



MODEL 2090
PROGRAMMABLE RESISTANCE BOX
OPERATION MANUAL



2090

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Overview



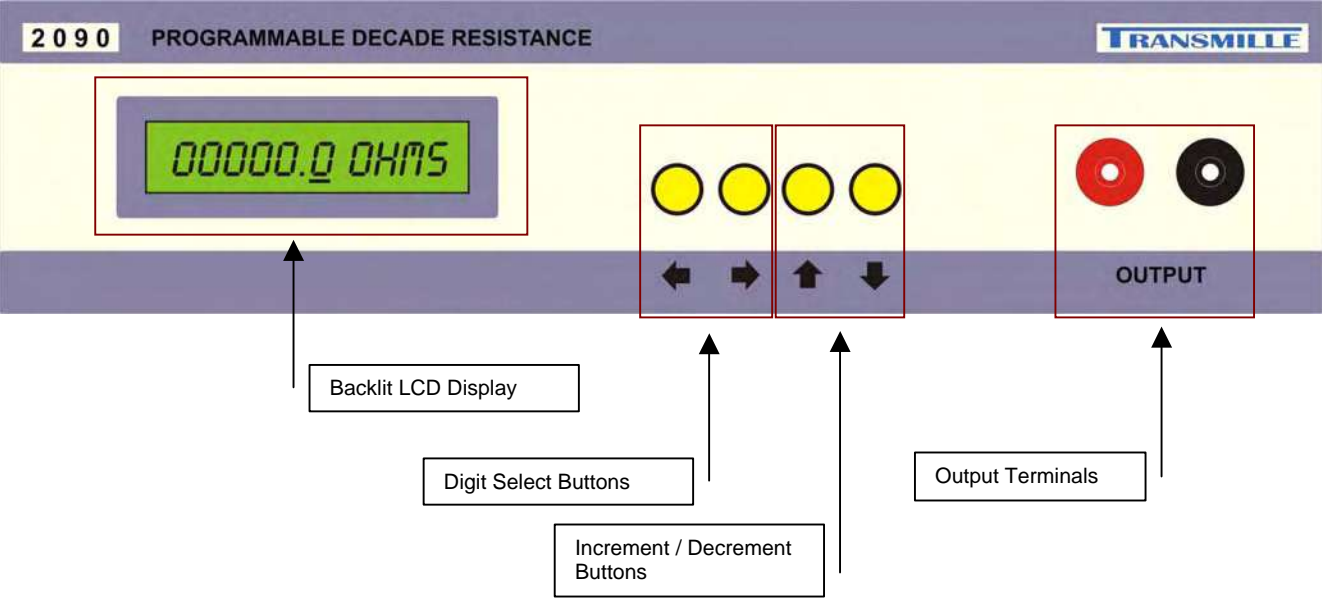
The 2090 provides the solution to the requirement of a programmable resistance box in one compact unit. Connect the 2090 to the serial COM port of a PC and automate almost any task performed by a standard resistance box saving time and reducing errors.

The 2090 is ideal for simulation of any kind of RTD (Resistance Thermometers) or Resistive Sensors / Transducers in ATE or test systems. Controlling the 2090 is achieved using simple high level commands which can be sent to the unit from any program or programming language.

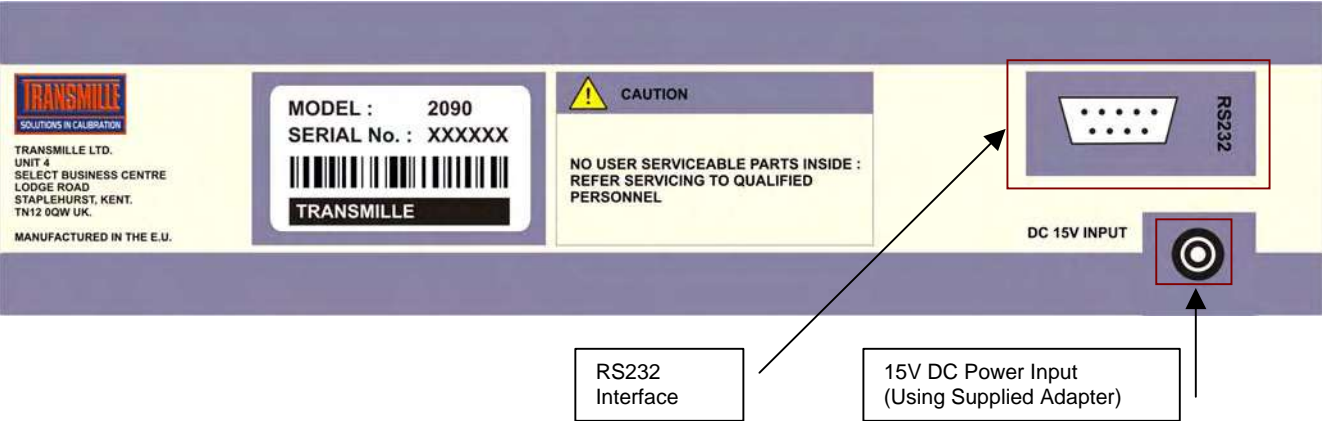
The 2090 uses *passive* resistors and exactly mimics the performance of a conventional resistance box. Front panel controls and display allow easy local operation, which is essential for ad hoc testing and troubleshooting.

