

## Two Year Limited Warranty

SpectraPure, Inc. warrants each new Reverse Osmosis system to the original owner only to be free of defects in material and workmanship for a period of two years from the date of receipt. SpectraPure's liability under this warranty shall be limited to repairing or replacing on SpectraPure's option, without charge, F.O.B. SpectraPure's factory, any product of SpectraPure's manufacture. SpectraPure will not be liable for any cost of removal, installation, transportation, or any other charges which may arise in connection with a warranty claim. Products which are sold but not manufactured by SpectraPure are subject to warranty provided by the manufacturer of said products and not by SpectraPure's warranty. SpectraPure will not be liable for damage or wear to products caused by abnormal operating conditions, accident, abuse, misuse, unauthorized alteration, or repair, or if the product was not installed in accordance with SpectraPure's printed installation and operating conditions or damage caused by hot water, freezing, flood, fire, or acts of God.

SpectraPure Inc. will not be responsible for any consequential damages arising from installation or use of the product, including any water damage due to flooding which may occur due to malfunction or faulty installation, including, but not limited to failure of installer to tighten all fittings.

SpectraPure warrants (pro-rated) the performance of membrane elements for one year from date of receipt by the buyer, providing that the loss of performance was not caused by fouling, neglect, or water conditions exceeding the feed water parameters listed on page 3 of this manual.

\* Most municipal water supplies meet these requirements.

## Terms and Conditions of Sale

1. To obtain service under this warranty, the defective system or components must be returned to SpectraPure with proof of purchase, installation date and failure date.
2. Any defective product to be returned to the factory must be sent freight prepaid; documentation supporting the warranty claim and/or a Return Goods Authorization must be included, if so instructed.
3. SpectraPure will not be liable for any incidental or consequential damages, losses, or expenses arising from installation, use, or any other causes. There are no expressed or implied warranties, including merchantability or fitness for a particular purpose, which extend beyond those warranties described or referred to above.
4. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages and some jurisdictions do not allow limitations on how long implied warranties may last. Therefore, the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary jurisdiction to jurisdiction.
5. Method of Payment: All orders will be shipped C.O.D. or require payment in advance.
6. SpectraPure, Inc. reserves the right to change prices without notice when necessary.

## Water Purity Monitor for RO/DI Systems

## Installation and Operating Manual

## System Description

The SpectraPure Push-to-Test Electronic Purity Monitor measures electrical conductivity of water and indicates when the value is above or below an internally set level. This association can be used to gauge the relative performance of an RO or DI system in removing contaminants from the water. While this does not detect the presence of Silica or organic contaminants, it can be used to imply the level of Total Dissolved Solids (TDS) contained as disassociated ionic species in the water.

The monitor has eight (8) internal settings for electrical conductivity, each associated with a level of water purity. With the appropriate setting, a user can determine when the performance of a water purification system has degraded to the point where replacement of deionization cartridges or RO membranes is required. The monitor operates on a 9 volt alkaline type battery (included). The switch number settings are listed on page 4.

**Fig. A: Typical Mounting Location**

Purity Monitor Mounted with Velcro Tape



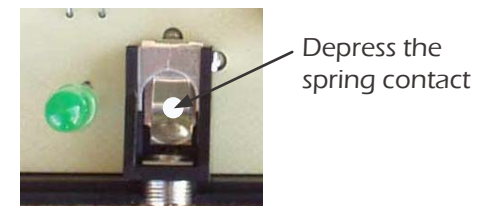
Q: How do you determine if the probe or monitor is faulty?

A: Follow this procedure:

1. Put the #8 switch in the ON position. All other switches must be OFF.
  2. Dry out the probe and suspend it in mid-air.
  3. Depress the push-to-test button.
    - 3A. If the GREEN light is ON, immerse the probe in tap water.  
Depress the push-to-test button.  
If the GREEN light is ON, you have a bad monitor and/or bad probe.  
If the RED light is ON, you have a bad cartridge and/or bad membrane.
  - OR
  - 3B. If the RED light is ON, unplug the probe from the jack (Fig. E).  
Depress the spring contact on that jack so that it is no longer touching the main body of the jack.  
Depress the push-to-test button.  
If the GREEN light is ON, you have a bad probe.  
If the RED light is ON, you have a bad monitor.
4. Be sure to restore the monitor to the #7 switch ON and all others OFF.

