



**"A BREAKTHROUGH  
IN ELECTRICAL  
TEST EQUIPMENT  
CALIBRATION"**

## Calibrates...

- Insulation Testers to 5kV
- PATs
- Loop Testers
- RCD Testers
- Breakdown / Hipot Testers
- Automated Calibration



# 2100 Electrical Test Equipment Calibrator - Five calibrators in one instrument

The world's first calibrator for PATs • Loop • RCD, Insulation & Breakdown Testers



## Insulation Testers

Providing all the functionality required to calibrate all aspects of these popular instruments.

### Resistance to 10GOhms

Continuously variable Insulation resistance to 10GOhms @ 1kV. Use the optional adaptor to check 5kV testers with active guard.



### Test Voltage Measurement

Measures insulation test voltage & current at nominal 1mA load for 16th edition equipment or 0.5mA for older equipment.



### Continuity Resistance & Current

3 ranges to 1kOhm (variable from 0.1Ohm to 200Ohms) and current measurement to 320mA (@10hm)



### AC Voltage Output

5 AC voltage outputs at 50V•100V•200V•230V•400V for calibrating voltage ranges



## PATs

The 2100 is the quickest solution for calibrating all PAT functions. Plug in the PAT, connect the earth bond lead and select a test.

### Earth Bond Resistance & Current

10 precision resistance values with current measurement from 100mA to 30A into 0.1 Ohms



### Insulation Resistance

Adjustable resistance to 10GOhms - ideal for checking pass/fail levels



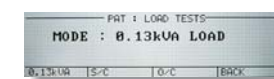
### Flash Voltage & Leakage Current

Class 1 & 2 flash voltage & current measurement plus 3 AC leakage ranges to 7mA



### Load Testing

Open circuit, short circuit and 0.13kVA load checks PAT operation / run tests



## RCD Testers

Simply plug in the RCD tester to the RCD test socket and start calibrating. The 2100 will check and detect a faulty tester.

### RCD Current Measurement to 3A

RMS and peak current measurements for all types of tester using digital waveform capture & analysis. Graphical Indication of phase start



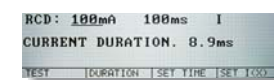
### RCD Trip Time 20ms to 5s

Accurate & repeatable trip times entered simply via the keyboard provide easy calibration.



### RCD Current Duration

The 2100 makes this normally difficult measurement straight forward with this dedicated function



## Optional Adapters

### Flash Test Adaptor



## LOOP Testers

Calibrate these instruments quickly and safely. The auto loop options ensures accurate correction of the supply line impedance.

### Loop Resistance

10 precision resistance values incorporating line impedance - either entered directly or obtained using the auto loop measurement option



## Breakdown Testers

External adaptor allows measurement of AC/DC voltages to 10kV under load to be safely made.

### High Voltage Measurement to 10kV

A purpose designed adaptor to automate calibration of breakdown / hi-pot testers.



## A breakthrough in electrical test equipment calibration

The increasing demand for the calibration of electricians tools brought on by government regulations and quality systems has presented a problem for calibration laboratories. Although these types of electrical equipment are relatively low in accuracy, they are difficult to calibrate due to the varied test equipment required, skill level and safety aspects associated with using live mains on an unprotected line. This precluded cost effective calibration...*UNTIL NOW.*

The 2100 revolutionises the process of calibration, providing a safe and controlled method to calibrate these types of electrical instruments with a minimum level of training. Connect directly to a PC using Transmille's ProCal software via the built in RS232 interface (isolated for safety) to provide a turn-key solution for automated calibration.



## Automate Calibration with ProCal - the easy to use calibration software



For a FREE demo CD contact our sales desk or visit [www.transmille.com](http://www.transmille.com)



### Improves productivity & throughput

ProCal software controls the calibrator and guides the user through a sequence of tests, recording the results automatically ensuring fast, repeatable calibration that can be performed with a minimum of training.

### Documentation of results

ProCal produces a selection of professionally formatted reports, including certificates and calibration labels - ideal for quality systems such as ISO9000 and ISO17025. Custom reports can also be written using Seagate Crystal Reports

### Calibration Procedures

Procedures can be easily downloaded from a library of procedures from [www.transmille.com](http://www.transmille.com) or created using the integrated procedure builder wizard.

### Use as part of a larger laboratory solution

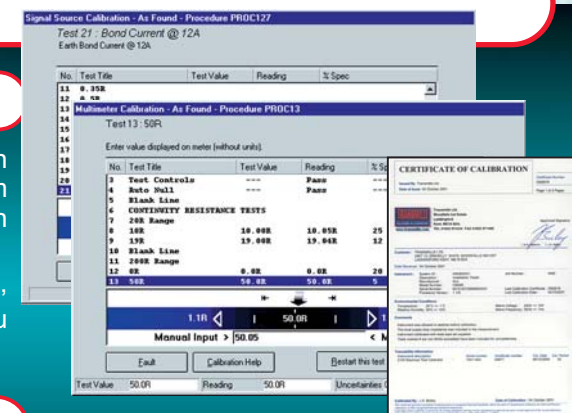
ProCal provides the flexibility to grow for expanding requirements to support calibration of other types of instruments including DMMs, power supplies, oscilloscopes - even pressure, torque & dimensional disciplines.

