



MCRM

Conductor Resistance Meter



Motwane Conductor Resistance Meter determines the DC resistance of conductors for plain copper, metal coated copper, aluminium and aluminium alloy, circular or shaped. MCRM is provided with maximum 10 A current injection which is useful for the measurement of very low resistance from $0.1\mu\Omega$ and works on true Four terminal measurement. The MCRM have 4.3" Color TFT display with backlit display and features like Temperature measurement & Correction, Length Correction facility and protection against back EMF for high inductive loads.



Features

- ✓ 4.3" Color TFT display with backlit
- ✓ **Resolution $0.1\mu\Omega$ on 2 m Ω range**
- ✓ Best Measurement **Accuracy of $\pm 0.03\%$**
- ✓ Mains cum Battery operated.
- ✓ High measurement current (10A) for faster settling of measured values on low resistance.
- ✓ True 4 wire resistance measuring technique
- ✓ Pulse Mode, Auto Hold Operation.
- ✓ Bluetooth interface and cloud connectivity through MOT-WARE app
- ✓ Inbuilt thermal paper printer
- ✓ Low Battery indication to prevent deep discharge of internal recharging battery.
- ✓ Temperature Measurement & Correction

Applications

High-precision micro-ohmmeter used for measuring accurately the low resistance with an high accuracy, makes it a reliable tool for Quality Assurance, easy operation and also makes it a very handy for quick maintenance checks for process industries. Typical It is very useful in design, test, maintenance, QC/QA and production.

Industry Use Cases:

- **Wire & Cable Manufacturing:**
Ensures uniform resistance, resistivity & conductivity per meter in wire, cable & overhead ACSR conductors production helping to identify manufacturing defects.
- **Transformer, Motor & Generator Manufacturing:**
In transformer, motor & generator manufacturing it verifies per-meter resistance, resistivity & conductivity, of busbars and wires, to ensure material efficiency, compliance & thermal performance under load conditions.
- **Switchgear Installations:**
Assesses per meter resistance, resistivity & conductivity in busbars & joints, ensuring safe operation through precise contact evaluation.
- **Preventive Maintenance:**
Facilitates trend-based monitoring of per-meter resistance, resistivity & conductivity of DUT, enabling predictive maintenance and early detection of degradation before failure.

Technical Details

MCRM

Specifications

Printer	Built in Thermal Printer
PC Interface	USB
Report Storage	1000 Reports
Temperature correction	Manual entry or Temperature Probe
Temperature Channel	1
Dimensions Device	368 mm(L) X 283 mm(W) X 188 mm(H) Approx.
Weight	5.5 Kg Approx. (with Test Lead)
Dimensions Wire Fixture	1210mm(L) X 210 mm(W) X 150 mm(H) Approx.
Weight	6 Kg Approx.

Environmental

Operating Temperature	0°C to 55°C
Storage Temperature	-10°C to 60°C
Relative Humidity	95 % RH at 40°C max. (Non Condensing)

Power

Mains Power Supply	Mains Input Voltage 110/230 Volt AC, 50/60Hz
Battery Power Supply	Li-Ion Battery 14.8 V

Electrical Specifications

Test Current Injection	10A, 1A, 100mA, 10mA, 1mA, 100µA
Test ON Alert	BEEP

Resistance Range

Range	Max Reading	Resolution	MAX CURRENT	ACCURACY ± (%RDG + DIGITS)
2mΩ	1.9999mΩ	0.1µΩ	10A	± 0.03 % of reading ± 4 digits
20mΩ	19.999mΩ	1µΩ	1 A	± 0.03 % of reading ± 4 digits
200mΩ	199.99mΩ	10µΩ	100mA	± 0.03 % of reading ± 4 digits
2Ω	1.9999Ω	100µΩ	10mA	± 0.03 % of reading ± 4 digits
20Ω	19.999Ω	1mΩ	100mA	± 0.03 % of reading ± 4 digits
200Ω	199.99Ω	10mΩ	10mA	± 0.03 % of reading ± 4 digits
2000Ω	1999.9Ω	100mΩ	1mA	± 0.03 % of reading ± 4 digits
20KΩ	19999Ω	1Ω	100µA	± 0.03 % of reading ± 4 digits

Safety

Measurement Category: CAT II (1000V)/CAT III (600V)
 Reinforced insulation
 Relevant Standard Specifications: Safety According to EN 61010-1, EMC According to EN 61326-1

Accessories

Standard

■ Test Lead 2 meter	: 01 No.
■ Wire Test Jig	: 01 No.
■ Mains Power Cord (1.5 meter)	: 01 No.
■ Mains Protected Fuse 1A	: 01 No.
■ Current Protection Fuse 15A	: 01 No.
■ Thermal Paper roll	: 01 No.
■ Instruction Manual	: 01 No.
■ Calibration Certificate	: 01 No.
■ USB cable (1.5 meter)	: 01 No.
■ Temperature probe (3 meter)	: 01 No.
■ Pen drive with PC software's	: 01 No.

Note:

- MOT-WARE Desktop Application (Optional)
- Bluetooth Software (Optional)

MCRM Conductivity Calculator

Ambient Temp

Resistance At Ambient Temp in Ω : 0.01532 (insert)

Resistivity At Ambient Temp in Ωm : 1.789979608

Conductivity At Ambient Temp in (S/m) : 55866558.22

Conductivity in Percentage(%) : 96.31953304

Reference Temp

Resistance At Reference Temp in Ω : (insert)

Resistivity At Reference Temp in Ωm :

Conductivity At Reference Temp in (S/m) :

Conductivity in Percentage(%) :

Wire Material : Copper

Wire Type : Round

Wire Dia : 1.22 (Dia in mm)

Wire Gauge : (0 - 50)

Area in Meter Square (m²) : 1.168394E-01

Conductivity Calculation through PC Interface



Accessories

ORDERING INFORMATION

Product	Order Code
MCRM with Standard Accessories	109228510

Notes: **1.** The Instrument is accompanied with Test & Calibration sheet. **2.** Test Facilities can be provided at the factory with the available test set-ups only. **3.** The company's policy includes continuous improvement of its product. We, therefore, reserve the right of any deviation from illustration or specifications without notice. **4.** Stated accuracies are valid from 10% of the range to 95% of the range. **5.** Accuracy specified for temperature range of 25°C ± 5°C & 55% RH ± 10%.