

15MW (4*3.75MW)

Matrix Energy Storage Back-to-Back Power Routing Test System

Product Introduction

The MatrixLink-PST Series is a high-efficiency, high-precision energy management solution for energy storage R&D and validation. Its core integrates multiple high-precision DC/DC converters, AC/DC bidirectional converters for energy regeneration and back-to-back loss compensation, and a high-voltage DC bus, enabling complex power flow simulation and efficient equipment testing.



Functional Features



Capacity Test



Charge/Discharge
Characteristics Test



Charge/Discharge
Efficiency Test



Cycle Life Test



Temperature
Characteristics Test



Operating Condition Simulation
& Reliability Test

Product Advantages



High-Precision Control

Voltage/current accuracy: $\pm 0.05\%$ FS; enables precise energy flow regulation, meeting high-end precision testing needs.



Bidirectional Energy Transfer

Grid-side converter supports AC/DC bidirectional flow, adaptable to all charge/discharge test modes.



Efficient Energy Management

Common DC bus design minimizes transmission losses, enhances overall efficiency, and maximizes testing energy utilization.



Flexible Customization

Modular architecture allows on-demand configuration with flexible power/function expansion for diverse battery testing requirements.



High-Integration Design

Integrated control + modular architecture ensures stable operation; compact layout simplifies long-term maintenance.



Intelligent Full-Process Testing

Dedicated software enables automatic data recording and full-process traceability, supporting efficient and reproducible testing.



Typical Product Specifications	
Model	PST15000-4CH
Total Test Power	15MW (4×3.75MW)
Number of DC Channels	4 channels / cabinet (customizable)
Output Voltage Range	0~1520V
Output Current Range	±2500A / channel
Voltage/Current Efficiency	±(0.05%FS+0.05%RD)
Overall System Efficiency	≥98% (cycle efficiency)
Grid Connection Power	3.75MW
Current Harmonics(THD)	≤5% (full load)
Power Factor	99% (full load)
Continuous Sampling Interval	≤10ms
Energy Feedback Mode	AC/DC hierarchical energy cycling
BMS Communication Interface	2 CAN per channel (including 24V power supply)
Design Life of the Equipment	25 years
Protection Level	IP21
Cooling Method	Forced air cooling
Equipment Noise	≤75dB (1 meter away)
Compatible Grid	AC380V±15% three-phase five-wire

Energy Storage Testing System Topology Diagram

