

MOVING FILTER AIR MONITOR ALPHA, BETA/GAMMA

Model Series - SAAM
SAAM-1HVM – Alpha, Beta, Gamma
SAAM-3 – Alpha Only

FEATURES:

- ❖ MOVING AIR FILTER
- ❖ AIRBORNE **ALPHA LESS RADON**
AND BETA/GAMMA
PARTICULATES
- ❖ RUGGED, 100% DUTY CYCLE
- ❖ SETTABLE ALARM
- ❖ HIGH THROUGH-PUT
- ❖ UNATTENDED OPERATION
Up to 6 WEEKS
- ❖ PRINTED RECORD (Optional)
- ❖ 2 CHANNEL AIR MONITOR –
SAAM-1HVM
- ❖ 1 CHANNEL AIR MONITOR –
SAAM-3
- ❖ COUNTS SEPARATELY AND
SIMULTANEOUSLY
- ❖ USB and/or ETHERNET OUTPUT



Filter Paper Roll

APPLICATION:

The SAAM Series Monitors are used for monitoring effluent from radioactivity utilizing or producing facilities either directly at the stack or other outlet or at the property boundary. The SAAM Series are designed to provide a **complete record of activity for up to 45 days of unattended operation**. This instrument automatically advances the filter. This avoids frequent manual filter replacement. Alarms are preset by user.

OPTIONS:

1. Single Channel Analyzer window(s) specifically for Pu-239, and U-238 and/or other nuclides.
2. Clock and calendar give date and time of each reading.
3. Helium Flush for Alpha Spectroscopy.



**TECHNICAL ASSOCIATES
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Divisions of  US NUCLEAR CORP

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DESCRIPTION:

The **SAAM-1HVM** is a two channel air monitor for simultaneous measuring of gross Alpha, Beta/Gamma particulates. The **SAAM-3** is a one channel monitor for Alpha emissions. **Both monitors see Alpha less Radon.** The **SAAM-3** has plug in capacity for one or more channels of specific radiation energies, e.g. Pu-239, U-238 etc.

Like all of the SAAM series, these are continuous duty, high capacity, rugged skid or caster-mounted systems.

Electronics are microprocessor with color LCD display. Also preamps etc. are plug-in modules allowing change or addition of function as needed and allowing rapid repair by substitution of modules in the field.

Shields are void free lead encased in welded steel and with stainless steel liners for a 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 air pump capable of delivering 4 cfm with **options** up to 30 cfm free air and a real time electronic flow meter. The flow meter feeds directly into the TAquire software data analysis for more accurate calculation of airborne concentration and total activity.

The entire system is mounted in a self-contained rugged cabinet and comes complete with all cabling and connectors in place ready to operate. The standard unit is operated from 120 V single phase, 60 Hz; 220 V optional, 50 or 60 Hz.

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.

SPECIFICATIONS:

USER SETTABLE ENGINEERING UNITS

ALARMS: Clear audio and visual alarms are provided.

MODEL	SAAM-3 & SAAM-1HVM	SAAM-1HVM
Channels:	1	2
Physical Form:	Particulates	Particulates
Activity Detected:	Alpha less Radon	Beta/Gamma
Detector Type:	Solid State	Nal(Tl) Scintillator
Size:	1" Diameter	2" Diameter
Model:	SS-A1	PGS-3L16
Filters Media:	Moving Filter	Activated Charcoal Cartridge
Size:	75mm x 100 meters	2.5" Diameter
Construction:	Standard or Glass Fiber	Standard or Glass Fiber
Standard Shielding:	½" Steel	3" (Pb) Lead
Optional Shielding:		1" (Pb) Lead
Sensitivity:	2 x 10 ⁻¹³ µCi/ml	2 x 10 ⁻¹³ µCi/ml



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SPECIFICATIONS (continued):

ELECTRONIC SYSTEM DESCRIPTION:

Micro-processor includes:

CPU with data acquisition	Keyboard
High resolution, color	Color LCD Monitor
Mouse	Audio
Manuals	Onscreen Graphics (Built-in Printer Optional)

Data Storage:	Non-volatile memory 1 year. Data stored every 2 minutes all year.
1 terabyte hard drive:	Stores programs, plus room to add additional new software functions in the future.
Energy Analyzer:	Fully adjustable single channel analyzer with independent High Voltage power supply.
Power Supply:	1 ea. MVR-5R
High Voltage Supply:	Separately variable for each detector from 0 to 1500V. Standard FM-5 modular series.
Display Monitor:	Showing both real time concentration and accumulated dose for each channels.
Accuracy:	±10% except for resolution loss and statistical variation.

