

SGLM 202K Steam Generator Leak Rate Monitor

The SGLM 202K from the RAMSYS product line has been developed for steam generator leak rate monitoring in WWER nuclear power plants. The ^{16}N volume activity (in counts per second/Cps) measured by a NaI scintillation detector inside a lead shielding facing the live steam line is converted to Bq/m^3 (or $\mu\text{Ci}/\text{cc}$) through a coefficient calculated from Monte Carlo analysis on the basis of relevant data provided by the user. An algorithm which is based upon thermal hydraulic transport phenomena modeling uses the measured ^{16}N activity, the reactor power, the steam flow rate and the transport time (in the primary and in the secondary loop) to assess the steam generator leak rate.

FEATURES

- ^{16}N monitoring when reactor power exceeds 25%
- Gross gamma energy monitoring when reactor power < 25%
- Spectrum stabilization against temperature and aging drifts
- 16 selectable windows over the range covered
- 1024 channels analysis
- Available with or without display and local signaling
- Seismically qualified
- More than 500 SGLM channels in operation worldwide
- Defined for mild environment conditions

APPLICATIONS

- Barrier leak control
 - Secondary circuit monitoring

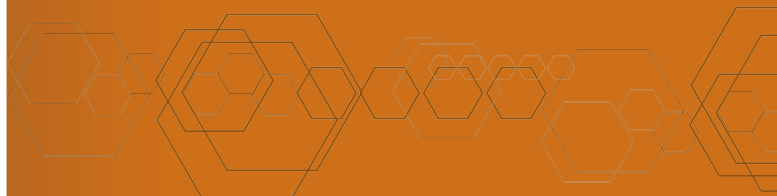
RELATED MONITORS

- SGLM 201K: version for PWR nuclear power plants

radiation monitoring
systems

A Mirion Technologies Division

Featuring:



PHYSICAL CHARACTERISTICS

- Radiation detected: gamma
- Detector: 3"x2" NaI(Tl) scintillator + PMT
- Energy range:
 - ¹⁶N window: 4.5 MeV to 7 MeV
 - Gamma window: 0.2 MeV to 2.2 MeV
- Measurement range:
- Leak rate: 1 to 5 000 l/h (6 to 31 700 GPD)
- Gamma: 0.5 to 100 000 cps
- Spectrum analysis: 1024 channels
- Lead shield: 2 π / 5 cm (2 π / 2 in)

ENVIRONMENTAL CHARACTERISTICS

- Long term temperature:
+10°C to +40°C (+50°F to +104°F)
- Periodic temperature:
-5°C to +55°C (+23°F to +131°F)
- MTBF: > 20 000 hours
- 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: Ø 402 mm x 429 mm (Ø 15.8 in x 16.9 in)
- Weight:
 - Processing unit: 8 kg (17.6 lb)
 - Detector: 226 kg (498 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 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

- Seismic: IEEE344 and IEC60980
- EMC: 2006/95/CE, 2004/108/CE, EPRI 102323, MIL STD 461 E, IEC61000-6-2 and IEC61000-6-4

VERSIONS

- 230 Vac or 120 Vac
- LPDU or LPU
- 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
- USB converters
- Seismic qualified wall mounting bracket for LP(D)U
- Detection sub-assembly support



MIRION
TECHNOLOGIES

Radiation Monitoring Systems
Division

Mirion Technologies (MGPI) SA
Route d'Eyguières
FR-13113 Lamanon
France

T +33 (0) 4 90 59 59 59
F +33 (0) 4 90 59 55 18

Mirion Technologies (MGPI) Inc
5000 Highlands Parkway
Suite 150
Smyrna, GA 30082
USA

T +1 770 432 2744
F +1 770 432 9179

Mirion Technologies (MGPI H&B) GmbH
Landsberger Strasse 328a
DE-80687 Munich
Germany

T +49 (0) 89 515 13 0
F +49 (0) 89 515 13 169

Mirion Commercial (Beijing) Co., Ltd.
Shanghai Jiangchang Commercial Branch
Room 801, 78 Jiangchang SanLu
Zhabei District, Shanghai 200436
PR of China

T +86 21 6180 6920
F +86 21 6180 6924

www.mirion.com
144430EN-F

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