Coaxial Power Systems

MEDICAL TEST INDUSTRIAL SCIENTIFIC

RFG 30K

Model RFG 30K-2 (30kW / 30,000 Watts / 2Mhz)
Model RFG 30K-13 (30kW / 30,000 Watts / 13.56Mhz)
Model RFG 30K-27 (30kW / 30,000 Watts / 27.12Mhz)
Model RFG 30K-40 (30kW / 30,000 Watts / 40.68Mhz)

The ***RFG 30K (30kW / 30,000 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 generator has an air-cooled driver and water-cooled Amplifier.

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. If an automatic network is used, the controller can be fitted to the generator cabinet.

The main features of all models are

- Proven design and track record.
- Air-cooled driver / Water-cooled Amplifier via external water recirculation system.
- Individual LED displays for incident (forward) and reflected power.
- Precision power control +/- 1% of set point.
- Common exciter input/output.
- Fast pulse operation from TTL/CMOS input (Optional)
- Solid State/Power Tube design for reliable performance.
- The output power of the generator is fully adjustable between zero and maximum power.
- The feedback control system ensures that the set output power remains constant and repeatable.
- 2MHz, 13.56MHz, 27.12MHz and 40.68MHz frequencies available as standard.
- Safety Interlock Switchgear on all external panels.
- 380/415 VAC - Three Phase / 5 Wire (140 KvA) - Standard
- 208 VAC (3 phase) – Optional
- 480 VAC (3 phase) – Optional

(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.

Coaxial Power Systems LTD | Spectrum House | Unit 2 Finmere Road | Eastbourne | East-Sussex | U.K | BN22 8QL

Telephone: +44 (0)1323 639974 | Fax: +44 (0)1323 739654 | Web: www.coaxialpower.com | Email: sales@coaxialpower.com

General Specifications

Output frequency
RFG 30K-2 (2MHz)
RFG 30K-13 (13.56MHz)
RFG 30K-27 (27.12MHz)
RFG 30K-40 (40.68MHz)

Output power
30kW / 30,000Watts

Frequency stability
Crystal controlled:
2MHz +/-4.1kHz
13.56MHz +/-1.4kHz.
27.12MHz +/-2.7kHz.
40.68MHz +/-4.1kHz

Efficiency
84% or greater.

Output impedance
50Ω

Output connection
EIA Flange (3-18 EIA/50ohm)

Power control
● Analogue control system allows power
or external feedback control.
● Output stability is +/-1% for +/-15%
variation in line.

VSWR capability
Can withstand any VSWR at any phase angle.
Harmonic output
Better than 40dB below fundamental.
Output envelope
Ripple less than 1% of full amplitude.

Pulse operation (optional)
● TTL input via SMA socket on rear panel.
Minimum pulse width 10µs.
Minimum duty cycle 5%.
Minimum Frequency 100Hz.
● The front panel display automatically shows pulse output levels by utilising sample/hold technology.

Common exciter
BNC input 50ohm (max 13 dBm).

RF Output Sampler
Directional Coupler with:
N-Type outputs for incident / reflected power signals

Signal Input
N-Type input 50ohm (max 13 dBm)

Line
380-415 VAC (3 phase) – Standard
208 VAC (3 phase) – Optional
480 VAC (3 phase) – Optional

External Feedback
Remote RF on/off request

Front panel indicator
● RF power ON.
● RF power OFF.
● Overload.
● Remote control.
● Incident output power.
● Reflected power.
● Interlock status.
● VFD Display for driver status.

Front panel controls
● Line on/off.
● Machine on/off.
● RF on/off.
● Reflected Power Limit.
● Output power set dial.
● Pulse/CW switch.
● MCB.
● Overload set.
● Remote/Local

Rear panel
● Remote connector (25-way ' D').
● Common exciter output (SMA).
● Common exciter input/external signal source (SMA) - max.13dBm.
● Line input (I.E.C.).
● AMN display (option).
● RF output connector (N50Ω).
● Mains switch.
● Pulse (Optional)

Remote control (Rear Panel)
25-way 'D' type socket:
● RF on/off (open collector 100mA)
● RF on/off + Interlock (contact closure)
● Incident / Reflected power
● BNC output 50 (7dBm)
● Output set 0-5Volts = 0-100%
● Remote output set request

Meters
3 1/2 digit LED display of incident (forward)
and reflected power.

Diagnostics
Analogue meter/LED indicator show the
following parameters:
● All internal power supply voltages.
● Driver output incident/reflected power.
● PA anode current.
● PA Grid current

Amplifier line-up
● Solid state oscillator and RF driver
● Thermionic vacuum power tube power amplifier

Standards
● EN61000-3-2:2006.
● EN61000-3-3/A2:2005.
● EN61326-1:2006.
● EN61010-1:2001.
● CE compliance.
● ROHS.

Size
Note: this unit can be built in a custom size
If required. (Please contact us).
Length : 1700mm
Height : 2089mm
Width : 1040mm
(Rear external connectors may protrude an extra 60mm)

Safety
Safety interlock switchgear to all external panels.

Finish
● Front Panel - RAL7035 light grey.
● Rear Panel - Stainless steel.
● Cover - Stainless Steel.
Cover - Aluminium (optional).
Rear Panel - Aluminium (optional).

Environment
● Operating temperature:
0-35°C (-20° to +65° C storage).

Cooling
Forced air for driver.
Amplifier water cooled via external water recirculation system

Intake and Exhaust
Air intake through rear exhaust around chassis cover.

Notes
* Pulse is an option on this unit.
* Optional custom sizes/format for this unit.

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