MIRION TECHNOLOGIES

Radiation Safety. **Amplified.**

RGR-100

High Sensitivity Military Remote Sensor

Nuclear | Healthcare | **Homeland Security & Defense** | Labs and Education | Industrial and Manufacturing

FEATURES

- Detects and quantifies prompt gamma and neutron dose as well as residual gamma dose and dose rate
- Uses time tested “Time-to Count” technology
- Sensor only version, derived from the AN/UDR14, RGU-100 Pocket Radiacs
- Simple integration within remote controlling systems
- Secure data tracking

KEY BENEFITS

- Small size and weight
- RS-232 sub-D computer interface towards automated read out systems
- Ease of use for setup and read out, by simple Rx/Tx commands

APPLICATIONS

- Unmanned vehicles or drones
- Aircraft and vehicle

DESCRIPTION

The RGR-100 Military Remote Radiac Sensor detects and quantifies prompt gamma and neutron dose as well as residual gamma dose and dose rate in support of both tactical and non-tactical use.

It has the same radiological features as the AN/UDR14 or RGU-100 Pocket Radiacs but doesn’t have any display, keypad and batteries.

Its wide dynamic ranges based on the unique Time To Count (TTC) technology for dose and dose rate and ability to measure prompt as well as residual gamma radiation make it an essential tool for harsh environment where a remote radiological detector is required.

This simple rugged compact device is easily connectable to an external controller for remote read-out for dose and dose rate tracking systems.

An RS-232 port that resides in the RGR-100 enables its data to be accessed by a computer. The same connector is used to provide the external power to the unit.

It can be used on unmanned vehicles, drones or robots for remote monitoring applications. It also lends itself for internal monitoring when mounted inside a vehicle/aircraft as part of an integrated monitoring system. When multiple units are mounted outside a vehicle it can be used to determine directionality of the radiation field.

Using the RS-232 port enables the next parameters to be read out:

- Filtered Dose Rate
- Unfiltered Dose Rate
- Mission Dose
- Time
- Alarms (D dose, R Rate)

It can be used for efficient dose or dose rate mapping during an intervention or dose management of personnel during a mission. The port may also be used to reset the accumulated dose to zero before an intervention, or for configuration of the device ensuring proper alarm setting parameters.

CANBERRA

RGR-100 High Sensitivity Military Remote Sensor

SPECIFICATIONS

Data Provided:

- RESIDUAL GAMMA RADIATION – 0.01 µGy/hr to 350 cGy/hr dose rate and 0.01 to 999 cGy total dose.
- PROMPT NEUTRON AND GAMMA RADIATION – 1 to 999 cGy total dose.

Features:

- PRE-SETTABLE – Dose and dose rate alarms.
- SETUP TIME – Less than one minute for all checks and alarms.
- ACCURACY – ±20%.
- CIRCUIT PROTECTION – Nuclear and EMP hardened.
- HOUSING MATERIAL – Aluminum.

Detectors:

- Pin Diode (neutron), RADFET (prompt gamma) and "Time to Count" GM detector (residual gamma).
- Separate detectors for neutron and gammas are combined to provide a single dose reading.
- TOTAL (Cumulative) DOSE READ OUT – Will not be erased when read, resettable to zero as desired.
- RESIDUAL DOSE RATE – Minimum detectable level 0.2 µGy/hr – Rad units available.
- RESPONSE TIME – Within 10% of final reading in four seconds at 1.0 cGy/hr, returns to background within four seconds.

Communications:

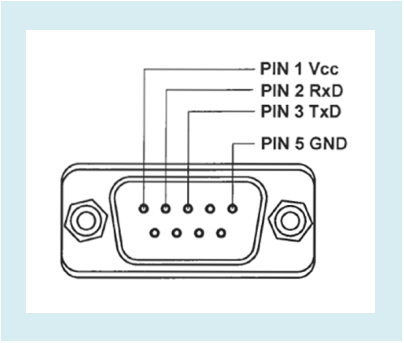
- RS-232 Sub-D (DB-9) communications port, for setup of parameters and continuous read out for monitoring purposes.

Alarms:

- Has selectable Dose and Dose Rate alarm levels, settable over entire dynamic range (used internally only).

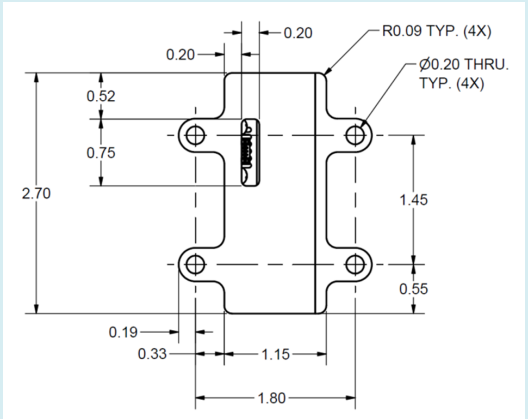
Power:

- Provided externally via RS-232 connection.
- VCC = 6.5 V dc ± 0.2 V dc.
- No internal batteries.



Dimensions and Size:

- DIMENSIONS – 68.6 x 66.04* x 29.2** mm^3 (2.7 x 2.6* x 1.15** in.^{3}).
  - * Connector adds 12.2 mm (0.48 in.)
  - ** Mounting wings add 13 mm (0.513 in.) to each side
- WEIGHT – 174 g (6.14 oz).
- VOLUME – 172 cc (10.5 in.^{3}).



Environmental Parameters:

- OPERATING TEMPERATURE – -51 °C to +50 °C (-59.8 °F to 122 °F).
- STORAGE/TRANSPORT TEMPERATURE – -60 °C to +70 °C (-76 °F to 158 °F).
- OPERATING HUMIDITY – 0-95%.
- SAND/DUST – Operates in winds to 1750 ft/min with exposure to fine dust and to 5700 ft/min to sand particles.
- VIBRATION – Withstands vibration associated with transport.
- EXPLOSIVE ATMOSPHERES – Will not cause ignition of explosive gas mixtures.
- ALTITUDE – 4572 m (15000 ft).

QUALIFICATION TESTING

The RGR-100 is derived from the military qualified AN/UDR-14 or RGU-100 Radiac Sets that were developed by Aptec-NRC/CANBERRA, now part of Mirion Technologies, under contract to the US Army. The RGR-100 precisely duplicates the radiological performance of the AN/UDR-14 or RGU-100 and is a sealed version of the AN/UDR14/RGU-100 that is designed to meet Mil-Std 810 tests.

ORDERING INFORMATION

- RGR-100-GO High Sensitivity Military Sensor.

ISO 9001 SYSTEM CERTIFIED

CANBERRA