

Need Help?

For technical issues please visit rigelmedical.com and view the Application Notes in the Downloads tab. Application Notes are regularly updated and will most likely cover any common issues.

For further assistance please contact your Rigel Medical supplier or use the following contact details to speak to a member of the Rigel Medical team:

Sales and Delivery enquiries

Email: sales@rigelmedical.com

Tel: +44 (0) 191 587 8730 **Fax:**+44 (0) 191 586 0227

Technical enquiries

Email: support@rigelmedical.com

Tel: +44 (0) 191 587 8701

Service, Calibration and Repair

Email: service@calibrationhouse.com

Tel: +44 (0) 191 587 8739 **Fax:** +44 (0) 191 518 4666

**Remember to activate your 2 year warranty*
by registering your Rigel 288+ with Rigel Medical**

Go to rigelmedical.com/register-product



*Terms and Conditions apply. See website for details.

Rev 1.2
Part No. 406A557

Rigel 288+ Electrical Safety Analyser Quick Start Guide



NOTICE

If any items are missing on receipt of your new unit, please contact your equipment supplier immediately.

- 1 Rigel 288+
- 2 Applied part adaptors x 10
- 3 Detachable 2m mains lead
- 4 Patient Applied Part Module
- 5 Earth bond test probe with clip
- 6 Earth bond clip lead
- 7 Belkin USB Bluetooth dongle
- 8 Calibration certificate
- 9 Carry case

What's in the box?

Welcome to your new Rigel 288+ Hand-Held Electrical Safety Analyser. This quick start guide tells you how to set up your Rigel 288+ and make use of its key features. Once you are up and testing, you can learn more about the full range of features available on our website www.rigelmedical.com/288+

Introduction

User notes

The following symbols are used throughout this Rigel Quick Start Guide.

Warnings and Cautions

Warning of electrical danger! Indicates instructions must be followed to avoid danger to persons.

Important, follow the documentation! This symbol indicates that the operating instructions must be adhered to in order to avoid danger.

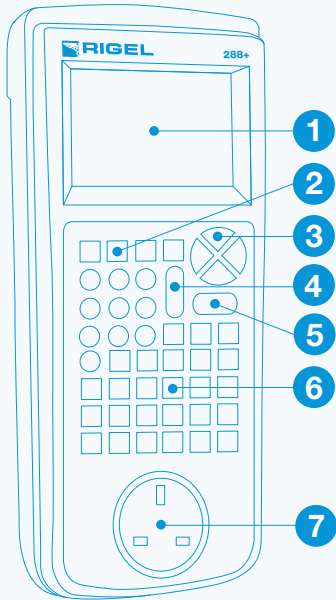
Warning - during many of the leakage tests the PROTECTIVE EARTH CONDUCTOR to the appliance under test is interrupted. For this reason additional means of protection are required in order to comply with the relevant safety standards. For EN60601-1 leakage tests, it is recommended that this additional protection is in the form of an isolation transformer, with an isolated reference ground, used to power the entire system.

Do not connect any probe combination to the maximum permitted voltage of 30 V AC/DC with respect to earth potential when performing non-power tests. Danger of electric shock.

It must be assumed that safe operation is no longer possible:

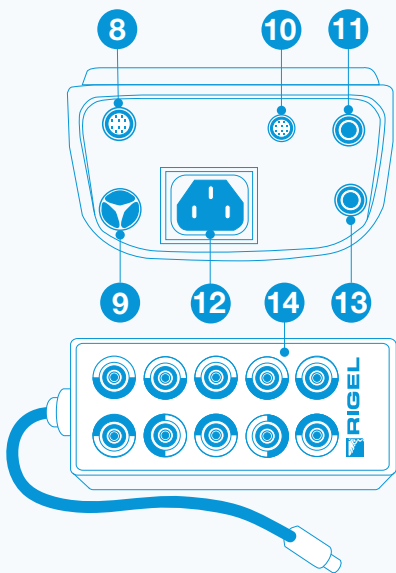
- If the instrument or leads show any sign of damage
- If the instrument does not function
- After long periods of storage under adverse environmental conditions

1 Getting to know your Rigel 288+



Rigel 288+

- 1 LCD screen
- 2 Function keys F1 - F4
- 3 Directional arrow keys
- 4 OFF/Stop key
- 5 ON/Start key
- 6 Alphanumeric keyboard
- 7 DUT socket



