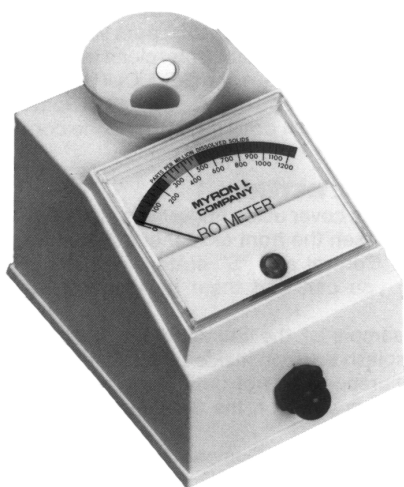


# SINGLE RANGE DS METERS

## Operation Instructions

User Manual for Models RO-1  
RO-1NC  
DS-1<sub>2</sub>



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**MYRON L  
COMPANY**  
pH/Conductivity Instrumentation  
*Accuracy • Reliability • Simplicity*

## DESCRIPTION

This manual describes your Myron L RO-1 series DS meter, tells you how to use it, and how to keep it working accurately for many years.

Your single range DS Meter is a compact instrument which operates on the principle of electrical conductivity. It will quickly determine the ppm/Total Dissolved Solids of almost any solution by converting the conductivity directly into parts per million (ppm) of Total Dissolved Solids.

All DS Meters are 3.4" x 4.5" x 4.0" (85 x 129 x 126mm), weigh less than one pound (0.45 kg), and are completely self-contained. The built-in cell is automatically temperature compensated from 50° to 160°F (10° to 71°C). They are powered by a 9 volt transistor battery good for at least 2000 tests, or one year shelf life.

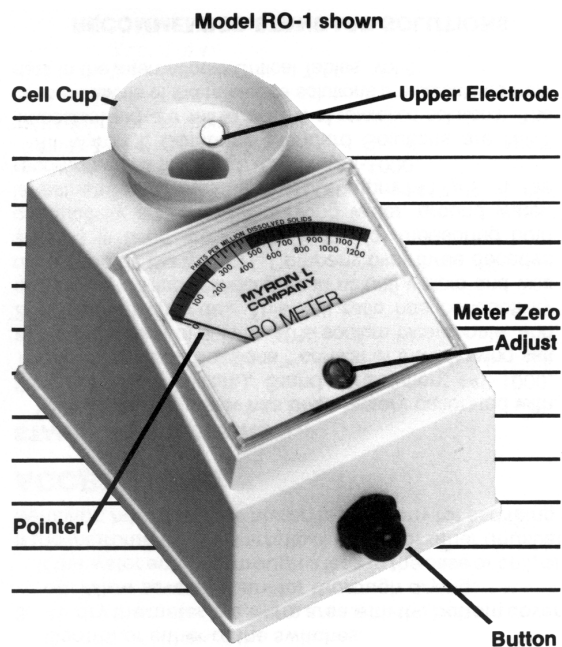
MODEL NO.	RANGE	DIAL COLOR BANDS
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RO-1	0-1250 ppm	
	0-250	:Blue
	250-500	:Orange
	500-1250	:Red

RO-INC	0-1250 ppm
DS-1	0-1250 ppm

Your meter has a useful and unique feature: an electronic Internal Standard for easy field calibration.

The pictures in this manual show the major operating parts of your Myron L DS Meter. Handle your Meter and identify these parts to become familiar with it.



## USING YOUR METER

1. Rinse the cell cup three times with the sample you want to test. (For very hot or very cold samples see TEMPERATURE COMPENSATION below.)

### NEVER FILL THE CELL BY DIPPING THE METER INTO WATER!

2. Fill the cell with another sample to at least 1/4" (6mm) above the upper electrode.
3. Press the black button.
4. Read the dial value indicated by the pointer to determine parts per million (ppm) Total Dissolved Solids.
5. If the pointer goes off the scale to the right, try diluting your sample so it can be measured:
  - A) Pour distilled or deionized water into a separate container until it is exactly half full.
  - B) Complete the filling of the container with your sample.
  - C) Test the diluted sample in the normal way described above.
  - D) Multiply by 2 the ppm value indicated on the dial. For Example: A sample reading 900 after dilution would actually have a TDS value of 1800 ppm.

### NOTE:

When you are finished with the meter, RINSE THE CELL CUP with clean water, preferably distilled or deionized.

### TEMPERATURE COMPENSATION

For very hot or very cold solutions let the three rinse samples each remain in the cell for several seconds, then immediately fill the cell with the sample you want to test (step 2 at left). This allows the automatic temperature compensation feature time to work properly.

