

Model 241VM, 241TM Operating Instructions



SPECIFICATIONS:

Power: Input: DC: 0 - 24VDC +/- 1 VDC, + Black, -White
 Frequency: 2.4 MHz +/- 50kHz
 Generator Power: 12-15 Watts
 Processing Rate (Water): 200-250 ml/hr @ 150 deg F, 70-100 ml/hr @ 70 deg F, 0ml/hr @ 33 deg F
 Mating Connector: MOL705-43-0003
 Element: Gold Plated
 Seals: 241TM PTFE Teflon, 241VM Viton

Particle Size: In the case of water, where $T=.0729N/m$, $p=1000kg/cu. m$ and $f=2.4 MHz$, the size of the particles centers around 1.7 microns.

$$d_n = 0.73 \sqrt[3]{\frac{T}{\rho f^2}}$$

Sonaer's Model 241 Nebulizer is a small compact, 2.4 MHz vibrating ultrasonic element used to convert low viscosity liquids into a fine mist. As the liquid is converted into fine like particles, they are to be carried off for processing with a small airflow. This air flow is usually less than 2 cfm.

OPERATION: Unit is to be operated with liquid on top of the element at all times. Should liquid run dry a possibility exists that the thin element could be damaged. Damage will cause heating and be a sign of low output from the crystal. It is recommended that extra crystals be purchased if low liquid levels are needed for application..

Note: Module is to be mounted to a heat conducting plate (Aluminum) with a minimum mass of 60 grams for each element, or equivalent heat conducting material. Assure it is firmly mounted and O-rings are sealed

Allowing liquid to leave cell and spill onto electronic components or leak under mounting plate will by capillary action leak into nebulizer crystal assembly, possibly melt plastic and damage unit. No Warranty will apply in these cases. Use device in a closed loop system to prevent damage from spillage.

For extended operation, use larger transformer and keep unit at a temperature of **150 degrees F** or less by circulating nebulizing fluid if necessary. **Measure temperature at the case of the transistor.** Should the temperature exceed 150 degrees F, it will fail and need replacement, voltage above power input rating will cause over heating and result to low output.

Fill the vessel with the liquid being converted into particles. This liquid will vary in height over the element depending on the characteristics of the solution. With water, a typical operating height will be 3/4 to 1 inch over the element..

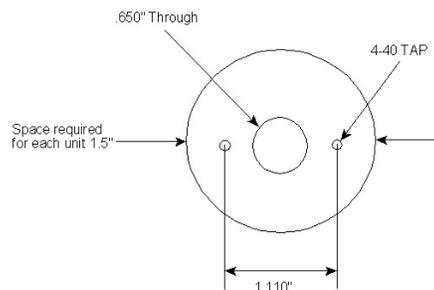
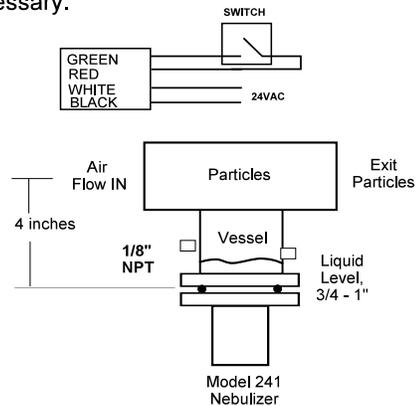
Wear of the crystal is an indication of discoloration of the center, replace if necessary.

If a switch is needed to turn the unit ON/OFF, connect Between GREEN and RED wires, otherwise use jumper wire for continuous operation.
 Variable Power use PWM @ ~350 Hz

A typical set-up is shown for generating fine particles and carrying them off for processing. Recommended height for 2 cfm air flow is 4"

For mounting a vessel to the unit or arrays

For more information see www.sonaer.com



LIMITED WARRANTY

WARRANTY: Warranty is 60 days. No warranty on crystal. Warranty is honored if customer has a program in place that assures unit is maintained by emptying unit after each use and cleaning. If no proof of maintenance is provided, warranty is void, no exceptions. Sonaer warrants that products distributed by Sonaer in the USA that fail to function properly under normal use due to a manufacturing defect when installed and operated according to the owner's instructions enclosed with the unit will be repaired or replaced with a unit of comparable value, at the option of Sonaer, without charge to you for parts or actual repair work. Parts supplied under this warranty may be new or rebuilt at the option of Sonaer.

This warranty covers the product during the warranty period whether in the possession of the original owner or subsequent owner proved by receipt. In the event service is required, the product must be delivered within the warranty period, customer will provide transportation, return of the repaired unit will be paid by Sonaer.

This warranty does not cover the costs of parts or labor which would be otherwise provided without charge under this warranty, should the product be repaired by any other source other than Sonaer.

The warranty will be void should any alterations or modifications be performed to the product without appropriate authorization from Sonaer.

The warranty will be void for all experimental uses of this equipment without the written consent of Sonaer, Inc.

HOLD HARMLESS

Sonaer makes devices that make very fine particles from liquids. Some of the liquids as gasoline, alcohols, jet fuel, acetone can become very explosive when exposed to heat or sparks and will cause death or bodily harm. Biological agents when made into fine particles can and will travel through the air which will cause death or bodily harm. Customers who use such equipment for research or processes should take the proper precautions to prevent any harm to people or damage to property and will hold Sonaer and its representative held harmless for all uses of this equipment. This equipment is experimental for scientific research and will benefit society with improvements in medicine and new processes.

Under no circumstances will this equipment be sold directly or indirectly to any nation that the United States of America deems to house terrorists or any other organization here or abroad with the intent to cause bodily harm or property damage. This equipment is for scientific purposes and friendly use only.