EA005

INSULATION TESTER CALIBRATION ADAPTER

TRANSMILLE
SOLUTIONS IN CALIBRATION

OPERATION GUIDE

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Overview

Calibration of insulation testers require functions outside that of the 2000 series calibrators. The special functions required for calibrating these instruments are available by using the Insulation calibration adaptor.

Controlled from the feature connector on the calibrator the adapter provides the high voltage/ high value resistors for calibrating the Megohm ranges and also by using the measurement capability of the calibrator the insulation test voltage 1000V, 500V, 250V, 100V & 50 Volt at a nominal 1mA load can also be measured.

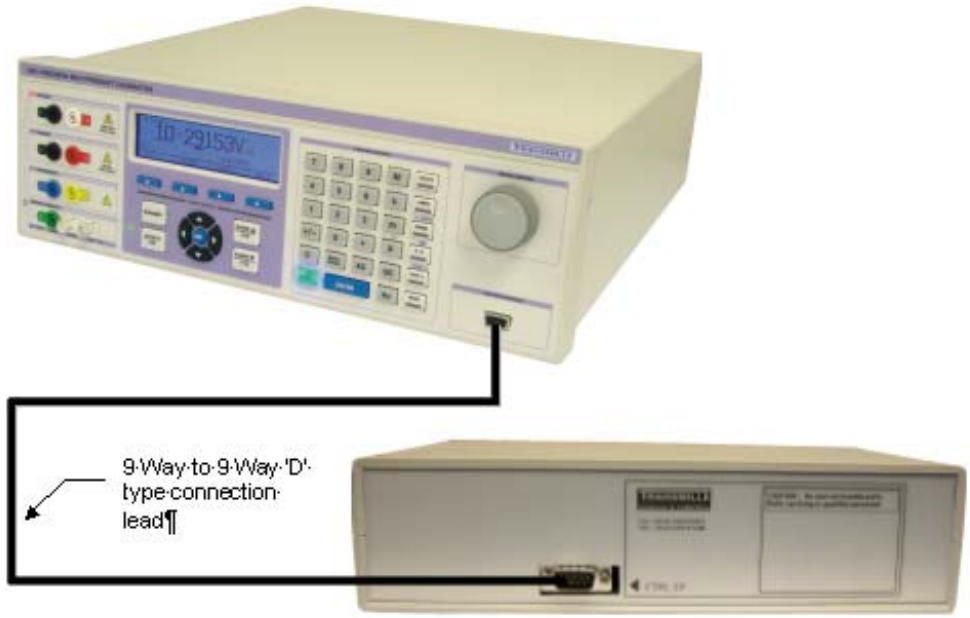
High current low ohm values are also available for calibrating the continuity ranges of the tester.
Calibration can also be automated by using ProCal.

For those laboratories whose requirements go beyond calibrating insulation testers Transmille also manufacture a calibrator (2100) specifically for the calibration of electrical test tools i.e. PAT's, Loop & RCD Testers as well as insulation testers.

Insulation Tester Calibration Adaptor - Connections

The insulation tester adaptor unit uses a 9 Way to 9 Way 'D' type connection lead to plug into the 2000 Series feature connector, as shown below :

ⓘ **Important Note** : This connection is not an RS232 serial interface connection and the adaptor cannot be connected directly to a PC



Front Panel Terminal Connections

Connect the Insulation Tester being calibrated to the terminals marked Continuity for the 10 Ohms and 100 Ohms ranges. For high ohm ranges and insulation test voltage measurement use the terminals marked Insulation.
The range selected is indicated by LEDs on the front panel.

ⓘ **Note** : The input voltage for the insulation terminals should not exceed 1000V

Insulation Tester Calibration Adaptor - Software Control

ⓘ Important Note : The insulation tester adaptor must be connected to a 3000 series calibrator - it cannot be used as a stand-alone unit.

Sending the commands below to the 3000 Series calibrator RS232 COM Port will set the insulation adaptor to the correct range :

Value	Command
10 Ohms	p128
1 Ohm	p64
100kOhms	p32
250kOhms	p16
500kOhms	p8
1MOhm	p4
10MOhm	p2
100MOhm	p1
Open Circuit	p0

All commands must be terminated with a carriage return (ASCII character 13), for example

p128<*CR*>

This will set the adaptor to the 10 Ohms range (<*CR*> denotes a carriage return)

