

ALPHA / BETA & BERYLLIUM AEROSOL MONITOR

Model ~ FM-9-AB2 & Model ~ FM-9-AB2-Be

FEATURES:

- ALPHA/BETA & BERYLLIUM SIMULTANEOUS & SEPARATE MEASUREMENT - **FM-9-AB2-Be**
- ALPHA/BETA INTEGRATED EXPOSURE - **FM-9-AB2**
- REAL TIME ALARM
- LINE OPERATED
- BENCH TOP - **OPTIONAL**: WALL MOUNT
- STANDARD FM-9 MODULES
- CAN DRAW AIR FROM HOOD, DUCT, ETC.
- ELECTRONIC MASS FLOW METER
- QUICK CHANGE FILTER CARTRIDGE
- REAL TIME AIR FLOW MEASUREMENT DISPLAY
- COMPUTER INTERFACE – USB, RS485, OR ETHERNET
- DATA ARCHIVE & RETRIEVAL (FLOW RATE & SAMPLE TIME)



FM-9 ELECTRONICS

APPLICATION:

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

Measures activity from activated Beryllium (Be) and can be used as sampler to collect all airborne Be.

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.



TECHNICAL ASSOCIATES

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SPECIFICATIONS:

Alpha Sensitivity: 1KBq/m³ Alpha (3×10^{-8} Ci/m³) = (3×10^{-8} µCi/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 4×10^{-13} µCi/cc integrated over an 8 hour period, or 10^{-4} Bq/m³ for a 40 hour period.

NOTE: This corresponds to 2×10^{-10} µCi/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.

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
Readout: 7" Color LCD monitor built-in for digital and graphic user data display.
Power: 110-220 AC (Optional 230 AC)

DISPLAY: LCD color monitor
Alpha, Numeric
3-4 Lines of simultaneous information
Multiple color status indicators
Decimal places (User Settable)
Raw counts and air borne concentration (User Settable engineering units)
Fast response on all count rates
User friendly
Keypad and mouse for set up

RANGE:

Beta: 1×10^{-13} to 1×10^{-7} µCi/cc or (Ci/m³).
Alpha: 1cpm to 100,000cpm, 3×10 to 3×10 Ci on filter.
Activated Beryllium: 10^{-4} Bq/m³
MDA: **95%**
Alarm: Settable. 2000 Hz beeper and red flasher.
Response Time: Settable 1 second to 40 hours.
Flow Rate: 10-100 liters/min. (User Settable)
Mass Flow Meter: Real-Time air flow rate data feeds directly into data analyzer software and



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embedded processor for highest concentration accuracy.

Flow Rate Accuracy: ±5%

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.

Filter Holder: **Beryllium:** BeFil-10H

Filter: **Beryllium:** BeFil-10 filter disc

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 (50 cm x 33 cm x 45 cm).

Detector assembly: 5"W x 10"H x 6" D (12 cm x 25 cm x 15 cm).

Pump assembly: 8"W x 8"H x 14"D (20 cm x 20 cm x 35 cm).

Shipping Weight: 84 lbs (38 kg)

DESCRIPTION	FM-9-AB2 & FM-9-AB2-Be
Read-Out Units	µCi/cc or Bq/m ³
Optional Read-Out Units	Specify at Time of Order
Measures	Airborne Concentration
Smart System	Calculations by Imbedded Processor On Board: Data Archive, Download, Display
Special Feature	Electronic Mass Flowmeter
	Direct Drive
	Noiseless, quiet pump



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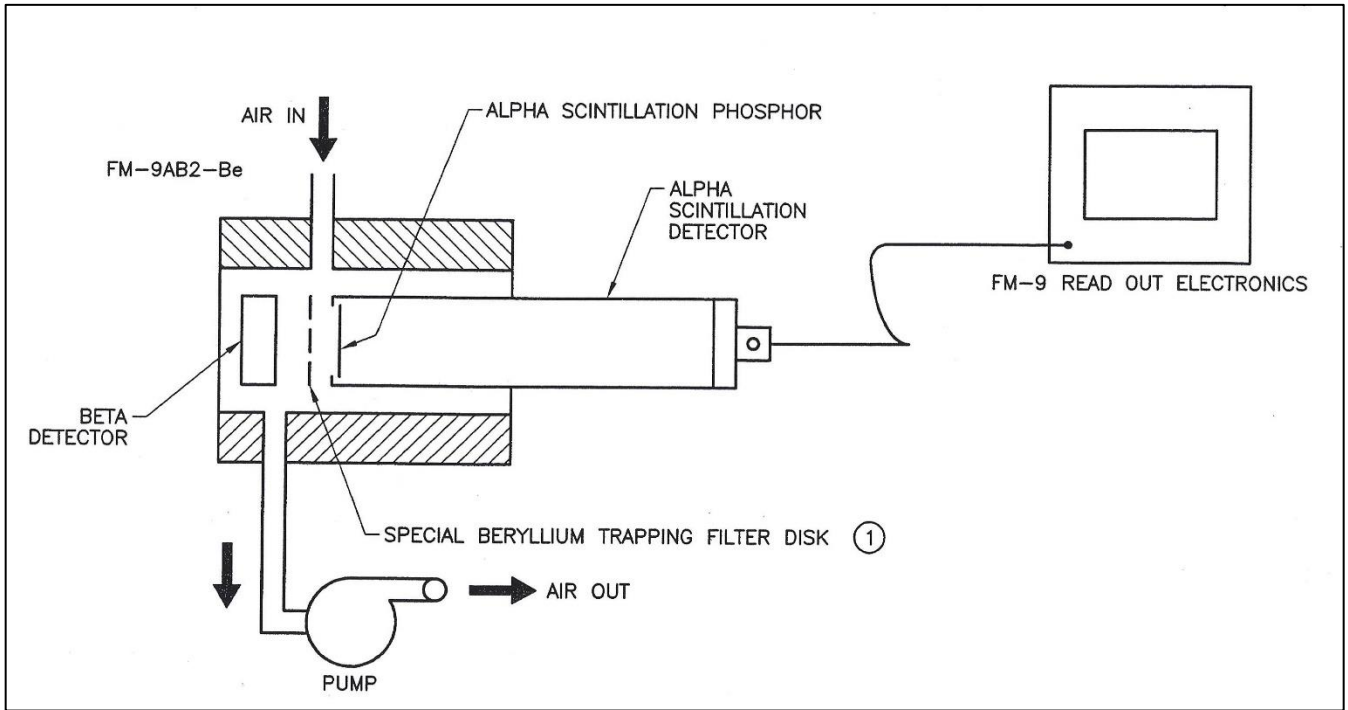
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FM-9AB2-Be SAMPLER DIAGRAM



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