MIRION
TECHNOLOGIES
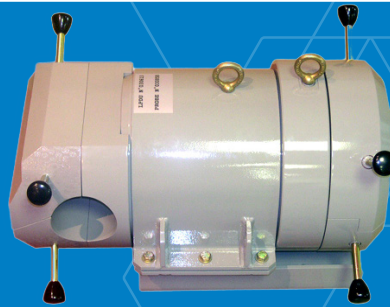
SAM 201K™

Spectrum Analysis Monitor

Gamma spectra analysis with identification of isotopes. Available with a 1''x1 1/4" NaI(Tl) detector.

DESCRIPTION

The SAM 201K monitor forms part of the RAMSYS product line. It has been developed to detect gamma radiations and provide gamma spectra analysis with identification of isotopes.

The SAM 201K monitor is designed for continuous unattended operation and can cover most of the gamma measurement ranges required by regulations and industry guidelines. Four detector sizes are available which make this monitor very efficient and reliable, with high sensitivity, wide measurement range and fast response time.

FEATURES

✔ Wide measurement range

✔ Can be used for various types of applications

✔ Minimal periodic maintenance

✔ 1E qualification and embedded safety related software

✔ Available under 10 CFR 50 App. B, ASME NQA-1 and IEC61226 programs for safety related applications

SAM 201K™ SPECTRUM ANALYSIS MONITOR

PHYSICAL CHARACTERISTICS

- Radiation detected: gamma
- Detector: 1¼"x1" NaI(TI) scintillator + PMT (SG/NAI 1¼"x1")
- Energy range: 100 keV to 7 MeV
- Spectrometry analysis: 1024 channels
- Typical measurement range: 6 decades between 3.7 10^{+2} to 3.7 10^{+12} Bq/m³ (10^{-8} to 10^{+2} 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 and cable: -5 °C to +70 °C (+23 °F to +158 °F)
- MTBF (processing unit): > 50 000 hours
- TID :
  - Processing unit: 100 Gy (10^{+4} rad)
  - Detector and cable: 10^{+3} Gy (10^{+5} rad)
- Protection index: IP65 and IK07

MECHANICAL CHARACTERISTICS

- Dimensions:
  - Processing unit: 390 mm x 196 mm x 187 mm (15.3 in x 7.7 in x 7.3 in)
  - Detector: 329 mm x 388 mm x 513 mm (13 in x 15.3 in x 20.2 in)
- Weight:
  - Processing unit: 8 kg (17.6 lb)
  - Detector: 210 kg (463 lb)
- Color (processing unit): gray RAL 7030 (decontaminable paint)

ELECTRICAL CHARACTERISTICS

- Power supply: 230 Vac – 50 Hz or 120 Vac – 60 Hz
- Data link outputs: one RS232 (LPDU only) and two isolated RS485
- Alarm relays: three SPDT relays
- I/O: two isolated analog outputs and one 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: three lights (red, yellow, green)

REFERENCE STANDARDS

- Environmental: IEC/IEE 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)
- Without protection, 2 π/5 cm (2 π/2 in) or 4 π/5 cm (4 π/2 in) detector lead shield
- With or without RS485 junction box
- Detector cable length: from 20 m (65.6 ft) to 100 m (328 ft)
- Junction box cable length: 2 m (6.56 ft), 5 m (16.4 ft) or 10 m (32.8 ft)

ACCESSORIES

- Calibration tools
- Software: MASS2™, RAMVISION™, SIMS2™ applications...
- USB converters
- Seismic qualified wall mounting bracket for LP(D)U
- Detection sub-assembly support

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