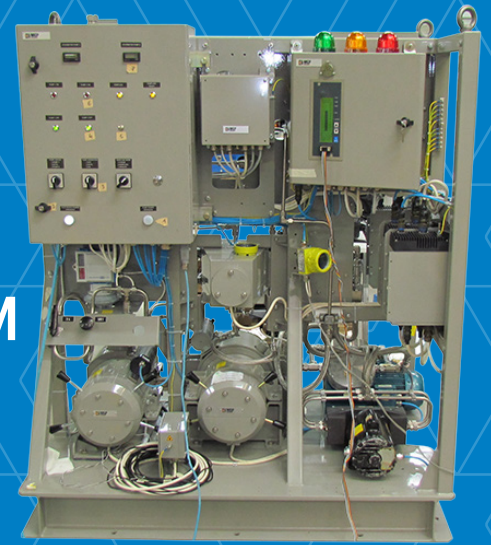




RAMSYS™

PINGM 207S™

Seismic Particulate, Iodine and Noble Gas Monitor



Continuously measuring particulate, iodine and noble gas volumetric activities.

DESCRIPTION

The PINGM 207S 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. It integrates all the functions and performances of the PM 205, IM 201 and NGM 216 monitors into a single monitor.

FEATURES

- ✓ 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

PINGM 207S™ SEISMIC PARTICULATE, IODINE AND NOBLE GAS MONITOR

PHYSICAL CHARACTERISTICS

Particulate (PM 205):

- Radiation detected: beta
- Detector: 2" thin plastic scintillator + PMT + embedded LED (SB 70)
- Filter type: fiberglass 49 mm (1.9 in)
- Lead shield: 7.5 cm/4 π (3 in/4 π)
- Typical energy range: > 30 keV
- Typical measurement range: 3.7 10⁻² to 3.7 10⁺³ Bq/m³ (10⁻¹² to 10⁻⁷ 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_γ 364.5 keV)
- 1024-channel spectrum
- Typical measurement range: 3.7 to 3.7 10⁺⁶ Bq/m³ (10⁻¹⁰ to 10⁻⁴ μCi/cc)

Noble gas (NGM 216):

- Radiation detected: beta
- Detector: 2" thin plastic beta scintillator + PMT + embedded LED (SB 70)
- 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/m³ (10⁻⁷ to 10⁻¹ 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: 28.3 l/min (1 scfm)
- Pressure drop: 50 mbar (0.73 psi)

MECHANICAL CHARACTERISTICS

- Dimensions:
 - PM 205 detection: 472 x 394 x 385 mm (18.6 x 15.5 x 15 in)
 - IM 201 detection: 380 x 300 x 390 mm (14.9 x 11.8 x 15.3 in)
 - NGM 216 detection: 377 x 572 x 370 mm (14.8 x 22.5 x 14.5 in)
 - LPU processing unit: 346 x 196 x 106 mm (13.6 x 7.7 x 4.2 in)
 - LDU display unit: 507 x 407 x 223 mm (19.9 x 16 x 8.8 in)
- Weight:
 - PM 205 detection: 245 kg (540 lb)
 - IM 201 detection: 125 kg (275 lb)
 - NGM 216 detection: 318 kg (701 lb)
 - LPU processing unit: 6 kg (13 lb)
 - LDU display unit: 6 kg (13 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: IEC 60761, IEC 61171, IEC 61172, IEC 61578
- Environmental: IEC/IEEE 60780-323
- Seismic: IEC 60980, IEEE 344
- EMC: 2014/30/EU and 2014/35/EU, EPRI 102323, RG 1.180, IEC 61000-6-2 and IEC 61000-6-4

VERSIONS

- 230 Vac or 230 Vac + 400 Vac 3Ø or 120 Vac + 400 Vac 3Ø
- Solenoid check sources for PM 205, IM 201, NGM 216
- PIS particulate and iodine samplers
- Second pump for redundancy

ACCESSORIES

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

