

## Introduction

Transmille has brought its experience gained in design & calibration of its high performance calibration systems to a portable test box for the electrician. The 2080 quickly & easily tests Loop testers, RCD testers and Insulation testers to meet the NIC requirements. The 2080 works with all makes of instruments.

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## Testing RCD Testers using the 2080

*Special features of the 2080 for RCD Testers*

### ► 3 Current ranges with 2 trip times

The 2080 uses an accurate electronic circuit with three current ranges & two trip times selected by a 3 position switch. The ranges have been chosen to test both low and high ranges, and the 5I function found on many testers. Transmille considers it essential to test a multi-range instrument, which most RCD testers are, on several ranges. Simply testing at one point is insufficient to confirm correct operation.

### ► Accurate Trip Timing

The 2080's electronic trip also provides the greater timing accuracy needed to perform a meaningful timing test. A standard electromechanical RCD, where the timing varies with the fault current cannot provide the accuracy. - the point of the RCD tester is after all to test RCD trips and therefore needs to be better than what it is testing.

### ► Display of Over current Faults.

A faulty RCD tester with a high test current is indicated by the over current LED on the 2080, this is an important test as the tester will still trip a RCB and may not otherwise be noticed.

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## Testing RCD testers

Plug the 2080 into an unprotected supply and your RCD tester into the Test socket on the 2080. The 2080 can test 3 current ranges with 2 trip times shown below.

**10mA** with a trip time of **150ms**

**30mA** with a trip time of **150ms**

**150mA** with a trip time of **30ms**

The tester may have more ranges than the 2080, however the instrument may be adequately tested by performing the 4 RCD tests below which test the instrument across the upper and lower measurement ranges :

### 1:Test a low current range (10mA)

Select 10mA range on tester and 10mA/150ms on 2080, press test, 2080 trips, Tester displays trip time between 148 to 152ms, over current LED off.

### 2: Test a mid current range (30mA)

Select 30mA range on tester and 30mA/150ms on 2080, press test, 2080 trips, Tester displays trip time between 148 to 152ms, over current LED off.

### 3: Test a high current range (150mA)

Select 150mA range on tester and 150mA/30ms on 2080, press test, 2080 trips, Tester displays trip time between 27 to 33ms, over current LED off.

### 4: Test of the 5I function at 30mA (150mA)

Select 30mA range x 5I on tester and 150mA/30ms on 2080, press test, 2080 trips, Tester displays trip time between 27 to 33ms, over current LED off.

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## Testing Insulation testers using the 2080

Testing the 4 main functions below of any insulation/continuity meters is very easy. Simply connect to each resistor in turn in the 2080 and measure the value, checking the displayed value is correct.

Record the results if required. The insulation test voltage can be tested by using the LED voltage indicator.

- 1: Test the accuracy of the meters insulation ranges by measuring the 3 High value resistor's -1/9.9/99Megohms in the 2080. Record results if required.
- 2: Use the LED voltage indicators to check the insulation test voltage at 100V, 250V, 500V & 1000V by plugging into the 1Mohm socket
- 3: Use the 3 low value resistors 0.5-2-10 ohms in the 2080 to test the accuracy of the continuity ranges.
- 4: Test the AC voltage measurement of the meter by connecting to the AC line output on the 2080.

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## Testing Loop testers using the 2080

The 2080 provides an accurate 1 Ohm increase in loop impedance controlled by a switch. To use, plug the loop tester into the test socket on the 2080, and with the switch set to the Supply loop position measure the loop impedance. Then select the switch position of loop +1 Ohm and test again. The reading obtained on the tester should be 1 Ohm higher.

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## Calibration & Certificates

A calibration certificate records the values & measurements made to ensure your confidence when using the 2080 for testing instruments. Transmille recommends that the 2080 is calibrated annually. The 2080 is ideal for regularly testing instruments in the field to identify faulty instruments, bad test leads etc. avoiding both time wasting & costly mistakes. Note regular testing is not a substitute for a full calibration which is traceable to *National Standards*.