



RAMSYS™

# IM 201L™

## Iodine Monitor



Continuously measuring the gamma volumetric activity of radioactive iodine samples, in both molecular and organic forms contained in air drawn from stacks, ventilation ducts or working areas.

### DESCRIPTION

The IM 201L monitor forms part of the RAMSYS product line.

It has been developed to continuously measure the gamma volumetric activity of radioactive iodine samples, in both molecular and organic forms (methyl iodine), contained in air drawn from stacks, ventilation ducts or working areas.

An NaI scintillation detector faces the activated charcoal cartridge in which radioactive iodine is trapped. The proximity of the detector and the cartridge, enclosed within a  $4\pi/5$  cm (4 1/2 in) lead shielding, serves to optimize detection efficiency. A  $^{241}\text{Am}$  radioactive source built into the NaI scintillator allows compensation of temperature and aging related drifts. The spectrometry capability, based on a 1024-channel spectrum analysis, allows radio iodine isotope localization.

### FEATURES

- ✓ Embedded  $^{241}\text{Am}$  source for energy spectrum stabilization against temperature changes and aging
- ✓ 1024-channel spectrum analysis
- ✓ Effluent trapping of both molecular and organic forms of iodine

## IM 201L™ IODINE MONITOR

### 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 (<sup>131</sup>I, E<sub>γ</sub> 364.5 keV)
- 1024-channel spectrum
- Typical measurement range: 3.7 to 3.7 10<sup>+6</sup> Bq/m<sup>3</sup> (10<sup>-10</sup> to 10<sup>-4</sup> 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<sup>+4</sup> rad)

### PNEUMATIC CHARACTERISTICS

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

### MECHANICAL CHARACTERISTICS

- Dimensions: 864 mm x 725 mm x 440 mm (34 in x 28.5 in x 17.3 in)
- Weight: ~ 220 kg (~ 495 lb)
- Color: gray RAL 7030 (decontaminable paint)
- Inlet tube connection: Ø 12 mm OD (1/2 in)
- Outlet 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: one RS232 and two isolated RS485
- Alarm relays: three SPDT relays
- I/O: two isolated analog outputs and one isolated analog input (0/4-20 mA)

### SIGNALING (APPLICABLE TO LPDU ONLY)

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

### REFERENCE STANDARDS

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

### VERSIONS

- 230 Vac or 120 Vac
- Local processing and display unit (LPDU) or local processing unit (LPU)
- With or without dust filter holder
- Pumping unit
- Monitor wall or floor fixing plate

### ACCESSORIES

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



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