

RPSG-07

Gamma Dose Rate Probe

The gamma dose rate probe, model RPSG-07, developed and manufactured by MicroStep-MIS, for monitoring of wide range of gamma radiation dose rate with high sensitivity – from natural background up to dangerous values.



Wide range of gamma dose rate measurement
[from 10 nSv/h to 10 Sv/h]



Low power consumption



Station component - sensor or portable device



Operates in harsh conditions and various climates



Leightweight [0.9 kg]

The gamma dose-rate probe, model RPSG-07, developed and manufactured by MicroStep-MIS, is designed for monitoring a wide range of gamma radiation dose rates with high sensitivity – from natural background levels to dangerous values.

The Gamma Dose Rate Probe RPSG-07 is a measuring device designed to determine dose rates of X-ray and gamma-ray radiation, ranging from background levels to high amounts generated by accidental releases from nuclear plants, nuclear facilities, or other sources of radioactivity.

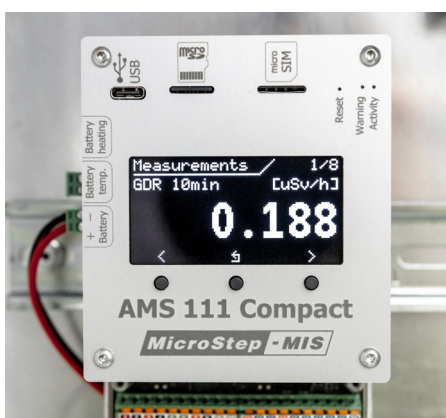
It incorporates two energy-compensated Geiger-Müller (GM) tubes, covering a wide measurement range of dose rates from 10 nSv/h up to 10 Sv/h.

The fiberglass housing makes this sensor lightweight (weighing less than 1 kg), water- and dust-proof (IP 68), making it suitable to operate in harsh environments. Thanks to the lightweight material used, it is highly sensitive to minor changes in the ambient natural radioactivity level and is capable of measuring extremely high dose rates.

The Gamma Dose-Rate Probe RPSG-07 functions as a standalone sensor or can be used in conjunction with our data loggers, AMS 111 IV or AMS 111 Compact, in a station configuration. It can also be employed as a handheld device with the option to connect to the UDCS/EnvIDB Central System. The low power consumption of the Gamma Dose Rate Probe RPSG-07 enables its use at solar-powered stations.



RPSG-07 mounted on a solar powered Gamma Dose Rate station with a precipitation detector and AMS 111 Compact data logger.



RPSG-07 with AMS 111 Compact data logger as a hand-held device. Operation duration: ~44 hours (display permanently on), ~135 hours (display permanently off).

Technical specifications

Measured variable	Ambient dose equivalent rate H*(10)
Detector	two H*(10) GM tubes with energy-compensating filter
Measuring range	10 nSv/h to 10 Sv/h
Data sampling rate	continuously with 1 second data processing
Data period	1 min, 10 min and 60 min
Variables provided	Dose Rate, Dose rate uncertainty (2 σ CL), Alarm flag, Status flag
Alarm	4 levels of alarm threshold for dose rate values of each data period
Operation modes	Normal, Check Low dose rate, Check High dose rate, Calibration mode
Energy range	35 keV to 4.5 MeV (sensitivity up to 10 MeV)
Energy dependence	5 % to 15 %
Energy compensating filter range	35/70 keV to 2.5/4.5 MeV for Low range/High range respectively
Temperature range	-40 °C to +60 °C
Sensitivity	1.4 counts per second @ 100 nSv/h 14 counts per second @ 1 μ Sv/h 11750 counts @ 1 Sv/h
Calibration	at Secondary Standard Laboratory for ambient dose equivalent rate H*(10) over the full measuring range
Operation	with data logger or PC
Microprocessor	ARM
Output	RS-485, SDI-12, RS-232 (option), UART (option), RS485-isol (option)
Power supply	9 to 33 V DC
Power consumption	average 72 mW (6 mA @ 12 V); maximum 120mW (10 mA @ 12 V)
Dimensions	diameter 50 mm, height 570 mm (connector included)
Weight	907 g (3x mounting screws included)
Housing	fiber-glass housing with aluminum holder and inox connector
Housing classification	IP 68 (water and dust proof)

Compliance

EN IEC 61000-6-3:2021 of electromagnetic disturbance for equipment in residential environments.

EN IEC 61000-6-2:2019 of electromagnetic immunity for equipment for heavy-industrial environments.

EN IEC 60846-1:2009 Ambient and/or directional dose equivalent (rate) meters and/or monitors for beta, X and gamma radiation - Part 1: Portable workplace and environmental meters and monitors.

EN IEC 60846-2:2015 Ambient and/or directional dose equivalent (rate) meters and/or monitors for beta, X and gamma radiation - Part 2: High range beta and photon dose and dose rate portable instruments for emergency radiation protection purposes.

Calibration

Calibration laboratory at Slovak Metrological Institute in accordance with EN IEC 17025:2005.

Traceability to the National standard of gamma radiation.

