

# Assist

Spark-e-Mate



# Spark-e-Mate



**493  
Sparkemate, Circuit  
Testing Equipment  
Multiple Function Tester  
240V, 50Hz**

## Description

The Clipsal Spark-e-Mate performs comprehensive electrical wiring tests relevant to Australian and New Zealand Standards from socket outlets to the switchboards.

Spark-e-Mate will test the following:

- Polarity Test
- Insulation Resistance Test
- Earth Continuity Test
- RCD Trip Test
- Fault Loop Test
- Circuit Connections Test

The Clipsal Spark-e-Mate records all of the verification results which can be emailed to your PC using the 493BTLi Spark-e-Mate with Bluetooth®.

With a Bluetooth-enabled device, you can save, store and print reports for each installation, making accessibility to your original verification records simpler. The 493BTLi is supported by Android and Apple devices.

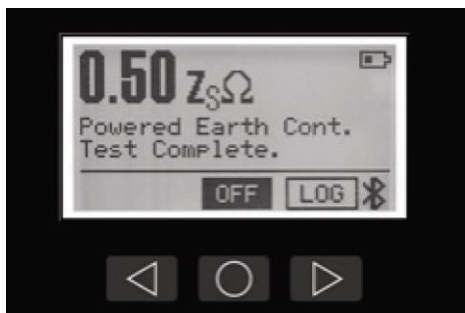
## Spark-e-Mate benefits include:

- One electrical installation tester that does the required AS/NZS3000 testing.
- Helps to ensure every electrical installation is safe for your customers to use.
- No need to maintain and calibrate multiple pieces of test equipment.
- Using the optional *Bluetooth*, faster test cycles with reports for each installation can be stored and emailed.

For each of trip current range, Spark-e-Mate automatically applies a load at the peak of the first half cycle at 90 degrees. It then maintains a full wave test current until the RCD trips or for 400ms.

This test method is thorough and exceeds the requirements of AS/NZS 3000 Section 8.3.10.1 and 8.3.10.2. Firing at 90 degrees in an installation prevents the need to test at 0 degrees and again at 180 degrees.

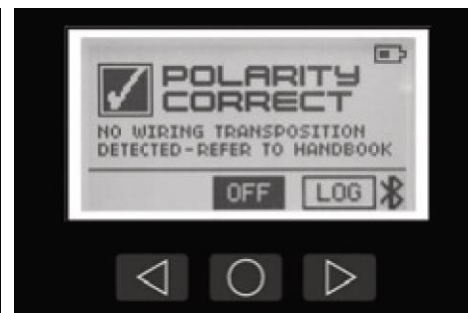
The ramping test current prevents the need to manually select the trip current. An RCD is expected to perform and trip within certain parameters, **you must refer to your local wiring rules or electrical standards to ensure you have the correct tripping times.**



Earth Continuity Test



Insulation Resistance Test



Polarity Test

## Key Product Terms

**RCD** – Residual Current Device

**LCD** – Liquid Crystal Display

**MEN** – Multiple Earthed Neutral

**Earth Continuity Test** – Tests Earth bonding to Neutral

**Insulation Resistance Test** – Test resistance between all live conductors and Earth

**Polarity Test** – Tests Active and Neutral wiring integrity

**Correct Circuit Connections Test** – Tests Earth connection and potential

**Extension Leads Test** – Tests integrity of extension leads, power boards, and double adaptors

## References

For more information about the Clipsal Spark-e-Mate, contact your local Clipsal and Schneider Electric Partner Business Representative, electrical wholesaler or visit [clipsal.com](http://clipsal.com)

Brochure link:

[https://download.schneider-electric.com/files?p\\_Doc\\_Ref=CLPDOC\\_I0000129](https://download.schneider-electric.com/files?p_Doc_Ref=CLPDOC_I0000129)

## Typical Applications

The Spark-e-Mate is designed to be used to test and verify electrical circuits in all electrical installations, alterations, and repairs prior to being placed in service.

The Spark-e-Mate can be connected to a computer using a Bluetooth connection, this function provides the ability to record all tests conducted.

## Key Questions

1. **Does a Spark-e-Mate come calibrated? Does it need regular calibration?**

All Spark-e-Mates are calibrated at manufacture prior to dispatch.

**Please refer to your local standards for how often the Spark-e-Mate needs to be calibrated**

2. **Why does the Spark-e-Mate insulation resistance test voltage vary slightly?**

In both the **250V<sub>DC</sub>** and **500V<sub>DC</sub>** test voltage ranges, the test voltage will vary depending on the load. Into 1 M $\Omega$ , it must be the indicated voltage -10% to +20%.

3. **Can a Spark-e-Mate be used to test appliances (PAT Tester)?**

No.

4. **Is there a Spark-e-mate carry case available?**

Spark-e-mate catalogue number 493K includes:

- Spark-e-Mate
- Case
- Tester
- Leads

5. **Is there a three-phase adaptor for testing of all phases?**

Yes, by using the 493AD1050 Adaptor.

