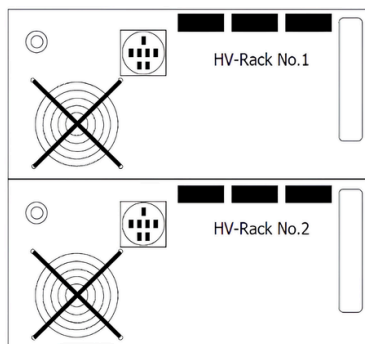
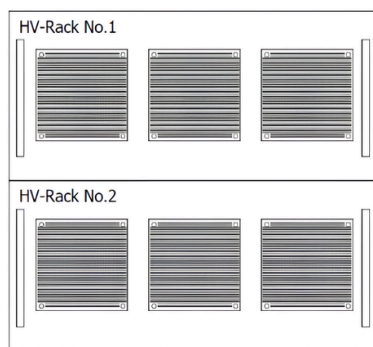




GENERAL INFORMATION OF POWER SUPPLY

The BPAPFC15kW microwave generator is an air-cooled modular Switched Mode Power Supply (SMPS) with integrated power factor correction (PFC), for having 15 kW power at 915 MHz frequency. This power supply is designed based on modular interleaving technology to reduce input and output ripple as well as having the ability to protect the magnetron from over voltage and over current.

The BPAPFC15kW autonomously manages the operating status of the magnetron and adjusts the filament voltage according to the input power of the magnetron and switches off the output when alarm events such as overcurrent or overvoltage of the magnetron occur. continue to emit microwaves. This SMPS includes 2 identical, self-ventilated 19" aluminum enclosures with 7-U height units.

FEATURES

- Power Factor Correction up to 0.97 at full load, reduced harmonic distortion, IEEE 519-2014 compliant
- Compliant to EMI standards of: Conducted and Radiated: BS EN/EN55032 (CISPR32) and EN55011 (CISPR11) Class A, Harmonic currents: BS EN/EN61000-3-2, Voltage flicker: BS EN/EN61000-3-3
- Compliant to EMC standards: Voltage Dips: BS EN/EN61000-4-11, Surge EMC immunity: BS EN/EN61000-4-5 level 4, ESD: BS EN/EN61000-4-2 level 3, EFT / Burst: BS EN/EN61000-4-4 level 3
- Low noise, air-cooling high efficiency system up to 97 %, no external water circuit required for the SMPS
- Accurate anodic voltage and anodic current measurement, and closed loop control using DSP microprocessor
- Cutting-edge resonant switching topology with low output ripple, less than 1 % voltage, less than 2 % current
- Comprehensive protection suite: over/under temperature, over/under voltage, overcurrent, overload, and short-circuit
- High reliability (designed based on MIL-HDBK-338B and MIL-HDBK-217 standards)
- Fault-tolerant modular design ¹
- Defined derated operation instead of shutdown ²
- Fast maintenance with module replacement
- Very high efficiency (up to 97 %) with low ripple, improving magnetron lifetime
- Flexible operation: compatible with different general magnetron brands and adjustable from 3 kW to 15 kW
- Advanced control & integration: options for selecting the industrial communication protocols for control and monitoring the magnetron using PROFINET, and Modbus TCP

[1] Power stage built from parallel-connected power modules with redundancy; no single point of failure within the power conversion path. Module faults are detected, isolated and annunciated by the system controller without shutdown of the system.

[2] Upon a single-module fault, the remaining modules automatically redistribute the load. Output capability is maintained at $\leq 75\%$ of rated power for up to 30 min and $\leq 65\%$ of rated power continuously, so that the production process continues at reduced throughput until the affected module is replaced in a scheduled service window.

SPECIFICATION ELECTRICAL AND TECHNICAL DATA

Input voltage	380 V _{AC} to 520 V _{AC}
Efficiency	up to 93 %
Input frequency	47 Hz to 63 Hz
Power Factor Correction	≥ 0.97 at full load
Output voltage adaptivity	11 kV to 13 kV
Anode current variation range (nominal)	300 mA to 1500 mA
Absolute maximum output power of SMPS	22 kW
Active operating temperature	-20 °C to 50 °C
Working humidity	20 % to 90 % RH, non- condensing
Storage temperature, humidity	-30 °C to +70 °C, 10 % to 95 % RH, non- condensing
Withstand voltage	20 kV
Dimension	744 mm × 622 mm × 483 mm