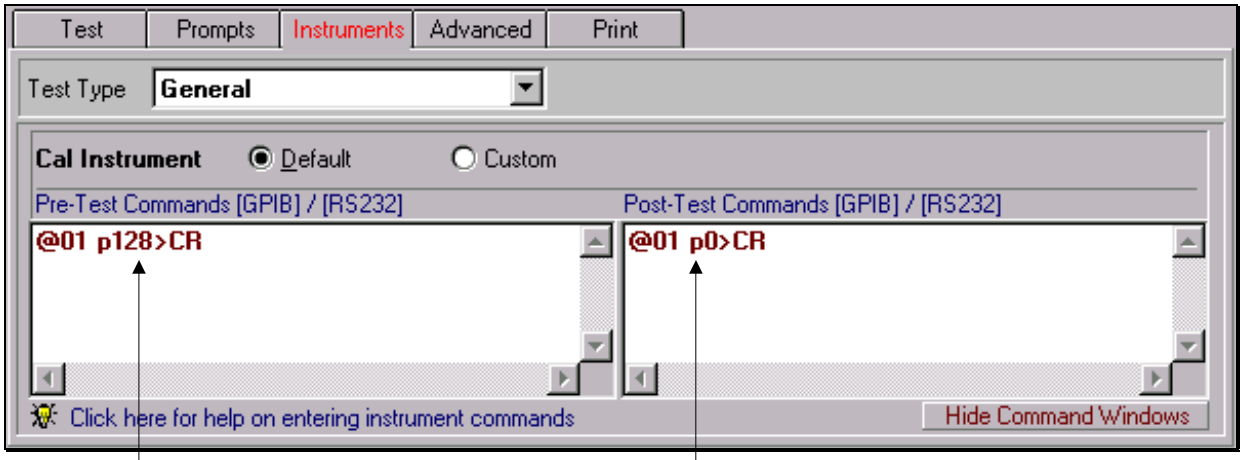
Serial commands to control the adaptor can be sent to the calibrator using either the Virtual Front Panel, ProCal Calibration Software or using any RS232 COM program, such as Hyper Terminal.

Controlling the adapter using ProCal

Setting Continuity / Insulation Resistance

Commands to control the Insulation Adaptor ProCal can be added to each test of a ProCal procedure.

Use the instruments tab in ProEdit, and edit the **pre-test** and **post-test** command boxes to enter commands, as shown below :



Pre-Test Command
This will send the command 'p128' followed by a carriage return to the calibrator.

This will set the adaptor to 10Ohms.

@01 sends the command to the COM port of the instrument at position 1 of the traceable instrument list in ProSet, e.g. the 2000 Series calibrator.

Post-Test Command
This will send the command 'p0' followed by a carriage return to the calibrator.

This will set the adaptor to OPEN CIRCUIT at the end of the test.

Note : To display a message on the 2000 Series display use the # command, for example

`@01 p128/#10 Ohms>CR`

This command sets the Insulation Adaptor to 10 Ohms, and displays '10 Ohms' on the 2000 Series display.

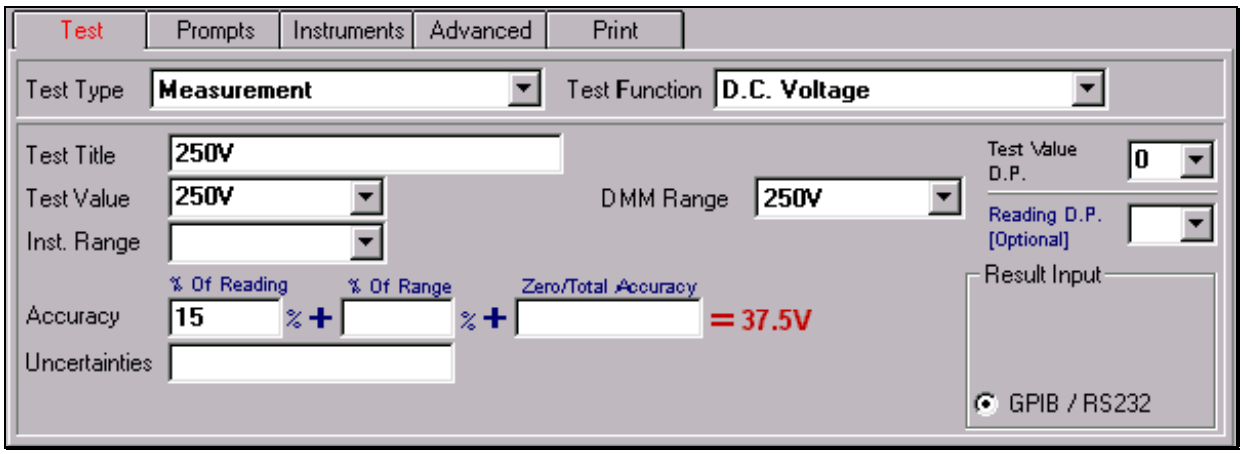
Measuring Insulation Test Voltage

Commands to use the Insulation Adaptor to measure insulation test voltage using ProCal can be added to each test of a ProCal procedure.

