

# ALPHA, RADON & BETA PARTICULATE AIR MONITOR FM-9MA2 SERIES

Model ~ FM-9-MA2 ~ Alpha ~ Model ~ FM-9-MA2-R ~ Radon & Progeny

Model ~ FM-9-MAB2 ~ Alpha & Beta

Model ~ FM-9-MAB2-M ~ Alpha & Beta (MOBILE)

## FEATURES:

- TABLE TOP OR TRANSPORTABLE OPTIONS:
- **FM-9-MA2** ~ ALPHA ONLY
- **FM-9-MA2-R** ~ RADON & PROGENY
- **FM-9-MAB2** ~ ALPHA & BETA
- **FM-9-MAB2-M** ~ MOBILE OPTION
- RUGGED SOLID-STATE SILICON DETECTOR
- INTERNAL DATA ARCHIVE & USB RETRIEVAL
- QUICK CHANGE FILTER
- REAL TIME OPERATION
- REAL TIME ALARM - AUDIO / VISUAL, LOW FLOW ALARM
- PROVIDES LOCAL OR REMOTE SAMPLING
- USB PORTS (4)
- **FM-9-MAB2-M** ~ MOBILE OPTION
  - MOVING FILTER HEAD – 1 YEAR UNATTENDED
  - CART
- **OPTIONS:**
  - REMOTE ALARM – CELL PHONE ALERT
  - REMOTE READOUT
- **IP32**



**ELECTRONICS  
FM9-MA2 SERIES**



**MFH-AB MOVING FILTER HEAD  
FM9-MAB2-M ONLY**



**CART Mounted  
2 Wheeled Vertical or  
4 Wheeled Horizontal  
FM9-MAB2-M ONLY**

## APPLICATION:

Technical Associates **FM-9 Air Monitor Series** assures safety against airborne radioactivity contamination by means of constant check with alarm and record capability. It provides integrated exposure information with an optional hard copy via external computer.

This Air Monitor Series is a complete system and may be expanded per need with modules of the **FM-9** series.

The **FM-9 Air Monitor Series** 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.

[See RADON IN AIR COMPARISON CHART](#)



**TECHNICAL ASSOCIATES**

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OTCOB-UCLC

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## DESCRIPTION:

- The **FM-9-MA2** and **FM-9-MAB2 Air Monitors** utilize a solid-state detector and two coordinated single channel analyzer windows.
- Utilizing two coordinated single channel analyzers the electronics will reject Radon pulses.
- The sample window (PHA allows the user to preset specific energy level for sample (eg. The "Radium A" peak), measuring Pu-239 or other Alpha emitters in the presence of significant or changing **Radon-Thoron background**.
- The count rate is shown on the front panel color monitor display both rate and integrated information.
- The **FM-9-MA2-R Air Monitor** utilizes 3 detectors in addition to the Alpha solid-state detector.
- The user can select the operating modes: gross count, pulse height analyzing (PHA), or PHA with background subtract (PHA-SUB).
- The high-level alarm trip point is settable over the entire range.
  - ✓ When activated, the system provides an on-screen red alert and an audible alarm warning.
  - ✓ An adjustable alarm delay prevents short term transient alarms.
- The system uses a quick change 47mm filter.
- The unit comes with an AP-3V air pump or may be plumbed to hood exhaust or in-house air system.
- Included with the **FM-9-Air Monitor Series:**

Quiet Green Turtle Air Pump	User's Manual
Six feet plastic tubing	A box of 100 Filters

## SPECIFICATIONS:

<b>Detectors:</b>	<b>FM-9-MAB2</b> Alpha Solid State, Beta Particulate (1 Each) <b>OPTIONAL:</b> Tritium.
	<b>FM-9-MA2-R</b> Radon Progeny, Gamma, Radon Gas Ion Chamber
<b>Detection:</b>	<b>FM-9-MAB2</b> 1% of MPC of Pu-239 can be detected with average Radon-Thoron background.
	<b>FM-9-MA2-R</b> Rn-222, RP – Radon Progeny, Am-241, Co-60, Cs-137
<b>Range:</b>	<b>Alpha:</b> $10^{-2} - 10^5$ Bq/cm <sup>3</sup> OR $10^{-1} - 10^6$ Bq/cm <sup>3</sup> <b>Beta:</b> $3 \times 10^{-1} - 10^5$ Bq/cm <sup>3</sup>
<b>Sensitivity:</b>	0.2 Bq/m <sup>3</sup> at 180 liter/min air flow with hour reading.
<b>Energy Response:</b>	<b>Alpha:</b> 2.7-10MeV <b>Beta:</b> 80 KeV – 2.5 MeV
<b>Counting Efficiency:</b>	24% of 2 pi with wide window setting for Pu-239 source in the filter holder.
<b>Detector:</b>	Solid state detector, cleanable silicon with a 490 sq. mm area and a typical Alpha resolution of 60 KeV maximum.
<b>Response time:</b>	1 sec. to 40 hours.



