10KW HiPIMS-Power Supply hiP-V Opt A

Technical Data

Output Data

Output-Power: 10KW
Output Voltage: 0V to -1000V, optional 1200V
(Voltage for nominal pulse and DC-mode)
Output Current: 1000A (pulse peak)
(max. 25A DC, for <400V in DC-mode)
Pulse frequency: 1kHz at 1000/1200V, 1000A,
with lower energy pulses the frequency can be increased
Regulation: Voltage / Current / Power
Pulse width: 5µs to 300 µs; 1000µs (optional) or DC
Duty cycle: <50% or DC 100%
Arc detection / handling: < 3µs
Arc level current / voltage: Adjustable 50A ÷ 1500A, Voltage delta in %
(absolute/delta)
Voltage stability: ±2.5%
Voltage ripple: <5% rms

Projected Applications

- HiPIMS, Uni-Polar / Bi-Polar (optional) / with Superimposed HiPIMS capability
- DC magnetron sputtering
- DC-pulse magnetron sputtering
- DC Bias
- DC-pulse Bias
- HiPIMS Bias- DC
- HiPIMS Bias DC-pulse Uni-Polar / Bi-Polar (optional)
- hiPlus (Positive Voltage Reversal, optional)
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Input Line

Nominal voltage: 400Vac 3phase + neutral +/- 15%
Input nominal current: <21 Amps
Dielectric strength: 2500V – 50Hz – 1min.

Environmental Conditions

Ambient temperature: 0ºC to 40ºC
Temperature inside the box: 0ºC to 70ºC
Humidity: up to 90% (the equipment is designed with creepage distances as per EN-61010-1)
Maximum Height: 1200m

Acoustic noise

The equipment will produce an acoustic noise lower than 60dBA measured at a distance of 1 m.

Case

The unit is contained in a 19” rack module, 635mm deep and 9U high (405mm approx.)
The weight is 75kg.
The protection is IP20. It is not protected for water ingress; it is protected against ingress of parts bigger than 12mm. It is intended for indoor use in a laboratory.
The case is water-cooled and forced air ventilated; the air ingress is done by the front side and the exhaust by the rear side.
Reference Standards

The 10kW pulsed power supply described in this document is fully compliant, but not only, with the following railway standards:

EN 61000-3-12-2006 Electromagnetic compatibility (EMC) part 3-12: limits for harmonic currents produced by equipment connected to public low-voltage systems with input current greater than 16 a and equal to or less than 75 a per phase

EN 61010-1:2002 Safety requirements for electrical equipment for measurement, control, and laboratory use -- Part 1: General requirements

MIL STD 217 Reliability Prediction of Electronic Equipment

EN 61204-3-2002 Low voltage power supplies, d.c. output -- Part 3: Electromagnetic compatibility (EMC).

EN 61000-6-3-2006 Electromagnetic compatibility (EMC). Generic standards. Emission standard for residential, commercial and light-industrial environments

EN 61000-6-2-2006 Electromagnetic compatibility (EMC) -- Part 6-2: Generic standards - Immunity for industrial environments