### Expandable system for job control

ProCal-Track provides an inventory & calibration management module to handle job control from goods-in to dispatch, and links seamlessly with ProCal.

From single station to full network setups, Transmille software is flexible to work the way you want to.

For further details see the Transmille software brochure - click on to... [www.transmille.com](http://www.transmille.com)



- Intuitive graphical user interface
- Certificates printed directly on plain paper
- Professional labels using dedicated label printer

Ultra Portable  
Ideal for on-site calibration

# 2100 Electrical Test Equipment Calibrator

## Continuity Testing

Cont. Variable Range : 0.1Ω to 20Ω (0.01Ω steps)  
 Fixed Ranges : 100Ω ; 1kΩ  
 Optional Range : 10Ω to 99.99kΩ (0.1Ω steps)  
 Standard Accuracy : 1% ± 25mΩ  
 High Accuracy (Option) : 0.25% ± 25mΩ

### Continuity Current Measurement (into 1Ω)

Range : 0 to 320mA (0.1mA Resolution)  
 Accuracy : 1.3% ± 6 Counts

## Insulation Testing

Range : 0 to 2GΩ (10GΩ Option)  
 Accuracy : 10kΩ to 5MΩ 0.3% (0.1% Option)  
 5MΩ to 2GΩ 3% (1% Option)  
 Resolution : 10kΩ  
 Max Volt/Power : 1.1kV or 1 WATT (5kV Option)

### Insulation Test Voltage Measurement

Ranges : 50V, 100V, 250V, 500V, 1kV  
 (0.1V Resolution)  
 Current Measurement : 0.5mA, 1mA  
 Accuracy : 1% ± 8 Counts

### AC Voltage Output

Range : 100V, 200V, 230V, 300V, 400V  
 Accuracy : 0.2% ± 1 Counts

## RCD Testing

**Time** Range : 20ms to 5s (10ms Resolution)  
 Accuracy : ± 0.7ms  
**Current** Range : 3mA to 3A  
 Resolution : 0.01mA (to 200mA), 0.1mA (to 3A)  
 Accuracy : < 190ms 5% ± 20 Counts  
 : up to 5s 1.2% ± 6 Counts  
 Timing Modes : Immediate & Zero Crossing  
 Current Modes : I, ½ I, 2I, & 5I  
 Display Modes : 0° and 180° Phase

## LOOP Testing

### Resistances

0.05Ω, 0.1Ω, 0.22Ω, 0.33Ω, 0.5Ω, 1Ω, 5Ω, 10Ω, 100Ω, 1kΩ  
 Resolution : 0.1mΩ (to 10Ω) ; 1mΩ (to 1kΩ)  
 Accuracy : 0.5% ± 4mΩ

### Auto Loop (Option)

Maximum Correction : 2Ω  
 Resolution : 100μΩ  
 Accuracy : ±18mΩ  
 Measurement Current : 4A

Automatically  
 corrects for  
 supplied loop  
 impedance.

## PAT Testing

### Earth Bond Resistance

Values : See Loop Values  
 Accuracy : 0.5% ± 4mΩ  
 Resolution : 0.1mΩ (to 10Ω) : 1mΩ (to 1kΩ)

### Earth Bond Current Measurements

Ranges : 100mA, 10A, 30A  
 Resolution : 1mA, 10mA, 10mA  
 Accuracy : 1.5% ± 6 Counts

### PAT Insulation Resistance

Range : 100kΩ to 1GΩ (10kΩ Resolution)  
 Accuracy : See Insulation Resistance

### PAT Leakage

Ranges : 2mA, 4.7mA, 7.7mA (1uA Resolution)  
 Accuracy : 1.5% ± 2 Counts

### PAT Leakage Test Voltage

Range : 100V to 300V RMS (0.1V Resolution)  
 Accuracy : 1.5% ± 9 Counts

### Load Testing

Ranges : S/C, O/C & 0.13kVA  
 Accuracy : 440Ω ± 5%

### Flash Testing (Option)

#### CLASS 1

Range : 1kV to 1.8kV (1V Resolution)  
 Load Resistance : 600kΩ (2.5mA @ 1.5kV)

#### CLASS 2

Range : 2kV to 3.6kV (1V Resolution)  
 Load Resistance : 1.2MΩ (2.5mA @ 3kV)

Accuracy (Class 1&2) : 4% ± 10 Counts

### Flash Current Measurement (Option)

Range : 1mA to 3mA Resolution : 10uA

## Line Voltage Measurement

Range : 200V to 260V : 0.1V Resolution  
 Accuracy : 0.8% ± 6 Counts

## General Specification

Line Power : 230V/110V 50Hz /60Hz  
 Dimensions : 5.5" x 17" x 18" • Weight : 8.0kgs  
 Warm-up Time : Double the time since last used  
 up to 20 minutes maximum.  
 Interface : RS-232

### Ordering Information

Model 2100 Electrical test Equipment Calibrator	2100	Calibration Control Panel software	CCP
High accuracy - improves resistance accuracy	HIACC	Carry Case	CASE
Extend insulation resistance to 10GΩ	10G	Laptop case(attachs to main case)	CASE2
Automated loop (line-earth) measurement	AUTOL	Extended Continuity Resistance	ECR
External PAT flash voltage measurement (up to 3kV)	FLASH	UKAS Certificate	2100UKAS

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