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Model ~ FM-9-MAB2-M ~ Alpha & Beta (MOBILE)

<b>Display:</b>	7" Color LCD monitor built-in user data display.
<ul style="list-style-type: none"><li>• <b>Concentration</b></li><li>• <b>Total Activity on Filter</b> User Settable Units: (cps, Bq, <math>\mu\text{Ci}</math>, <math>\text{Bq}/\text{m}^3</math>, <math>\mu\text{Ci}/\text{l}</math>, DAC, DAC-hr etc.)</li><li>• <b>Raw Counts</b></li><li>• <b>Flow Status</b></li><li>• <b>Alarms – Audio &amp; Visual - User Settable.</b></li><li>• <b>System Status; System Error</b></li><li>• <b>Alert Change Filter Due to High Activity Build Up – Range Typically Set at 500 kBq or 13.5<math>\mu\text{Ci}</math> User Settable.</b></li><li>• <b>Torn Paper Filter Error Alert</b></li><li>• <b>Air Flow Rate Accessible via Display</b></li></ul>	
<b>Alarm:</b>	On screen red light alert; audible alarm
<b>Pump:</b>	Quiet Green Turtle Pump – AP-3V included. 115V 60Hz 2Amps. Optional: 220 V 50-60 Hz.
<b>Flow Rate:</b>	35 – 200 l/m (Normally set at 180 liters/min.)
<b>Mass Flow Meter:</b>	Real-Time air flow rate-data feeds directly into data analyzer software and Onboard computer for highest concentration accuracy eliminating need for manual adjustment of High and Low Flow Rates.
<b>Ports:</b>	Sample In & Sample Out (1 each) Purge Air Inlet (1) Calibration (2)
<b>Filters:</b>	Pack of 100 47mm glass fiber filters included.
<b>Temperature Range:</b>	20 to 130 degrees F. (-7 to 54 degrees C.) Total change in system gain is less than $\pm 5\%$
<b>Finish:</b>	Baked enamel, easily cleaned.

## ELECTRONIC MODULES INCLUDE:

<b>MV-5.12.24:</b>	Electronics Power Supply – Accepts both 115V or 220V
<b>MFT-5A:</b>	Sample Holder & Detector
<b>SUB-5:</b>	Three level energy analyzer
<b>MAC-9:</b>	Air Control; Low Flow Alarm; Flowmeter
<b>FM-9:</b>	On Board computer with color monitor
<b>Pump Power:</b>	115V, 60 Hz (220 Volts, 50 Hz optional.)

## WEIGHT & DIMENSIONS:

**Weight:** 35 lbs. excluding pump

### Dimensions:

Electronics Assembly & Internal Detector:  
20"W x 13"H x 18" D.

Pump assembly: 8"W x 8"H x 14"D.



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Model ~ FM-9-MAB2-M ~ Alpha & Beta (MOBILE)

DESCRIPTION	FM-9-MA2, FM-9-MAB2, FM-9-MA2-R FM-9-MAB2-M
Read-Out Units	User Settable
Measures	Airborne Concentration
Smart System	Calculations by On Board Computer Easy On Board Data Display & Archive Retrieval
Special Feature	Electronic Mass Flowmeter

Oil-Less Green Turtle Pump



## Moving Filter Head for Alpha / Beta ~ FM9-MAB2-M (Mobile) ONLY

FRONT PANEL ELECTRONICS	
CONTROLS & FUNCTIONS	INDICATORS:
<ul style="list-style-type: none"> <li>➤ Master Power Switch For All Electronics.</li> <li>➤ Detector Bias Voltage, 50 Volts.</li> <li>➤ High Level Alarm Set.</li> <li>➤ Operate / Calibrate Modes.</li> <li>➤ Alarm Set, Displays Mode.</li> <li>➤ Alarm Acknowledge Button</li> <li>➤ Percent Subtract Function.</li> <li>➤ Threshold / Discriminator, Ten Turn-pot with 1,000 Division Dial.</li> <li>➤ Sample Window (PHA) Always Constant Above Threshold</li> <li>➤ Ten Turn Pot With 1,000 Division Dial.</li> <li>➤ Mode Switch - Gross Count, PHA, PHA-SUB.</li> </ul>	<ul style="list-style-type: none"> <li>➤ On Screen High Alarm</li> <li>➤ Audio Alarm Warning</li> <li>➤ Loss of Signal On Screen</li> <li>➤ Running Time Record.</li> <li>➤ Mass Air Flowmeter</li> <li>➤ Low Air Flow Alert</li> <li>➤ ``Power On`` Light for Electronics</li> </ul>

### FEATURES

- MOVING FILTER TAPE
- AUTOMATIC ADVANCE
- AIR SAMPLING DETECTOR HEAD
- OPEN FACE BREATHING ZONE OPERATION FOR ROOM AIR
- SEALED PLASTIC CASE WITH CARRYING HANDLE
- CLEAR FRONT PANEL



Real - Time  
Air & Water  
Specialists



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## DESCRIPTION:

### FILTER TAPE:

- PARTICLE SIZE: >5.0  $\mu$  m TEFLON MEMBRANE FILTER
- WIDTH: 1.25"
- LENGTH: 1,200" (other lengths optional)
- STEP LENGTH: 1"

