



FM-9 Electronics and Display

Iodine-125 and Xenon-125 Ratemeter

Model – FM-9-IXE



I-125 Detector PGS-3i
WITH SHIELDING



Xe-125 Detector PGS-3X

Features

- RealTime Airborne Concentration (In Any Units – User Settable)
- High Sensitivity
- Real Time Alarm (User Settable)
- Line Operated
- Standard FM-9 Modules
- Can Draw Air From Hood, Duct, etc.
- Quick Change Iodine Filter Cartridge – PGS-3i
- Quick Connect Iodine Detector – PGS-3i
- Quick Connect Xenon Detector – PGS-3x
- Built-in Data Archive and Retrieval
- Data Updates Every Few Seconds – Operator Settable
- Computer Interface – USB or Ethernet – Quick Connect

Application

The **FM-9-IXE ratemeter system** assures safety against airborne radioactivity contamination by means of constant check with alarm and record capability. It provides airborne concentration information for I-125 and Xe-125. A quick connect provides retransmit capability for data retrieval and hard copy via external computer and printer.

It is a complete system and may be expanded per need with modules of the **FM-9** series. The **FM-9-IXE** may be used to monitor stack effluent down to EPA levels as well as hoods, glove box or workplace air.



TECHNICAL ASSOCIATES OVERHOFF TECHNOLOGY

7051 ETON AVENUE, CANOGA PARK, CALIFORNIA 91303
PHONE: 818-883-7043 | FAX: 818-883-6103

SALES@USNUCLEARCORP.COM | TECH-ASSOCIATES.COM | USNUCLEARCORP.COM

DIVISIONS OF
 USNUCLEARCORP
 OTCQB-UCLE

Iodine-125 and Xenon-125 Ratemeter

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Description

Flow Path:

- Air is drawn in through an inlet hose.
- Incoming air stream passes first through a particulate pre-filter to remove Cs-137 and other confounding particulates.
- The **FM-9-IXE** uses the PGS-3I with a standard charcoal filter in TA's unique quick change, no leak holder to trap any airborne I-125 and other Radioiodine isotopes. The charcoal filter is under constant surveillance via a thin window scintillation detector.
- Air is then drawn into the Xenon measurement cavity observed by the PGS-3X detector.
- Air enters Mass Flow Meter.
- Air enters the pump.
- Air is then exhausted via another hose.

Utilizing two individual detectors provides superior I-125 sensitivity. Although the filter concentrates activity from a large volume of air, the FM-9-IXE software individually records the increase in activity every 2 seconds to provide accurate real-time I-125 concentration levels.

Simultaneous total 4 hour moving average readings gives accurate readings at the very lowest concentrations.

Better Xe-125 sensitivity is also achieved because the I-125 has been removed and does not mask the Xe-125 signal.

A real-time mass flow meter provides the built in computer with instantaneous flow rate and count rate providing greater accuracy than traditional flow rate calculations.

The unit comes with 10 filter cartridges

Specifications

Range:

Xe-125

2×10^{-7} to 2×10^{-3} $\mu\text{Ci/ml}$ to a 2σ confidence level within a 4 hour period.

I-125

8×10^{-10} to 8×10^{-6} $\mu\text{Ci/ml}$ to a 2σ confidence level within a 4 hour period.

Environmental Operating Conditions:

Temperature:

Ambient: 0° to 40° C

Upset: 0° to 40° C

Temperature Effects:

$\pm 5\%$

Humidity:

Ambient: 20% to 85% RH Non-Condensing

Upset: 20% to 85% RH Non-Condensing

Pressure:

Ambient: Atmospheric

Background Radiation:

Reads Correctly: Cs-137 $< 15\text{mR/h}$

Accuracy:

$\pm 20\%$ or Better

Precision:

$\pm 10\%$ deviation from a mid-scale reading with a 2σ confidence reading.

