



INMOTION ENERGY (OPC) PRIVATE LIMITED

# Resistivity Meter

*Digital Drilling Fluid Resistivity Meter, Complete with Hard Carrying Case*

**Model No: IM-RM-OM01**

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## INSTRUCTION MANUAL

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**Inmotion Energy (OPC) Private Limited**

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## ***Introduction***

Formation evaluation and accurate log correction both depend on knowing the electrical resistivity of the drilling fluid in use. A resistivity reading that drifts unnoticed can throw off downhole log interpretation, so crews and mud engineers check this property routinely alongside density and rheology.

The Inmotion Resistivity Meter makes that check straightforward. It is a self-contained digital instrument that applies a signal across a sample of the test liquid held in its resistance cell, reads the result directly on an LCD display, and compensates automatically for temperature — no manual bridge-balancing or reference charts required.

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## Description

The Inmotion Resistivity Meter works by passing a signal through a liquid sample held in the resistance cell, between two fixed electrodes. The instrument's electronics measure the resulting resistivity and, together with a probe reading from the separate temperature sensor, calculate both the measured and temperature-converted resistivity in a single pass.

All four readings — measured temperature, measured resistivity, converted temperature, and converted resistivity — are shown together on the backlit LCD display, so a single glance gives the complete picture without any calculation on the user's part.

**The instrument is suitable for drilling fluids and a range of other industrial liquids, and also serves as a reference tool for liquid mineralization analysis and water-purity checks.**



*The LCD display shows measured and temperature-converted readings together — shown here mid-test with the resistance cell and temperature sensor connected*

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## Components

| Part Number   | Description                                                           |
|---------------|-----------------------------------------------------------------------|
| IM-RM-OM01-01 | Resistivity Meter Unit (electronics, LCD display, hard carrying case) |
| IM-RM-OM01-02 | Resistance Cell (sample cell with handle and electrodes)              |
| IM-RM-OM01-03 | Temperature Sensor (probe with connector cable)                       |
| IM-RM-OM01-04 | AC Power Adapter                                                      |
| IM-RM-OM01-05 | 4 × 9V (6F22) Batteries                                               |
| IM-RM-OM01-06 | Hard Carrying Case                                                    |

Power Switch   Temperature Sensor   Menu Key   Battery Indicator   Down Key   LCD Display   Up Key   Resistance Cell

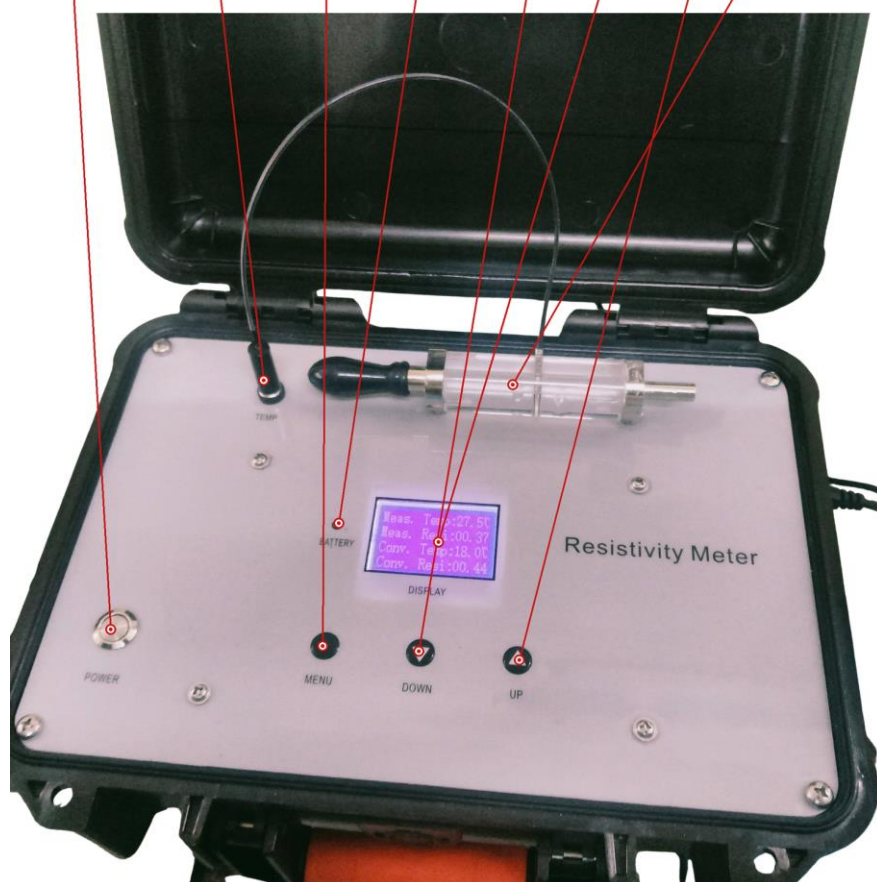


Fig. 1 — The Inmotion Resistivity Meter, complete with hard carrying case, with major components labeled

