WHAT IS EC?

Electrical Conductivity (EC) is the ability of a material to conduct electric current. The principle by which instruments measure conductivity in solution is by placing two sensor pins in a sample, applying a potential across the pins, and the current that passes through the solution is measured. Conductivity (G), the opposite of resistivity (R), is determined from the voltage and current values according to Ohm's law
(G=1/R = amps/volts).

The basic unit of conductance is the Siemen (S), also called the mho. Since cell geometry affects conductivity values, standardized measurements are expressed in (µS/cm) to compensate for variations in electrode dimensions. The cm is removed from the LCD screen due to space limitations.

Since the water that the DM-2EC will be testing has low electrical conductivity, the measurement used is micro-Siemens (µS). 1 µS = 0.001 mS = 0.000001 S.

Reverse Osmosis (RO) systems work by filtering the tap water and rejecting the wastewater. You can determine your system's effectiveness by calculating the percent rejection rate.

HOW TO CALCULATE PERCENT REJECTION

((Tap EC - RO EC) % (Tap EC)) x 100 = Percent Rejection

Example: Tap EC = 352 µS and RO EC = 18 µS. Percent rejection = 94.9%.

Contact the manufacturer of your system to determine minimum percent rejection levels and when to change the filter or membrane.

Please contact the manufacturer of your water system for recommended EC levels.

TROUBLESHOOTING

Issue	Potential Solution(s)
Err display (error)	1. The sensor cable is unplugged. Open the back panel and connect the cable securely.
oor display (out of range)	1. The water is out of the monitor's EC range
Incorrect readings	1. Re-calibrate the monitor. 2. Change the batteries.
bAt display (low batteries)	1. Change the batteries.
The "OUT" reading is higher than the "IN" reading	1. Check your connections. The sensors may be reversed.

WARRANTY

This product is warranted to the purchaser against material and workmanship for one (1) year from the date of purchase.

What Is covered: Repair, parts, labor, or replacement at the Company's option. Transportation charges for repaired or new product to be returned to the purchaser.

What is not covered: Transportation charges for the defective product to be sent to the Company. Any consequential damages. incidental damages, or incidental expenses, including damages to property. This includes damages from abuse or improper maintenance such as tampering. wear and tear. water damage, or any other physical damage. This product is not waterproof and should not be fully submerged in water. Products with any evidence of such damage will not be repaired nor replaced.

To obtain warranty service, please contact 800.383.2777 or email Warranty@HMDigital.com to receive further instructions. Before sending the product back to us, please include the following below,

- Your name
- Phone number/ Address
- Description of problem
- Proof of purchase, must include Date

If a returned product does not include the above-mentioned items, the Company reserves the right to refuse warranty service.

Implied Warranties: Any Implied warranties: including implied warranties of merchantability and fitness for a particular purpose, are limited in duration to five years from the date of purchase. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. To the extent any provision of this warranty is prohibited by federal and state law and cannot be preempted, it shall not be applicable. This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.

NOTE: Warranties are product-specific. Third-party products and products deemed by HM Digital as "accessories" are not covered under warranty. Third-party products include, but are not limited to, batteries, fittings, and adhesives.

HMDigital.com
info@HMDigital.com

Designed in USA and Korea
Made in China

An ISO-9001 Certified Company

COMMERCIAL DUAL INLINE EC MONITOR

model DM-2EC

USER'S GUIDE

Measure the EC levels of two different water lines, such as the tap water and filtered water, at any time.

The DM-2EC is an ideal monitor to know if a filter cartridge, resin cartridge, or membrane is functioning effectively. Install the DM-2EC so you'll always know how a water filtration or purification system is performing.

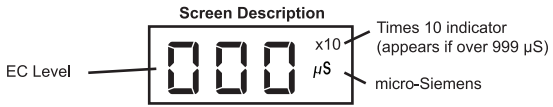
Useful links for more information

More information on
HMDigital.com

VER1.5E.US.CH(W-US)

SPECIFICATIONS

EC Range: 0~9990 µS
Resolution: 0~999: 1 µS
1000~9990: 10 µS (indicated by a blinking 'x10' icon - multiply the reading by 10)
Accuracy: ±2% (of the reading)
Factory Calibration: 700 µS (digital calibration)
Sensor Cable Length: 46" (116.8 cm) (including sensor)
Power Source: 2 x AA batteries
Base Unit Dimensions: 4.6 x 2.6 x 0.7 in (11.6 x 6.8 x 1.8 cm)
Base Unit Weight: 7.9 oz (224.3 g) (including batteries)



Base Unit Weight: 7.9 oz (224.3 g) (including batteries)

CARE AND MAINTENANCE

Very little care is necessary for your DM-2EC.

- Never touch the sensor pins, as skin oils may adversely affect the EC measurement.
- To clean the sensor pins, clean with rubbing alcohol and let air dry.
- Avoid removing the fittings, as doing this often may strip the plastic off the sensor and potentially cause a leak.
- If you notice the readings are off from what they should be, replace the batteries or re-calibrate.

