

ALPHA - BETA / GAMMA AIR MONITOR

Model ~ FM-9-AB2

FEATURES:

- INTEGRATED EXPOSURE
- REAL TIME ALARM
- LINE OPERATED
- PORTABLE
- STANDARD FM-9 MODULES
- CAN DRAW AIR FROM HOOD, DUCT, ETC.
- QUICK CHANGE FILTER CARTRIDGE
- REAL TIME AIR FLOW MEASUREMENT DISPLAY
- COMPUTER INTERFACE – USB OR ETHERNET
- DATA ARCHIVE & RETRIEVAL
- IP22



APPLICATION:

The **FM-9-AB2** Air Monitors assure safety against airborne radioactivity contamination by means of constant check with alarm and record capability. Data archive and retrieval is available via USB or Ethernet ports.

It is a complete system but may be expanded per need with modules of the **FM-9** series.

The **FM-9-AB2** is **sensitive and versatile**.

It may be used to monitor stack effluent down to EPA levels as well as hoods, glove box or workplace air.

DESCRIPTION:

The **FM-9-AB2** uses a standard filter in TA's unique quick change, no leak holder to trap any airborne particulates. The filter is under constant surveillance via both an Alpha scintillator and a Beta pancake GM tube.

Air is drawn by a regulated pump through a three-foot inlet hose and exhausted via a flow meter through another three-foot hose. These may be extended to allow monitoring of hoods, glove boxes, stacks, etc.

Time is recorded by a computer wired into the pump circuit.

The unit is completely self-contained and portable. Complete with box of 100 filters.

SPECIFICATIONS:

Alpha Sensitivity: 1KBq/m^3 Alpha ($3 \times 10^{-8} \text{ Ci/m}^3$) = ($3 \times 10^{-8} \mu\text{Ci/cc}$) is easily measured in one hour at 70 lpm flow rate.

Beta Sensitivity: Limit of sensitivity (as Cs-137 at 70 liters/minute air flow rate) is $4 \times 10^{-13} \mu\text{Ci/cc}$ integrated over an 8 hour period, or $8 \times 10^{-14} \mu\text{Ci/cc}$ for a 40 hour period.

NOTE: This corresponds to $2 \times 10^{-10} \mu\text{Ci/ml}$ minute exposure equal to 0.6% of the California Safety Code Title 17 and USNRC Title 10 limit for 40 hour weekly exposure to most hazardous Beta and/or Gamma emitter in absence of Ac 227.



TECHNICAL ASSOCIATES

Divisions of



US NUCLEAR CORP

OVERHOFF TECHNOLOGY

7051 Eton Ave., Canoga Park, CA 91303
818-883-7043 (Phone) 818-883-6103 (Fax)

tagold@nwc.net

WWW.TECH-ASSOCIATES.COM

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SPECIFICATIONS (Con't):

Alpha Detector: 2" dia. probe, thin Zn(S) Alpha scintillation phosphor, Model **PAS-8**.
Beta Detector: 2" dia. **T-1190** GM pancake detector with Beta window to eliminate Alpha cross talk, or with 2mg/cm window to allow C¹⁴ and S³⁵ detection.

ELECTRONIC MODULES INCLUDE:

MV-5.12.24: Power Supply
MAC-9: Air Control Timer; Low Flow Alarm Flowmeter
FM-9: On Board computer with color monitor
MμP: Imbedded processor

RANGE:

Beta Range: 1×10^{-13} to 1×10^{-7} μCi/cc or (Ci/m³).
Alpha Range: 1cpm to 100,000cpm, 3×10 to 3×10 Ci on filter.

Alarm: Settable. 2000 Hz beeper and red flasher.
Response Time: Settable 1 second to 40 hours.
Readout: 7" Color LCD monitor built-in for digital and graphic user data display.
Flow Rate: Regulated. Normally set at 70 liters/min. (User Settable)
Mass Flow Meter: Real-Time air flow rate data feeds directly into data analyzer software and embedded processor for highest concentration accuracy.
Power: 115V, 50-60 Hz (**Optional** 230 V).
Shielding: 1" lead about sample and detector.
Pump: Noise Free Pump. 115V 60Hz 2A. (**Optional** 230 V 50-60 Hz)
Filters: Includes box of 100 glass fiber filters – 2" or 55mm.
Can also use membrane, paper or glass fiber filters.
Case: Electronics housed in enameled aluminum case; carrying handles optional.

WEIGHT & DIMENSIONS:

Dimensions: Excluding pump and detector assembly: 20"W x 13"H x 18" D.
Detector assembly 5"W x 10"H x 6" D.
Pump assembly 8"W x 8"H x 14"D.
Shipping Weight: 84 lbs.

OPTION: **FM-9AB2SJ** – Substitute a solid state Alpha detector (to replace Alpha scintillator) allows Alpha energy discrimination and Radon rejection.



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Accessories: Filter: Free flowing glass fiber filters – 2” or 55mm.

DESCRIPTION	FM-9-ABGN
Read-Out Units	$\mu\text{Ci/cc}$
Optional Read-Out Units	Specify at Time of Order
Measures	Airborne Concentration
Smart System	Calculations by Imbedded Processor On Board Data Logger
Special Feature	Electronic Mass Flowmeter

Oil-Less Green Turtle Pump



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