Controls & Indicators

Front Panel



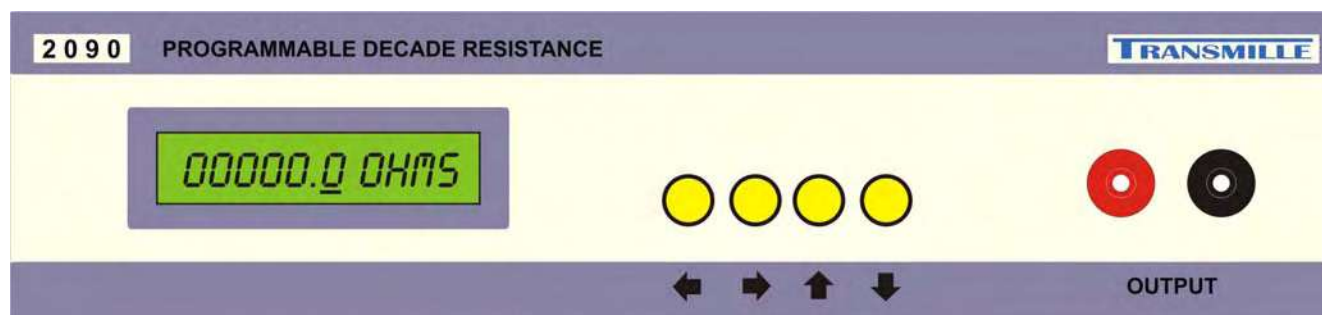
Rear Panel



Manual Operation

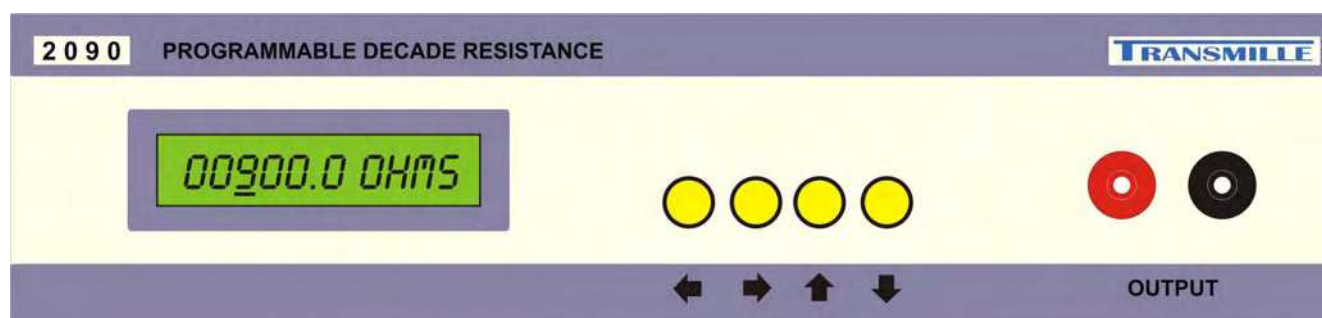
To operate the 2090, simply connect the mains adapter to power up the unit.

