



RAMSYS

NIM 201K™

Neutron Irradiation Dose Rate Monitor

Monitoring in real time the neutron equivalent dose rate.



FEATURES

- Detector for indoor and outdoor applications
- H*(10) measurement
- Available with or without display and local signaling
- Wide and high neutron energy range (2.5 10⁻⁸ to 16 MeV)
- Compact and reliable

DESCRIPTION

The NIM 201K forms part of the RAMSYS product line. It has been developed to monitor in real time the neutron equivalent dose rate.

It provides operational dose rate in units of H*(10) derived from neutron fluence according to ICRU 57 recommendations. The helium-3 proportional counter (cylindrical tube) placed inside a polyethylene sphere detects thermal and fast neutrons. Its large energy range, associated with modular design makes it efficient, reliable and very sensitive. It is used effectively in nuclear reactors, subcritical stacks, neutron generators, irradiators and in accelerator facilities.

NIM 201K | NEUTRON IRRADIATION DOSE RATE MONITOR

PHYSICAL CHARACTERISTICS

- Radiation detected: neutron
- Detector: He3 proportional counter
- Energy range: $2.5 \cdot 10^{-8}$ (thermal) to 16 MeV
- Typical measurement range (according to IEC61322): 10^{-6} to 0.1 Sv/h (10^{-4} to 10 rem/h)
- Measurement capability: 10^{-7} to 0.3 Sv/h (10^{-5} to 30 rem/h)

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: -20°C to +70°C (-4°F to +158°F)
- MTBF:
 - Processing unit: > 50 000 hours
- TID:
 - Processing unit: 100 Gy (10^{+4} rad)
 - Detector: $5 \cdot 10^{+3}$ Gy ($5 \cdot 10^{+5}$ 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)
 - Detection sub-assembly: 817 mm x 312 mm x 310 mm (32.2 in x 12.3 in x 12.2 in)
- Weight:
 - Processing unit: 8.5 kg (18.7 lb)
 - Detection sub-assembly: ~ 31 kg (~ 68.3 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

- Nuclear: IEC61322, IEC61005
- EMC: 2014/30/EU and 2014/35/EU, 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
- Detector cable length: 2 m (6.56 ft), 5 m (16.4 ft) or 10 m (32.8 ft)
- Junction box cable length: 2 m (6.56 ft), 5 m (16.4 ft) or 10 m (32.8 ft)

ACCESSORIES

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

Featuring:

