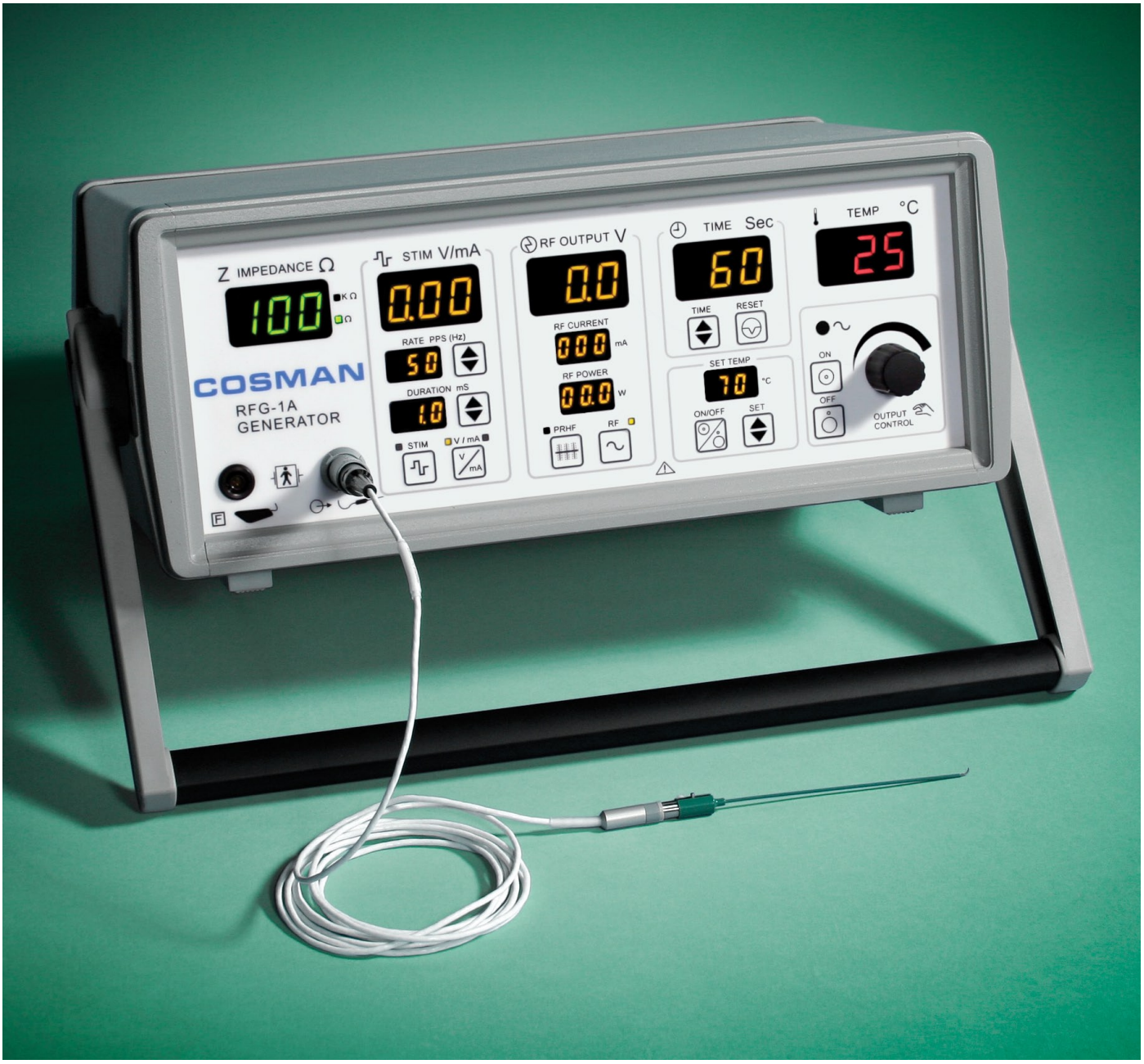
COSMAN

RFG-1A

Radiofrequency Generator



For Neurosurgery and Pain Therapy

Cosman History: The Pioneers and Leaders in Radiofrequency Technology

The RFG-1A embodies nearly 60 years of Cosman Radiofrequency (RF) technology. Bernard J. Cosman, who founded Radionics (originally called Cosman and Company) in 1938, built the first commercial RF lesion generator in 1952. His son, Professor Eric R. Cosman of the M.I.T. Physics Department, directed Radionics from 1970 to 2000. Professor Cosman designed dozens of RF generator models, including the RFG-3C Plus, 3CF, 3C, 3B, 3D, 3E, 5, 6,etc., and an accompanying vast array of RF electrode systems which are used by thousands of clinicians around the world. Radionics, the family business, was sold in 2000.

Cosman Medical, Inc. was founded in 2004 by Professor Cosman to continue the innovation and progress in RF medical technology that he and his father pioneered and lead from the very beginning of the field.

The RFG–1A Generator: A Modern and Advanced Design

The RFG-1A has been designed by Cosman and manufactured by his team of expert engineers and technicians at Cosman Medical, all of whom he selected from the best of his previous coworkers at Radionics. Thus the RFG-1A incorporates the most modern and advanced electronic designs plus decades of RF clinical experience, making it more functional, reliable, and safe. The RFG-1A software is upgradable to accomodate new functionality.