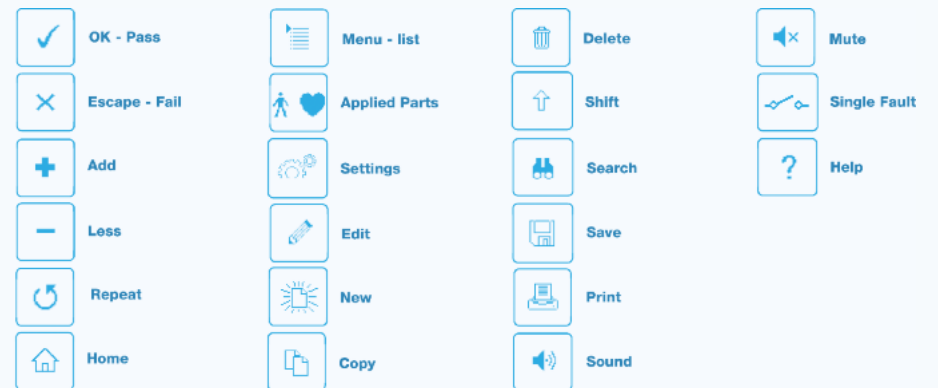
Rear Connection Panel

- 8 10-way patient Applied Part adaptor box connection
- 9 Mains power connections
- 10 RS-232 lead socket
- 11 Auxiliary earth bond socket
- 12 IEC lead test socket
- 13 Earth bond probe socket
- 14 10 way Applied Part Adaptor box

2 Unique use of icons

The Rigel 288+ features a high resolution graphic backlit display which not only provides highly visible and easy to follow menu structures but also allows the user to operate the tester and the intuitive icons speed up test routines.

Rigel 288+ icon key



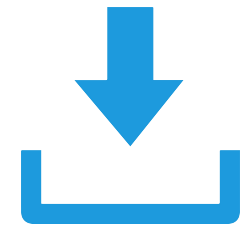
Instruction manual

Instruction Manual

This Quick Guide is designed to be used in conjunction with the full Rigel 288+ Instruction Manual.

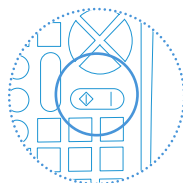
The Rigel 288+ Electrical Safety Analyser Instruction manual is available as a download from rigelmedical.com/rigel-downloads

The download section also includes a free 30 day trial for our asset management software, Med-eBase



3 Getting started

In this section we will identify some of the basic functions of the Rigel 288+ and how to get you started.



Switch on

Turn on your Rigel 288+ by pressing and holding the green **ON** button until you hear a 'beep' and the Rigel splash screen appears

Re-launch a previously saved test

Ensure EUT is plugged into DUT socket and any applied parts are connected to the Applied Part Module.

Select for the main menu and then choose Auto Mode

Enter the Asset ID of the EUT and press F4 to confirm you want to reload existing test data.

Reload existing Test data?	
Asset ID	ID1
Tested by	Admin
	60601 - ClassI
Tested on	15 Aug 2011
Run Mode	Automatic
Test Period (months)	12
<input type="button" value="X"/> <input type="button" value="✓"/>	

4 Perform electrical safety tests

Launch a test in Automatic Mode

Ensure Equipment Under Test (EUT) is plugged into DUT socket and any applied parts are connected to the Applied Part module.

Select for the main menu and choose Auto Mode

<p>IEC Lead Test</p> <p>500 v</p> <p>Continuity [0.10 Ohms]</p> <p>[1.0 MOhms]</p> <p>Auto Mode</p> <p>Manual Mode ></p> <p>View Data</p> <p>Data Transfer ></p> <p>Setup ></p> <p>About</p>	<p>Asset Details</p> <p>User Name Admin</p> <p>Asset ID</p> <p>Test Code</p> <p>TestCode=1BF2</p> <p>Run Mode Automatic</p> <p>Test Period (months) 12</p>
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Enter the Asset ID then choose the test standard and whether to run the test in semi or automatic mode.

Select for the applied parts setup and to edit.

NOTICE

For safety reasons, the Applied Part configuration will revert to 10 CF after the unit has been switched off.

Warnings during testing

To ensure the measurements are performed under valid and consistent conditions, the Rigel 288+ performs a number of self-checks upon power up and prior to a powered safety test (leakage test). A warning message may appear if these conditions are not met.

Warning	
No incoming Earth line.	
Can be caused by:- 1. Earth Fault or 2. IT System (Isolated Earth)	
Please check earth integrity before proceeding. ONLY continue when SAFE.	
Leakage measurements might vary to those done on a TN Sytem as per IEC 60601-1 requirement.	
<input type="button" value="X"/> <input type="button" value="↓"/>	

	IEC 62353	2s
Direct Equipment Lkg		
Alert		
Secondary earth path detected. Please verify test setup		
0008		
<input type="button" value="✓"/>		

In addition, the Rigel 288+ is able to check for a valid test setup for measurements done using the direct method. In case a secondary earth path is detected, the Rigel 288+ will warn the user. It is not possible to continue as testing under such conditions will always result in a "zero" reading due to the low Ohm resistance of the secondary earth path in comparison to the 1kOhm resistance of the body model used in the Rigel 288+.