SPECIALIZED AIR MONITOR SOFTWARE.

- ❖ User settable Engineering Units.
- ❖ Calibration feature allows readout directly in uCi/cc or Bq/m³ or other units.
- ❖ Integrates results over an eight hour, or 24 hour interval.

MENU OPTIONS:	1. Modify shift length	2. Change filter
	3. Configure energies	4. Set alarms
	5. Start shift	6. Calibration

ALARMS: Alarms pre-settable to any trigger level.

Low Level Alarm:	Automatic Reset
High Level Alarm:	High level alarm remains activated until RESET is pushed.
Alarm Indication:	Red-High Level, Amber-Low Level
Audio:	1000 Hz, greater than 80 db. Also see Safety Features below.

AIR MOVING SYSTEM:

Air pump:	Extremely rugged continuous high capacity +Positive displacement pumping system. Ultra Low Noise Pump
Pump Drive Motor:	1 HP, 50/60 Hz, capacitor start, induction run.
Flow Rate:	Electronic mass flow meter continuously informs analysis system.
Inlet and Outlet:	20 foot 3/4" hose inlet: 20 foot 1" hose outlet. Length may be extended.



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CONTROLS:

System:	ON-OFF	
Air:	ON-OFF	
Alarms:	(each channel) High Level Alarm:	Set
	(each channel) High Level Alarm:	Reset
	(each channel) Low Level Alarm:	Set
	(each detector) Voltage:	Set
	(each detector) Energy Threshold/Window:	Set

STANDARD SPECIFICATIONS:

High Voltage Supply:	Separately variable from 0 to 1,5000 VDC at 200 μ a on scintillation or proportional channels.
LCD Color Monitor:	17" Monitor shows both real time concentration & 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:	6 Lights Red-high level; Amber-low level count for each channel, plus more indicators shown on LCD Monitor.
Audio:	1,000 Hz, greater than 80 db
Outputs:	Alarm Condition Outputs: 1. Logic Level Signal 2. Contact Closure or Opening Ethernet USB
Standard Installation:	Cabinet: heavy gauge steel. Skid or caster mounted Five inch ball bearing casters (4 each). Two of these are full 360 degree swiveling.
Special Safety:	Loss of system vacuum air flow alarm with relay switch closure. Loss of signal alarm. All system circuits fused.
Power:	120 VAC – 220 VAC; optional 50/60 Hz
OPTIONAL:	Thermal protection on motor.



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OPTIONS:

- ❖ Multi-Channel Gamma Energy Analyzer (MCA) with Isotope Identifier
- ❖ Multi-Channel Alpha Energy Analyzer (MCA) for Alpha Particulates
- ❖ Up to 3 Channels of 4-20mA Chart Recorder Drive or Communicate with the computer
- ❖ Skid Mount
- ❖ Grab Sample Port
- ❖ Available without air mover or with alternate air movers.
- ❖ Broader range 12 decades.
- ❖ Different detector types.
- ❖ Positive displacement of Roots Blower.
- ❖ Push-button Detect & Test sources (License exempt quantities)
- ❖ Flow rate can be increased to 30 cfm with larger pump and minor changes in the plumbing
- ❖ Lighter SAAM-1HVM system with less Shielding eg: 1" thick.

WEIGHT, DEMENSION, SHIPPING:

SAAM-1HVM

Dimensions: 29" wide x 31" deep x 41" high - exclusive of casters.
Weight: 1600 lbs.
Shipping Weight: 1750 lbs.

SAAM-3

Dimensions: 24" wide x 36" deep x 41" high - exclusive of casters.
Weight: 175 lbs.
Shipping Weight: 250 lbs.



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