The display will illuminate and show the following (note the cursor under the right hand zero) :

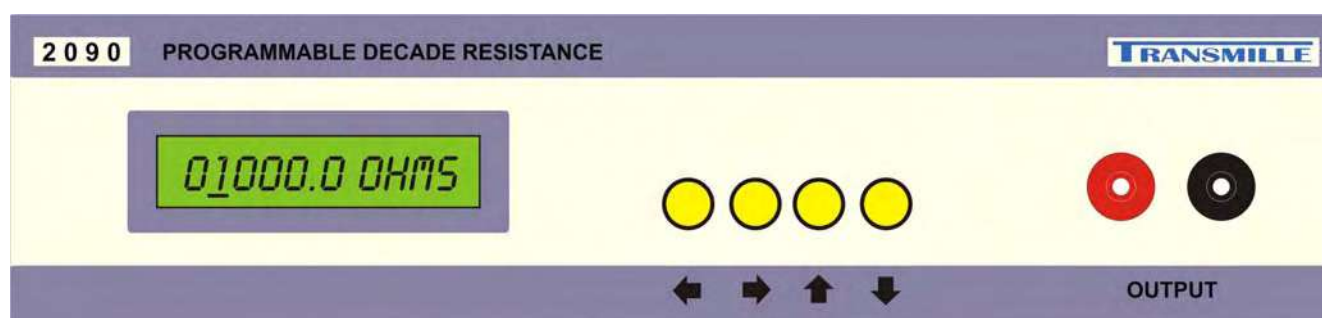


To set up a resistance, simply select the digit required using the left / right cursor buttons (move the cursor to the required digit), then use the up / down buttons to select the required number.

Note : If the digit is incremented to above '9', the display will cascade up to the next digit, for example if the display read :

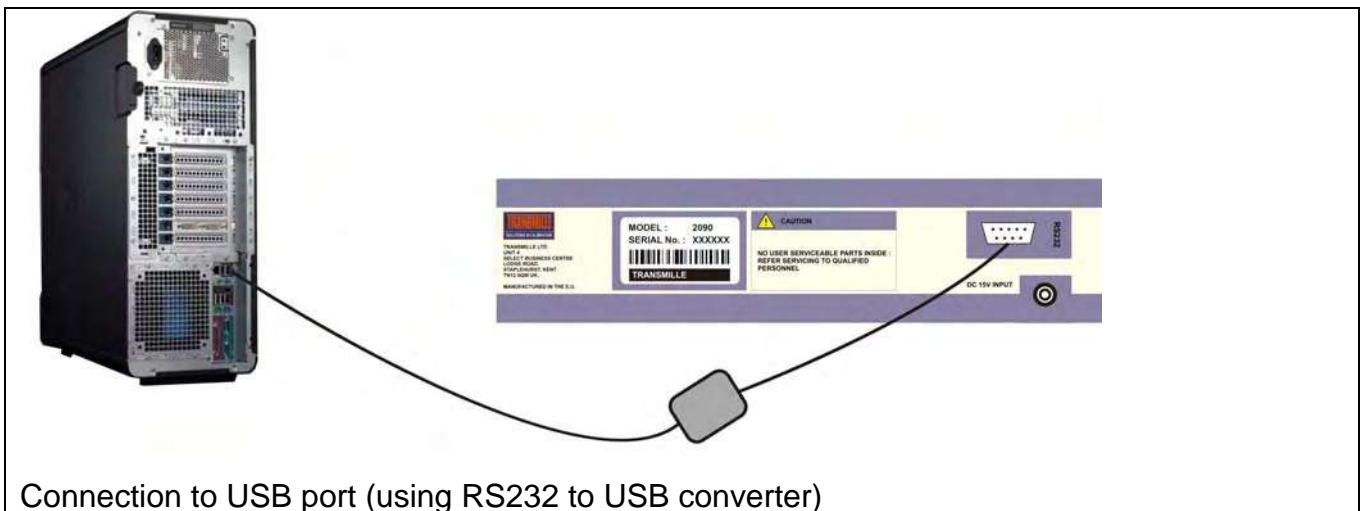
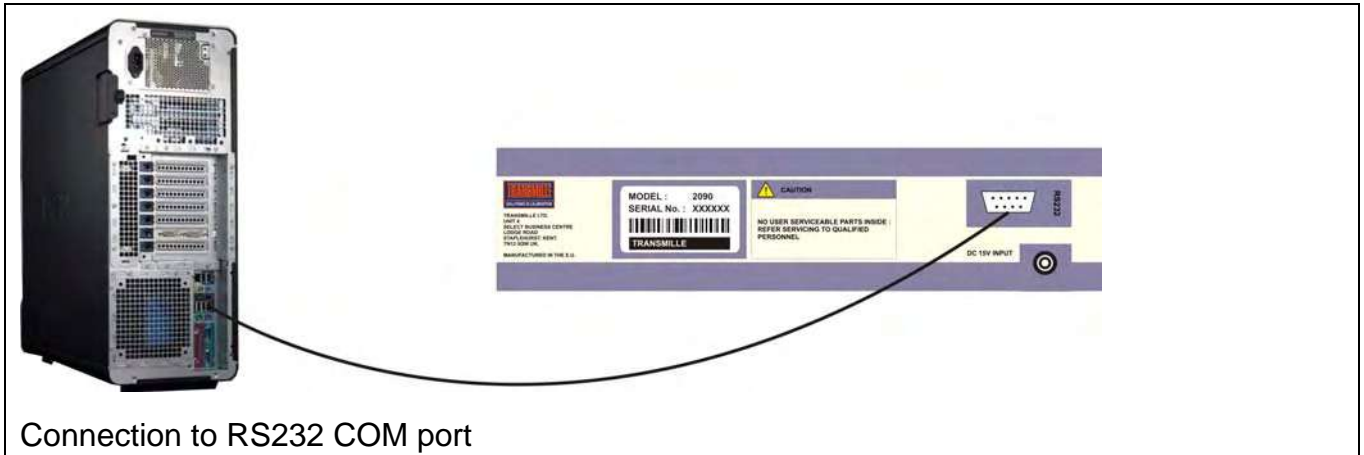