Features

- **Digital Display** — Direct, easy-to-read resistivity and temperature values with automatic ranging — no manual balancing or calculation required.
- **Portable & Rugged** — Housed in a shockproof hard case with an integrated resistance cell and temperature probe for reliable field use.
- **Wide Application** — Tests the resistivity of drilling fluids and other industrial liquids, and supports mineralization analysis and water-purity checks.
- **Dual Power Options** — Runs on four 9V (6F22) batteries or AC mains power — 220V/50Hz (standard) or 120V/60Hz (USA) — with a low-battery alarm indicator.
- **Temperature Compensation** — A dedicated probe measures fluid temperature and converts readings automatically to a set reference temperature.

Specifications

|                                 |                                                                             |
|---------------------------------|-----------------------------------------------------------------------------|
| Inmotion Model Number           | IM-RM-OM01                                                                  |
| Configuration                   | Digital, Portable                                                           |
| Measurement Range               | 0.01 – 10 Ω·m                                                               |
| Measurement Accuracy            | ± 2%                                                                        |
| Working Power Supply            | AC220V 50Hz (standard) or AC120V 60Hz (USA), ±10%, or 4 × 9V (6F22) battery |
| Working Environment Temperature | 10 – 50°C                                                                   |
| Measuring Temperature Range     | 0 – 50°C accuracy within ± 1°C                                              |
| Convert Temperature             | 1 – 50°C step value 1°C                                                     |
| Compliance Standard             | API RP 13B-1                                                                |

*Manufactured to evaluate drilling fluid and industrial liquid resistivity in line with API RP 13B-1.*

## **Operation**

1. Check that the temperature sensor hole is clean before starting.
2. Connect power — either the AC adapter or the internal battery pack — and switch the instrument on at the side-mounted power switch. If the low-battery indicator lights up, replace the batteries before continuing. The unit opens on the measurement and conversion display.
3. Rinse the resistance cell with the test liquid several times, then draw in the sample, expelling any trapped air. Wipe the cell body and electrode holes dry so no residue affects the reading.
4. Insert the temperature sensor probe fully into the temperature hole on the resistance cell, then seat the resistance cell firmly onto the electrode shaft, ensuring good contact.
5. Allow 3–5 minutes for the sensor and resistance cell to reach the temperature of the sample, then read and record the measured and converted values from the display.
6. Press the Menu key to switch to the measured-temperature and set-temperature screen. Use the Up and Down keys to set the conversion reference temperature (1–50°C); press Menu again to return to the main display.

### **IMPORTANT**

*Check that there are no air bubbles in the resistance cell before measuring, and that the cell is in full contact with the electrode — either will affect accuracy. Wait until the sample has reached a stable temperature before taking the reading.*



*Resistance Cell*



*Temperature Sensor*

## ***Calibration & Temperature Setting***

The Inmotion Resistivity Meter is factory-calibrated and requires no manual bridge-balancing or mechanical adjustment before use. The only setting the operator needs to check is the conversion reference temperature, which determines the temperature the “Converted Resistivity” reading is normalized to.

To set it: press the Menu key from the main display to open the measured-temperature and set-temperature screen. The upper line shows the live measured temperature; the line below shows the current set (conversion) temperature. Use the Up and Down keys to adjust the set temperature anywhere from 1–50°C in 1°C steps, then press Menu to return to the main display.

### **TIP**

*Set the conversion temperature to a standard reference (commonly 18 °C or the plant/lab reference temperature) so resistivity readings taken at different times remain directly comparable.*



*The display's four-line readout — measured and converted temperature and resistivity — confirms the conversion setting is being applied*

## Maintenance

- Clean and dry all components after use and store the instrument in a dry environment.
- Handle the unit with care when moving, repairing, or servicing it — avoid deforming components, which can affect accuracy and usability.
- Keep the electrode shaft and the resistance cell's electrode-hole surfaces clean and dry, free of impact damage, and free of corrosion.
- Keep the temperature sensor probe clean and free of impact damage; do not let it contact corrosive liquids.
- After each use, clean the sensor socket, rinse the resistance cell with clean water, and store it dry.

