



RAMSYS

IM 203M™

Mobile Iodine Monitor

Compact, lightweight and movable to measure the gamma volumetric activity of radioactive iodine sampler.



FEATURES

- Embedded ^{241}Am source for energy spectrum stabilization against temperature changes and aging
- 1024 channels spectrum analysis
- Effluent trapping of both molecular and organic forms of iodine
- Can be used as temporary bypass for IM 201S or IM 201L to maintain full monitoring capability during maintenance

DESCRIPTION

The IM 203M monitor forms part of the RAMSYS product line.

It has been developed to continuously measure the gamma volumetric activity of radioactive iodine sample, in both molecular and organic forms (methyl iodine), contained in air drawn from stacks, ventilation ducts or working areas. A NaI scintillation detector faces the activated charcoal cartridge in which radioactive iodine is trapped. The proximity of the detector to the cartridge, enclosed within a $4\pi/2$ cm ($4\pi/0.8$ in) lead shielding, serves to optimize detection efficiency. A radioactive ^{241}Am source built into the NaI crystal allows compensation of temperature and aging related drifts. The spectrometry capability, based on a 1024 channel spectrum analysis, allows radio iodine isotope localization.

PHYSICAL CHARACTERISTICS

- Radiation detected: gamma
- Detector: 1¼"x1" NaI(Tl) scintillator + PMT
- Iodine cartridge: 57.7 mm (2.27 in)
- Energy range: 100 keV to 3 MeV
- Typical energy windows: 314 - 414 keV (¹³¹I, E_γ 364.5 keV)
- 1024 channels spectrum
- Typical measurement range: 3.7 to 3.7 10⁺⁶ Bq/m³ (10⁻¹⁰ to 10⁻⁴ µCi/cc)

ENVIRONMENTAL CHARACTERISTICS

- Normal temperature: +5°C to +40°C (+41°F to +104°F)
- Temperature limit: -5°C to +55°C (+23°F to +131°F)
- MTBF: > 20 000 hours, with preventive maintenance
- TID: 100 Gy (10⁺⁴ rad)

PNEUMATIC CHARACTERISTICS

- Standard flow rate: 35 l/min (1.24 scfm)
- Pressure drop: according to the filter dust loading

MECHANICAL CHARACTERISTICS

- Dimensions: 973 mm x 350 mm x 480 mm (38.3 in x 13.8 in x 18.9 in)
- Weight: 55 kg (121 lb)
- Color: gray RAL 7030 (decontaminable paint)
- Inlet tube connection: Ø 12 mm OD (1/2 in)

ELECTRICAL CHARACTERISTICS

- Power supply: 230 Vac – 50 Hz or 120 Vac – 60 Hz
- Data link outputs: 1 RS232 and 2 isolated RS485
- Alarm relays: 3 SPDT relays
- I/O: 2 isolated analog outputs and 1 isolated analog input (0/4-20 mA)

SIGNALING

- Alphanumeric display: measurement, status...
- Sound alarm: buzzer 90 dBA at 1 meter
- Visual alarm: 3 lights (red, yellow, green)

REFERENCE STANDARDS

- Nuclear: IEC60761, IEC61171
- EMC: 2014/30/EU and 2014/35/EU, IEC61000-6-2 and IEC61000-6-4

VERSIONS

- 230 Vac or 120 Vac
- With or without dust filter holder
- With or without output dust filter

ACCESSORIES

- Calibration tools
- Software: MASS2, RAMVISION, SIMS2...
- USB converters

Featuring:

