

Your COM-80 is ready for immediate use, but please familiarize yourself with the modes and parameters. This will help you get the most of this instrument.

#### Scales/Units of Measure for EC (Electrical Conductivity):

$\mu\text{S}$  = micro-Siemens

mS = milli-Siemens (1 mS = 1000  $\mu\text{S}$ )

#### Scales/Units of Measure for TDS (Total Dissolved Solids):

ppm = parts per million

ppt = parts per thousand (1 ppt = 1000 ppm)

NOTE: For example, an "EC of 2.3" can either be 2.3  $\mu\text{S}$  or 2.3 mS.

For more information, visit [www.tdsmeter.com](http://www.tdsmeter.com)

## Taking EC or TDS Measurements

1. Remove the cap. (Do not use the cap for testing.)
2. Click the POWER button. The reading will always be zero in the air.
3. Dip the meter's sensor into the water, liquid or solution to be tested.
4. Lightly swirl the meter to ensure the removal of air bubbles or electric charges.
5. The meter will display a reading instantly. Keep the meter in the water until the reading stabilizes (up to 5 seconds, depending on the situation).
6. To view the reading out of the liquid, click the HOLD button. This will freeze the reading on the screen. Clicking HOLD again will release it.
7. Click the POWER button to turn the meter off.
8. Shake any excess water off the meter and rinse with low TDS water (such as distilled, RO or DI), or use compressed air to clean it. Put the cap back on.

### SWITCHING MODES

1. With the meter on, press and hold the MODE button.
2. The scales will cycle through on the display screen in this order:  
**mS →  $\mu\text{S}$  → ppt → ppm → mS**
3. Release the MODE button when the desired scale is shown.

### TEMPERATURE AND SWITCHING TEMPERATURE MODES

1. The temperature reading is always displayed on the LCD panel (except in calibration mode), and is shown simultaneously with EC/TDS readings.
2. The default mode for temperature is Celsius. To change the temp mode, quickly click the TEMP/CAL button to switch from Celsius to Fahrenheit or vice-versa.

## Care & Maintenance

1. **If using the COM-80 for nutrients or high TDS solutions, ALWAYS RINSE THE SENSOR AFTER EACH USE.** Rinse in distilled or RO water, but tap water can also be used. Improper care will negatively affect readings and void the warranty.
2. Your meter has been factory calibrated, which is sufficient for most applications. The COM-80 will retain its calibration for a long period of time, but recalibration may be necessary based on frequency of use, care and application of use.
3. Ideally, store the sensor dry (it should never be stored in water or a solution).

### ERROR MESSAGES AND TROUBLESHOOTING

The water is out of range	□□□	The max range is 9999 $\mu\text{S}$ or 5000 ppm
There is internal damage	--- ETT	You may need a new meter
The meter cannot calibrate	--- ETT	The meter's mode should match the solution

To convert between scales, simply change the mode on the meter. There is no math required. The meter uses the following conversion factors (all automatic):

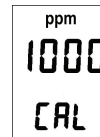
$\mu\text{S}$  → PPM : 0.5 factor avg. (NaCl)

mS → PPM: 500 factor avg. (NaCl)

## Calibration

Calibrating a scientific instrument is similar to tuning a musical instrument. Your COM-80 has been factory calibrated to 1413  $\mu\text{S}$  (700 ppm), which is suitable for most applications, and is ready for immediate use. The meter will retain its calibration for many years, depending upon care, frequency of use and application of use. If you need to recalibrate:

1. Obtain a certified EC/TDS calibration solution. Always calibrate close to the level you will be testing (or in the middle of a range).
2. Turn the meter on and insert into the solution. (Make sure the meter's mode matches the composition of the solution). If your meter shows the correct reading, stop here. If not, press and hold the CAL button for 5 seconds. The display will flash and the temperature reading will change to a flashing 'CAL' image.
3. Adjust the reading to match the solution value with the UP or DOWN buttons (indicated by the arrows). When the number matches the solution, click ENTER.
4. 'CAL' will flash briefly, indicating progress. Allow a few seconds, do not press any buttons, and if possible, do not move the meter.
5. When the meter is calibrated, 'End' will flash and the measurement will reappear.



### TEMPERATURE CALIBRATION

If you need to calibrate the COM-80's thermometer, only calibrate it in the air to a different, correct thermometer.

1. With the meter on and in the air, press and hold the POWER and TEMP buttons at the same time for 5 seconds.
2. 'CAL' and the temperature will flash on the screen.
3. Using the UP or DOWN buttons (arrows), adjust to the correct temperature.
4. Once you have corrected the temperature, click ENTER. 'C – CA – CAL' will flash on the screen and then 'End' will briefly appear. The thermometer is now calibrated.

## Changing the Batteries

When the meter displays a flashing battery symbol, your batteries are getting weak and should be replaced soon. To change the batteries:

1. Pull out the blue battery compartment using your thumb nail.
2. Remove the three batteries.
3. Insert new batteries in the direction as depicted inside the compartment. The flat side of the battery is the positive (+) side. The meter uses LR44 batteries.
4. Close the battery compartment. Make sure it is tightly closed.



## Warranty

Your COM-80 is covered by a one-year factory warranty against manufacturing defects. If you find that the meter has a manufacturing defect, and you have *already attempted to troubleshoot (including calibration)*, send the meter, along with a copy of your receipt, and a description of the problem, to HM Digital. If your meter is caked in dirt or nutrients, this may be the cause of the problem. The warranty does not cover user damage, neglect or improper care.

Contact information and the complete warranty can be found on our website at [www.hmdigital.com](http://www.hmdigital.com) or call us at 1-800-383-2777 (within the United States).