



FM-9-BG Electronics

Features

- Detects Beta and Gamma Particulates Including Mo-99, Cs-137, K-40
- Airborne Concentration
- Integrated Exposure
- High Sensitivity
- **Optional:** Cyclone Particle Separator (**FM-9-BG-C**)
- Real Time Alarm
- Line Operated
- Bench Top
- Standard FM-9 Modules
- Can Draw Air From Hood, Duct, etc.
- Quick Change Filter Cartridge
- Real Time Air Flow Measurement Display
- Data Archive and Retrieval
- Computer Interface – USB or Ethernet

Application

The **FM-9-BG** Air Monitor assure 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 printer or computer.

Beta – Gamma Particulate Air Monitor

Model Series FM-9-BG

Models: **FM-9-BG** and **Model FM-9-BG-C**

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

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

The **FM-9-BG-C** has the **Optional** cyclone particle separator. Particles are pre-sorted prior to moving through the Beta Particulate Detector. The particle size of separation is for 2.5 and 10 microns.

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-BG** 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 a thin window GM pancake detector.

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.



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Beta – Gamma Particulate Air Monitor

Model Series FM-9-BG

Models: FM-9-BG and Model FM-9-BG-C

Specifications

- Sensitivity:** Limit of sensitivity at 120 liters/minute air flow rate is 4×10^{-13} $\mu\text{Ci/cc}$ integrated over an 8 hour period, or 8×10^{-14} $\mu\text{Ci/cc}$ for a 40 hour period.
This corresponds to 2×10^{-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.
- Detector:** 2" diameter thin window GM detector Model T-1190
Sensitivity to ALL Beta-Gamma positron emitters including: Mo-99, Cs-137, K-40.

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
 - **M μ P:** Imbedded processor
- Range:** 1×10^{-13} to 1×10^{-7} $\mu\text{Ci/cc}$ or (Ci/m^3) Depends on count timer and flow rate.
- Alarm:** Settable. 2000 Hz beeper and red flasher.
- Response Time:** Settable 1 second to 40 hours.
- Readout:** Color 7" LCD Monitor shows status, alarms, concentration and total radiation values.
- Flow Rate:** Regulated. Normally set at 70 liters/min.
- Power:** 115V, 50-60 Hz (230 V **optional**).
- Shielding:** 1" lead about sample and detector.
- Pump:** Muffler and trap included. 115V 60Hz 2A. (230 V 50-60 Hz **optional**).
- 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 and Dimensions Excluding pump and detector assembly:

- Case:** 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.

- Accessories:** **Filter:** Additional free flowing silver activated charcoal disposable cartridge.



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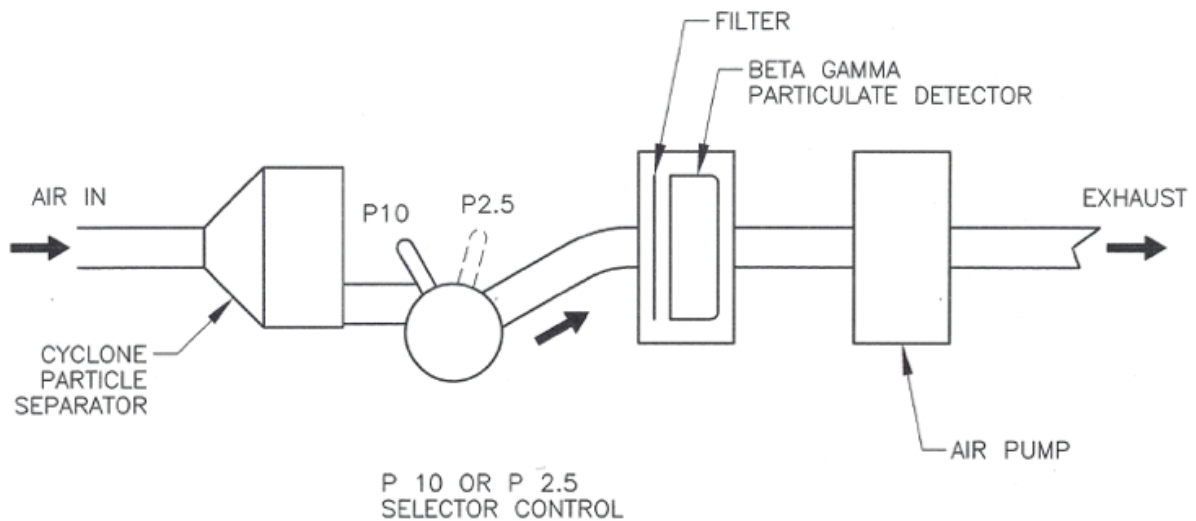
Model Series FM-9-BG

Models: FM-9-BG and Model FM-9-BG-C

DESCRIPTION	FM-9-BG & FM-9-BG-C
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 Archive, Display, Download
Special Feature	Electronic Mass Flowmeter



BETA GAMMA CYCLONE PARTICULATE COUNTER



FM-9-BG-C Flow Chart



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