MIRION TECHNOLOGIES

RAMSYS

ABPM 201S™

Seismic Alpha Beta Particulate Monitor

Sampling of air extracted from ventilation ducts or stacks. Can withstand seismic conditions. Dynamic compensation of radon and thoron progenies.

FEATURES

- Static and dynamic compensation of the radon and thoron solid progenies
- Dynamic gamma background compensation
- Online spectrometry
- Up to 6 months filter cassette autonomy
- 1E qualification and embedded safety related software
- Available under 10 CFR 50 App.B, ASME NQA-1 and IEC61226 programs for safety related application

DESCRIPTION

The ABPM 201S monitor forms part of the MGP Instruments RAMSYS product line.
It has been developed to sample air extracted from ventilation ducts or stacks. A double silicon detector performs the gamma compensation and a radial fin grid limits the scattering of the alpha particles (static compensation) which facilitates the compensation of the radon and thoron solid progenies by the processing algorithms (dynamic compensation). Operating costs are minimized by the autonomous operation through automatic filter advance management.

ABPM 201S | SEISMIC ALPHA BETA PARTICULATE MONITOR

PHYSICAL CHARACTERISTICS

- Radiation detected: alpha, beta and gamma
- Detector: dual large area silicon (PIPS)
- 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 10^{+6} Bq/m^3 (2.7 10^{-13} to 10^{-4} µCi/cc)
  - Beta: 1 to 3.7 10^{+6} Bq/m^3 (2.7 10^{-11} to 10^{-4} µCi/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: 100 to 350 mbar (1.45 to 5.07 psi)

MECHANICAL CHARACTERISTICS

- Dimensions: 1305 mm x 830 mm x 680 mm (51.4 in x 32.7 in x 26.8 in)
- Weight: ~ 250 kg (~ 551 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: 1 RS232 and 2 isolated RS485
- Alarm relays: 3 SPDT relays
- I/O: 2 isolated analog outputs and 1 isolated analog input (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
- Environmental: IEC/IEEE 60780-323, RG 1.97
- Seismic: IEC60980, IEEE344
- EMC: 2014/30/EU and 2014/35/EU, EPRI 102323, MIL STD 461, 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
- With or without PIS sampler
- Gas grab sampler ports

ACCESSORIES

- Calibration tools
- Software: MASS2, RAMVISION, SIMS2...
- USB converters

Featuring:

MGP INSTRUMENTS

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