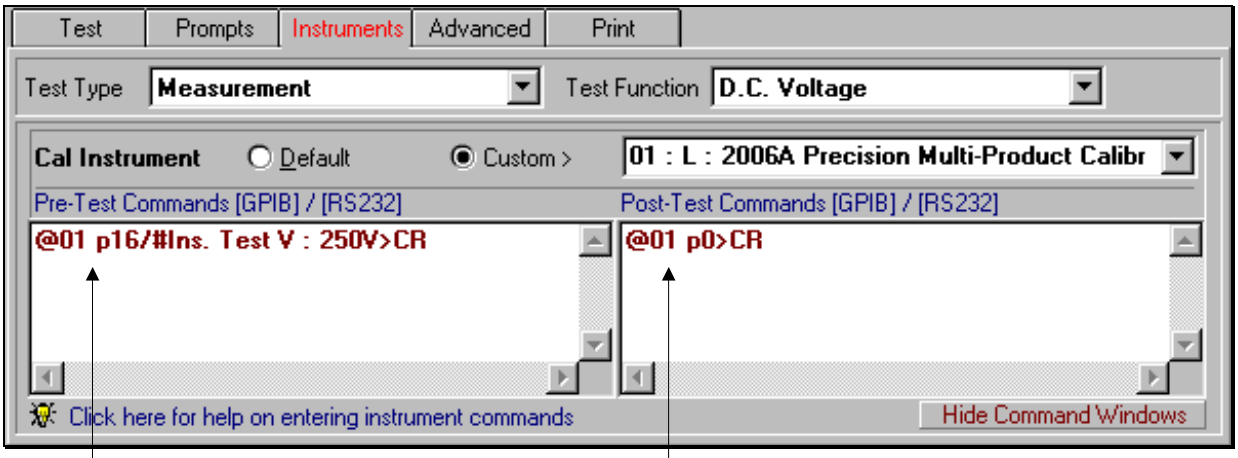
Insulation Test Voltage ranges and commands are :

Range	Command
100V	p32
250V	p16
500V	p8
1000V	p4

STEP 1 : Set-up a **Measurement** test, **D.C. Voltage** test function with the test value set to the insulation test voltage range to be measured. Also set the **DMM Range** to the insulation test voltage range.



STEP 2 : Using the **Instruments** tab in ProEdit, and edit the **pre-test** and **post-test** command boxes to enter commands. Also, the **Cal. Instrument** needs to be set as **Custom** and the **2000 Series Calibrator** selected, as shown below :



Pre-Test Command
This will send the command 'p16' and sets a message 'Ins. Test V : 250V' followed by a carriage return to the calibrator.

This will set the adaptor to 10Ohms.

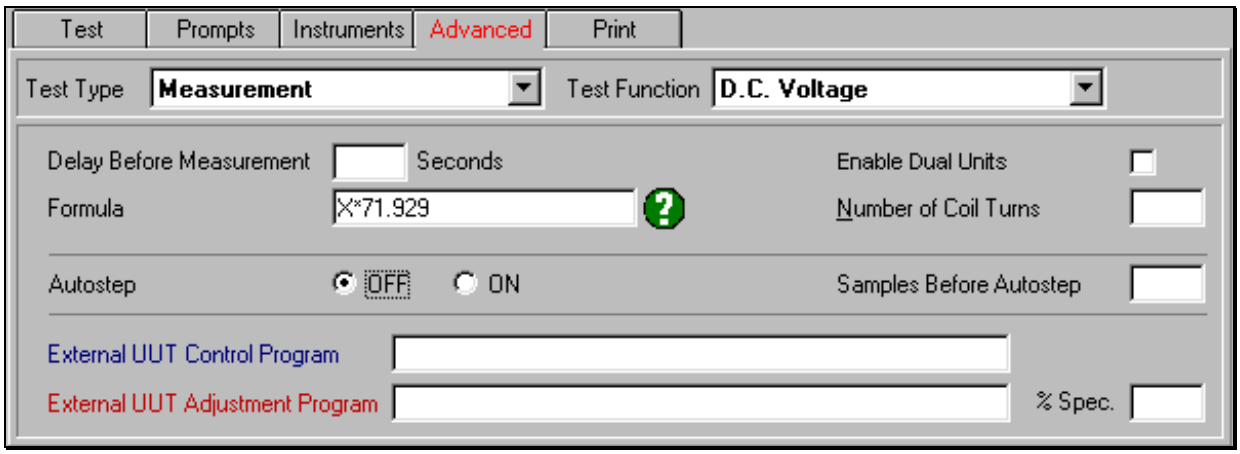
@01 sends the command to the COM port of the instrument at position 1 of the traceable instrument list in ProSet, e.g. the 2000 Series calibrator.

Post-Test Command
This will send the command 'p0' followed by a carriage return to the calibrator.

This will set the adaptor to OPEN CIRCUIT at the end of the test.

STEP 3 : Use the **Advanced** tab in ProEdit, and set the formula to scale the reading read back from the calibrator

Note : The scale factor (71.929 in this case) is dependant upon the calibration of the Insulation Adaptor.



Specifications

Insulation Test Resistance	
Range	100k, 250k,500k,1M,10M,100M
Accuracy	0.1% to 1M, 1% to 100M
Max Voltage	1000 Volts

Insulation Test Voltage Measurement	
Range	0 to 1000 Volts
Load	1mA

Continuity Resistance	
Range	1 Ohm & 10 Ohms
Accuracy	0.1% + 30mOhms
Max Current	300mA