

# PORTABLE TRITIUM IN AIR SURVEY MONITOR

Model Series 200 SB

Model 200SB ~ Model 200 SB HTO

## FEATURES:

- LOW COST, LIGHT WEIGHT PORTABLE TRITIUM IN AIR SURVEY METER
- AVAILABLE IN:  $\mu\text{Ci}/\text{m}^3$ ,  $\text{MBq}/\text{m}^3$ , DAC, MPCa
- WIDE RANGE – FAST RESPONSE
- SENSITIVITY:  $10 \mu\text{Ci}/\text{m}^3$  ( $0.1 \text{ MBq}/\text{m}^3$ )
- LARGE 3 LPM PUMP
- DUAL 200cc ION CHAMBERS, GAMMA COMPENSATED
- HTO DISCRIMINATION – **MODEL 200SB-HTO**
- SINGLE ADJUSTABLE LEVEL ALARM
- ALARMS: LOW FLOW, BATTERY, LEVEL
- SENSITIVE FOR OCCUPATIONAL EXPOSURE
- DYNAMIC BACKGROUND COMPENSATION
- BATTERY OPERATION
- OPTIONAL: AC JACK



## DESCRIPTION:

MODEL 200SB is a low-cost portable Tritium in air monitor with a fast response and wide range.

- A subtractive balanced chamber electrometer circuit decreases background effects to negligible levels and its deionized and filtered intake reduces spurious effects from smoke dust and existing ionization in the air.
- Inlet and outlet hoses allow point monitoring of fume hoods, rooms, exhausts, etc.
- Model 200SB will measure airborne Tritium as free hydrogen or as volatile chemicals in concentrations as low as  $10 \mu\text{Ci}/\text{m}^3$  of air.
- All instruments are calibrated at the factory. Calibration check may be performed in the field with a microCurie level Gamma source.
- Background chamber may be shielded to check linearity of response on a gamma calibration range.
- User friendly calibration controls are provided.



TECHNICAL ASSOCIATES

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## MEASURING TRITIUM IN WATER & OIL MIXTURES: Strategies

Tritium is radioactive hydrogen and hydrogen atoms regularly jump or exchange between different adjacent oil and water molecules.

In a mixture of normal water mixed with tritiated oil, both components will, over time, share the Tritium equally.

In **GASEOUS** Samples, the same principals apply.

1. A vapor separation system is recommended.
2. Use Model 200SB Tritium Ion Chamber to make the measurements.

## SPECIFICATIONS:

<b>Ranges:</b>	Compact, easy to read digital LCD readout. <u>Select one of the following sensitivity ranges:</u> 10 to 199,990 $\mu\text{Ci}/\text{m}^3$ 1 to 19,999 $\text{MBq}/\text{m}^3$ 1 to 19,999 DAC (1 DAC = $10\mu\text{Ci}/\text{m}^3$ ) 1 to 19,999 MPCa (1 MPCa = $10\mu\text{Ci}/\text{m}^3$ )
<b>Energy Range:</b>	0 to 25 KeV
<b>Background:</b>	Essentially eliminated by subtractive balanced chambers.
<b>Smoke, Dust &amp; Ion Elimination:</b>	HEPA Filter and deionizer reduce effects to negligible level.
<b>Internal Air Pump:</b>	High Volume 2-3 lpm.
<b>Gamma Compensation:</b>	Dual Ion Chambers; side by side
<b>Ion Chamber Volume:</b>	220 $\text{cm}^3$ port to port; 200 $\text{cm}^3$ effective
<b>Response Rate:</b>	5 seconds to reach 90% of final reading
<b>Alarms:</b>	Single adjustable alarm set-point. Visual / Audio: Low Air Flow, High Level, Low Battery.
<b>Controls:</b>	(3) Switches – Power On/Off, Sample, Measure.
<b>Environment:</b>	32° F to 122° F (0° C to +50° C); RH 0-98%
<b>Calibration:</b>	Can be calibrated using Tritium gas, calibrated electrical resistor, or small gamma check source.
<b>Portability:</b>	Model 200SB is provided with carrying handle.
<b>Case:</b>	Deep drawn aluminum case, with handle and gasket lid, easily cleanable anodized finish.
<b>Battery:</b>	(2) 'D' Battery

## WEIGHT & DIMENSIONS:

**Dimensions:** Instrument Case (excluding handle): 5.2"W x 7.6"L x 4.4" H.



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Weight: 5 lbs. (2.3 kg)

## OPTIONS:

- **Model 200SB-HTO** includes (6) Hose Connections and a desiccant dryer for specific HTO measurement even in the presence of HT or other radioactive gases as well as external and internal Gamma fields.
- OPTIONAL: AC JACK



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