# MAGNETRON SWITCHED-MODE POWER SUPPLY

## BPA Series, 6 kW 2450 MHz

## GENERAL INFORMATION

The BPA6kW microwave generator is an air-cooled Switched Mode Power Supply (SMPS) for running a 6 kW/ 2450 MHz magnetron. 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 BPA6kW 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 is a self-ventilated 19" aluminum enclosures with 5 height units.

## FEATURES

- 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 design compliant with MIL-HDBK-338B and MIL-HDBK-217 standards
- Low noise SMPS
- Fault-tolerant modular design [1]
- Defined derated operation instead of shutdown [2]
- Very high efficiency (up to 97 %) with low ripple, improving magnetron lifetime
- Flexible operation: compatible with different magnetron brands and adjustable from 1 kW to 6 kW
- Advanced control & integration: options for selecting the industrial communication protocols for control and monitoring the magnetron using PROFINET, EtherCAT, and Modbus TCP
- All high-quality power electronics and mechanical components sourced from Germany

## SPECIFICATION ELECTRICAL AND TECHNICAL DATA

| | BPA6kW400 | BPA6kW480 | BPA6kW600 | BPA6kW690 |
|---|---|---|---|---|
| Input voltage | 400 $V_{AC}$ ± 10 % | 480 $V_{AC}$ ± 10 % | 600 $V_{AC}$ ± 10 % | 690 $V_{AC}$ ± 10 % |
| Efficiency | up to 96 % | up to 96 % | up to 97 % | up to 97 % |
| Input frequency | 47 Hz to 63 Hz | | | |
| Output voltage adaptivity | 7.5 kV to 7.8 kV | | | |
| Anode current variation range | 120 mA to 1200 mA | | | |
| Absolute maximum output power of SMPS | 8 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 × 220 mm × 483 mm | | | |

[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 ≤ 75 % of rated power for up to 30 min and ≤ 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.



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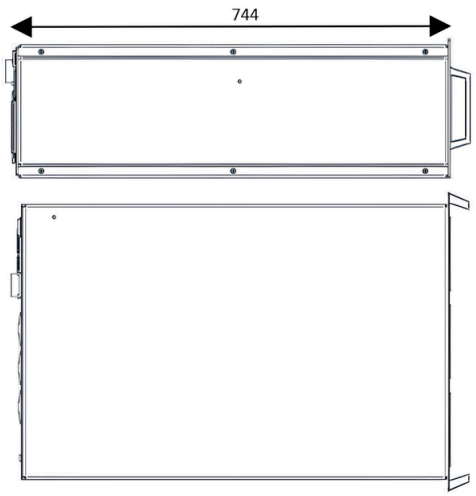
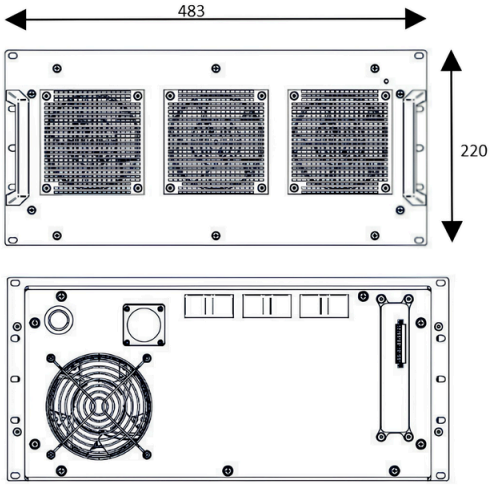
## DIMENSIONS OF SMPS



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