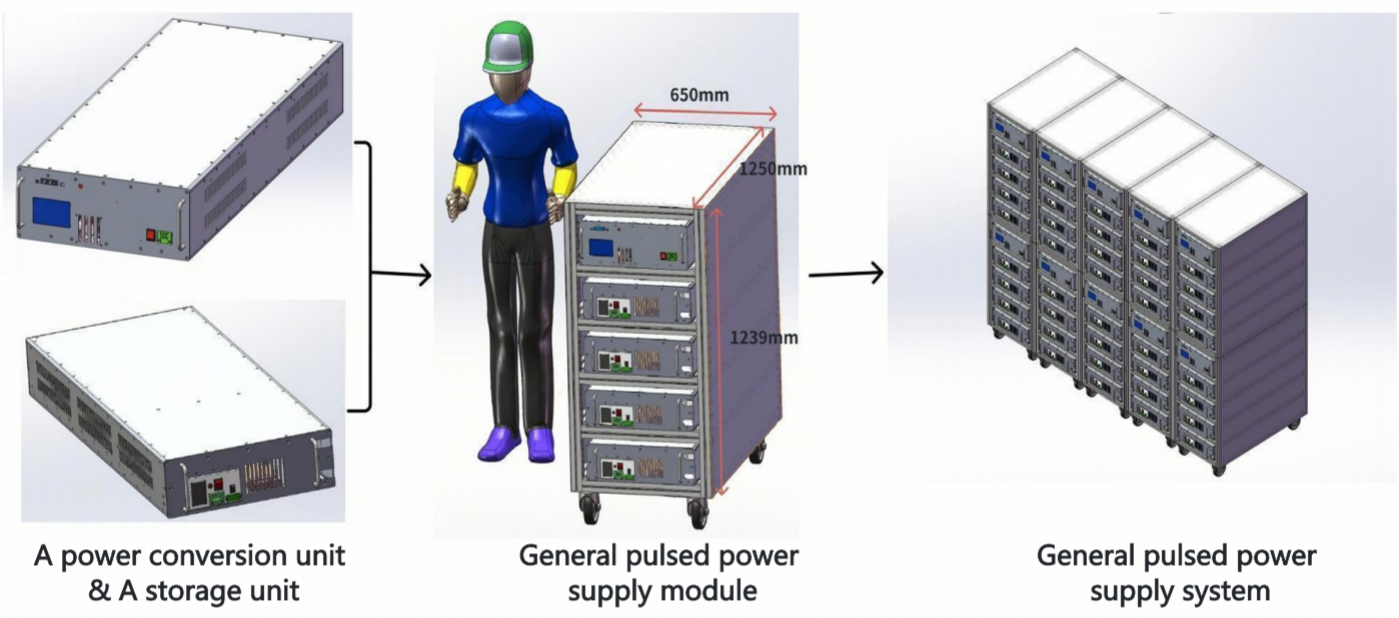
IV Cube

Introduction



A power conversion unit & A storage unit

General pulsed power supply module

General pulsed power supply system

This product utilizes a supercapacitor module for energy storage, integrating a power conversion unit, a storage unit, and a controller. It boasts significant advantages such as compact size and high power density. The product supports both offline LCD screen control and online remote control modes. Online communication is compatible with multiple industrial communication protocols, including RS485, Ethernet, and EtherCAT. Additionally, the product can serve as a basic unit for flexible series and parallel expansion. The output voltage can reach up to ±3kV, with no restrictions on the output current. With its modular architecture, the system can be easily expanded based on actual application requirements, ensuring efficient operation and maintenance.

