Estrada do Paço do Lumiar
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ENERGY PULSE SYSTEMS DESIGNING ENERGY FOR LIFE

Fast SiC Marx Generator

EPULSUS-FPM1-15

The EPULSUS®-FPM1-15 is a high performance pulse generator, being a registered trademark, from EnergyPulse Systems, Lda. It incorporates a positive Marx Generator, based on SiC MOSFET technology designed especially for pulsed power applications into capacitive type loads, being controlled from a microcontroller, which guarantees a high level of performance and safety, such that any failure will not cause an unsafe condition.

Specifications

Input	
Voltage & current	230 Vac / 1A (fuse), single phase with ground
Output	
Maximum voltage	15000 V (pulsed)
Pulse polarity	Positive
Maximum current	100 A (pulsed)
Maximum power	≈200 W
Maximum frequency	1kHz, limited by power
Pulse rise time	Below 50ns for 150pF (depending on load capacitance)
Maximum Stored energy	2.5J
Pulse width	200ns to 100µs (limited by load capacitance)
Pulse duty cycle	Limited by maximum power
Protections	Fast output short-circuit protection above 100 A
	Short-circuit operation
	Series distributes 44Ω - 88Ω during pulse
	Series distributed 22Ω - 66Ω during load discharge
Cooling	Internal forcer air (no external fan needed),
Environment	
Operation temperature	-20 to +45 °C
Storage temperature	-40 to +85 °C
Humidity	90 %, non-condensing
Ingress Protection	IP20
Size (LxWxH)	19 inch rack, 4U, 425x425x172mm^3
Weight	<7 kg
Installation/orientation	Horizontal with sufficient spacing for ventilation
Accessories	
Operation manual	English

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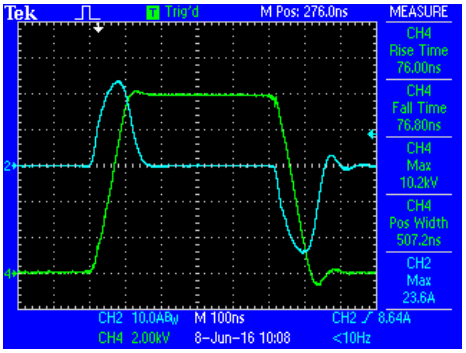
Front Panel

- Mains ON/OFF switch
- RUN LED;
- Short-Circuit LED;
- Short-Circuit mode LED
- Over temperature LED
- STOP LED
- HV output connector
- SYNCRO, output pulse BNC
- TRIG, input pulse BNC
- Current sensor output BNC
- Short-circuit indicator BNC

Rear Panel

- RS-232 Connector
- SPARE BNC
- STOP, input BNC
- IDC, interlock for safety
- Mains, input power connector with 1A fuse

Output voltage vs current



Typical voltage and current waveforms on a 150pF load: green line voltage 2kV/div; blue line current 10 A/div; time-scale 100ns/div.

Outline drawing