TRACEABLE® DIGITAL CONDUCTIVITY METER INSTRUCTIONS

SPECIFICATIONS

Range Micromhos: 0.1 to 199.9 (Microsiemens)
Range Megohms: 2.00 to 19.99
Accuracy: 0.4%
Temperature Compensation:
Automatically temperature compensated to the international standard of 25° Celsius. The temperature compensation range is from 0.0 to 50.0° Celsius (32.0 to 122.0° Fahrenheit). The thermistor in the probe automatically adjusts the readout to 25° Celsius. The temperature correction factor is fixed at 2% per degree Celsius.
Display: 0.5 inch (1.3 cm) LCD
Case: ABS Plastic
Failsafe: Low Battery Indicator
Power: 9-Volt Alkaline battery or Accessory AC Adaptor

OPERATION

1. Insert the probe plug into the probe receptacle on the top of the unit. It is keyed to fit properly.
2. Slide the switch on the side of the unit to Micromho or Megohm. (See "Megohm Readings")
3. Rinse the probe with the solution to be tested. Discard the rinse.
4. Insert the probe in the solution to be tested (minimum 30 ml sample volume required). Read the display while stirring the probe in the solution.
5. Avoid cross-contamination between measurements by rinsing the probe in distilled/ deionized water.
6. For best results, the solution temperature should remain constant during the readings. The display will indicate increasing or decreasing readings as it senses different temperatures as small as 0.05°F within the solution.
7. Make certain to sustain solution flow through the probe by stirring the probe in the solution.
8. Be aware that very pure water will pick-up contaminates from the air in a relatively short period of time and yield progressively higher micromho readings.
9. After making your readings, turn the unit off and rinse the probe in distilled/deionized water and store. The probe may be stored dry or in distilled/deionized water.

MEGOHM READINGS

1. Pure water or other solutions above 2 megohms is difficult to maintain because of contamination. High purity water is difficult to keep pure for even a short time. Air, plastic containers, glass vessels, etc. can contaminate the water and produce variations in purity readings. Many users take high and low readings of extremely pure water and average them for reporting purposes.
2. Expect constant display changes in the Megohm range. Slight stray electrical signals can change the readings. Any stray signals produced by equipment or even your hand will cause significant changes. For precise results, the measuring vessel should be shielded. When making readings in the higher megohm range, do not hold the probe or unit in your hand.
3. Sensitivity in the Megohm range can be illustrated by observing that in the Micromho range there are five possible different readings between 0.0 and 0.5. In the same measurement range in Megohms, there are 1,800 different possible readings. Although no readings are possible between 0.0 and 0.1 Micromhos, there are 1000 different readings possible in the Megohm range. This increased sensitivity makes the Megohm range appear to be less stable.

FAILSAFE

1. Over-range conditions are indicated with a 1 to the far left and a decimal to the right.
2. Under-range conditions are indicated by a reading of 0.00 (Megohm) or 00.0 (Micromho).
3. A low battery condition is indicated by "BAT" appearing in the lower left hand corner of the display. See the Battery Replacement section when "BAT" appears.

CALIBRATION

Electronic:

1. Insert the Calibration Plug (gray plug without a cord) in the probe receptacle on the top of the unit. It is keyed to fit properly.
2. Slide the switch on the side of the unit to Micromho.
3. Set the reading to 01.0 by turning the calibration set screw on the top of the unit with the small-blade screwdriver.

This electronic calibration of the unit Is acceptable for routine and field calibration. For more precise calibration follow the procedure outlined for calibrating with known solutions.

Known Solutions:

1. For the most accurate results choose a known calibration solution with a value as close as possible to your unknown sample.
2. If possible, the calibration solution and your unknown sample should be at the same temperature. The ideal temperature is 25.0° Celsius (77.0° Fahrenheit).
3. Place the probe in the known calibration solution.
4. Adjust the calibration set screw on the top of the unit with the small-blade screwdriver until the correct value is displayed.