Parameters

General Pulsed Power Supply Module Technical Specifications:

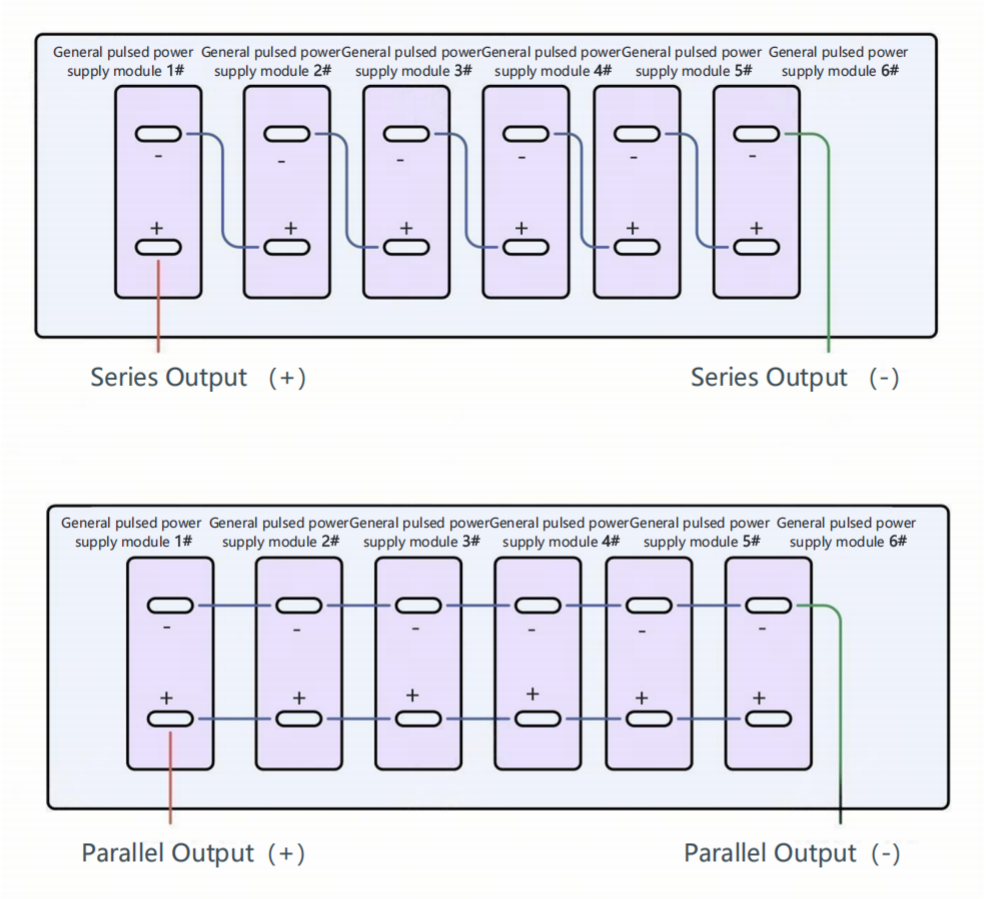
Project		Specification description
Input	Input voltage	220VAC± 15%
	Power	5kW max
	PF	0.98
	Energy storage	900Wh（about 3.24MJ）
Output	Output voltage	-500V~500V
	Voltage accuracy	5%FS
	Output current	-2000A~2000A
	Current accuracy	1%FS
	Output combination mode	Capable of independent output and arbitrary series-parallel combination
	Output pulse duration	1s
Control	Adjust the control cycle	200us
	Communication interface	RS485、EtherCAT、Ethernet
	Working mode	Voltage control/current control is optional , and it supports four-quadrant operation
Safety regulations	Insulation withstand voltage	⩾3000VDC
Structure	Size	1240mm× 650mm× 1250mm
Environmental conditions	Working temperature	0~35℃
	Humidity	≤ 95%，No condensation
	Altitude	0~2000m
	Cooling method	Air cooling + water cooling

Parameters

Storage Unit Technical Specifications:

Project		Specification description
Energy storage module	Form	Supercapacitor module
	Function	Voltage monitoring
		Temperature monitoring
		Voltage equalization
		RS485 communication
	Insulation withstand voltage	3000VDC
Charging	Current	6A max
	Power	1.2kW max
Discharge	Discharge method	Water-cooled resistor
Structure	Size	1180mm×500mm×157mm

Schematic diagram



Application

This power supply product is primarily targeted at cutting-edge fields such as controlled nuclear fusion energy, high-end electrical testing, industrial pulse power, and large scientific facilities. With its modular design, high power density , high voltage output (±3kV), and capability to interface with multiple industrial communication protocols, it provides efficient, flexible, and reliable power solutions for applications including magnet (PF/TF/CS) drives in fusion devices, electrical equipment characteristic testing, and pulse power applications