



RAMSYS™

# PING 206S™

## Seismic Particulate, Iodine and Noble Gas Monitor

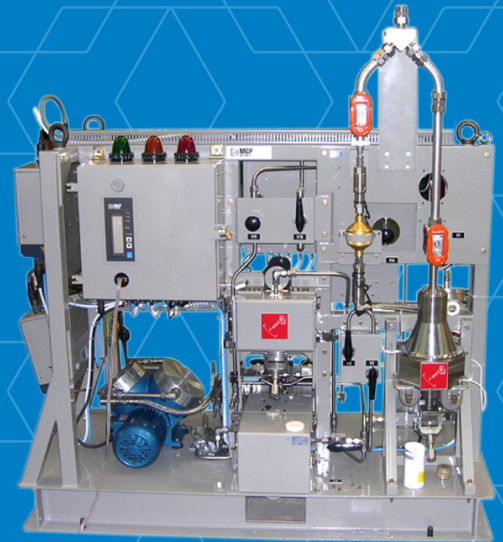
Continuously measuring the particulate, iodine and noble gas volumetric activities in stacks, ventilation ducts or working areas. Can withstand seismic conditions. Allows dynamic compensation of radon and thoron progenies.

### DESCRIPTION

The PING 206S monitor forms part of the RAMSYS product line.

It has been developed to continuously measure the particulate, iodine and noble gas volumetric activities in stacks, ventilation ducts or working areas.

The PING 206S monitor integrates all the functions and performances of the ABPM 201, IM 201 and NGM 204 monitors into a single system.



### FEATURES

- ✓ Particulate monitoring with static and dynamic compensation of the radon and thoron solid progenies
- ✓ Iodine monitoring for both molecular and organic forms
- ✓ Noble gas monitoring with dynamic gamma and pressure compensations
- ✓ Local Display Unit (LDU) to display the measurements and status of each channel
- ✓ Compact skid
- ✓ 1E qualification and embedded safety related software
- ✓ Available under 10 CFR 50 App.B, ASME NQA-1 and IEC 61226 programs for safety related applications

# PING 206S™ SEISMIC PARTICULATE, IODINE AND NOBLE GAS MONITOR

## PHYSICAL CHARACTERISTICS

### Particulate (ABPM 201):

- Radiation detected: alpha, beta and gamma
- Detector: dual large area silicon (PIPS® detector)
- Filter type: FSLW
- Typical energy windows:
  - Alpha: 2 MeV to 10 MeV
  - Beta: 80 keV to 2.5 MeV
  - Gamma: 80 keV to 2.5 MeV
- Typical measurement range:
  - Alpha:  $10^{-2}$  to  $3.7 \cdot 10^{+6}$  Bq/m<sup>3</sup> ( $2.7 \cdot 10^{-13}$  to  $10^{-4}$  µCi/cc)
  - Beta: 1 to  $3.7 \cdot 10^{+6}$  Bq/m<sup>3</sup> ( $2.7 \cdot 10^{-11}$  to  $10^{-4}$  µCi/cc)

### Iodine (IM 201):

- Radiation detected: gamma
- Detector: 1¼"x1" NaI(Tl) scintillator + PMT (SG/NAI 1¼"x1")
- Iodine cartridge: 57.7 mm (2.27 in)
- Energy range: 100 keV to 3 MeV
- Typical energy window: 314 - 414 keV (131I, E<sub>γ</sub> 364.5 keV)
- 1024-channel spectrum
- Typical measurement range: 3.7 to  $3.7 \cdot 10^{+6}$  Bq/m<sup>3</sup> ( $10^{-10}$  to  $10^{-4}$  µCi/cc)

### Noble gas (NGM 204):

- Radiation detected: beta and gamma
- Detector: dual large area silicon (PIPS detector)
- 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:
  - <sup>85</sup>Kr:  $3.7 \cdot 10^{+4}$  to  $3.7 \cdot 10^{+14}$  Bq/m<sup>3</sup> ( $10^{-6}$  to  $10^{+4}$  µCi/cc)
  - <sup>133</sup>Xe:  $3.7 \cdot 10^{+4}$  to  $1.8 \cdot 10^{+13}$  Bq/m<sup>3</sup> ( $10^{-6}$  to  $5 \cdot 10^{+2}$  µCi/cc)

## ENVIRONMENTAL CHARACTERISTICS

- Nomal 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: 100 to 350 mbar (1.45 to 5.07 psi)

## MECHANICAL CHARACTERISTICS

- Dimensions (with PIS): 1614 mm x 1535 mm x 690 mm (63.5 in x 60.4 in x 27.1 in)
- Weight: between 690 kg (1521 lb) and 720 kg (1587 lb)
- Color: gray RAL 7030 (decontaminable paint)
- Inlet tube connection: Ø 25.4 mm OD (1 in)
- Outlet tube connection: Ø 12 mm OD (1/2 in)

## ELECTRICAL CHARACTERISTICS

- Power supply: refer to possible versions
- Data link outputs: one RS232 and five isolated RS485
- Alarm relays: nine SPDT relays and five DPDT relays
- I/O: eight isolated analog outputs and four isolated analog inputs (0/4-20 mA)

## SIGNALING (ON LDU)

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

## REFERENCE STANDARDS

- Nuclear: IEC60761-1-2-3-4
- Environmental: RG 1.97, IEC/IEEE 60780-323
- 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 3Ø or 120 Vac + 400 Vac 3Ø
- Solenoid check sources for ABPM 201, IM 201, NGM 204 monitors
- PIS particulate and iodine samplers
- Gas grab sampler ports
- Second pump for redundancy

## ACCESSORIES

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

## OPTION: TRITIUM SAMPLER



The HT ionix is designed for monitoring levels of concentration of atmospheric tritium HTO (vapour) form and HT (gas), (available in two or four bottles)



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