## Troubleshooting

| Fault                                  | Cause                                                           | Repair Method                            |
|----------------------------------------|-----------------------------------------------------------------|------------------------------------------|
| Inaccurate readings during measurement | ① Air bubbles trapped in the liquid inside the resistance cell. | • Re-draw the test liquid into the cell. |
|                                        | • The rubber suction bulb is                                    | • Replace the suction bulb.              |

|                             |                                                                               |                                                       |
|-----------------------------|-------------------------------------------------------------------------------|-------------------------------------------------------|
|                             | damaged and the cell is not fully filled with liquid.                         | • Replace the resistance cell.                        |
|                             | • The temperature sensor socket or cell test hole is damaged, letting gas in. |                                                       |
| <b>Display shows “----”</b> | ① Temperature sensor not connected.                                           | • Reinsert the temperature sensor.                    |
|                             | • Resistance cell not connected.                                              | • Reconnect the resistance cell.                      |
|                             | • No liquid in the resistance cell.                                           | • Draw liquid into the resistance cell.               |
|                             | • Liquid resistivity is outside the measurement range.                        | • Use a different test liquid and re-draw the sample. |

## ***Warranty and Return Policy***

### **Warranty**

Inmotion Energy (OPC) Private Limited stands behind the materials and workmanship of every instrument it ships. For eighteen (18) months from the invoice date, if a product turns out not to meet its stated specifications through no fault of the buyer, and we're notified in writing once the issue is found, we'll repair or replace it at our discretion, subject to the exclusions below.

This coverage assumes normal use, in line with the operating conditions described in this manual. It does not stretch to cover use outside those conditions, nor to flaws that were plainly visible on arrival but went unreported.

Beyond what's stated here, Inmotion Energy doesn't offer any other express or implied warranty — including, to the extent the law allows, implied warranties of merchantability or fitness for a particular purpose.

Coverage does not extend to damage or loss caused by:

- Installation, operation, or upkeep that doesn't follow this manual

- Misuse, carelessness, or accidental damage
- Adjustment or repair carried out by anyone other than Inmotion Energy or an authorized service provider
- Storage conditions or exposure beyond what normal field use implies
- Parts or components sourced from outside Inmotion Energy
- Ordinary wear items — the resistance cell and temperature sensor cable, for example

#### **Returns and Repairs**

Pack anything you're sending back carefully — Inmotion Energy can't take responsibility for damage caused by inadequate packaging in transit.

If you're returning a unit that isn't defective, do so within thirty (30) days of your invoice; a restocking charge may apply, and the item needs to arrive in its original condition to qualify for a refund.

Before shipping anything back, reach out to us with your invoice number, a description of the issue, and your contact details so we can set expectations. Send equipment to:

#### **Inmotion Energy (OPC) Private Limited**

Attn: Service & Repair

186, 1st Main Road, Vijaya Bank Layout, Bilekahalli

Bangalore, Karnataka – 560076, India

Questions before then? Reach our support team at [info@inmotionenergy.in](mailto:info@inmotionenergy.in).

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### ***Ordering & Replacement Parts***

Send the Inmotion Energy sales team a note about what you're working on, and we'll get back with a recommendation and a quote. Spares — including resistance cells and temperature sensors — are kept in stock and shipped on request.

Have this ready when you reach out:

- Model / catalog number (IM-RM-OM01)
- The part number and description you need (see Components, page 4)
- How many you need
- Your company name, shipping address, and a contact point

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### ***Company & Contact Information***

Inmotion Energy has spent years supplying precision testing instruments and drilling tools to operators working with drilling fluids, cements, and completion fluids. Working out of our Bangalore facility, we serve customers

across India and the Middle East. Being an independent manufacturer means our customers come first, not a parent company's agenda.

#### **Industries We Serve**

- Onshore & offshore drilling contractors
- National & independent oil companies
- Mud engineering & testing laboratories
- Well completion & workover operations

#### **Why Choose Us**

- Every unit goes through rigorous checks before it ships
- Spares and replacements move fast, so downtime doesn't stack up
- Designs proven in the field, built to keep working

#### **Contact Details**

##### **Inmotion Energy (OPC) Private Limited**

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