Wider Settings for Both Neurosurgeons and Pain Management Clinicians

The RFG-1A has a wider range of stimulation parameters than its RFG-1B counterpart to accommodate the needs of both neurosurgeons and pain management specialists.

Easy to Operate: Clear, Simple, and Logical Controls

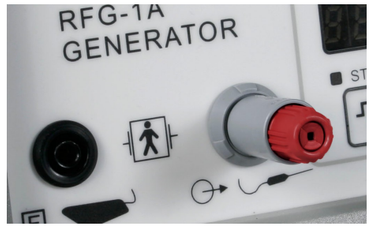
The RFG-1A has a simplified and easy-to-understand front panel. The Impedance, Stimulator, RF Output, Timer, and Temperature controls are located logically from left to right on the front panel. Large color-coded digital displays are bright and easy-to-read from a distance in the procedure room. There are no confusing menus or program steps to remember, but rather a clear panel layout to improve clarity and confidence at every step.

Reliability and Economy

The RFG-1A's modern design means better technology for less production costs. That translates directly to a more robust and reliable unit. It also means that Cosman can pass the savings onto the customer, offering a superior generator at a better price.

Self-Test Features

The RFG-1A can be tested before and during a procedure. The RFG-TP Output Test Plug plugs into the output jack and simulates a test load to check RF heating and temperature controls. The optional RFG-STP Sterilizable Test Pad checks connections, electrodes, and cables without breaking sterility. The RFG-1A displays actual measured output values, not preset screen settings, confirming what is being delivered to the patient.

