



RAMSYS™

NGM 203S™

Seismic High Range Noble Gas Monitor

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

DESCRIPTION

The NGM 203S monitor forms part of the RAMSYS product line.

It has been developed to sample air in discharge stacks, ventilation ducts or working areas. A flow through ionization chamber is enclosed in a 4 π/5 cm lead shielding.

This monitor is designed to meet the noble gas monitoring requirements set forth by the USA Regulatory Guide 1.97 and it can be used before, during and after an accident. It can operate in conjunction with a shielded particulate and iodine sampler (PIS 203) and with a low range noble gas monitor (NGM 204) to form a wide range monitoring system.



FEATURES

- ✓ Designed for accident and post-accident conditions
- ✓ Durable detector without any electronic or radiation degraded components
- ✓ 1E qualification and embedded safety related software
- ✓ RG 1.97 and IEC60951 compliance
- ✓ Available under 10 CFR 50 App. B, ASME NQA-1 and IEC61226 programs for safety related applications

NGM 203S™ SEISMIC HIGH RANGE NOBLE GAS MONITOR

PHYSICAL CHARACTERISTICS

- Radiation detected: alpha, beta and gamma
- Detector: flow-through ionization chamber (CHMC01)
- Sensitive volume: 100 ml (100 cc)
- Energy range: 5 keV to 3 MeV
- Typical measurement range (for RG 1.97 applications):
 - ^{85}Kr : $4 \cdot 10^{+6}$ to 10^{+16} Bq/m³ ($1.08 \cdot 10^{-4}$ to $2.7 \cdot 10^{+5}$ $\mu\text{Ci/cc}$)
 - ^{133}Xe : 10^{+6} to $3.7 \cdot 10^{+15}$ Bq/m³ ($2.7 \cdot 10^{-5}$ to 10^{+5} $\mu\text{Ci/cc}$)
- Typical measurement range (for IEC60951 applications):
 - ^{85}Kr : $4 \cdot 10^{+6}$ to $5.55 \cdot 10^{+15}$ Bq/m³
($1.08 \cdot 10^{-4}$ to $1.5 \cdot 10^{+5}$ $\mu\text{Ci/cc}$)
 - ^{133}Xe : 10^{+6} to $1.85 \cdot 10^{+15}$ Bq/m³ ($2.7 \cdot 10^{-5}$ to $5 \cdot 10^{+4}$ $\mu\text{Ci/cc}$)

ENVIRONMENTAL CHARACTERISTICS

- Normal temperature: +10 °C to +40 °C (+50 °F to +104 °F)
- Temperature limit: -5 °C to +55 °C (+23 °F to +131 °F)
- MTBF: > 50 000 hours, with preventive maintenance
- TID (processing unit): 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: one RS232 and two isolated RS485
- Alarm relays: three SPDT relays
- I/O: two isolated analog outputs (0/4-20 mA)

SIGNALING

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

REFERENCE STANDARDS

- Nuclear: IEC60951, RG 1.97
- Environmental: IEC60780, IEEE323
- 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
- PIS sampler
- Dust filter holder
- Gas grab sampler ports
- Heater

ACCESSORIES

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



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TECHNOLOGIES

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