



SafeTest 60+

An entry-level electrical safety analyzer for medical devices



The Rigel SafeTest 60+ is a robust, reliable and dedicated medical safety analyzer. It is ideal for testing high volumes of medical and laboratory equipment that does not require patient lead testing, such as beds, hoists, infusion pumps, CPAP's and centrifuges etc.

The SafeTest 60+ includes a range of safety tests to enable compliance with a range of international safety standards, including leakage testing to IEC 60601, 62353, 61010 and NFPA-99, earth bond

testing to 62353, 61010 and NFPA-99, and insulation testing to IEC 62353.

Why buy the SafeTest 60+?

- > The SafeTest 60+ is available in a wide range of power configurations to suit local and international markets
- > With a large colour display and a colour-coded user interface, it's easy to select the required tests with a single key press, whilst a fast step-through of the test routine makes the testing process speedy and dependable.

Key Features:

- > Compact, robust and portable design
- > Manual control of fault conditions and tests
- > Dynamic pass/fail thresholds during measurement
- > Automatic warning of secondary earth/ground paths
- > Point-to-point insulation testing
- > Patient leakage testing

Passionate about patient safety.
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What's in the box?

- > Rigel SafeTest 60+
- > Detachable 2m mains lead
- > Patient Lead Adapter Box
- > Earth/ground bond test probe with clip
- > Calibration Certificate
- > Carry Case

Optional Accessories:

- > Earth bond cable
- > Replacement carry case
- > Patient lead adapter box
- > Applied parts adapters

Technical Specification:

Earth Continuity

Pre-pulse	2 wire ZAP technique
Pulse Shape	Exponential Decay
Decay Time	200 – 550µs to 5% of peak (0.1 to 0.8Ω respectively) 2 Wire
Method	
Measurement Current	>± 200mADC into 2Ω
Max Test Voltage	4-24Vrms o/c
Measuring Range (Low Range)	0.001 – 0.999Ω
Resolution	0.001Ω
Measuring Range (Mid Range)	1.00 – 9.99Ω
Resolution	0.01Ω
Measuring Range (High Range)	10.0 – 19.9Ω
Resolution	0.1Ω
Accuracy	± 1% of value, ± 5mΩ
	± 1% of value, ± 5mΩ Test inhibited if ≥ 30VAC or DC at 4mm inputs
Circuit Protection	

Insulation Resistance

Measurement Voltage	Point-to-point and EUT to Earth 500VDC @1mA
Maximum O/C Voltage Range	<600VDC
Resolution	100K – 100MΩ ± 5% ± 2 Digits
Short Circuit Current	0.01MΩ
	<2mA

Powered Leakage Measurements

IEC 62353	Equipment Leakage (Direct)
IEC / AAMI 60601	Earth + Enclosure Leakage + Patient Leakage
NFPA-99	Ground + Chassis Leakage + Patient Leakage
IEC 61010	Touch Leakage, Touch Voltage
Test Voltage	Mains Supply Voltage
Measuring Range	0.1 - 9999µA (0.1 - 8000µA typical for IEC61010)
Measurement/Display Resolution	0.1µA
Accuracy	± 2%, ± 5µA
Mains Reversal	Soft Key
Single Fault Conditions	Open Neutral and Open Earth Via Soft Key
Frequency Response	IEC 60601 – 62353, NFPA-99, and IEC 61010 selectable

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Service and Warranty

The SafeTest 60+ comes with a free 12-month warranty, subject to terms and conditions, available at

rigelmedical.com/register

Technical Specification (Continued):

Voltage Measurement

Application	L-N, L-E, N-E and touch voltage (IEC 61010)
Range	0.0V – 300VAC
Resolution	0.1V
Accuracy	± 2% ± 5 digits (between 10V – 270VAC)
Mains frequency	45.0 – 66.0Hz
Resolution	0.1Hz
Accuracy	Unspecified

EUT Load Current Measurement

Range	0.0A – 20.0A
Resolution	0.1A
Accuracy	±5% ± 2 digits

Power Source

Maximum Current Rating	20A @ 120V / 16A @ 230V
Duty cycle (@21°C ambient)	16A to 20A, 3 min. on/ 10 min. off 10A to 15A, 3 min. on/ 5 min. off 0A to 10A, continuous
Mains Power	90-264V 48-64Hz

General Specifications:

Weight	1.1kg/2lbs (unit) 2.2kg/5lbs (complete with accessories)
Size (L x W x D)	225 x 150 x 100mm / 9 x 6 x 4"
Operating Temperature	0 to 40°C
Humidity	0 – 98% Relative humidity, non-condensating
Storage Temperature	-10 to 50°C
Altitude	0 – 2000m
Ingress Protection	IP 40
Operating Pollution Degree	2, according to IEC 60529
Overvoltage Category	CAT II 300V

Rev 1

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