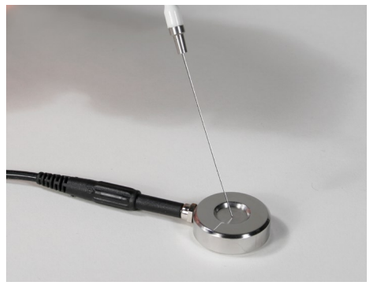


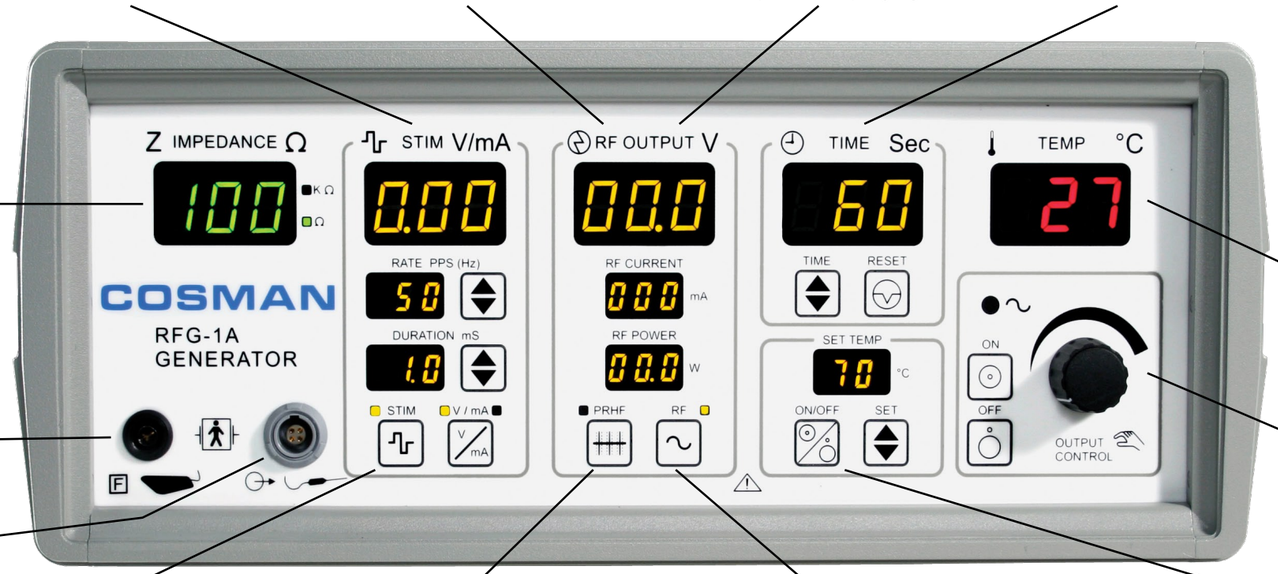
Lightweight and Portable

The RFG-1A is lightweight, only 15 pounds (6.8 Kgm), and compact, making it easy to transport and store. It has an optional HAN Carrying Handle that also serves as a tilt stand (see front page figure). Other related options are shown on the next page.

Sterile Adapted

The RFG-1A is available in the sterile-adapted version, the RFG-1A-S. It comes with a SKG Sterilizable Knob, FS-1 Footswitch, and RFG-STP Sterilizable Test Pad, so that the unit can be operated without breaking sterility. Clear sterile drapes are available to cover the front panel to sterily actuate pushbuttons.





Impedance Monitor

Electrode impedance is measured continuously at all times, including stimulation and lesioning. This enables detection of any changes during the critical procedure steps. Its wide range accomodates even the smallest electrodes and future developments. Impedance is shown on a large green LED display for instant clarity.

Reference Connection

The reference jack connects to the Cosman Disposable Grounding Pad or to the Non Disposable Ground Plate.

Active Electrode Connection

The active jack connects the outputs to the active electrode.

Stimulation Mode Selector

This pushbutton selects the Stimulation section.

Pulsed RF Section

The Pulsed RF (PRHF) output voltage and current are shown on large digital displays. A wide range of pulse rates and durations can be selected, and are displayed.

Pulsed RF Mode Selector

This pushbutton selects the Pulsed RF section.

Continuous RF Section

The RF output voltage, current (mA), and power (Watts) are shown on large digital displays. The output can be finely controlled, even for low power applications such as in the brain, spinal cord, or ganglia.

Continuous RF Mode Selector

This pushbutton selects the continuous RF section.

Timer

Preset lesion times can be selected and are shown on the large digital display. The timer can be reset to 0 or stopped at a desired elapsed time at any point in the procedure.

Automatic Temperature Control

Either Manual or Automatic Temperature Control can be selected. Preset set temperatures can be selected and are shown on the digital display.

Temperature Monitor

Electrode temperature, the most critical RF heating parameter, is shown on a large red digital display that can be seen from across the room.

