

Innovative Industrial Solutions



I.I.S.

AMS-4

The AMS-4 is a radiation-in-air detection system, designed to provide early warning to workers exposed to potential airborne releases of beta emitting particulates, iodine or noble gases. Its lightweight and robust design accommodates both fixed and portable use applications. A system is comprised of the microprocessor-based central readout device, mated to any of a variety of detection heads which are either attached directly to the readout or used remotely. The monitor offers user selected alarms based on DAC or DAC-hour levels of common radionuclides as specified by 10 CFR Part 20. The system additionally permits the user to enter a DAC constant for a new nuclide or a mixture of nuclides. The AMS-4 is very portable, has real time gamma background subtraction using two detectors, remote sampling capability and can be stand-alone or part of a network of beta CAMs. The system can also be used for stack monitoring of effluent releases using the in-line detector head.



- Beta particulate, iodine and noble gas detection
- Radial inline noble gas detector heads available
- Accommodates portable and fixed applications
- Performs real-time background subtraction
- Measures DAC & DAC-hours Concentration, dose, and activity alarms
- Stand-alone or network configurable

Innovative Industrial Solutions, Inc.

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Display Unit

Weight	7 lb 6 oz
Size	2.8" H x 11" W x 8.75" D
Visual Displays	2 rows x 20 characters high visibility vacuum fluorescent, % of Alarm 40-element LED par graph
Keypad	18 keys, full numeric plus functions keys
Flow Rate Range	8.5 to 113 l/min, 0.5 to 6.8 m ³ /hr (0.3 to 4.0 ft ³ /min)
Status Indicators	Front panel lights display READY and MALFUNCTION conditions red alarm strobe light sonalert
Communications Ports	Computer:DB9, RS-232 standard, RS-485 optional
Printer	RS-232 serial DB9
Data Log Buffer	2,000 entries of combined Concentration and Status
Change information	Equivalent to 83 days of 1 hour detail, nearly 14 days of 10 minute detail or over 24 hours of 1 minute detail.
Alarm/Fail Relays	SPST, 15A @ 30 VDC/120 VAC resistive
Analog Output	0 to 5 VDC output, five decade logarithmic
Power Requirements	100 to 240 VAC, 50 to 60 Hz, 120 Watts maximum

Radial Sampling Head

Size	9.8" H x 5.6" W x 7.3" D
Detector Type	2 each 2" diameter sealed proportional (Ar/Co ₂), 80 kPa (600 Torr) fill pressure
Window	2 to 3 mg/cm ² , mica.
4π Efficiency	8.5% ⁶⁰ Co, 17% ⁹⁰ Sr/ ⁹⁰ Y (nominal)

Inline Sampling Head

Size	9.5" H x 9.3" W x 6.4" D
Detector Type	2 each 1" diameter sealed proportional (Ar/Co ₂), 80 kPa (600 Torr) fill pressure
Window	2 to 3 mg/cm ² , mica.
4π Efficiency	5.75% ⁶⁰ Co, 12% ⁹⁰ Sr/ ⁹⁰ Y (nominal)

Noble Gas Sampling Head

Size	11.6" x 5.6" W x 7.3" D
Detector Type	2 each 2" diameter sealed proportional (Ar/Co ₂), 80 kPa (600 Torr) fill pressure
Window	2 to 3 mg/cm ² , mica.
4π Efficiency	6.4% ⁸⁶ Kr, 4.4% ¹³⁶ Xe (nominal)

Pump Module

Weight	17 lbs
Size	9.68" H x 10.8" W x 7.31" D
Flow Rate Capacity	56 l/min (2.0 ft ³ /min) nominal at STP with clean filter
Power	0.2 hp, 3 amps @ 115 VAC or 1.5 Amps @ 220 VAC

Options

AMS4 Opt 14	Radial entry sampling head
AMS4 Opt 7	In-line sampling head
AMS4 Opt 8	Noble gas sampling head
AMS4 Opt 1	Integral pump module.
AMS4 Opt 1A	115 VAC and 220 VAC available
AMS4 Opt 6A, B, C	4.6, 7.6, and 15.2 m (15, 25, and 50') extension cable/hose for remote use of radial entry and noble gas heads
AMS4 Opt 4	RS-485 computer port for networked systems
AMS4 Opt 13	WinAMS Windows™ based system monitoring and calibration PC software

Accessories

FIFP10	Filter paper, 47mm, particulate type LB5211 or equivalent
FIFP16	Filter paper, 47 mm, iodine type 508 Charcoal Impregnated
AMS4 Opt11	⁹⁹ Tc Noble gas transfer calibration standard
Calibration Sources	⁹⁹ Tc, ¹³⁷ Cs, or ⁹⁰ Sr/ ⁹⁰ Y
RS485TORS23BB	RS-485 to RS-232 adapter

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