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[sales@rhpointinstruments.com](mailto:sales@rhpointinstruments.com)

### M210 Milliohm Meter

- 5mA Test Current
- 4 Terminal Input
- UKAS Calibration Certificate

# M210 Milliohm Meter

This instrument is a portable digital meter to measure low resistances over the range  $0.001\Omega$  to  $200\Omega$ . A high degree of accuracy is achieved by utilising a four terminal input to eliminate errors caused by test lead length.

The instrument is small, light weight and is used easily in one hand with only an ON button to operate. It has auto-ranging, auto-decimal point and auto-powerdown after three minutes. It has long battery life and is powered by a single PP3 or MN1604 battery.

One of the most important features of the Milliohm Meter is its low (5mA) test current. This ensures that the contact being tested is not 'cleaned' by the test current which can happen when higher test currents are used. This 'cleaning' of the contact under test leads to erroneous measurements.

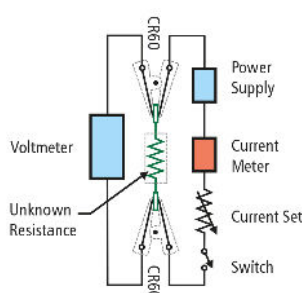
## Typical applications:

- Relay, switch and connector contact
- PC-plated through holes
- PC track resistance
- Transformer and motor windings
- Ring circuit testing
- Earth conductor continuity
- Wire-wrapped and solder joints
- RFI shielding and coil resistance
- Network cabling
- Aircraft bonding check

In the four-terminal "Kelvin" configuration four wires are used to connect the circuit under test to the instruments.

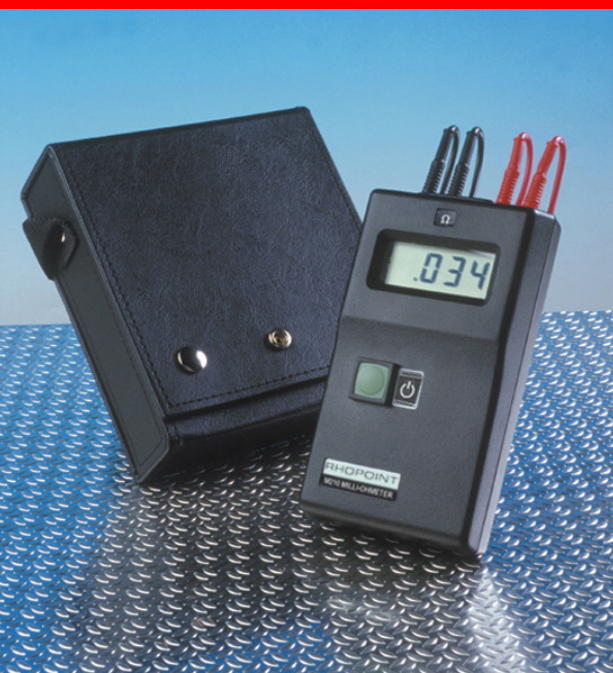
One pair of wires carries current generated by the instrument, the other pair connect to the voltage-measuring circuit.

The current circuit is low impedance, the voltage circuit high impedance. When connected a current flows through the component or circuit under test and the voltage drop across the test points is measured.



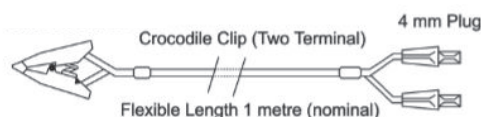
## Features:

- ✓ 0.1% accuracy
- ✓ Only 5mA test current
- ✓ Single push button operation
- ✓ Auto switch-off after three minutes
- ✓ 20 hours continuous operation (from standard PP3 battery)
- ✓ Auto-ranging
- ✓ Four terminal input
- ✓ Lightweight and portable



# Accurate readings every time

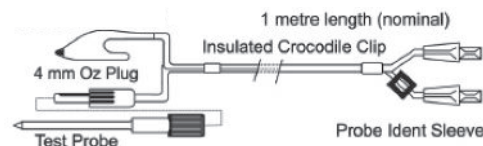
## Spring clip connectors



1. Plug either black plug into either black socket in the top of the instrument and red plugs into red sockets.
2. Clip leads to circuit or component to be tested.  
Ensure that both faces of clip make good electrical contact.
3. Press the ON button to read resistance.