Alarms:

Alarm Function:

High and Fail Latching



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Visual Alarm: High and Fail on Instrument Panel Face
Audio Alarm: High and Fail on Instrument Panel Face
Acknowledge/Silence Switch on Instrument Panel Face
Integral Alarm Reset Switch on Instrument Panel Face

Electrical:
Power: 120 V AC, 60 Hz; $\pm 10\%$
Power Cord: 5 meters long with Quick Connect. (**Optional:** Longer Cord)
Power Indicator: LED on Instrument Panel Face
Electrical & Frequency Variations: $\pm 5\%$ or Better at Minimum Detectable Levels.
Electrical Enclosure Class: IP-20

Retransmit Information:
Retransmit Output: Linear – 0 – 5V
Retransmit Signal: User Specified
Retransmit Connection: Quick Connect

Electronic Modules Include:
Power Supply and MV-5.12.24
MAC-5: Air Control Timer; Low Flow Alarm Flowmeter
MGA-5: Single Channel Analyzer
MCT: On-Board computer with color monitor
Display: $\mu\text{Ci}/\text{cm}^3$, cpm, cps (User Settable)

Weight and Dimensions:

ITEM	WEIGHT	DIMENSION
ELECTRONICS	12 lbs (5Kg)	11"W x 11"D x 11"H (28 cm x 28 cm x 28 cm)
XENON DETECTOR – PGS-3X	1 lb (0.453 Kg)	2"W x 2"D x 9"H (5cm x 5cm x 23cm)
I-125 DETECTOR WITH SHIELD – PGS-3I	22 lbs (10 Kg)	12L x 7W x 7H (30 cm x 18 cm x 18 cm)
DETECTOR CORD		3 Meters Standard with Quick Connect (OPTIONAL – Longer Cord User Specified)



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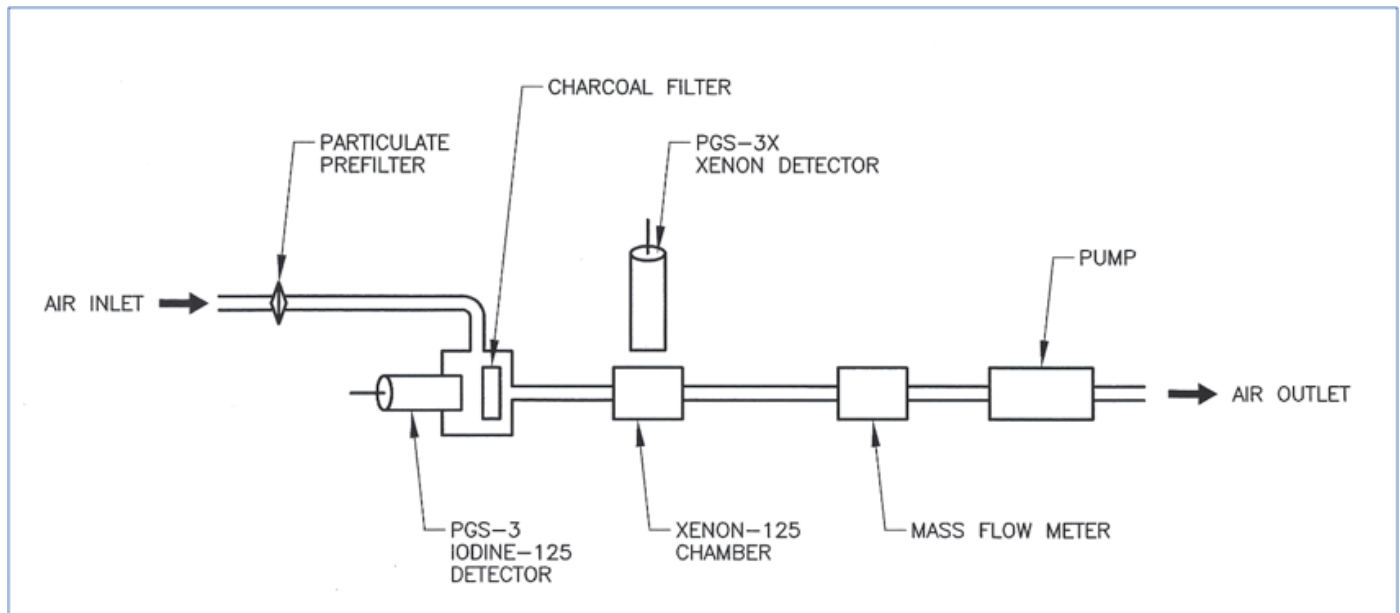
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FM-9-IXE Flow Path



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