5.04. POWER SUPPLY OF ELECTRONIC HEATING

It is designed for electric power supply of gas-discharge electron beam guns.

The main nodes of the power supply are modular inverter and transformer-rectifier module. An ability to adjust the output voltage by changing the relative control time allows to stabilize and adjust the output voltage when changing the load current and supply network voltage. In this inverter a technical contradiction between high quality of electric energy and the minimum energy storage accumulated in the output circuits is eliminated.

Advantages: It provides low output voltage pulsation without reactive components at the output in a wide range of output voltage regulation. The use of a liquid dielectric in the output transformer rectifier node increases electrical insulation strength between the primary winding and output.

Main technical specifications

Output parameters	
Rated output voltage (pole “plus” is grounded in the load)	30 kW
Rated load current	15 A
Rated output power	450 kW
The change of output voltage under the influence of external factors, ≤	5% from the rated value
Input parameters	
Voltage of the input network (three-phase, variable) with a zero wire	380 В ± 10%
Frequency of the input network	(50 ±0,4) Hz
Efficiency, not less than	0,92
Total power consumption in the rated mode, no more than	500 kW