

The AMS-4 is a Continuous Air Monitor (CAM) offering beta particulate, radioiodine or noble gas detection.

AMS-4

Continuous Air Monitor

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



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.

AMS-4 Specifications

Display Unit

Weight:	3.4 kg (7 lb 6 oz).
Size:	32.5 H x 27.9 W x 22.2 D cm (2.80 H x 11.00 W x 8.75 D inches).
Visual Displays:	Two rows x 20 characters high visibility vacuum fluorescent, percentage of Alarm 40-element LED bar graph.
Keypad:	18 keys, full numeric plus function 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
Communication 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, 15 A @ 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:	24.9 H x 14.2 W x 18.5 D cm (9.8" H x 5.6" W x 7.3" D).
Detector Type:	2 each 5 cm (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:	24.1 H x 23.6 W x 16.3 D cm (9.5 H x 9.3 W x 6.4 D inches).
Detector Type:	2 each 2.5 cm (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:	29.5 H x 14.2 W x 18.5 D cm (11.6" H x 5.6" W x 7.3" D)
Detector Type:	2 each 5 cm (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% ⁸⁵ Kr, 4.4% ¹³³ Xe (nominal)

Pump Module

Size:	24.6 H x 27.4 W x 18.6 D cm (9.68" H x 10.8" W x 7.31" D)
Weight:	8 kg (17 lbs).
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. 47 mm, particulate type LB5211 or equivalent.
FIFP16:	Filter paper. 47 mm, iodine type 508 Charcoal Impregnated.
AMS4 OPT 11:	⁹⁹ Tc Noble gas transfer calibration standard
Calibration Sources:	⁹⁹ Tc, ¹³⁷ Cs, or ⁹⁰ Sr/ ⁹⁰ Y
RS485TORS232BB:	RS-485 to RS-232 adapter.

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