



RAMSYS

PM 205S™

Beta Particulate Monitor

Continuously measuring the volumetric activity of a radioactive gaseous sample containing particulates



FEATURES

- 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

DESCRIPTION

The PM 205S monitor forms part of the RAMSYS product line. It has been developed to continuously measure the volumetric activity of a radioactive gaseous sample containing particulates. The sample is drawn from discharge stacks, reactor building, ventilation ducts or working areas via a pumping system. It is then admitted into a detection unit where the particulates are trapped on a filter. It is typically used for monitoring particulate volumetric activity under normal operating and mild-environment conditions.

This monitor can operate as a stand alone device or in conjunction with an iodine monitor (IM 201), and/or noble gas monitors (NGM 203, NGM 204, NGM 214, NGM 216) to form a complete monitoring system.

PHYSICAL CHARACTERISTICS

- Radiation detected: beta
- Detector: 2" thin plastic scintillator + PMT + embedded LED (SB 70)
- Filter type: fiberglass 57 mm (2.24 in)
- Lead shield: 7.5 cm/4 π (3 in/4 π)
- Typical energy range: > 30 keV
- Typical measurement range: $3.7 \cdot 10^{-2}$ to $3.7 \cdot 10^{+3}$ Bq/m³ (10^{-12} to 10^{-7} μCi/cc)

ENVIRONMENTAL CHARACTERISTICS

- Normal temperature: +5°C to +40°C (+41°F to +104°F)
- Temperature limit:
 - Processing unit: -5°C to +55°C (+23°F to +131°F)
 - Detector: +0°C to +60°C (+32°F to +140°F)
- MTBF:
 - Processing unit: > 50 000 hours
 - Detector: > 40 years
- 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: 889 mm x 1397 mm x 1651 mm (35 in x 55 in x 65 in)
- Weight: 700 kg (1543 lb)
- Color: gray RAL 7030 (decontaminable paint)
- Inlet tube connection: Ø 1 in
- Outlet tube connection: Ø 1/2 in

ELECTRICAL CHARACTERISTICS

- Power supply: 230 Vac – 50 Hz or 120 Vac – 60 Hz
- Data link outputs: 1 RS232 (LPDU only) 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 (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 IEC60761-2
- Environmental: 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 120 Vac
- Local processing and display unit (LPDU) or local processing unit (LPU)
- With or without check source
- With or without heater
- PIS sampler

ACCESSORIES

- Calibration tools
- Software: MASS2, RAMVISION, SIMS2...
- USB converters
- Seismic qualified wall mounting bracket for LP(D)U
- Ethernet (LPDU version only)

Featuring:

