SARTREX
POWER
CONTROL
SYSTEMS

Portable Tritium-in-Air Monitor Model 309B(LD)

The Model 309B(LD) Portable Tritium-In-Air monitor adds a new dimension to the versatility of monitoring instrumentation for the Nuclear Industry. The only true dual purpose instrument in the industry, Model 309B(LD) enables you to use the monitor as both a continuous remote area monitor and as a hand-held unit ensuring absolute flexibility.

Introducing this monitor in the ensemble of standard portable devices for health physics applications adds strength to the overall capability for tritium monitoring. Through its microprocessor intelligence and automatic range switching, the 309B(LD) permits tritium measurements in the range 1μCi/m^3 to 200,000 μCi/m^3. Additional built-in features include concentration displayed in any one of four preselectable units, analog output (lin and log), remote monitoring capability via an RS-232 port, pre-settable alarm levels and external power supply operation.

The state-of-the-art electrometer coupled to co-axial ion chambers affords efficient gamma cancellation. This inexpensive, lightweight, Tritium-In-Air monitor is also environmentally sealed and serves to fulfill a distinct need in the general area of dose-control, assessment of tritium contamination and detection of tritium leaks.

The Model 309B(LD) is used world-wide both in health physics applications and in heavy water reactor complexes.

Features

Rugged, Portable Design
Model 309B(LD) weighs less than 4kg, ensuring full portability, and is environmentally sealed.

Dual Purpose Monitor
The 309B(LD) serves as both a continuous remote area monitor and as a hand-held unit giving you the utmost flexibility.

Wide Operating Range
A wide operating range of 0 to 200,000 μCi/m^3 with automatic range switching makes the 309B(LD) very versatile and easy to use.

Meets Military Specifications
All of our Tritium monitors are manufactured to AQAP-4 and ISO 9001.

Three Operator Selected Ranges
The three selectable ranges enable you to view the reading in any of these forms:

- 1-200,000 μCi/m^3
- 0.1-20,000 MPC_a (10 μCi=MPC_a)
- 0.037-7400 MBq/m^3 (1 MBq-27 1μCi/m^3)

Intelligent Microprocessor
The 309B(LD)'s microprocessor technology ensures maximum flexibility.

Automatic Compensation
The 309B(LD) automatically compensates for zero drift ensuring data integrity.

Co-Axial Dual-Ion Chamber
The co-axial dual-ion chamber permits efficient Gamma Compensation.

Specifications

Detector
250cc Nominal Co-axial Ion-Chambers.

Range
1 to 200,000 µCi/m^3.

Time Constant
<1 minute to display >90% of final reading.

Gamma Compensation
For Cs-137 Gammas perpendicular to chamber axis <+3 µCi/m^3/mR/h to maximum of 10 mR/h gamma dose rate.

Display
Graphic LCD Display

Accuracy
±30% (1 sigma) or 1 digit whichever is greater for tritium concentration <20 µCi/m^3.

Operating Temperature
+5°C to +50°C.

Temperature Drift
Zero: <0.15 µCi/m^3/°C
Noise: (No radioactivity): <3 µCi/m^3/C.

Operating Humidity
To 95% R.H. (Non-condensing).

High Position Alarm
Audio-internally pre-settable at any one of three levels in all system of measurement units.

Flow Alarm
Indication of LCD with intermittent audio.

Power Supply
4.5 V DC (three D type alkaline cells) of External 110/220 AC from power supply. Battery Life = 6 hours at room temperature, without pump on, 25 hrs.

Functional Features

A. Function Switch (4 position)

1. Instrument OFF: In this position the electrometer is under power from main battery source and the bias voltage is supplied by two 45V batteries Eveready 415 or equivalent.
2. DISPLAY ON: This position is used for zero cancellation. Battery condition is also indicated.
3. PUMP ON: Pump and Display ON: On this position a low battery condition is also indicated.
4. BATT./ALARM CHECK: Pump, Display and Audio Alarm activated. Display reads Battery ,Background, ION Channel, Comp. Channel, Amplified Channel, Flowmeter output, Next page, Alarm level, Eingeering unit, Baud rate, Trend scale, Trend span, Backlight saving, Previous page.

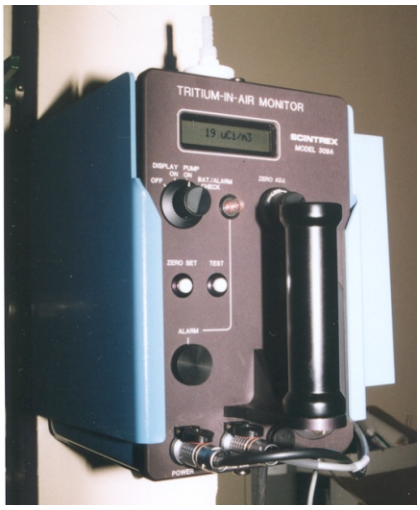
B. Select Push Button: Used to select items setting/status menu.

C. Adjust/Test Push Button is used to change the setting of the selected items. It works in conjunction with Select Push Button. It is also used for zero cancellation when pushed simultaneously.

D. Zero Drift: Automatic Compensation.

Air Sampling System
Connection: Male hose adapter for 5mm I.D. Silicon tubing
Sample Rate: Approx. 1.5 litre/min
Filtration: Replaceable 25mm diameter glass-fibre filter disk

Construction
All metal case and front panel construction; suspended type configuration; all entry points gasketed or O-ring sealed. Instrument box is painted with hardwearing two-component urethane. Detachable Sound Alarm resonator for easy decontamination.



309B(LD) in wall mount bracket in networked mode

Size
Width: 15.24cm (6.0")
Length: 22.86cm (9.0")
Depth: 17.53cm (6.9")
Weight: 3.9kg (8.6lbs)

Standard Accessories

1. External Power Supply
   120V - P.N. 935060
   220V - P.N. 935061
2. Spare filters
   P.N. 008987
3. RS-232 Cable
   P.N. 935063
4. Analog Cable
   P.N. 935064

Optional Accessories

1. Rugged Aluminum Carrying Case
   P.N. 935024
2. Carrying Strap
   P.N.140200
3. Wallmount Adaptor
4. 8 Channel Multiple serial Port Adaptor
5. Trinet Software
6. Gas output port adapter
   P.N. 9351

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