



## RFG 5K-AC

**AIR COOLED: (water cooled optional)**

**Model RFG 5K-2-AC (5kW / 5000 Watts)**

**Model RFG 5K-13-AC (5kW / 5000 Watts)**

**Model RFG 5K-27-AC (5kW / 5000 Watts)**



The **RFG 5K-AC (5kW / 5000 WATT)** RF generator is a precision unit intended for both scientific and industrial applications. The robust construction using the latest in switch mode and solid-state 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.

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.

This unit is air cooled (AC) but can also be supplied as a water cooled unit (WC) if required – please see separate manual for all extra information regarding the water-cooled model.

### The main features of all models are

- Efficient Class-E design
- Rack-mount design as standard.
- 380-415 VAC (3 phase) – As standard
- 208 VAC (3 phase) – Optional
- 480 VAC (3 phase) – Optional
- Full-rack, 7U (310mm) high
- Analog and RS-232 interfaces available.
- 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.
- Microprocessor display of incident (forward) power, reflected power and unit status
- Precision power control fully adjustable between 0-100%.
- Fast pulse operation from TTL/CMOS input.
- 2MHz, 13.56MHz, 27.12MHz frequencies available 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 power.

<b>Physical</b>	
Model Variants	RFG 5K-2-AC (2MHz) RFG 5K-13-AC (13.56MHz) RFG 5K-27-AC (27.12MHz)
Dimensions	Full rack mounting - 7U high 445mm (W) x 700mm (L) x 310mm (H) / (Front panel width is 482mm). External connectors protrude extra 16mm MAX (Front panel), 19mm MAX (Rear panel).
Weight	70 Kg (154 lb) max.
Front panel Material / Colour	Aluminium, RAL7135 Light Grey.
Chassis and Cover Material	Stainless Steel.
<b>Connector and Cable Specifications</b>	
RF Output Connector	7/16 type / 50 $\Omega$
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 + Output CEX / Drive Connector	<b>Input:</b> SMA, Coaxial Sub-Miniature / <b>Output:</b> SMA, Coaxial Sub-Miniature
Pulse Input Connector	SMA, Coaxial Sub-Miniature
AMNC Readout connector (Optional)	Lemo – Circular Connector, 3 contacts.
Earth Connection	Single, 45° Stud-Mount terminal, 6.35 x 0.81mm
<b>Electrical</b>	
Input Power	380-415 VAC (3 phase) - Standard 208 VAC (3 phase) – Optional 480 VAC (3 phase) – Optional
Output Power / Impedance	5000-Watts (5kW) Continuous / 50 $\Omega$
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	90%
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 40 $\mu$ s ( <b>micro-seconds</b> ). 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).
<b>Local Control and Remote Interface</b>	
Local Control	<b>Accessed via Front-Panel Controls:</b> 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.  <b>VFD display showing:</b> 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	<b>Accessed via User-Port.</b> 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 	

<b>Environmental</b>	
Operating Temperature	0-40°C (32°F-104°F)
Storage Temperature	0-20°C to +65°C (-4 to 149°F)
<b>Cooling Requirements</b>	
Cooling	Forced Air
<b>Other</b>	
Standards	EN61000-3-2:2006 EN6100-3-3/A2:2005 EN61326-1:2006 EN55011:2009+A1:2010 EN60204-1:2006+A1:2009 UL61010-1:2004 R7.05 Machinery Directive 2006/42/EC Low Voltage 2006/95/EC EMC 2004/108/EC BS EN ISO 9001:2008

<b>Notes &amp; Revision History</b>

### 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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