



RAMSYS

BIM 201K™

Beta Irradiation Monitor

In-line monitor designed to detect beta radiation in process and effluent lines in nuclear power plant or nuclear facilities.



FEATURES

- Wide measurement range
- Wide temperature range detector
- Available with or without display and local signaling
- Compact and reliable
- 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 BIM 201K forms part of the RAMSYS product line. It is an in-line monitor designed to detect beta radiations in process and effluent lines in nuclear power plant or nuclear facilities.

The BIM 201K has been developed for continuous unattended operation and can cover beta measurement ranges required by regulations and industry guidelines. It is mainly adapted for in-line monitoring to continuously measure beta volumetric activity in gaseous effluent.

PHYSICAL CHARACTERISTICS

- Radiation detected: beta
- Detector: 2" thin plastic beta scintillator + PMT + embedded LED (SB 70)
- Energy range: > 30 keV
- Typical measurement range: $3.7 \cdot 10^{+3}$ to $3.7 \cdot 10^{+9}$ Bq/m³ (10^{-7} to 10^{-1} μ Ci/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

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: 240 mm x 279 mm x 276 mm (9.4 in x 11.9 in x 10.8 in)
- Weight:
 - Processing unit: 4.5 kg or 7 kg (10 lb or 15.5 lb)
 - Detector: 11 kg (24.2 lb)
- Color: gray RAL 7030 (decontaminable paint)

ELECTRICAL CHARACTERISTICS

- Power supply: 230 Vac – 50 Hz or 120 Vac – 60 Hz
- Data link outputs: 1 RS232 (for LPDU) 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

- Environmental: IEC/IEEE 60780-323
- Seismic: IEEE344 and IEC60980
- EMC: 2014/30/EU and 2014/35/EU, EPRI 102323, RG 1.180, 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 RS485 junction box
- With or without check source
- With or without heater
- Detector cable length: from 20 m (66 ft) to 65 m (213 ft)
- Junction box cable length: 5 m (16.4 ft) or 10 m (32.8 ft)

ACCESSORIES

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

Featuring:

