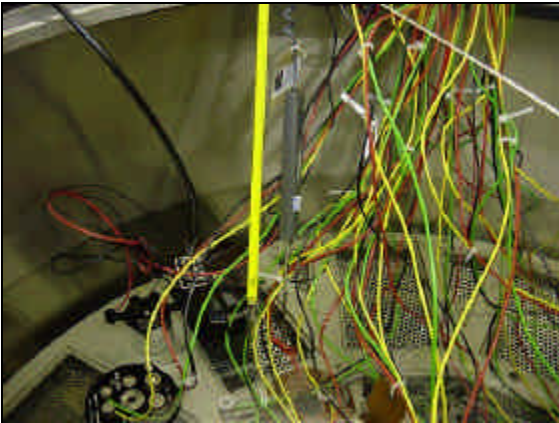


Resistance Thermometer Calibration Option

PRT



- **Ultra Accurate Resistance Value**
- **2, 3 or 4 Wire Simulation of Probe**
- **8 Passive Resistance Values**

The PRT option makes the calibration of high accuracy resistance thermometers easy. Simply connect in place of the probe and compare the displayed value with the calibrated value from the 2000 series calibrator. Because the calibrator uses passive precision resistors, reliable readings are guaranteed regardless of the measurement technique used by the thermometer.

Specifications

Range	Actual Value (Ohms)	Max. Power Rating (Watts)	Maximum Voltage (V)	Maximum Current (mA)	1 year Rel %
-100°C	60.25	0.2	3.47	57.62	0.01
0°C	100.00	0.2	4.47	44.72	0.01
+30°C	111.67	0.2	4.73	42.32	0.01
+60°C	123.24	0.2	4.96	40.28	0.01
+100°C	138.50	0.2	5.26	38.00	0.01
+200°C	175.84	0.2	5.93	33.73	0.01
+300°C	247.04	0.2	7.03	28.45	0.01
+800°C	375.51	0.2	8.67	23.08	0.01

Measured Value Stored For Accurate Calibration

When the 2000 series inductance option is calibrated, the exact measured value of the PRT resistor is stored in non volatile memory. This value is recalled and displayed each time a specific PRT resistor is selected, allowing accurate calibration to be performed.

Automated Calibration of Temperature Meters Using ProCal Calibration Software

By using the ProCal calibration software from Transmille, the PRT values stored in non volatile memory can be automatically downloaded and used as the nominal test value, allowing this type of calibration work to be carefully controlled. This de-skills these types of measurement and provides a way to reduce costs by allowing efficient throughput of calibration work.



Measured PRT resistor value stored and displayed by the 2000 series calibrator

Resistance Thermometer Calibration Option - Operation

Starting the PRT Calibration Option

To start the oscilloscope calibration option, press the softkey below the PRT menu item



PRT mode softkey

① **TIP** : If the PRT menu item is not displayed, press the PRT softkey to go to the next menu level.

PRT Option Operation

- Using two sets of 4mm to 4mm safety plug type leads (such as the leads supplied with the optional precision lead set available from Transmille) connect the 2000 series *Voltage* and *Low Current* sockets (indicated by LEDs when in PRT mode) to the 4-wire terminals of the UUT.
 ① **Note** Some instruments will require a custom lead to be made, depending of the probe connection type.

- Using the RANGE UP
X10 RANGE DOWN
/10 buttons, select the range required, e.g. 200°C

and ensure the calibrator output is turned ON by pressing the ● Output
ON key.

① **Note** : The LED in the top left hand corner of the Output ON key will illuminate and the display will indicate ON in the left hand corner.

Note : The digital potentiometer can be used to step up or down through the PRT values



Step Up



Step Down

Calibration times using the PRT option can be significantly reduced by using the ProCal calibration software available from Transmille which allows a pre-defined sequence of tests (known as a procedure) to be set up. This allows the computer to automatically step through these tests, control the calibrator, set the correct outputs and record the amount of deviation in relation to the instrument's specifications.

① **Note** : ProCal will *automatically* use the PRT resistor value stored by the 2000 Series calibrator.

2000 Series Resistance Thermometer (PRT) Option Specifications

General Specifications

Range	Actual Value (Ohms)	Max. Power Rating (Watts)	Maximum Voltage (V)	Maximum Current (mA)
-100°C	60.25	0.2	3.47	57.62
0°C	100.00	0.2	4.47	44.72
+30°C	111.67	0.2	4.73	42.32
+60°C	123.24	0.2	4.96	40.28
+100°C	138.50	0.2	5.26	38.00
+200°C	175.84	0.2	5.93	33.73
+300°C	247.04	0.2	7.03	28.45
+800°C	375.51	0.2	8.67	23.08

4-Wire connection. Allow 1mW on all resistance specifications.

Accuracy Relative to Calibration Standards Specifications

Range	Actual Value (Ohms)	90 day Rel %	180 Day Rel %	1 year Rel %	2 year Rel %
-100°C	60.25	0.008	0.009	0.01	0.014
0°C	100.00	0.008	0.009	0.01	0.014
+30°C	111.67	0.008	0.009	0.01	0.014
+60°C	123.24	0.008	0.009	0.01	0.014
+100°C	138.50	0.008	0.009	0.01	0.014
+200°C	175.84	0.008	0.009	0.01	0.014
+300°C	247.04	0.008	0.009	0.01	0.014
+800°C	375.51	0.008	0.009	0.01	0.014

Specifications apply between 17°C and 27°C.

Outside this range an allowance of 0.18 x 1 Year Spec. per °C should be added.

Due to continuous development specifications may be subject to change.