

BPA-Series Microwave Generators for 100 kW 915 MHz Magnetrons



GENERAL INFORMATION

The BPA-100 kW microwave generator is an air-cooled power supply for a 100 kW / 915 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 BPA-100 kW 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.

FEATURES

- Very low energy discharge while heavy short circuit fault of magnetron
- Air cooling
- Accurate anodic voltage and anodic current measurement and control
- Ability to adjust of the anode voltage from 15 kV to 21 kV based on the magnetron performance chart to reach the optimized working point having max. efficiency/lifetime of Magnetron.
- Lower weight and lower output voltage ripples compared to the old transformer-based technology generators
- Cutting edge resonance switching topology
- Protections: Over temperature/ Over current/ Overvoltage/ Over load/ Under voltage/ Under load/ Short circuit
- High reliability (designed based on MIL-HDBK-338B and MIL-HDBK-217 standards)
- Low noise SMPS
- Constructed using high quality power electronics and mechanical components all provided in Germany
- Fault-tolerant design, and uptime through modular, (no single point of failure)
- Seamless operation under failure: automatic fault detection and load redistribution ensure uninterrupted output
- Fast maintenance with module replacement in under 5 minutes
- Very high efficiency (up to 97%) with low ripple, improving magnetron lifetime, and air-cooled system
- Flexible operation: compatible with different magnetron brands and adjustable from 10 kW to 100 kW in 0.5 kW steps
- Advanced control & integration: options for selecting the industrial communication protocols for control and monitoring the magnetron using PROFINET, EtherCAT, and Modbus TCP

SPECIFICATION

Electrical and Technical Data

	BPA100kW400	BPA100kW480	BPA100kW600	BPA100kW690
Input voltage	400 V _{AC} ±10 %	480 V _{AC} ±10 %	600 V _{AC} ±10 %	690 V _{AC} ±10 %
efficiency	up to 95 %	up to 96 %	up to 97 %	up to 97 %
Input frequency			47 Hz to 63 Hz	
Output voltage adaptivity			15kV-21kV	
Anode current variation range			300 mA to 6000 mA	
Absolute maximum output power of Magnetron			100 kW	
Output voltage ripple			Less than 1 %	
Anode current ripple			Less than 2 %	
Active operating temperature			-20 to 50 °C	
HV Protections	Over temperature/ Over current/ Overvoltage/ Over load/ Under voltage/ Under load/ Short circuit			
Working humidity			20 ~ 90% RH non-condensing	
Storage temperature, humidity			-30 ~ +70, 10 ~ 95% RH non-condensing	
Withstand voltage			30 kV	
Dimension			2218*1221.5*1293 mm3	