

## RVD-EI Specification / Installation Guide

The Residual Voltage Detection Unit RVD-EI electrically connected to the power circuit RCBO is designed for use in floating IT electrical earthing systems. The combination of the RCBO/RVD-EI provides both over current and Earth Leakage fault protection from either L1 or L2 to the RVD-EI Sense Line which must be connected to the power circuit GPO earth terminal or the earth/frame depending on the electrical distribution system implemented. If the RVD-EI unit detects an earth/frame voltage or leakage current from either L1 or L2 to the RVD-EI Sense Line above the specifications detailed below, RVD-EI will automatically trip the electrically connected RCD/RCBO and isolate the supply voltage to the load. The RVD-EI overcomes the problems associated with Earth Neutral Bonding that can suffer from High Impedance where an RCD/RCBO may not work and may also compromise the isolation of the input to output requirement of Inverters and Generators.

### Physical Data

Dimensions: 36mm W, 78mm H and 65mm D, combined with supplied RCBO and is DIN rail mountable,

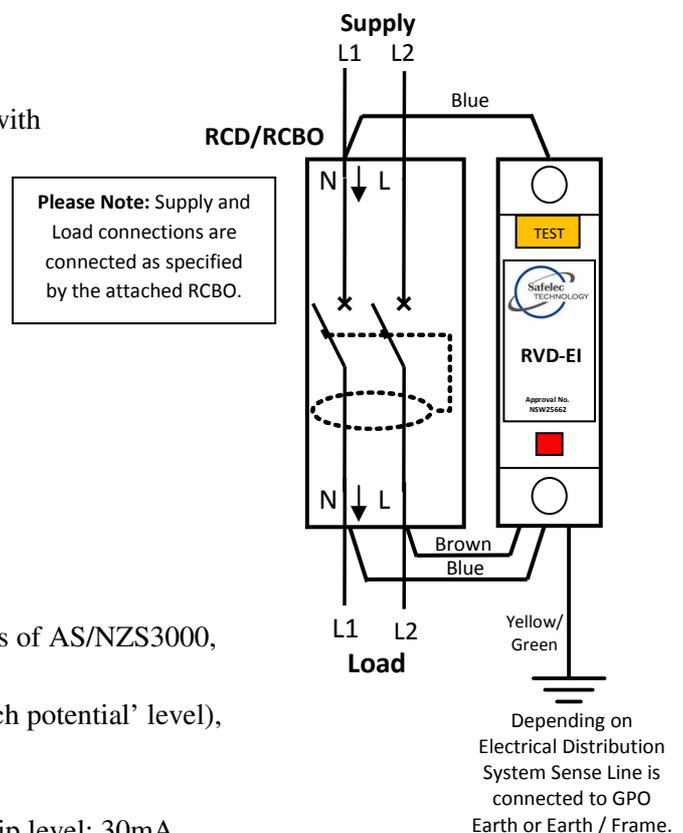
Connections are:

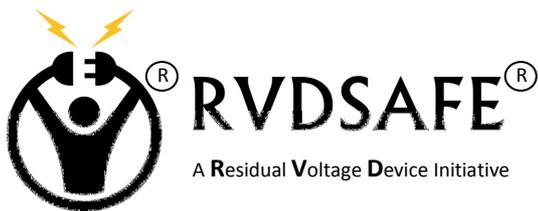
- L1 (Neutral) line-side - Blue
- L2 (Active) load-side - Brown
- Earth/Frame (Sensor) - Green/Yellow

The device will in no way impede or interfere with the normal operation of an RCD/RCBO.

