MIRION TECHNOLOGIES

Radiation. **Safety.**

NGM 216S

Low Range Beta Noble Gas Monitor

Nuclear Power | Healthcare | Homeland Security & Defense | Labs and Education | Industrial and Manufacturing

OVERVIEW

The NGM 216S monitor from the RAMSYS product line has been developed to continuously measure beta volumetric activity of radioactive gaseous sample. The sample is drawn from discharge stacks, reactor building, ventilation ducts or working areas via a pumping system. This monitor can operate as a stand alone device or in conjunction with a particulate monitor (PM 205 or ABPM 201), an iodine monitor (IM 201) or a shielded particulate and iodine sampler (PIS 203) and with a high range noble gas monitor (NGM 203) to form a very wide range monitoring system.

KEY FEATURES

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

RELATED MONITORS

- PM 205S: beta particulate monitor
- ABPM 201S: alpha beta particulate monitor
- IM 201S: iodine monitor
- NGM 203S: high range noble gas monitor
- PIS 203S: shielded particulate and iodine sampler

Radiation Monitoring Systems Division

PHYSICAL CHARACTERISTICS

- Radiation detected: beta
- Detector: 2'' thin plastic scintillator + PMT + embedded LED
- Lead shield: 4 π/7.5 cm (4 π/3 in)
- Typical energy range: > 30 keV
- Typical measurement range: 3.7 10^{+3} to 3.7 10^{+9} Bq/m^3 (10^{-7} to 10^{-1} µCi/cc)

ENVIRONMENTAL CHARACTERISTICS

- Long term temperature: +10°C to +40°C (+50°F to +104°F)
- Periodic temperature (processing unit): -5°C to +55°C (+23°F to +131°F)
- Periodic temperature (detector): +0°C to +60°C (+32°F to +140°F)
- MTBF (processing unit): > 50 000 hours
- MTBF (detector): > 20 000 hours, with preventive maintenance
- TID: 100 Gy (10^{+4} rad)
- Protection index: IP65 and IK07

PNEUMATIC CHARACTERISTICS

- Standard flow rate: 28.3 l/min (1 scfm)
- Pressure drop: 50 mbar (0.73 psi)

MECHANICAL CHARACTERISTICS

- Dimensions:
- Processing unit: 390 mm x 196 mm x 187 mm (15.3 in x 7.7 in x 7.3 in)
- Detector: 250 mm (10 in) x Ø 72 mm (2.8 in)
- Weight:
- Processing unit: 4.5 kg or 7 kg (10 lb or 15.5 lb)
- Detector: ~ 300 kg (661 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: 1 RS232 and 2 isolated RS485
- Alarm relays: 3 SPDT relays
- I/O: 2 isolated analog outputs (0/4-20 mA)
- Embedded LED tester

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: IEC60761-1 and IEC60761-3
- Environmental: IEC60780, IEEE323
- Seismic: IEC60980, IEEE344
- EMC: 2006/95/CE and 2004/108/CE, EPRI 102323, MIL STD 461 E, IEC61000-6-2 and IEC61000-6-4

VERSIONS

- 230 Vac or 120 Vac
- LPDU or LPU
- With or without check source
- With or without heater
- PIS sampler
- Dust filter holder

ACCESSORIES

- Calibration tools
- Software
- Ethernet
- USB converters

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