

AIR MONITOR-GAS, GROSS BETA GAMMA PARTICULATE AND IODINE

Model # BAM-3HVM-3"



Figure 1: BAM-3HVM-3"

DESCRIPTION:

The BAM-3HVM-3" series are three channel air monitors for simultaneous measuring of gross beta / gamma particulates, and noble gaseous radioactivity, and iodine. Like all of the BAM-3HVM-3" series, these are continuous duty, high capacity, rugged skid or caster mounted systems. Electronics consists of Computer with 17" COLOR LCD Monitor. Electronics are plug-in modules allowing change or addition of function as needed and allowing rapid repair by substitution of modules in the field. The modular system is covered by T/A's unique exchange warranty, in addition to the full one year warranty covering all T/A products. Shields are void free lead encased in welded steel and with stainless steel liners for long, useful life and easy decontamination. Filters are easily changed via quick disconnect, o-ring sealed filter holder. Shield can be opened for filter change or cleaning with minimum effort. All shield connections and openings are sealed against air leaks. The air moving system is based on a high capacity oil less air pump capable of delivering 120 lpm (4cfm) free air and including Real time flow rate measurement and data analysis.

The entire system is mounted in a self-contained rugged cabinet and comes complete with all cabling, connectors, and software in place, setup, and ready to operate. The standard unit is operated from 115V single phase, 60 Hz; 220V optional, 50 or 60 Hz.

SPECIFICATIONS:

- Channels: Three

ACTIVITY DETECTED: Gross beta-gamma particulate, iodine, noble gas.

Activity Detected:	Gross beta-gamma particulate	Iodine	Noble Gas
Filters:	2" dia.	2.5" dia x 1" thick	One Liter Chamber
Filter Type:	Glass Fiber Filter	Activated Charcoal Cartridge	Stainless Steel Lined
Collection Efficiency	Up to 99% efficiency at 0.3 micron particle size		

DETECTORS:

- Particulate Beta-Gamma:** 2" diameter GM or optional Proportional Detector. (1 each)
- Iodine:** 2" diameter NaI(Tl) Model PGS-3L1 (Spectroscopic Grade) (1 each)
- Gas Standard Range:** 2 inch diameter GM or Optional Proportional Detectors (2 each)
- Shielding:** 3" lead; 4 pi. Plus 1 inch lead placed between adjacent detectors
- Detector Sensitivity:** Monitor is more sensitive on all channels by factors of 5 to 500 than is required by USNRC and other regulatory agencies.

**T
A** TECHNICAL ASSOCIATES

7051 ETON AVENUE * CANOGA PARK, CA 91303
TELEPHONE (818) 883-7043 * FAX(818) 883-6103
e-mail: tagold@nwc.net www.tech-associates.com

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SPECIFICATIONS (Continued):

CHANNEL NAME STATUS	1 MINUTE	1 HOUR	10 HOURS	1 DAY	1 WEEK
PARTICULATE BETA-GAMMA	6 x 10 ⁻¹⁰ μ Ci/ml/min	1 x 10 ⁻¹¹ μ Ci/ml 3.7 x 10 ⁻⁷ Bq/ml	1 x 10 ⁻¹² μ Ci/ml 3.7 x 10 ⁻⁸ Bq/ml	6 x 10 ⁻¹³ μ Ci/ml 2.4 x 10 ⁻⁸ Bq/ml	1 x 10 ⁻¹³ μ Bq/ml 4 x 10 ⁻⁹ Bq/ml
IODINE	3 x 10 ⁻⁹ μ Ci/ml/min	1 x 10 ⁻¹¹ μ Ci/ml 3.7 x 10 ⁻⁷ Bq/ml	1 x 10 ⁻¹² μ Ci/ml 3.7 x 10 ⁻⁸ Bq/ml	6 x 10 ⁻¹³ μ Ci/ml 2.4 x 10 ⁻⁸ Bq/ml	1 x 10 ⁻¹³ μ Bq/ml 4 x 10 ⁻⁹ Bq/ml
GAS-STANDARD RANGE	6 x 10 ⁻⁷ μ Ci/ml/min	1 x 10 ⁻¹¹ μ Ci/ml 3.7 x 10 ⁻⁷ Bq/ml	1 x 10 ⁻¹² μ Ci/ml 3.7 x 10 ⁻⁸ Bq/ml	6 x 10 ⁻¹³ μ Ci/ml 2.4 x 10 ⁻⁸ Bq/ml	2.7 x 10 ⁻⁹ μ Bq/ml 1 x 10 ⁻⁴ Bq/ml

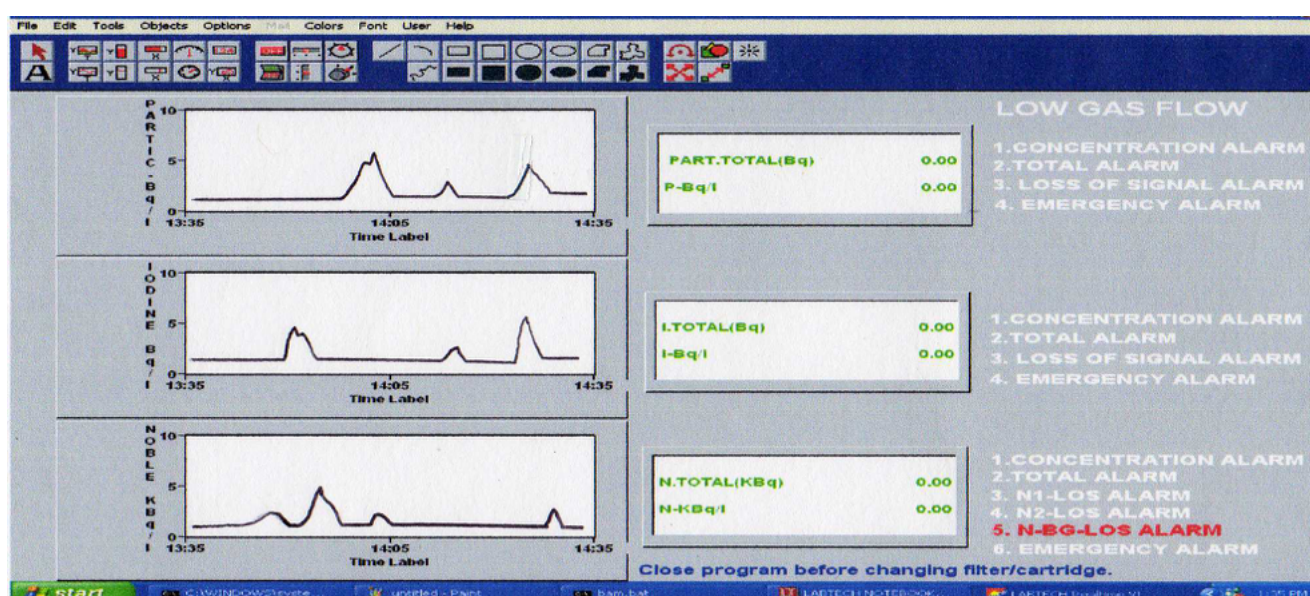
MONITOR IS MORE SENSITIVE ON ALL CHANNELS BY FACTORS OF 5 TO 500 THAN IS REQUIRED BY USNRC AND OTHER REGULATORY AGENCIES.

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Model # BAM-3HVM-3"



Display Mode: Model BAM-3HVM-3" features a Intel Pentium 4 Computer with a Color LCD Monitor
Operation: When Model BAM-3HVM-3" continuous air monitor is in normal operation, the Color LCD Monitor displays:
High Voltage Supply: Separately variable from 0 to 2,000
LCD Color Monitor: 17" Monitor shows both real time concentration and accumulated dose for all Channels
Accuracy: +/- 10% except for resolution loss and statistical variation
Alarms: Alarms are pre-settable to any trigger level
Low Level Alarm: Automatic Reset
High Level Alarm: High level alarm remains activated until RESET button is pushed
Alarm Indication Lights: Red-high level; Amber-low level
Audio: 1,000 Hz, greater than 80 db

AIR MOVING SYSTEM:

Air Pump: Extremely rugged continuous duty
Pumping System: Pump noise is reduced by heavy duty internal muffler
Oil-less Pump Motor: 3/4 Horsepower, 50/60Hz capacitor start, induction run
Flow Control: Flow Regulator Controls the flow from 0-4 cfm, +/- 0.2cfm
Settable Flowrate: On screen Flow Rate Display 0 to 4 or 0-120lpm
Inlet and Outlet: 20 foot 3/4" hose inlet; 6 meter 2.5 cm I.D
20 foot 1" hose outlet. May be extended
Flow Rate: Factory setting is at 4 cfm. Mass flowmeter feed Real Time data to BAM-3-HVM-1" software
Outputs: Alarm Condition Outputs:
1. Logic Level Signal
2. Contact Closure or Opening
3. Ethernet LAN Connection
Standard Installation: Cabinet of heavy gauge steel. Skid or caster mounted with 4 five inch ball bearing casters. Two of these are full 360 degree swiveling.
Special Safety: Loss of system vacuum air flow alarm and relay switch closure. Loss of signal alarm. All system circuits fused.
Features: Thermal protection on motor. Positive displacement Pump.
Options: Three push-button check sources (License exempt quantities) to Detect and Test each of the three channels. Also as a final option the flow rate can be increased to 30 cfm with minor changes in the plumbing
Dimensions: 29" wide x 31" long x 41" high exclusive of casters.
Weight: 1800 lbs. (Lighter Weight Units available with 1" lead shielding)
Shipping Weight: 2100 lbs.

ELECTRONIC SYSTEM DESCRIPTION: Computer in Intel Pentium 4 based, including

- CPU with data acquisition
- High Resolution, 17" LCD Color Monitor Display
- Mouse
- Graphic Printer for hard copy - 3 trace graphs
- 3 Channel 4-20mA Chart Recorder Drive available as option
- Keyboard
- Audio
- Manuals
- CD/DVD Writer Combo
- Minimum 200 gigabyte hard drive - Stores programs, plus room to add additional new software functions in the future
- Specialized Air Monitor software custom tuned and designed for the BAM-3-HVM-3" Air Monitor

Technical Associated standard modular series - all solid state:

- 1 ea - Digital Acquisition Board
- 1 ea - MGA-5202 with 4 amplifiers including fully adjustable single channel analyzer with independent High Voltage power supply for scintillation detector
- 1 ea - MVR-0-5-24 Power Supply Module
- 1 ea - HP Deskjet Color Inkjet Printer
- 1 ea - MAL-B3 Alarm Module
- 1 ea - PPC-33 Pump Power Control Module
- 1 ea - Mass Flow Meter with on-screen display

Options:

- Shrouded probe or other air collection Nozzels are available
- Touch screen feature on the LCD color monitor
- Lighter weight system with 1" shielding
- Titanium detector cover
- Proportional detectors to replace GM detectors
- 4-20mA output signals - 3 channels

Special Upgrades Incorporated Into TA BAM-3-HVM-1" Air Monitors

Big 17" Color LCD Monitor
LABTECH Virtual Instrument Software
Real-Time Mass Flowmeter
3" Lead (Pb) shields now lighter weight due to more compact Beta-gamma Detectors
Positive check sources with greater "throw length" and trouble free operation

BAM-3HVM-3" CAN SUBSTITUTE FOR PING-1A

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