→ ***Avoid removing the fittings from the sensors. Excessive removal and insertion of the fittings could ultimately scratch the sensor and potentially cause leakage.***

Frequently Asked Questions (FAQs)

1.What should the EC readings be?
→ For drinking water and filter performance, the lower the EC level, the better. There is never a "right" or 'Wrong" number. For filter performance, calculate the percent rejection to determine performance levels. Contact the manufacturer of your filter system for recommended levels.
2.My EC levels fluctuate. Is this normal?
→Yes. Slight fluctuations are normal from day-to-day. A variety of factors affect the reading.
3.Does the DM-2EC have an alarm or programmable set point?
→ No. You will need to view the readings.
4.How will I know when the batteries need to be replaced?
→ A low battery indicator, "bat" will appear on the display for 3 seconds when the unit is turned on.
5.Can I use the DM-2EC to monitor a water softener?
→ No. Water softeners do not remove EC.
6.Where can I get more information on water quality?
→Visit www.hmdigital.com

INSTRUCTIONS

The DM-2EC can be configured in a variety of ways, depending upon your needs. Typically, the IN line (line 1) is connected to the source (tap) water, and the OUT line (line 2) is connected to the product (filtered) water. The DM-2EC can also be configured with multiple systems, such as an RO/DI combination, as well as with HM Digital's Single Inline EC Monitor (model SM-1EC).

INSTALLATION

To install the DM-2EC to a water purification or filtration system:

1. Insert the white sensors fully into the bottom of the T-fittings.
2. Orient the sensor pins so that they are perpendicular to the direction of the T. The water should flow over both pins equally. (You should be able to see both pins of you look through the fitting.) See illustration #1 below.
3. Disconnect the water source.
4. Snip the source (tap) water tube at a point between the source and the filter. Insert both ends of the tube into the top of the IN line sensor's T-fitting. See illustration #2.
5. Snip the product (filtered) water tube at a point between the filter and a dispenser. Insert both ends of the tube into the top of the OUT line sensor's T-fitting. See illustration #2.
6. The DM-2EC monitor can be attached anywhere on or near the water system using the mounting bracket (which can be secured by screws or adhesive tape).
7. Reconnect the water source. Your monitor is now ready for use.
NOTE: *Consult a professional plumber for specific bracket or connection questions.*

Illustration #1
To insert the sensor into the fitting

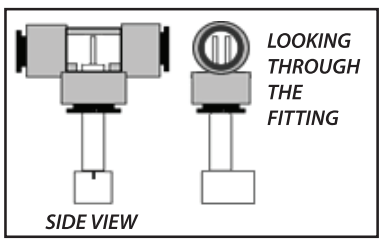
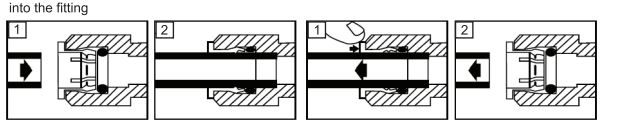


Illustration #2
To insert the tubing into the fitting



Push tubing straight in as far as it can go.
To remove, push in small collet and pull the tubing out.

CHANGING THE BATTERIES

1. To replace the batteries, unscrew the four metal screws on the rear of the unit and remove the back panel.
2. Remove the batteries.
3. Replace both batteries with two fresh AA batteries. Ensure the polarity is correct.
4. Close the back panel and replace the screws. You will not need to recalibrate.

USAGE

1. Press the "POWER" button.
2. To display the EC level of the feed (tap) water, press the IN button. To display the EC level of the product (filtered) water, press the OUT button.
3. The displayed EC will be most accurate after approximately 10 seconds.
4. Determining filter effectiveness depends on your particular system. For an RO system, for example, compare the IN water EC levels with the OUT water EC.
5. If the "x10" icon appears, then the EC level is above 999 µS. Therefore, multiply the reading by 10. For example, if the display shows 255 µS ***with*** the 'x10' icon, the actual EC level is 2550 µS. (If the 'x10' icon does not appear, the reading on the display is the actual EC level.)
6. Turn off the unit. (It will automatically shut off after 3 minutes to conserve battery power).

CALIBRATION

Your monitor was factory calibrated to 700 µS. This level is suitable for most tap water/filtered water applications, so it is ready to use out of the box. However, you may need to re-calibrate based on your needs, as well as from time-to-time to ensure the best results. To calibrate:

1. Connect the water tubes to the T-fitting as shown in the diagram below. The water tubes connected to the fitting must be 'IN' water (Before the RO filter) NOT the product 'OUT' water. When calibrating, the EC of water you are calibrating to must be over 5 µS Insert the sensor you wish to calibrate in the T-fitting. Ensure the orientation of the sensor to the fitting is correct, as shown in illustration #1.
2. Let the water flow in the tubes to allow the sensor to measure and calibrate.
3. Measure the EC of the water with a handheld EC meter to determine the EC of the water flowing in the tubes as shown in the diagram below. Make a note of the EC reading as this will be the EC value you will be calibrating your monitor. (illustration #3)
4. Turn on the Monitor.
5. Press either IN or OUT depending on the sensor inserted in the T-fitting for 3 seconds to enter into the calibration mode. Once in the calibration mode, 'CAL' will display on the screen with an LED light blinking.
6. press the IN or OUT to increase or decrease respectively. in this stage, the LED (IN or OUT) of the calibrating sensor will be blinking.
(Press and hold the buttons (IN or OUT) will speed up the numbers changing).
(Separate calibration is required for IN and OUT sensors).
7. When the reading value is correct, press the power button to start calibration.
8. When the product calibration is complete, 'End' is displayed on the screen.
(You can cancel the calibration by pressing the power button twice during the calibration process.)

Illustration #3