## Catalogue Numbers

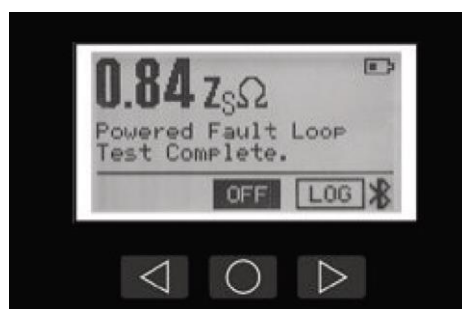
493	Spark-e-Mate Electrical Installation Tester
493L	Optional test probes
493BTLi	Spark-e-Mate with Bluetooth for Android and Apple iOS devices
493BTLKi	Spark-e-Mate kit with Bluetooth and leads for Android and Apple iOS devices (kit not available in NZ)
493AD1050	Three Phase Adaptor kit
493SB	Shoulder bag

## Features

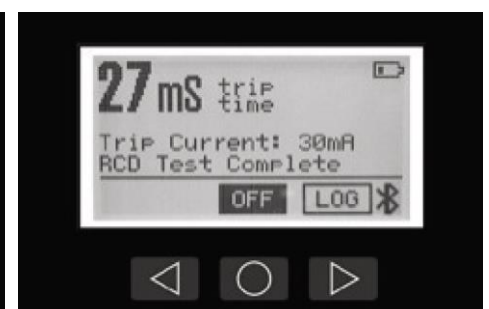
- Three-pin plug for socket testing.
- Optional test probes for lighting **OR** testing at the switchboard (493L).
- Optional *Bluetooth* logging (493BTLi) for both Android and Apple iOS devices.
- Tough rubber protective cover.
- Optional adaptor for testing three phase applications
- Complies with AS/NZS Standards:  
AS/NZS3017, AS/NZS3260  
(AS/NZS60950), AS/NZS3100,  
AS/NZS3350.1, AS/NZS61010.1  
Category IV 600V.
- Integrated testing for AS/NZS3003 Compliance for Electrical Installations in Hospitals, Aged Care & Child Minding



Circuit Connections Test



Fault Loop Test



RCD Trip Test

**493BTLKi**

**Spark-e-Mate kit with Bluetooth and leads for Android and Apple iOS devices (kit not currently available in NZ)**



**493L**

**Optional Test Lead Kit**



**493AD1050**

**Optional Three-Phase Adaptor**

## Helpful Hints

Spark-e-Mate measures the Earth continuity from a socket outlet to the Multiple Earthed Neutral (MEN) bar without the hassle of running a separate Earth reference. Spark-e-Mate passes current through the Active and Earth wires and measures the current through the Earth wire and voltage drop along the Earth wire (via the Neutral) to calculate the Earth impedance (when a.c. powered) or Earth resistance (when un-powered). If a low reading is obtained (say  $\leq 0.5\Omega$ ), circuit protective devices will operate in an Earth current fault situation. This helps to ensure that exposed conductive parts of electrical equipment will never reach a dangerous voltage, helping to make the installation safe. Note that every socket outlet needs to be tested.

**Note:** S-Type (100mA and 300mA) RCDs are not to be used for personal protection (refer to AS/NZS 3190 and AS/NZS 3175). They are designed for machinery, series installation with other RCDs and Cable systems.

## Customer Matrix

- \* **Rarely**  
Not associated with this kind of business
- \*\* **Sometimes**  
Can be required on occasion
- \*\*\* **Often**  
Specific requirement or specification
- \*\*\*\* **Very frequently**  
Regularly used
- \*\*\*\*\* **Constant use**  
A constant requirement

Domestic Contractor	*****
Systems Integrator	*****
Commercial Contractor	*****
O.E.M.	*****
Industrial Contractor	*****
End User/Manuf.	*****
Power Authority	*****
Government Dept.	*****

## How to order/where to find assistance

- Phone the Customer Service Centre on 13SEAU (137328)
- Fax the Customer Service Centre on 1300 369 288.
- Email: [customer care.au@schneider-electric.com](mailto:customer care.au@schneider-electric.com)
- Contact your local Schneider Electric representative.
- Consult your appropriate catalogue and reference manuals.
- Web: [clipsal.com](http://clipsal.com)

**Schneider Electric (Australia) Pty Ltd**  
 Head Office Australia Wide  
 2 Banfield Road Tel: 1300 369 233  
 Macquarie Park Fax: 1300 269 288  
 NSW 2113 [www.schneider-electric.com.au](http://www.schneider-electric.com.au)  
[customer care.au@schneider-electric.com](mailto:customer care.au@schneider-electric.com)

As standards, specifications and designs change from time to time, always ask for confirmation of the information given in this publication. Information given in this publication was accurate at the time of release.