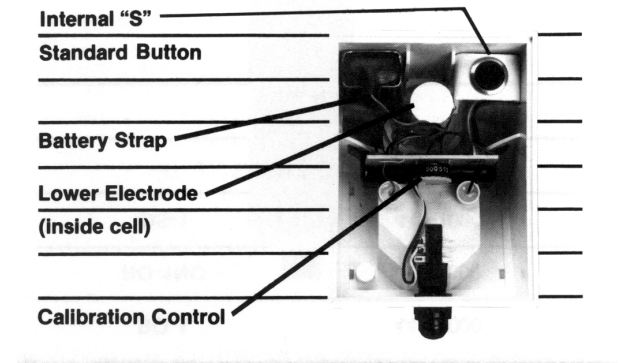
### CAUTION

**DO NOT** use with samples hotter than 160°F (71°C). The readings WILL NOT be accurate

**DO NOT** splash solvents such as lacquer thinner, acetone, benzene or chlorinated solvents on the plastic case.

**DO NOT** fix or modify the meter. That will void your warranty. See SERVICE for details or consult Myron L Company.

**DO NOT DIP THE INSTRUMENT INTO WATER.** If water does get inside the instrument, see MAINTENANCE for instructions on drying it.



## CALIBRATION

**STANDARD SOLUTIONS:** A Standard Solution has a known conductivity and ppm value. Your meter was calibrated at the factory using Myron L Company 442-1000 Standard Solution. You can keep your meter accurate by using this same Standard Solution (see ACCESSORIES).

How often you calibrate your meter depends on how much you use it. For once a day use, recalibrate it every three months.

### CHECKING CALIBRATION

1. Test a sample of Myron L 442-1000 Standard Solution.

**CAUTION:** Throw the Standard Solution away as you use it. Don't put the used samples back in the bottle.

2. If the Meter does not indicate the 1000 ppm value on the Standard Solution bottle's label, first clean the cell. For directions on how to do this see CELL CUP inside. Rinse the cell thoroughly and test the Standard Solution again. If the Meter still does not indicate the correct value, recalibrate it as described below.

### TO RECALIBRATE THE METER

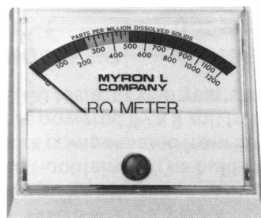
1. Remove the bottom cover using fingernails or a small screwdriver to loosen the front or rear edge. Identify the Calibration Control and "S" button (see photo below left) so you can find them by touch while calibrating.
2. Test another sample of the Standard Solution (be careful to not splash solution inside the meter).
3. Adjust the Calibration Control until the meter indicates the 1000 ppm value on the Standard Solution label.
4. Press the internal "S" button. Compare the meter reading to the INTERNAL STANDARD value on the meter's bottom label. If they are noticeably different, mark the new value in place of the old one.

### NOTE

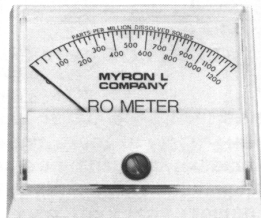
The feature described below is intended as a quick field calibration check. It is not a replacement for calibration with Myron L 442-1000 Standard Solution.

**INTERNAL STANDARD:** An INTERNAL STANDARD value for each meter is on the label on the bottom cover of each meter. Use it between normal calibrations as a field check of your meter's accuracy. To verify your meter's calibration:

1. Press the internal "S" button.
2. If the reading matches the INTERNAL STANDARD value on the bottom label, your meter is in calibration. If not, see FIELD CALIBRATION.



Model RO-1



Model RO-1NC

## FIELD CALIBRATION/MAINTENANCE

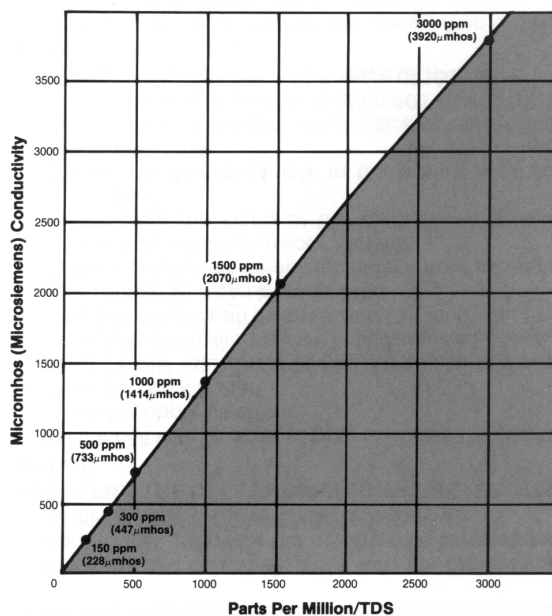
1. Remove the bottom cover using fingernails or a small screwdriver to loosen the front or rear edge.
2. Press the internal "S" button and adjust the Calibration Control until the meter reading is the same as the INTERNAL STANDARD value.