IMPORTANT NOTE: ONLY USE ALKALINE BATTERIES.  
Other Batteries will cause erroneous readings

**Fig. E: Purity Monitor Jack**



## Troubleshooting the Water Purity Monitor

### Some Frequently Asked Questions

Q: Does monitor read "good" or "bad" when it is unplugged?

A: The monitor reads "bad-RED" when it is unplugged.

Q: What if the light switches between GREEN and RED between successive depressions of the "push-to-test" water purity monitor?

A: Do not press the "push-to-test" button rapidly in quick succession. Wait at least 1 minute between two successive depressions of the button for an accurate reading.

Q: How should the probe be mounted for an accurate reading?

A: The probe should be mounted VERTICALLY, at the bottom of the T.

Q: How long does the battery last?

A: approx 1 year

Q: How do you determine if the battery needs replacement?

A: Depressing "push-to-test" button does not give any light.

Q: If the monitor shows a red light, what does it mean?

A: It means that either the membrane is bad OR either the probe or monitor is faulty.

**Fig. B: Purity Monitor Without Cover**



**Fig. C: In-Line Probe Location**



**Fig. D: Purity Monitor Switches**



Switch #7  
Shown in "ON"  
Position

## Installing the Water Purity Monitor

1. Locate the blue tubing that is just downstream of the DI housing you wish to monitor.
2. Using a sharp razor blade or Xacto knife, cut the tubing. Locate the "tee" provided with the purity test probe. Insert the probe into the "leg" of the tee.
3. Insert the two cut ends of the tubing into the remaining two ports of the tee. Tighten as needed. See Fig. C
4. Remove front cover from the monitor and connect the supplied 9-volt battery to the snap terminals located on the circuit board (Fig. B). Support the battery terminals with your finger while inserting the battery. For proper operation use only an ALKALINE type battery.
5. Insert the plug from the test probe cable into the jack on the monitor box.
6. Locate switch #7 on the selector switch. Slide (or push-in) the switch to the ON position. Ensure that all remaining switches are in the OFF position. This is the recommended setting to determine the condition of DI cartridges. Green=Pass, Red=Fail.
7. Replace the front cover and fasten with the included screw. Locate monitor at an easily accessible location within 3 feet of the test probe. Attach by peeling the protective cover from the self-adhesive velcro tape and pressing onto the mounting surface.
8. Locate the 8-position "dip switch" (Fig. D). Each of the internal settings corresponds to a specific electrical conductivity level measured in micro-siemens (uS). The equivalent "natural water" TDS setting in ppm is shown below.

| Switch Number  | 1   | 2  | 3  | 4   | 5   | 6   | 7    | 8    |
|----------------|-----|----|----|-----|-----|-----|------|------|
| Setting in uS  | 100 | 50 | 20 | 10  | 5   | 2   | 1    | 0.5  |
| Setting in ppm | 67  | 33 | 13 | 6.7 | 3.3 | 1.3 | 0.67 | 0.33 |

\* If settings are changed for any reason (such as testing the quality of the RO membrane), it should be returned to the original #7 setting after completion of the test.

## RO Membrane Diagnostic

In order to accurately determine the condition of an RO Membrane, a conductivity tester capable of reading the tap water conductivity and the product water conductivity would be required, but the Electronic Purity Monitor is capable of providing a general idea of the membrane's condition.

Before performing the following membrane test with the purity monitor, any DI cartridges must be removed and the empty housings re-installed; also, the waste to product water ratio must be 4 to 1 or greater.

1. Turn on the system, let it operate long enough to fill any empty DI housings, then let it run for an additional 20 minutes.
2. Remove the cover from the monitor.
3. Set all switches to the down or OFF Position except switch #1.
4. Push the test button and record the light indication (a good membrane will show green).
5. Continue through each switch number in order until you observe a red light indication.
6. Record the number of the last green light indication.
7. Look at the chart on page 4. Compare your highest green light indication to the number represented in uS or PPM.

As a general rule we would consider the RO membrane to be in good condition if a green light indication is observed on switch #3 or above. (The higher the switch number the better).

8. If you are in doubt or if you observe a red light on switch #1 or #2 we would recommend calling the factory for assistance. (This condition could be due to a faulty membrane or monitor).
9. Return monitor to switch #7 ON (for DI), all others are OFF

Note: All water sources are different and are subject to changes in conductivity from season to season which could affect the monitor reading depending on the time of the year. For this reason we recommend the use of a conductivity tester in order to record the most accurate measurement for determining the condition of the RO membrane.