



# NGM 204L

Low Range Noble Gas Monitor



Nuclear  
Power



Healthcare



Homeland  
Security  
& Defense



Labs and  
Education



Industrial and  
Manufacturing

## OVERVIEW

The NGM 204L monitor from the RAMSYS product line has been developed to sample air in discharge stacks, ventilation ducts or working areas.

The dual silicon diode detector integrated in a 4 π/5 cm (4 π/2 in) lead shielded sample volume guarantees high reliability of the measurements. The first silicon diode detects the beta/gamma radiation from sample volume and the gamma ambient radiation. The second one detects gamma radiation from sample volume and the gamma ambient radiation. This allows noble gas beta measurement with dynamic gamma compensation by the processing algorithm.

## KEY FEATURES

- Dynamic gamma radiation compensation
- Calculation of the total released activity through a stack flow rate signal provided
- Compact and reliable
- Minimum periodic maintenance

## RELATED MONITORS

- NGM 204S: seismically qualified version
- PING 206S: version with particulate and iodine
- PNG 206S: version with particulate

## PHYSICAL CHARACTERISTICS

- Radiation detected: beta and gamma
- Detector: dual large area silicon
- Sampling chamber: 300 ml (300 cc)
- Typical energy windows:
  - Beta: 80 keV to 2.5 MeV
  - Gamma: 80 keV to 2.5 MeV
- Typical measurement range:
  - $^{85}\text{Kr}$ :  $3.7 \cdot 10^{+4}$  to  $7.4 \cdot 10^{+13}$  Bq/m<sup>3</sup> ( $10^{-6}$  to  $2 \cdot 10^{+3}$   $\mu\text{Ci/cc}$ )
  - $^{133}\text{Xe}$ :  $3.7 \cdot 10^{+4}$  to  $3.7 \cdot 10^{+12}$  Bq/m<sup>3</sup> ( $10^{-6}$  to  $10^{+2}$   $\mu\text{Ci/cc}$ )

## ENVIRONMENTAL CHARACTERISTICS

- Long term temperature: +10°C to +40°C (+50°F to +104°F)
- Periodic temperature: -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: 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:  $\varnothing$  12 mm OD (1/2 in)
- Outlet tube connection:  $\varnothing$  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 (Applicable to LPDU only)

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

## REFERENCE STANDARDS

- Nuclear: IEC60761
- EMC: 2006/95/CE and 2004/108/CE, IEC61000-6-2 and IEC61000-6-4

## VERSIONS

- 230 Vac or 120 Vac
- LPDU or LPU
- With or without dust filter holder
- Pumping unit
- Monitor wall or floor fixing plate

## ACCESSORIES

- Calibration tools
- Software
- USB converters

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