Output Control

In STIM, Pulsed RF, or RF modes, the OUTPUT CONTROL knob raises the output smoothly, even at the very low levels. A yellow pilot light and an audible beeper signify delivery of output. The output can be shut off at any time.

RFG-1A Options

Graphic Display Outputs

The RFG-GO Graphical Output Jacks enable real-time graphic display and storage of RFG-1A parameters of a procedure on a laptop computer using the CB120 cable.

Face Cover

The RFG-FC-1 attaches to the front face, protecting it in transport or storage.

Carrying and Tilt Handle

The HAN Handle is a convenient carrying handle (see previous page) and also enables variable tilt angle for easy viewing in the procedure room (see front cover).

Sterile Adapted Version

The RFG-1A-S includes an SKG Sterilizable Knob, FS-1 Footswitch, and RFG-STP Sterilizable Test Pad.

Storage and Travel Case

The SC-1 Storage Case provides secure protection for storage and transportation.

Technical Specifications

ELECTRICAL SUPPLY

Domestic: 120 Vac
International: 100 Vac, 220 Vac, 240 Vac

GENERAL

Size: W 14” (35.5 cm), H 6” (15.3 cm), D 10.5” (26.7 cm)
Weight: 15 lbs (6.8 Kg)

IMPEDANCE MONITOR

Range: 0-3000 ohms digital
Resolution: 1 ohm between 0-999, 10 ohms between 1000-3000

STIMULATOR

Pulse Rate: 2, 5, 50, 75, 100, 150, 180, 200 Hz
Pulse Duration: 0.1, 0.5, 1, 2, 3 mS
Voltage Stimulation Mode: 0-3 Volts
Constant Current Stimulation Mode: 0-10 mA

RF GENERATOR

Continuous RF Mode

Voltage: 0-70 Volts (rms)
Current: 0-750 mA
Power: 0-50 Watts

Pulsed RF Mode

Voltage: 0-100 Volts (peak)
Pulsed Rate: 1, 2, 3, 4, 5, 6, 7, 8 Hz
Pulse Duration: 5, 10, 20, 30 mS

TIMER

Selectable: 30, 60, 90, 120, 180, 600 Sec

TEMPERATURE MONITOR

Range: 0-100 ºC
Resolution: 1 ºC

AUTOMATIC TEMPERATURE CONTROL

Select: ON or OFF
Continuous RF: 50, 55, 60, 65, 70, 75, 80, 85, 90 ºC
Pulsed RF: 42 ºC

OUTPUT PORTS (Optional)

RF Volts: 0-100 Volts = 0-1 VDC
RF Current: 0-750 mA = 0-.75 VDC
RF Watts: 0-50 watts = 0-.5 VDC
Impedance: 0-3000 ohms = 0-1 VDC
Temperature: 0-100 ºC = 0-1 VDC

STANDARDS

Unit meets CSA Canadian and USA standards.

CE 0050 SP C US

Cosman Medical, Inc. is an ISO-13485 certified company. Rx Only.

RFG-1A and Accessories Catalog Numbers

Catalog No.	*Description*
RFG-1A	RF Generator
RFG-1A-S	RF Generator, Sterile-Adapted

Catalog No.	*Description*
CB112-TC	Cable for TC electrodes
CB102	Reference Connection Cable
CB103-R	Cable, Red with Alligator Clip
CB103-B	Cable, Black with Alligator Clip
CB113	Bipolar Reference Cable
CB118	Power Cable, Europe
CB119	Power Cable, USA
CB120	Graphics Cable

Catalog No.	*Description*
RFG-TP	Output Test Plug
HAN	Handle
RFG-FC-1	Face Cover
SKG	Sterile Knob - Gold
FS-1	Foot Switch
RFG- STP	Sterile Test Pad
SC-1	Storage Case
RFG-GO	Graphical Output Jacks

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