

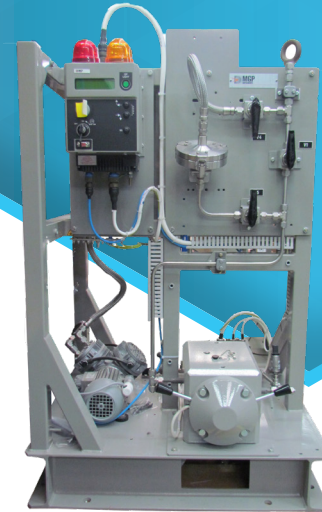


## RAMSYS

# NGM 204S™

*Seismic Low Range Noble Gas Monitor*

Sampling air in discharge stacks, ventilation ducts or working areas. Can withstand seismic conditions.



## FEATURES

- Dynamic gamma radiation compensation
- Calculation of the total released activity through a stack, when the flow rate signal is provided
- Compact and reliable
- 1E qualification and embedded safety related software
- RG 1.97 compliance
- Available under 10 CFR 50 App. B, IEC 61226 and ASME NQA-1 programs for safety related application

## DESCRIPTION

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

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 (background). The second one detects gamma radiation from the sample volume and the gamma ambient radiation. This allows noble gas beta measurement with dynamic gamma compensation by the processing algorithms.

## 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  $3.7 \cdot 10^{+14}$  Bq/m<sup>3</sup> ( $10^{-6}$  to  $10^{+4}$   $\mu\text{Ci/cc}$ )
  - $^{133}\text{Xe}$ :  $3.7 \cdot 10^{+4}$  to  $1.8 \cdot 10^{+13}$  Bq/m<sup>3</sup> ( $10^{-6}$  to  $5 \cdot 10^{+2}$   $\mu\text{Ci/cc}$ )

## 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: 1305 mm x 830 mm x 680 mm (51.4 in x 32.7 in x 26.8 in)
- Weight: ~ 310 kg (~ 684 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: refer to possible versions
- Data link outputs: 1 RS232 and 2 isolated RS485
- Alarm relays: 3 SPDT relays
- I/O: 2 isolated analog outputs (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: IEC60761-1 and IEC60761-3
- Environmental: IEC60780, IEEE323, RG 1.97
- Seismic: IEC60980, IEEE344
- EMC: 2014/30/EU and 2014/35/EU, EPRI 102323, RG1.180, IEC61000-6-2 and IEC61000-6-4

## VERSIONS

- 230 Vac or 230 Vac + 400 Vac 3 $\varnothing$  or 120 Vac + 400 Vac 3 $\varnothing$
- Solenoid check sources
- PIS sampler
- Dust filter holder
- Gas grab sampler ports

## ACCESSORIES

- Calibration tools
- Software: MASS2, RAMVISION, SIMS2...
- USB converters
- Local & remote display units

Featuring:

