Coaxial Power Systems

MEDICAL TEST INDUSTRIAL SCIENTIFIC

RFG 3K

AIR COOLED:
Model RFG 3K-2-AC (3kW / 3,000 Watts)
Model RFG 3K-13-AC (3kW / 3,000 Watts)
Model RFG 3K-27-AC (3kW / 3,000 Watts)

The ***RFG 3K (3.0kW / 3.000 WATT)*** RF generator is a precision unit intended for both scientific and industrial applications. The robust construction, using tried and tested components together with the latest design techniques, ensure a long and trouble-free life even in harsh environments.

The small size of the unit makes it ideal for use where there is restricted rack space.

This unit is available air cooled (AC) as standard for continuous operation. A water-cooled variant can be supplied if your operating environment demands it due to extreme temperatures or poor ventilation.

It is recommended that the generator be used in conjunction with either a manual or automatic impedance matching network. Both types are available from Coaxial Power Systems Ltd – please see the separate brochure for details.

The main features of all models are

- Efficient Class-E design.
- Rack-mount design as standard.
- Compact (ideal for restricted rack space).
- 380-415 VAC (3 phase) – Standard
- 208 VAC (3 phase) – Optional
- 480 VAC (3 phase) – Optional
- Full-rack / 3U high.
- Microprocessor display of incident (forward) power, reflected power and unit status
- Precision power control (fully adjustable between 0 and max power).
- Fast pulse operation from TTL/CMOS input.
- External control of output voltage. (Useful in sputter coating applications).
- Feedback control system ensures that the set output power remains constant and repeatable.
- Internally calibrated power measurements for high accuracy throughout the power range.
- 2MHz, 13.56MHz, 27.12MHz frequencies as standard.

(Non-standard frequencies are available - please contact factory for details).

The output power of each generator is fully adjustable between zero and maximum power. The feedback control system ensures that the set output power remains constant and repeatable. Incident (forward) and reflected power measurements are internally calibrated to give high accuracy throughout the power range.

Option (please enquire)
An external voltage of 0 to 5Volts can be used to control the output. This is particularly useful in sputter coating applications where the DC voltage developed across the plasma dark space can be controlled rather than the RF p

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Physical	
Model Variants	RFG 3K-2-AC (2MHz) RFG 3K-13-AC (13.56MHz) RFG 3K-27-AC (27.12MHz)
Dimensions	Full rack mounting - 3U high 445mm (W) x 553mm (L) x 133mm (H) / (Front panel width is 482mm). External connectors protrude extra 16mm MAX (Front panel), 25mm MAX (Rear panel).
Weight	28 Kg (60 lb) max.
Front panel Material / Colour	Aluminium, RAL7135 Light Grey.
Chassis and Cover Material	Stainless Steel.
Connector and Cable Specifications	
RF Output Connector	7/16 type / 50 **Ω**
User Port Connector (Analogue & RS-232)	25-pin, Sub-Miniature 'D' Female, with 8mm 4-40 jack post
AC Power Input Connector / Cable	. 380-415 VAC Model: AMP Connector, 7 contacts 208 VAC Model: Site-wired, Captive-Cable at 2 Metres 480 VAC Model: AMP Connector, 7 contacts
Input + Ouput CEX / Drive Connector	**Input:** SMA, Coaxial Sub-Miniature / **Output**: SMA, Coaxial Sub-Miniature
Pulse Input Connector	SMA, Coaxial Sub-Miniature
AMNC Readout connector (Optional)	Lemo – Circular Connector, 3 contacts.
Earth Connection	M4 Screwbush **or** M5 stud located on rear panel.
Electrical	
Input Power	380-415 VAC (3 phase) - Standard 208 VAC (3 phase) – Optional 480 VAC (3 phase) – Optional
Output Power / Impedance	3000-Watts (3.0kW) Continuous / 50 **Ω**
Output Frequency Options / Stability	2MHz / +/-4.1kHz 13.56MHz / +/-1.4kHz. 27.12MHz / +/-2.7kHz.
Interface Options	Analogue (Standard), RS-232 (Optional), Device-Net (Optional).
Efficiency	91%
Output Envelope Ripple	Less than 1% of full amplitude.
VSWR Capability	Can withstand VSWR at any phase angle.
Harmonic Output	Better than 40 dB below fundamental.
Pulse Operation via SMA input on rear panel	Minimum pulse width 40µs (micro-seconds). The external power control signal should vary the peak output from 0 to MAX-power with a pulse-on duty cycle from 0 to continuous (100% duty cycle).
Local Control and Remote Interface	
Local Control	**Accessed via Front-Panel Controls:** Line ON/OFF. RF ON/OFF. Digital output power set / Menu Control dial. Menu Switches. Remote switches: RF on/off control enable, O/P set on/off. Local switches: x0.1 / x1 (output range), CEX-OSC, PULSE-CW. Timer. **VFD display showing:** Forward (Incident) power / Reflected power / Reflected power exceed limit. Remote operation. Timer. Interlock status (cooling and external) AMN Readout on main display (optional)
Remote Interface	**Accessed via User-Port.** RF ON/OFF Incident Power indication Reflected Power indication Output set 0-5volts = 0-100% Remote output set request.

Specification is continued on the following page ⟶

Environmental	
Operating Temperature	0-40°C (32°F-104°F)
Storage Temperature	0-20°C to +65°C (-4 to149°F)
Cooling Requirements	
Cooling	Totally air-cooled
Other	
Standards	CE Certification BS EN ISO 9001:2008 EN61000-3-2: 2006 EN6100-3-3/A2: 2005 EN61326-1: 2006 EN61010-1: 2001

Notes & Revision History
RS-232 SECTION UPDATED – 08.03.18 – DR

Warranty

Coaxial Power Systems Ltd offer a warranty for parts and labour (if returned to factory) for 1 year from date of despatch. The warranty is invalidated if the generator has suffered inappropriate treatment i.e. excessive vibration, mechanical denting or dropping, accidental liquid spill, excessive applied voltage to remote connectors etc. Coaxial Power Systems Ltd should be notified of all warranty claims before return of equipment.

Contact

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