Compliance Testing Report for Australian / New Zealand Standard AS/NZS 3100:2017 + A1 Approval and Test Specification - General Requirements for Electrical Equipment

Client:	World Wide Electrical Safety Technology Pty Ltd Trading as Safe Electrical Technology
Address:	3rd Floor 169 King St, Newcastle NSW 2300, Australia
Report Number:	0529SAFRVTVM-220-10_3100
Date of testing:	5 March- 29 May 2019
File Number:	SAF180806
Equipment Name:	Residual Voltage Technology (RVT)
Equipment Model Number:	RVT:VM-220-10
Equipment Description:	Residual voltage technology
Result:	**COMPLIES***
Tested By:	Rianto Yuwono Electrical Safety Test Engineer
Approved by:	Kenneth Fu Electrical Safety Manager
Date of Issue:	29 May 2019

* Refer to summary page for clarification

SUMMARY OF COMPLIANCE WITH AUSTRALIAN/NEW ZEALAND STANDARD AS/NZS 3100:2017 + A1

The EUT (Equipment Under Test) was known as Residual Voltage Technology (RVT) model RVT:VM-220-10 and was supplied for testing to AS/NZS 3100:2017 + A1 by World Wide Electrical Safety Technology Pty Ltd, trading as Safe Electrical Technology of 3rd Floor 169 King St, Newcastle, NSW 2300, Australia.

The EUT was an earth voltage sensing device pairing with an approved RCBO, activiting the RCBO if the voltage level of the earth conductor rises above 43 volts.

An earth monitor wire (non accessible) was used to monitor the voltage level of the earthing system and considered as a functional earth.

The EUT was designed to be used with IT and TT earthing system.

The class II equipment was rated at 110-240 VAC, 50/60Hz, 10-30mA and intended to be used in conjunction with an approved Residual Current Breaker and Main Circuit Breaker (RCBO).

The equipment was tested with an Australian approved (SAA 142322EA) Suntree RCBO model SDRNL-40, C10.

As requested by client, the earth monitor wire was alternatively assessed according to clause 5.2.2 of AS/NZS 3760:2010 for insulation and clause 5.7.6.2 of AS/NZS 3190:2016 for leakage current. Refer to Appendix 3

The equipment shall be installed by a qualified electrical contractor.

The Residual Voltage Technology (RVT) model RVT:VM-220-10 **COMPLIES** with the tested clauses of AS/NZS 3100:2017 + A1

Method
Testing was performed in accordance with the standard:

3100man **Issue 1**

Possible Test Case Verdicts:
- test case does not apply to the test object .....N(.A)
- test object does meet the requirements.....P(ass)
- test object does not meet the requirements .....F(ail)
- noted .....ND

Appendix 3 – Alternative Assessment for Earth Monitor Wire

Leakage current measurement for the earth monitor wire according to clause 5.7.6.2 of AS/NZS 3190:2016			
Clause	Requirement + Test	Result - Remark	Verdict
5	Design and Construction		-
5.7.6.2	The standing current in the functional earth circuit of Type FS devices shall not exceed 1 mA in both the open and closed positions, when supplied at 1.1 × rated voltage. Compliance shall be verified by test of Clause 8.13.		P
8	Test		-
8.13	The RCD neutral pole is connected to a resistor of approximately 1 Ω and then to the supply neutral. The RCD is closed and supplied at 1.1 rated voltage. A resistor of 1 Ω ±1% connected in parallel with a voltmeter is connected in turn from the functional earth, or the line or load earth terminals, to the supply neutral.	V = 1.1 x 240 = 264V	P
	The r.m.s. value of the voltage drop across the resistor is measured and the current flowing calculated. The leakage from the line or load earth terminal, to the neutral of the supply, is measured in both the open and closed position. The calculated value of the current shall not exceed 1 mA in either case.	Measured current : Closed = 0.22 mA Open = 0.16 mA Limit = 1 mA	P

Insulation measurement for the earth monitor wire according to clause 2.3.3.2 of AS/NZS 3760:2010			
Clause	Requirement + Test	Result - Remark	Verdict
2.3.3	Testing		-
2.3.3.2	Insulation shall be subject to a leakage current test or an insulation resistance test in accordance with Appendix E		P
	When an **insulation** resistance test is performed in accordance with Appendix E, the **insulation** resistance values obtained shall be not less than those specified in Table 2.	Insulation between L+N and earth monitor wire = 0.410 MΩ Limit = 0.05 M	P