Then the 9 will cascade up to the next digit to read '10'



Remote Operation

To enable remote operation, the 2090 must be connected to a PC using the built in RS232 interface (located on the rear of the instrument).



Once connected, using the PC the resistance value should be sent to the 2090 to set the output. The command **MUST** be terminated with a carriage return (ASCII character 13), for example :

COMMAND	DESCRIPTION	DISPLAY
0.2<CR>	sets the display to 0.2 Ohms	00000.2 Ohms
100.0<CR>	sets the display to 100 Ohms	00100.0 Ohms
1000.0<CR>	sets the display to 1000 Ohms	01000.0 Ohms

Where <CR> is a carriage return (ASCII 13)

The value must include a decimal point, i.e. 100 Ohms should be sent as 100.0

Note : The front panel controls are not locked out when in remote operation mode, to enable manual adjustment of any setting.

Specifications

Resistance Range

0.1Ohm to 10kOhm

Accuracy

0.1Ohm	: 5% ± 35mOhm
1Ohm	: 1% ± 35mOhm
100Ohm	: 0.5%
1000Ohm	: 0.1%
1kOhm	: 0.1%
10kOhm	: 0.1%

Accuracy (High Spec. Option)

0.1Ohm	: 5% ± 35mOhm
1Ohm	: 1% ± 35mOhm
100Ohm	: 0.3%
1000Ohm	: 0.01%
1kOhm	: 0.01%
10kOhm	: 0.01%

Residual Resistance

25mOhm per decade

Maximum Voltage

100V

General

T/C	: Less than 50ppm/°C
Operation Time	: 50ms
Power Rating	: 1 Watt per decade
Operating Life	: >30 Million operations
Maximum Current	: 1 Amp
Interface Type	: RS232
Power Supply	: 15V Mains Adapter
Dimensions	: 180x255x65
Weight	: 2kg
Accessories	: Serial Connection Lead
	: 15V Mains Adaptor

Guarantee and service

Transmille Ltd. guarantees this instrument to be free from defects under normal use and service for a period of 1 year from purchase. This guarantee applies only to the original purchaser and does not cover fuses, or any instrument which, in Transmille's opinion, has been modified, misused or subjected to abnormal handling or operating conditions.

Transmille's obligation under this guarantee is limited to replacement or repair of an instrument which is returned to Transmille within the warranty period. If Transmille determines that the fault has been caused by the purchaser, Transmille will contact the purchaser before proceeding with any repair.

To obtain repair under this guarantee the purchaser must send the instrument in its original packaging (carriage prepaid) and a description of the fault to Transmille at the address shown below. The instrument will be repaired at the factory and returned to the purchaser, carriage prepaid.

Note :

TRANSMILLE ASSUMES NO RESPONSIBILITY FOR DAMAGE IN TRANSIT

THIS GUARANTEE IS THE PURCHASER'S SOLE AND EXCLUSIVE GUARANTEE AND IS IN LEIU OF ANY OTHER GUARANTEE, EXPRESSED OR IMPLIED. TRANSMILLE SHALL NOT BE LIABLE FOR ANY INCIDENTAL, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES OR LOSS.



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