CONVERSION FACTOR CHART

Micromho is a measurement of **conductance**, Megohm is a measurement of **resistance**. To convert one to the other, use the reciprocal value.

1/ micromhos = megohms 1 / megohms = micromhos
-micromhos = microseimens microseimens = micromhos
micromhos X 0.66 = dissolved solids parts per million (DS/PPM). * dissolved solids parts per million (OS/PPM) / 0.66 = micromhos*

* A rough approximation of the dissolved solids of a fresh-water source in parts per million can be obtained by multiplying the specific conductance, in micromhos, by the factor 0.66. The factor may range from 0.55 to as high as 0.80 for water from different sources.

BATTERY REPLACEMENT

To replace the battery, slide the battery compartment cover off of the back of the unit. Remove the exhausted battery and replace it with a new 9-Volt Alkaline battery. Do not use regular or heavy duty batteries, they do not have sufficient power. Replace the battery cover.

ACCESSORIES

Cat. No. 3090 Third Arm, probe holder.
Cat. No. 4013 AC Power Adaptor, for continuous operation.
Cat. No. 4065 NIST Traceable Conductivity Standard 10 micromhos, 1 pint.
Cat. No. 4066 NIST Traceable Conductivity Standard 100 micromhos, 1 pint.
Cat. No. 4175 One-Shot™ NIST Traceable Conductivity Standard 10 micromhos. Single-use standards, calibration is made In the standards vial. Supplied as a pack of six, each standard contains 100 ml.
Cat. No. 4176 One-Shot NIST Traceable Conductivity Standard 100 micromhos. Single-use standards, calibration is made in the standards vial. Supplied as a pack of six, each standard contains 100 ml.
Cat. No. 4079 Replacement Glass Probe. Probe with K=1 factor. Glass probe identical to probe supplied with the unit.
Cat. No. 4074 Replacement Plastic Probe. Probe with K= 1 factor. Plastic probe is similar to the probe supplied with the unit except the body of the probe is plastic.
Cat. No. 4057 Accessory Glass Flow-Thru Cell. Probe with K=1 factor. Flow-thru cell has glass inlet and outlet. Cell sample volume is 4 ml.
Cat. No. 4056 Accessory Glass Micro-Sampler, Micro/Flow-Thru Cell. Probe with K=0.2 factor makes the range of the unit 0.02 micromhos to 40 micromhos. This is a five fold increase in sensitivity in the lower micromho range. (In essence, to arrive at the correct reading, the user multiplies the meter reading times 0.2.) Cell sample volume is 2 ml. Flow-thru cell has glass Inlet and outlet. The unit may be used as a continuous flow-thru cell or as a single micro-sampler. A rubber bulb is supplied and may be connected to the outlet for use in aspirating a single micro-sample.
Cat. No. 4077 Accessory Glass Probe. Probe with K=0.1 factor makes the range of the unit 0.01 micromhos to 20 micromhos. This is a ten fold increase in sensitivity in the lower micromho range. (In essence, to arrive at the correct reading, the user multiplies the meter reading times .1.) Cell sample volume is approximately 8 ml.
Cat. No. 4078 Accessory Epoxy Probe. Probe with K=10 factor makes the range of the unit 1 micromho to 2,000 micromhos. This is a ten fold increase in sensitivity in the upper ranges. (In essence, to arrive at the correct reading, the user multiplies the meter reading times ten.) Cell sample volume is approximately 150 ml.

WARRANTY, SERVICE, OR RECALIBRATION

For warranty, service, or recalibration, contact:

CONTROL COMPANY
4455 Rex Road
Friendswood, Texas 77546 USA
Ph. 281-482-1714 Fax 281-482-9448
E-mail sales@control3.com
www.control3.com

Control Company is ISO 9001 Quality-Certified by DNV and ISO 17025 accredited as a Calibration Laboratory by A2LA.