### OPERATION:

- 1 YEAR 1 YEAR UNATTENDED USE – STEP EVERY 8 HRS
- 1 MONTH 1 MONTH UNATTENDED USE – STEP EVERY 1 HR

### WEIGHT & DIMENSIONS:

- SIZE : 5" X 10" X 7"
- WEIGHT: 5 LBS
- SINGLE SHOT (**MANUAL OPERATION**)
- AUTO REPEAT (**TIMED OPERATION**)

### FILTER HEAD OPTIONS:

- FILTER ROLLS: LONGER, SHORTER
- SNIFFER HOSE: HOOD, GLOVE-BOX, STACK OR OTHER LOCATION
- MASS FLOW SENSOR: PRECISION HOTWIRE SENSOR OR SIMPLE ROTOMETER

### POWER:

- DC: 115V OR 220V - TABLETOP MODEL
- BATTERY OPERATION:
- SYSTEM MOUNTING: WALL MOUNT, CART OR SKID
- 

### SYSTEM OPTIONS:

- Remote Alarm
- Remote Readout
- Cell Phone Alert

### FM-9-MAB2-M:

- Cart Mounted – 2 Wheeled Vertical or 4 Wheeled Horizontal



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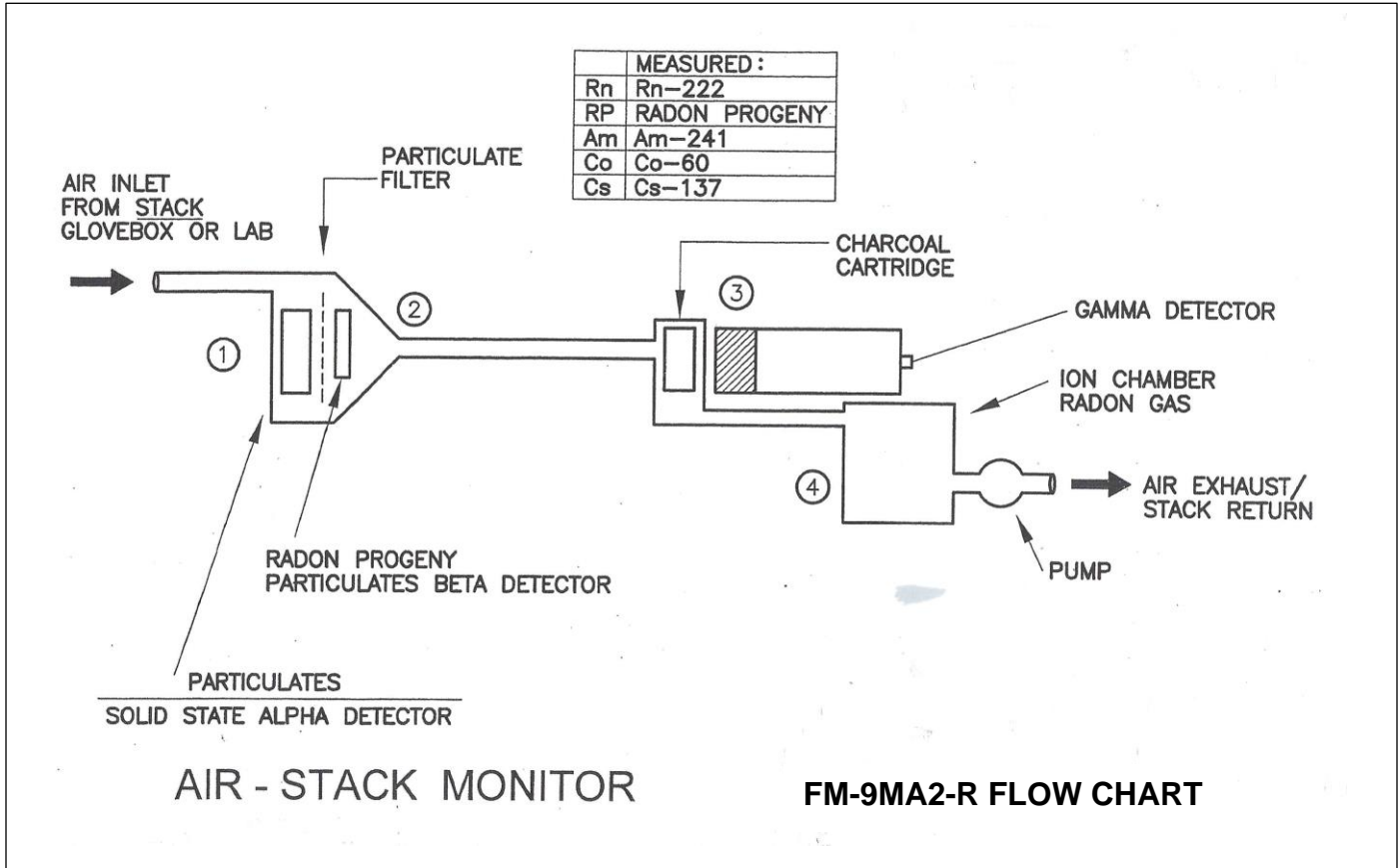
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