

SafeTest 60

A simple, robust and cost-effective medical safety analyser for general electrical safety testing

The Rigel SafeTest 60 is a robust, reliable and dedicated medical safety analyser. 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.

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.

Whilst small, 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.

Full manual control offers the benefit of executing only those specific tests that are required and provide the user with full control of the power cycles, making testing simple, easy and fast.

An automatic warning of secondary earth/ground paths ensures users are made aware when invalid readings are made, thus ensuring correct and accurate test results first time, every time.

The SafeTest 60 is available in a wide range of power configurations to suit local and international markets, and is supplied with a protective carry case as standard.



Key Features

- Compact, robust and portable design
- Fast step-through of test routines with minimised power breaks
- Manual control of fault conditions
- Tests to a range of international standards including IEC 60601, 62353, 61010 and NFPA-99
- Insulation testing to IEC 62353
- Large colour display with clear read-out
- Secondary earth warnings to ensure valid test setup
- Accurate high current, low energy earth bond testing
- Supplied with free, protective carry case
- Multi voltage - operates on any mains supply between 90-264V / 48-64Hz

Electrical/Analysis Functions

Specific to IEC 60601:

- Earth leakage
- Enclosure leakage

Specific to NFPA-99:

- Ground leakage
- Chassis leakage
- Earth bond testing

Specific to IEC 62353:

- Equipment leakage
- Insulation testing
- Earth bond testing

Specific to IEC 61010:

- Touch leakage
- Touch voltage
- Earth bond testing

Electrical Safety Tests performed:

- Point-to-point testing
- Mains voltage measurement
- Load current measurement

End User Types

- Those involved in testing medical equipment that do not require patient lead testing (e.g. medical beds, operating tables, infusion pumps, hoists, CPAP's, suction pumps, dentist chairs, medical scales, homecare equipment).
- Engineers testing on laboratory equipment and white / brown goods in medical environments.

Download your **FREE** guide to electrical safety testing at www.rigelmedical.com/guides

► **Compact, robust and portable design**

A strong and durable handheld safety analyser, the SafeTest 60 can endure even the most rigorous of testing regimes.



◀ **Ready to use, straight from the box**

The SafeTest 60 is so simple to use that no specific training is required. It is supplied with a protective carry case to ensure easy storage and transportation from one location to another.

► **Fast step-through of test routines with minimised power breaks**

Simplicity is key in ensuring the SafeTest 60 delivers fast and reliable safety testing.



► **Test to international standards**

The SafeTest 60 is packed with a range of tests to help you to comply with different standards, including leakage testing to IEC 60601, 62353, 61010 and NFPA-99, earth bond testing to IEC 62353, 61010 and NFPA-99 requirements and insulation testing to IEC 62353.

www.rigelmedical.com/SafeTest60

For USA and Canada enquiries Tel: +1 (813) 886 - 2775

For all other enquiries Tel: +44 (0) 191 587 8730

Email: info@rigelmedical.com

► Manual control of fault conditions

Full manual control offers the benefit of executing only those specific tests that are required and provide the user with full control of the power cycles, making testing simple, easy and fast.



◀ Insulation testing

In certain local markets and for testing certain electrical goods, insulation testing is a must-have requirement. Simple and quick testing of insulation resistance will ensure local or specific requirements are met and can show potential deterioration in dielectrics or show possible neutral-to-earth faults.



◀ Large colour display with clear read-out

The large colour display is visible even in poor light and from a distance, making it the ideal analyser for dark or even very light conditions.

A reversed colour display means that the screen can be used in dark rooms without being too disruptive to patients, and with reduced screen glare.