### NOTE:

If the meter will not adjust to the INTERNAL STANDARD value the battery should be replaced. See MAINTENANCE above right.

3. Replace the bottom cover.

### CONVERSION CHART



## MAINTENANCE

### BATTERY CHECK

Press the internal "S" button. If the pointer does not reach the INTERNAL STANDARD value, readjust the "S" (see FIELD CALIBRATION). If the pointer will not reach the INTERNAL STANDARD value, the battery should be replaced.

### BATTERY REPLACEMENT

Detach the battery connector. Pull on the plastic strap to remove the battery. Replace with a fresh zinc carbon or alkaline 9 volt battery. Reinsert the plastic strap to secure battery. Replace the bottom cover.

### CELL CUP

Self-conditioning of the built-in electrodes occurs each time the button is pressed with a sample in the cell cup. This ensures consistent results each time. With some samples a small downward swing of the pointer is a result of this conditioning action. This action is powerful and removes normal films of oil and dirt. However, if very dirty samples - particularly scaling types - are allowed to dry in the cell cup, a film will build up. This film reduces accuracy. When there are visible films of oil, dirt, or scale in the cell cup or on the electrode, scrub them lightly with a small brush and household cleanser. Rinse out the cleanser and the meter is ready for accurate measurements.

### WATER INSIDE THE METER

Your Myron L meter is a rugged instrument and will withstand water exposure around its cell, meter movement, and switches. However, care should be taken to keep water from leaking in around the bottom cover. It is not sealed (to prevent condensation from forming).

If the water is relatively clean (i.e., tap water or better), and there are only a few drops inside the meter, dry it as described below. Large amounts of water, or corrosive or very dirty solutions will almost certainly damage the meter movement or electronics. Such meters should be returned to the Myron L Company for repair.

To dry your meter:

1. Shake excess water out of the inside of the meter.
2. Dab the exposed surfaces dry with an absorbent cloth or tissue. Avoid pushing any water into the Calibration Control or either of the switches.
3. Air dry the meter in a warm area with the bottom cover off. Allow several hours for thorough drying.

If the water entered through a leak in the case or cell, or if the instrument shows erratic readings or other unusual behavior, return it to the Myron L Company for servicing.


## ACCESSORIES

### STANDARD SOLUTIONS

Your RO series meter has been factory calibrated with the appropriate Myron L Standard Solution: 442-1000. The 442 Standard Solutions™ consist of the following salt ratios: 40% sodium sulfate, 40% sodium bicarbonate, and 20% sodium chloride. This salt ratio has conductivity characteristics approximating fresh natural waters and was developed by the Myron L Company over three decades ago. It is used around the world for measuring both conductivity and TDS in drinking water, ground water, lakes, streams, etc. The 1000 ppm/1417 $\mu$ S is the recommended standard. Order 442-1000.

All Myron L Company Standard Solutions are NIST Traceable and are within  $\pm 1.0\%$  of reference solutions. The concentrations of the reference solutions are calculated from data in the international Critical Tables, Vol.6.

### RECOMMENDED STANDARD SOLUTIONS

MODEL		PARTS PER MILLION SOLUTION
RO-1		442-1000
RO-1NC		442-1000
DS-1		442-1000

### PORTA PAK

Carrying Case for use with all Myron L DS and pDS meters, is foam-lined and molded of sturdy ABS plastic.



### ORDERING

To order accessories contact your nearest stocking distributor, or the Myron L Company.

## WARRANTY/SERVICE

Myron L RO and DS Meters have a limited one year warranty. If your instrument fails to operate properly, check the batteries and calibration. If it still fails to function properly, return it prepaid to the Myron L Company.

Faulty instruments may be returned to us without prior permission.

### METERS WITHIN ONE YEAR WARRANTY PERIOD:

Failures due to materials or workmanship will be repaired or replaced (our option) without charge if returned freight prepaid. If failure is deemed by the factory to have been caused by abuse or tampering, the following procedure will apply.

### INSTRUMENTS/CONTROLS OUT OF WARRANTY:

Diagnosis will be made and repairs completed, providing the repair charges are \$70.00 or less.

**NOTE:** Actual repair charges may be less than this amount.

We will diagnose (but not repair) a returned meter and mail an estimate of charges if ANY of the following apply:

1. Repair charges will be more than \$70.00.
2. You specifically request an estimate of required repairs and charges.
3. The cost of required repairs exceeds one-half the list price of a new instrument.
4. The instrument is over ten years old. Because of component changes and improvements, such instruments can no longer be repaired.

**NOTE:** Unrepaired meters are discarded unless you want them returned to you. If so, there is currently a \$25.00 charge per unrepaired instrument to cover diagnosis and handling.

This warranty is limited to the repair or replacement of the Myron L RO or DS Meter only. The Myron L Company assumes no other responsibility or liability.

**MYRON L  
COMPANY**

Printed in U.S.A.

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