Included as standard.

## Probe and contact connector



1. Insert plugs into their respective sockets as illustrated. The outer plugs form the current circuit via the clips. The inner plugs (with yellow bands) connect the probes in the voltage measuring circuit.
2. Clip leads to circuit under tester.
3. Press ON button to read resistance when probes are in contact with the circuit.

Optional extra, supplied as pair of connectors with probes. Part Code: B210-110.

## Interpreting the display

1. The Milliohm Meter will read directly in ohms or in milliohms.
2. Fluctuating readings displayed. Check that the clips are making good contact with the circuit under test, then look for the cause of intermittency, e.g. dry solder joint, oxydised or corroded terminals; slight mechanical movement of the component(s) in the circuit under test should quickly reveal the source of the problem.
3. Flashing "1" indicates that resistance in circuit exceeds 200 ohms.
4. "LO-BAT" displayed indicates low battery

## Replace cover

Slide down the cover at the rear, bottom of the instrument. Fit new battery 9V (PP3 MN1604 or equivalent). Replace cover.

The ratio between the current and the voltage drop is calculated by the instrument using Ohm's law ( $R=E/I$ ) to display the result in ohms. Four clips would normally be required for connection but this could be tedious so a form of clip is used with the Milliohm Meter.

The jaws are moulded in robust plastic and inset into each jaw face is a copper / silver inlay contact; these are insulated from each other by the plastic mouldings. One contact face on each clip is connected to the current-generating circuit, the other face is connected to the voltage-measuring circuit. In this way four wires are connected instantly by two clips.

The resistance of the connecting wires plays no part in the measuring so no "backing-off" is required as would be the case if a multi-meter were to be used for the same measurement.

# Specifications

## Instrument Details

Ranges	1.999 $\Omega$ , 19.99 $\Omega$ , 199.9 $\Omega$
Increments	0.001 $\Omega$ , 0.01 $\Omega$ , 0.1 $\Omega$
Accuracy	$\pm 0.1\%$ of range
Zero Offset	$\pm 0.001\Omega$
Maximum Voltage	1.4V
Maximum Current	5mA
Temperature Drift	0.013%/ °C of lowest range
Display	31/2 digit LCD
Battery	9V (PP3 MN1604 or equivalent)
Operating Temperature	5°C to 35°C
Weight (including case and leads)	510g
Dimensions (in case)	150mm (H) x 145mm (W) x 45mm (D)
Dimensions (out of case)	150mm (H) x 80mm (W) x 38mm (D)

### M210



Order code: A210-092

M210 milliohm meter with spring clip test leads, protective case, instructions and UKAS calibration certificate.

[Buy Online](#)

### Optional Extras:



Order code: B210-100

Replacement test lead set (spring clip connector)

[Buy Online](#)



Order code: B210-110

Probe and contact connector lead set.

[Buy Online](#)

**Calibration and Service:** Fast and economical service via our global network of accredited calibration and service centres. Please visit [www.rhpointinstruments.com/support](http://www.rhpointinstruments.com/support) for detailed information.

The M210 Milliohm Meter is manufactured by Rhpoint Instruments, UKAS calibrated by Rhpoint Metrology.



FS 695373

#### Rhpoint Instruments

Rhpoint House, Enviro 21 Park, Queensway Avenue South,  
St Leonards on Sea, TN38 9AG, United Kingdom

T: +44 (0)1424 739 622

E: [sales@rhpointinstruments.com](mailto:sales@rhpointinstruments.com)

[www.rhpointinstruments.com](http://www.rhpointinstruments.com)

#### Rhpoint Americas

1000 John R Road, Suite 209, Troy,  
Michigan, 48083

T: 1.248.850.7171

E: [sales@rhpointamericas.com](mailto:sales@rhpointamericas.com)

[www.rhpointamericas.com](http://www.rhpointamericas.com)