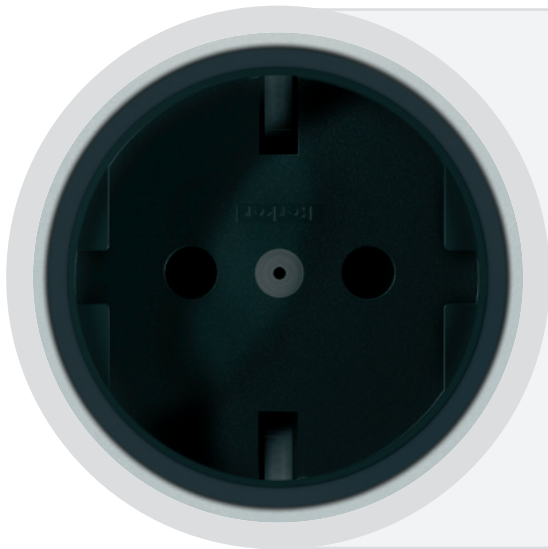


◀ Accurate high current, low energy bond testing

Rigel's unique bond technology, gives accurate and precise readings, saving time and unnecessary replacement of good mains cables. Measurements are still conducted at 200mA to ensure mechanical wear is being identified.

▶ Secondary earth warnings to ensure valid test setup

Get the correct results first time and avoid time consuming re-tests with Rigel's unique and automated verification of incoming mains configuration and secondary paths, which result in false positives.



▶ Available in international mains configurations

The Rigel SafeTest 60 is a truly global product, available in the widest possible range of mains configurations to meet local requirements across the globe. Please contact us at support@rigelmedical.com to enquire about the available mains configuration for your area.

- | | |
|------------------------------|-----------------------------------|
| ■ USA, 120V, 20A | ■ China, 220V |
| ■ USA, 240V, 15A | ■ India/South Africa, 220V |
| ■ Schuko Germany, 230V | ■ Japan, 100V |
| ■ UK, 230V | ■ Australia/New Zealand, 10A/230V |
| ■ Schuko France/Poland, 230V | |

More versions available. Please contact us on support@rigelmedical.com

Also operates on any mains supply between 90-264V, 48-68Hz

Technical Specifications

Earth Continuity

Method	2 wire ZAP technique.
Test Current	>± 200mADC into 2Ω
Max Test Voltage	4-24Vrms o/c
Measuring Range (low range)	0.001 – 0.999Ω / 0.001Ω resolution
Measuring Range (mid range)	1.00 – 9.99Ω / 0.01Ω resolution
Measuring Range (high range)	10.0 – 19.9Ω / 0.1Ω resolution
Accuracy	± 1% of value, ± 5mΩ
Circuit Protection:	Test inhibited if ≥30VAC or DC at 4mm inputs

Insulation Resistance (Non US versions only)

Measurement	EUT to Earth
Voltage	500VDC @1mA.
Maximum O/C Voltage	<600VDC
Range	100K - 20MΩ ± 5% ± 2 digits
Resolution	0.01MΩ
Short circuit current	<2mA

Powered Leakage Measurements

IEC 62353	Equipment Leakage (Direct)
IEC / AAMI 60601	Earth + Enclosure Leakage
NFPA-99	Ground + Chassis Leakage
IEC 61010	Touch Leakage, Touch Voltage
Test Voltage	Mains Supply Voltage
Measuring Range	0.1- 9999μA (0.1-8000μA typical for IEC 61010)
Measurement/Display Resolution	0.1μA
Accuracy	± 2%, ± 5μA
Mains Reversal	Softkey
Single Fault Conditions	Open neutral via softkey Open earth via softkey
Frequency Response	IEC 60601 – 62353, NFPA-99

Voltage measurement

Application	L-N, L-E, N-E and touch voltage (IEC 61010)
Range	0.0V – 300VAC
Resolution	0.1V
Accuracy	± 2% ± 2 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	15A to 20A, 5 min. on/5 min. off 10A to 15A, 7 min. on/3 min. off 0A to 10A, continuous
Mains power	90-264V 48-64Hz

General Specifications

Weight	1.1kg / 2.5lbs (unit) 2.2kg / 5lbs (complete with accessories)
Size (L x W x D)	225 x 150 x 100mm / 9 x 6 x 4"

Service & Warranty

SafeTest 60 comes with a free upgraded 24 month warranty (subject to terms and conditions, available at www.rigelmedical.com/register-product)

Standard Accessories (supplied with SafeTest 60)

■ Calibration certificate	■ Detachable mains cable
■ Carrying case	■ Electronic instruction manual
■ Bond test probe with clip	■ Quick start guide

Technical specification subject to change without notice.

Rev 1.2, 2015