discharging)							
Number of DC branch	1							
Number of modules	1	2	3	4	5	6	7	8
Maximum DC current every branch	208A	416A	624A	832A	1040A	1248A	1456A	1664A
Voltage regulation accuracy	≤±1%							
System parameters								
Efficiency curve								
Peak efficiency (with auxiliary source)	98.5%							
Size (W*H*D)	2200*2160*1300 mm							
Weight	1549kg	1642kg	1735kg	1828kg	1921kg	2014kg	2107kg	2200kg
Protection	IP54/NEMA3R							
Operating temp.	-20°C to 60°C (De-rating over 45°C)							
Cooling	Air cooling							
Humidity (storage)	0~95%（No condensing)							
Max altitude	3000m (De-rating over 3000 m)							
Connection parameters								
Communication	RS 485, Ethernet, CAN							
Protocol	Modbus TCP/RTU,IEC104,IEC61850							
Certification	UL1741,IEEE1547,CSA C22.2							

All specifications subject to change without prior notice