



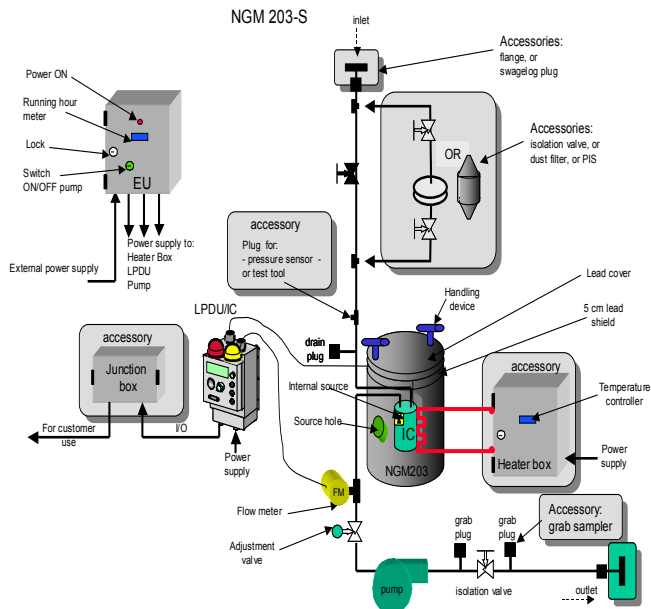
NGM 203 S

High range noble gas monitor

• continuous air monitoring and display of volumetric activity for radioactive noble gas • visual, audible and electrical signal alarms when threshold levels are exceeded

- designed for accidents and post-accident conditions
- durable detector without any electronic or radiation degraded component
- RG 1.97 compliance
- 1 E qualification and embedded safety related software
- available under 10CFR50 App. B, ASME NQA-1 and IEC61226 Cat.B programs for safety related application

The NGM 203 S 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 $4\pi/5$ cm ($4\pi/2$ in) 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 (PIS203) and with a low range noble gas monitor (NGM204) to form a wide range monitoring system. Available in a «light» version, on request.



Physical characteristics

- radiation detected: alpha, beta and gamma
- detector:
 - 0.1 liter flow-through ionisation chamber
- lead shielding: $4\pi/5$ cm ($4\pi/2$ in)
- measurement range:
 - $3.7 \cdot 10^6$ to $3.7 \cdot 10^{16}$ Bq/m³ (10^{-4} to 10^6 μ Ci/cc) for ⁸⁵Kr
 - $8 \cdot 10^5$ to $3.7 \cdot 10^{15}$ Bq/m³ ($2 \cdot 10^{-5}$ to 10^5 μ Ci/cc) for ¹³³Xe
- energy range:
 - 5 keV to 3 MeV
- ambient temperature range: +0°C to +55°C (32°F to 131°F)

Electrical characteristics

- power supply: 120V 60Hz or 230V 50Hz
- interfaces:
 - RS 232 Serial link for parameter configuration of the monitor through PC and MASS application software
 - two 0/4 - 20 mA analog outputs, one 0/4 - 20 mA analog input, three programmable relays, two RS 485 isolated serial links

Mechanical characteristics

- protection index: IP65 and IK07
- open frame steel structure (decontaminable paint): grey RAL 7030
- sizes: 1305 x 830 X 680 mm (51 x 32.7 x 26.8 in)
- weight: ~310 kg (684 lb)
- interfaces:
 - inlet and outlet sampling: tube ϕ 12 mm OD (0.47 in)

Qualification

- nuclear: IEC 60761 and IEC 60951
- environmental: IEEE 323 and IEC 60780
- seismic: IEEE 344 and IEC 60980
- EMI: EN 55022, IEC 61000-6-2, IEC 61010 and EPRI TR 102323

Alarm signaling (applicable to LPDU only)

- audio indicator: buzzer sound alert rated 90dBa at one meter
- visual indicators: programmable operation lights such as red for high alarm, yellow for alert alarm and green for normal operation

Accessories

- RAMSYS softwares
- heat tracing
- particulate and iodine sampler
- junction box to interface with all signals
- dust hydrophobic filter
- pressure sensor for dynamic compensation
- flanges for sample pressure inlet/outlet
- grab sample quick connect valves
- set of calibration (¹³⁷Cs source and its fixture)

RAMSYS: Radiation Monitoring System