



Electrosurgical Generator with Instant Response™ Technology

Instant Response Technology

Instant Response technology provides surgeons with improved performance at lower power settings, minimizing the risk of tissue damage and neuromuscular stimulation, and decreasing the need to “turn up the generator.”

A Smoother Cut Through All Tissue Types

The Force EZ generator adjusts automatically, responding to tissue changes, maintaining power delivery, and minimizing drag.

Added Safety and Reliability Minimizes Electrosurgical Risks

Capacitive coupling is reduced by 30-50% when using Instant Response technology. This reduction is achieved by limiting the RMS voltage and the high frequency harmonics. Lower voltage means less neuromuscular stimulation and more precise delivery of energy to reduce collateral damage.

Features

- » Instant Response technology ensures that the power delivered remains virtually constant, regardless of the tissue type
- » Improved performance at lower power settings minimizes the risk of tissue damage and neuromuscular stimulation
- » Three internal microcontrollers reduce system reaction time and increase the system's processing speed
- » Easy to use, cost effective system when performance is required and price is of equal concern
- » A Power Efficiency Rating (PER) of approximately 97 for accurate and consistent cut performance
- » Two cut modes, both controlled by Instant Response technology, offer surgeons a variety of choices: Pure Cut (for a clean, precise cut) and Blend (for cutting with hemostasis)
- » Two primary coag modes: Low for low voltage contact coagulation suitable in laparoscopic and delicate tissue work and High for efficient noncontact coagulation in most applications
- » Standard bipolar mode is controlled by Instant Response technology and utilizes low voltage to prevent sparking
- » Versatile system that is uniquely compatible with other devices, including: Force Argon II and Force GSU argon coagulation system, and OptiMumm smoke evacuator through a direct cable link
- » Separate monopolar and bipolar footswitch connectors on rear panel for easy set up
- » Convenient design for boom applications: Additional front mounted footswitch connector is switchable, allowing monopolar or bipolar activation from a monopolar footswitch

Technical Specifications

Output Waveforms

Bipolar 470 kHz sinusoid

Monopolar Cut

Pure 393 kHz sinusoid
Blend 393 kHz bursts of sinusoid, recurring at
27 kHz intervals. 50% duty cycle envelope

Monopolar Coag

Desiccation:

Low 1 240 ± 40 kHz sinusoid recurring at 39 kHz. 8% duty cycle
Low 2 393 kHz sinusoid
Low 3 393 kHz sinusoid

Fulguration:

High 1 470 ± 40 kHz damped sinusoidal
bursts with a repetition frequency of 57 kHz
High 2 470 ± 40 kHz damped sinusoidal
bursts with a repetition frequency of 30 kHz

Output power changes by less than 15% or 5 watts, whichever is greater, as the line voltage varies from 90-135 volts and 186-264 volts (into a 300 ohm load).

Low Frequency Leakage (50 - 60 HZ)

Source current, patient loads, all outputs tied together.

Normal polarity, intact chassis ground < 10 µA
Normal polarity, ground open < 50 µA
Reverse polarity, ground open < 50 µA
Sink current, 140V applied, all inputs < 50 µA

Power Readouts

Agree with actual power into rated load to within ± 15 or 5 watts, whichever is greater. Dosage error monitor.

PER = 97

PER (Power Efficiency Rating) is the measure of an electrosurgical generator's ability to accurately deliver the selected power into a wide range of tissue types.

Weight and Dimensions

Height 12.7 cm (5")
Width 40.7 cm (16")
Length 39.5 cm (15.6")
Weight < 6.8 kg (< 15 lbs.)

Input Power Requirements

	100-120 Vac	220-240 Vac
Operating Range:	85-140 Vac	170-280 Vac
Max Current Cut:	8A	4A
Max Current Coag	4.2 A	2.1 A

High Frequency Leakage

Bipolar Less than 60mA_{rms}
Monopolar Less than 150mA_{rms}

REM Contact Quality Monitoring System

Measurement Frequency 80 kHz ± 10 kHz
Measurement Current Less than 10 µA
Acceptable Resistance Ranges REM pad – 5 -135 ohms
Non-REM pad – less than 20 ohms

Acceptance range is 5-135 ohms after
REM PolyHesive II return electrode is applied.

Adaptive REM

REM trip is baseline impedance plus 40%. For example, if the baseline impedance is 30 ohms, the upper level trip is approximately 42 ohms. If the pad-patient impedance falls below the baseline impedance, a new baseline is established.

Design to meet UL, cUL, IEC 801, IEC 601, and AAMI HF-18 specifications.

Output Characteristics

	Mode	Maximum P-P Voltage	Rated Load (OHMS)	Maximum Power (Watts)	Crest Factor (Typical)*
Bipolar	Standard	300	100	70	1.5
Monopolar Cut	Pure	2000	300	300	1.5
	Blend	3400	300	200	2.1
Monopolar Coag	Desiccate Low 1	3500	500	120	5.0
	Low 2	660	300	120	1.5
	Low 3	1100	300	120	1.5
	Fulgurate High 1	6200	500	120	5.0
	High 2	8500	300	120	7.0

*Crest Factor is an indicator of a waveform's ability to coagulate without cutting.