



FG5001S with example system configurations



Plasma Control Unit - M



PFW10



RD1004



Plasma Control Unit - DM



RD2005



RD2010

DATA SHEET

Plasma Generator FG5001S

Digital plasma generator for Plasmamatreat pretreatment systems

The FG5001S Plasmamatreat generator combines ultra-high performance with precise plasma output regulation and control. It also offers numerous control and diagnostic functions, and a detailed display of plasma treatment data for comprehensive quality assurance and process reliability. The digital, process-controlled high frequency FG5001S plasma generator is equipped with IGBT semiconductor amplifiers as standard. These enable it to control Openair-Plasma® systems with up to two plasma jets.

The new touchscreen display is designed for an easy operation. The well structured navigation gives the user a good overview of all relevant parameters for each jet and the system as a whole. A troubleshooting list indicating causes and recommended actions also helps ensure smooth operation.

The generator is designed to enhance the performance and service life of the entire Plasmamatreat system. Versatile configurations with standard products, extended setting options, sophisticated monitoring modules, preventative maintenance instructions and plug-and-play quick change of components play a key role in this respect.

The compact generator benefits from a high level of availability and long maintenance intervals.

Benefits at a glance

- Continuous monitoring of the generator output reliably compensates for mains voltage fluctuations by ensuring a constant supply to the jets
- Touchscreen for simple control of operating parameters such as output and frequency, and displaying error and status notifications
- Using a Plasma Control Unit (PCU): transmission of data on plasma power, volume flow, process gas flow, motor rotation and dynamic pressure data for process control
- Output control regulates the intensity and density of the plasma beam to ensure consistent quality of plasma treatment
- Valuable information about the condition of the jet head and for rotary jets, the condition of the motor and bearings

Technical Data

Generator	FG5001S
Mains voltage	Wide voltage range 100 – 240 V, 50 – 60 Hz
Total output	1 kVA
Fuse	16 A
Plasma output regulation	Via recipe selection
Temperature range/protection rating	0 °C to + 45 °C / IP 54
Output voltage and frequency	approx. 1000 Vss / 19 - 25 kHz
Weight	approx. 25,5 kg
Case dimensions (w x h x d):	w 280 x h 480 x d 580 mm
Color	RAL Design white/anthracite
Customer interface	40 - pin plug-in connector Input terminals: emergency stop and limit switch circuit Performance Level (PL): PL c (can be extended to PL d on the customer-side) Generator on/off Acknowledgement, release Outputs: emergency stop ok, plasma ready, fault signal, 1x plasma LCM ok Optional: Bus connection to a superordinate control: Ethercat, Ethernet IP and TCP/IP, Profinet, Profibus, Modbus
Additional monitoring functions with PCU (Plasma Control Unit)	Monitoring of generator output effectively offsets mains voltage fluctuations - LCM (Light Control Module) controls the light emitted by the plasma discharge - PCM (Pressure Control Module) checks the back pressure in the jet to control the plasma intensity - PPM (Plasma Power Measurement) determines the output of each jet to regulate the intensity of the plasma beam - RCM (Rotation Control Module) monitors the rotation of the jet to ensure correct treatment duration
Connectable plasma generators	Up to 2 x PFW10 / RD1004 / RD2004 / RD8004 1 x PFW70 / RD2005 / RD2010"

Plasma Control Unit (PCU)

The plasma generator combined with a PCU allows operators to fully exploit the full range of process control options to ensure consistently high quality and reproducibility of the plasma treatment. This is particularly critical for pretreatment processes since the results are not immediately visible or testable in-line and can only be guaranteed by the monitoring functions.

Plasmatreat's unique combination of S generator and PCU records the most important process parameters for the operator, detects any changes or deviations that occur and presents them using clear graphic displays. The collected values also serve as indicators for different warning messages or preventative maintenance notifications and therefore minimize machine downtimes.



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Subject to technical changes and misprints.