

Plasma Gun Breakdown Power Supply

Introduction

This product employs a hybrid energy storage system combining aluminum electrolytic capacitor modules with film capacitors. It integrates power conversion units, energy storage units, and control units into a compact, highly reliable system with superior integration density. The device consolidates energy storage, charging, controlled discharge (bleeding), and output capabilities into a single platform, supporting online remote monitoring and control. Communication interfaces are compatible with both RS485 and Ethernet protocols, offering flexible deployment, user-friendly operation, and simplified maintenance. Featuring a modular architecture, the system can be paralleled to scale discharge current capacity, thereby accommodating diverse power requirements.



Parameters

ITEM		Specification
Input	Input Voltage	220VAC±15%
	Power	1500 W max
	Energy Storage	7.88 Wh
Output	Output Voltage	0~1400 V
	Output Current	0~2000 A
	Output Pulse Duration	0~20 ms
Control	Data Commuciation Interface	Etherent
	Power Control Interface	Optical Trigger Input
	Operating Mode	Open-loop control

Safety	Isolation Voltage Withstand	$\geq 3000\text{VDC}$
Mechanical	Dimensions(LWH)	970 mm*725 mm*910 mm
Environmental	Operating Temperature	0~45 °C
	Humidity	$\leq 95\%$, No condensation
	Altitude	0~2000 m
Discharge Current Waveform Example		

Applications

Specifically engineered for efficient and reliable plasma ignition, this product delivers nanosecond-rise-time high-voltage pulses to ensure rapid and dependable dielectric breakdown in gaseous media. Following breakdown, the system autonomously transitions to constant-current or constant-power operational modes, supplying continuous, stable energy to sustain the plasma arc. It features exceptional load disturbance immunity and incorporates comprehensive protection mechanisms, making it the optimal power component for material processing, plasma spraying, and scientific research applications.