

RF303_{RS} Electrosurgery Analyzer

Technical Data



RF303_{RS} Electrosurgery Analyzer provides enough user-selectable test loads to do routine maintenance checks on most electrosurgery units on the market today. Compact and portable, the device is so simple to use that technicians can become proficient with the RF303_{RS} within minutes.

The unit measures ESU output and high-frequency leakage, allows for verification tests on the return electrode contact quality monitors, and has an oscilloscope output for waveform viewing. Instantaneous output or selectable sample times provide extra versatility. The instantaneous mode is sufficient for most units, but if output readings are variable and require stabilizing, the signal-averaging mode allows users to manually select two additional, slower sampling times to produce an accurate average reading.

Key features

- Simple configuration for easy use
- Oscilloscope output, high-frequency leakage, and return electrode contact quality monitor tests
- Instantaneous and signal-averaging measurement mode
- Ability to connect with Fluke Biomedical's medTester 5000C for automated solution
- RS-232 port for computer control
- Battery powered
- 4-digit numeric LCD with backlight and power-save mode

Specifications

General		
Modes of operation	Line powered, battery powered, offline (battery maintenance charge)	
Test parameters	Power (W), HF current (mA), test load (Ω)	
Battery	Type	Sealed lead-acid
	Time between recharge	Two hours (continuous use)
	Time to full charge	Eight hours
	Number of cycles	200
	Capacity	2.2 A H
	Field serviceable	No
	Recharging	Internal, automatic charger; power cord required
Front panel controls/push buttons	Measurement select (1)	
	Load select	Increment test load (+) one step; decrement test load (-) one step
Top panel input connections	Designations	<ul style="list-style-type: none"> • Generator output-active (1) • Generator output-dispersive (2) • Signal earth/ground reference (2) • Auxiliary HF leakage load (2)
	Connector type	4 mm (0.16 in) diameter safety sockets
	Input voltage limit	10,000 V peak
	Input current limit	3 A rms
	Installation category	II
Side input connection	Designation	Signal reference
Calibration period	Recommended calibration	Every 12 months
Power requirements	Universal input switching supply (12 V dc output)	
	Operating voltages	<ul style="list-style-type: none"> • Specified: 115 V ac/230 V ac • Max Range: 83 V ac to 264 V ac
	Operating frequencies	<ul style="list-style-type: none"> • Specified: 50 Hz/60 Hz • Max Range: 47 Hz to 63 Hz
	Maximum input requirement	60 VA
	Fusing external (user-replaceable)	<ul style="list-style-type: none"> • Quantity: 2; 250 V, 3.15 A, Type F, L1 and L2
Temperature	Operating: 59 °F to 95 °F (15 °C to 35 °C)	Storage: 32 °F to 122 °F (0 °C to 50 °C)
Humidity range	90 % non-condensing	
Altitude	To 2,000 m (6,562 ft)	
Ventilation	Internal fan with variable speed control; over-temperature detector; magnetic tachometer sensor to detect blocked fan rotor	
Display	LCD, seven-segment, four full digits, 2 in x 0.75 in	
Case construction	High-impact plastic, UL94-V0	
Dimensions (LxWxH)	29.2 cm x 33.7 cm x 15.2 cm (11.5 in x 13.25 in x 6 in)	
Weight	5.6 kg (14.2 lb)	

Technical		
Generator output	HF leakage (Performs to IEC 601 2-2, 1289-2, ANSI/AAMI standards)	
	Type BF Test 1	Earth-referenced monopolar output
	Type BF Test 2	Earth-referenced monopolar output
	Type CF/Bipolar	Isolated monopolar or bipolar output
Current measurement (leakage)	Range	30 mA to 2500 mA rms
	Resolution	1 mA
	Accuracy	± 2.5 % of reading or ± 15 mA (whichever is greater)
Power measurement (output)	Range	1 W to 400 W
	Resolution	0.1 W
	Accuracy	± 5 % of reading or ± 3 W (whichever is greater)
Bandwidth of rms converter circuit (1 % accuracy)	Flat Response	10 kHz to 10 MHz)
	-3 dB points	1 kHz to 20 MHz
Frequency response	System response	-3 dB points, 1 kHz to 10 MHz at 300 Ω
RECQM Test	50 Ω to 750 Ω, 50-Ω steps	
Test load section	Number of selections	15
	Range	50 Ω to 750 Ω
	Step size	50 Ω
	Accuracy (dc to 500 KHz)	± 4 % of selected value measured at calibration to ± 1 % (across the entire operating temperature range)
	Duty cycle	25 % @ 400 W (max 30 sec ON during any 2-minute period)
	Resonance impedance variation	± 0.5 dB max (< 10 MHz)
Auxiliary leakage test load	Fixed	200 Ω
	Accuracy	± 4 %
	Power Rating	225 W
Input capacitance (nominal)	Active to Dispersive	30 pF
	Active or dispersive to earth ground	40 pF
Oscilloscope output	Transformer coupled output, uncalibrated	
	Connector type	BNC

Ordering information

Model

ESU303RS-US120V United States, 120 V
ESU303RS-AUS250V Australia, 250 V
ESU303RS-DEN250V Denmark, 250 V
ESU303RS-SHK250V Shuko, 250 V
ESU303RS-ISR250V Israel, 250 V
ESU303RS-ITAL250V Italy, 250 V
ESU303RS-IND250V India, 250 V
ESU303RS-SWZ250V Switzerland, 250 V
ESU303RS-BRAZ250V Brazil, 250 V
ESU303RS-UK250V United Kingdom, 250 V

Standard accessories

3031000 Users Manual
3030002 Accessory Kit

Accessory kit includes the following

TEST LEAD Active Safety Lead
3010-0576 ESU Dispersive Safety Lead

3010-0575 ESU REQM Safety Lead
TEST LEAD ESU Case Safety Lead
3010-0578 ESU Jumper Safety Leads (2)
2720-0005 Active Safety Clip Yellow
2720-0006 Case Safety Clip Green
1005-0194 Fuses (2) 5X20 F3.15A 250V CE
9503-0004 Ground Pin Adapter
 Detachable Power Cord (country specific)

Optional accessories

9530-0066 Multipurpose Hard-Sided, Watertight Carrying Case
3370512 Serial Cable for D9F-D9F
75034 Interface Cable, medTester to RF303_{RS} (RS-232; male DB9 to female DB9; adapter required, p/n 49755FG)
49755FG Adapter for Interface Cable, medTester to RF303_{RS} (male DB9 to female DB25; used with interface cable, p/n 75034)

About Fluke Biomedical

Fluke Biomedical is the world's leading manufacturer of quality biomedical test and simulation products. In addition, Fluke Biomedical provides the latest medical imaging and oncology quality-assurance solutions for regulatory compliance. Highly credentialed and equipped with a NVLAP Lab Code 200566-0 accredited laboratory, Fluke Biomedical also offers the best in quality and customer service for all your equipment calibration needs.

Today, biomedical personnel must meet the increasing regulatory pressures, higher quality standards, and rapid technological growth, while performing their work faster and more efficiently than ever. Fluke Biomedical provides a diverse range of software and hardware tools to meet today's challenges.

Fluke Biomedical Regulatory Commitment

As a medical test device manufacturer, we recognize and follow certain quality standards and certifications when developing our products. We are ISO 9001 and ISO 13485 medical device certified and our products are:

- CE Certified, where required
- NIST Traceable and Calibrated
- UL, CSA, ETL Certified, where required
- NRC Compliant, where required

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