### Technical Data

- Certified to AS/NZS3190 and exceeds the requirements of AS/NZS3000,
- Compliance Approval No: NSW25662,
- Voltage detection: approximately 43 volts (below 'touch potential' level),
- Trip Current: approximately 25 to 30mA,
- Trip time: approximately 20mSec,
- Associated RCD/RCBO actuating current imbalance trip level: 30mA
- Model Voltage ratings are: 220 to 240VAC, or 110 to 120VAC
- Frequency: 50Hz,
- Unit operates alongside most brands and current rated RCD/RCBOs,
- Detects active or neutral connection to earth/frame,
- Red LED indication on fault detection





## Installation Procedure

### Please note:

The specific RVD-EI and RVD-EMR units are designed for final sub-circuit protection in low voltage installations including (220 to 240VAC) and (110 to 120VAC), Please note that there are specific models for each voltage range.

### Step 1:

Ensure Power is isolated to RCD/RCBO electrical circuit and that the RCD/RCBO is turned off. Please ensure the site standard correct isolation and lock-out procedures are followed.

### Step 2:

Please note that in switchboards where the RVD-EMR does not need to sit alongside the RCD/RCBO, cables will need to be run from the RVD-EI or RVD-EMR unit to the associated RCD/RCBO. Give consideration to this during 'planning' for the installation so that we can supply cable lengths to suit the specific application. The following installation tips are more relevant to those types of installations, but as Recreational Vehicles (RVs) are supplied complete with the RCBO with connected leads other than the earth sense line which is to be connected to the earth returns from the sockets no cutting is required.

1. Mount the RVD-EI or RVD-EMR unit where required on the Din Rail,
2. Yellow/Green Earth/Frame cable is terminated in earth link or equipment frame,
3. Line Side Blue Neutral cable is terminated in the RCD/RCBO Line-side/Supply Neutral terminal,
4. Load Side Brown Active cable is terminate in the RCD/RCBO Load-side Active terminal,
5. Load Side Blue Neutral cable is terminated in the RCD/RCBO Load-side Neutral terminal,

All terminations should be tightened to a torque of 2Nm or RCD/RCBO manufacturers specified torque setting.

### Step 3:

Check installation connections are correct and then follow site standard procedures to reconnect power to RCD/RCBO power circuit. Turn on RCD/RCBO and check load supply voltage is present and then follow the monthly test instructions below.

## RCD/RCBO / RVD-EI and RVD-EMR Monthly Test Instructions

The following test instructions should be carried out monthly or in accordance with site standards.

1. First press the test button on the RCD/RCBO. To reset, reposition the RCD/RCBO to the 'on' position.
2. Test the RVD by pressing the orange test button. The RCD/RCBO should isolate. To reset, turn the RCD/RCBO to the 'on' position.
3. If the RVD does not isolate or allow RCD/RCBO to reset, and after verifying that there is no earth fault is present, then the unit may be faulty. Discontinue use, if applicable return to Residual Voltage Device Pty Limited for repair.

## GENERAL INSTRUCTIONS

1. When Active to Earth faults occurs the RCBO should trip at 30mA, once the fault has cleared simply turn RCBO to the on position.
2. When an Active to Frame voltage fault (43Volts) occurs, the RVD should trip at 25mA. Once the fault clears, reset the RCD/RCBO to the 'on' position.
3. Total current of protected circuits must not exceed maximum current rating of the RCD/RCBO.
4. Fixed appliances such as ovens and hot water services should be connected on individual circuits as RCD/RCBO's can be sensitive with these products.
5. To ensure operation of the RCD/RCBO ensure the 'Main Earth' and 'Main Neutral' are in good condition.
6. Always follow the RCD/RCBO manufacturer's instructions, the RVD instructions are to be used in addition to those instructions.
7. Please contact Residual Voltage Device Pty. Limited if further assistance is required.

## WARRANTY

1. The benefits conferred herein are in addition to, and in no way shall be deemed to derogate; either expressly or by implication, any or all other rights and remedies in respect to this Residual Voltage Device Pty Limited Product, which the consumer has under the Trade Practices Act or any other similar State or Territory Laws.
2. The Warrantor Residual Voltage Device Pty Limited Lot 25 Macwood Road, Smiths Lake NSW 2428.
3. This product is guaranteed against faulty workmanship and materials for a period of twelve months from the date of installation.