



RDS-110V

Military Radiac Set



Nuclear



Healthcare



Homeland Security & Defense



Labs and Education



Industrial and Manufacturing

FEATURES

- Wide dynamic range for dose rate and dose
- Pre-settable audio and visual alarms
- 600 hr battery life
- Vehicle mount for operation using vehicle or aircraft power (available option)
- Not affected by EMP
- Nuclear hardened
- Meets MIL-STD-810G for military environments
- Operable/readable by personnel in Mission Oriented Protection Posture (MOPP IV) or arctic clothing
- Outstanding linearity over a wide dynamic range
- Lowest life cycle costs due to calibration stability and semi automatic self calibration
- RS-232 interface for computer control and data downloads (available option)
- Uses “SMART” probe technology (calibration factors store inside the probe)

KEY BENEFITS

- Rugged and reliable
- Ease of use for setup and operations; minimal user training required

APPLICATIONS

- Personnel
- Aircraft and vehicle

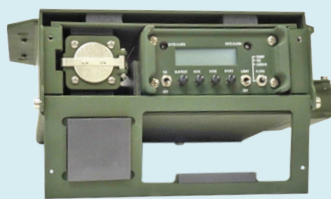
DESCRIPTION

The RDS-110V military radiac set is designed to detect and measure dose rate and accumulated dose derived from gamma-ray and beta radiation. The radiac set may be carried by an operator, or installed in a vehicular mount (optional). This simple to operate, rugged, and lightweight equipment combines unparalleled performance and reliability. It includes the Time-to-Count technique providing outstanding linearity over the entire dynamic range of the instrument – no compensation for high levels is necessary. Features such as wide dynamic ranges for dose and dose rate and pre-settable alarms make this instrument clearly the instrument of choice for the foot soldier.

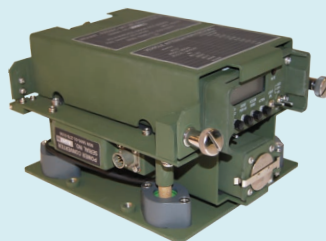
The RDS-110V also lends itself to use in military land vehicles and helicopters and easily fits within the space-constrained interiors of aircraft and fighting vehicles. Its detection probe may be mounted outside the land vehicle or helicopter for direct external radiation assessment. With the optional RDS-110V Vehicle Mount, the radiac is capable of operating on vehicular or aircraft power.

The RDS-110V has been developed using the same form as the legacy AN/VDR-2 and RDS-100V radiac meters. It uses a similar dedicated beta gamma specific hand held probe, with embedded smart probe electronics. Older legacy probes need minor factory modifications before reusing.

The RDS-110V includes STORE button functionality rather than the ATTEN button capability found in the legacy VDR2/RDS-100V models.



Optional Vehicle Mount Horizontal (7083637)



Optional Vehicle Mount Vertical (D3085430)

SPECIFICATIONS

Features:

- PRE-SETTABLE AUDIBLE AND VISUAL – Dose and dose rate alarms.
- MODES – Rate, Dose, Test.
- SETUP TIME – For all checks and alarms less than 1 min.
- CIRCUIT PROTECTION – Nuclear and EMP hardened.
- EMI COMPATIBILITY – Will not be affected, or cause other equipment to be affected by its use.
- OPERABLE AND READABLE – By persons wearing Arctic and MOPP protective clothing.
- DIMENSIONS –
 - Radiac Meter: 19.2 x 10.4 x 4.8 cm (7.6 x 4.1 x 1.9 in.).
 - Detector probe: 18.2 x 5.1 x 3.8 cm (7.2 x 2 x 1.5 in.).
 - Radiac set in pouch: 23.2 x 17.5 x 7.9 cm (9.12 x 6.88 x 3.13 in.).
- WEIGHT –
 - Radiac with Beta/Gamma Probe: 1.73 kg (3.8 lb).
 - Radiac set in pouch: 2.08 kg (4.6 lb).

Display:

- Auto ranging LCD can be read at 2 m daylight or 3 ft, back lit for night use, updated every two seconds.
- RATE provides dose rate readout in $\mu\text{Sv/hr}$, mSv/hr , Sv/hr .
- TOTAL (CUMULATIVE) DOSE READ OUT – provides dose read out in units of μSv , mSv , Sv ; will not be erased when read, resettable to zero as desired.
- STORE FUNCTION – To store up to 300 read-out values with date and time stamp (or with GPS coordinates if externally coupled).

Power:

- Six AA batteries.
- 600 hours of continuous operation and monitoring.
- Low battery LCD indication with 10 hr of battery life remaining, a “Go/No Go” feature provides battery status.
- Can be operated on vehicle or aircraft power (12 or 24 V dc via universal connector).

Reliability and Maintainability:

- SELFTTEST during start-up of the unit, with audible button strokes for verification.
- MEAN TIME BETWEEN FAILURE (MTBF) – Greater than 2000 hr.
- MEAN TIME TO REPAIR (MTTR) – 20 min.

Alarms:

- Has selectable Visual and Audible indicators for DOSE and RATE alarm for day or night use.
- Alarm levels are settable over entire dynamic range.

Probe and Detectors:

- “SMART” probe Technology – Instantly recognized and functional upon hook-up, without any adjustment, programming or calibration.
- Combined two GM Tubes; low range EWGM and high range GM.
- BETA RADIATION – $0.01 \mu\text{Sv/hr}$ to 50 mSv/hr .
- GAMMA RADIATION – $0.01 \mu\text{Sv/hr}$ to 99.9 Sv/hr (dose rate) and $0.01 \mu\text{Sv}$ to 99.9 Sv (total dose).
- ENERGY RESPONSE – $\pm 20\%$ 80 keV to 3 MeV.
- ACCURACY – $\pm 10\%$ of true dose and dose rate over the entire dynamic range.
- DOSE RATE – Minimum detectable level $0.01 \mu\text{Sv/hr}$.
- RESPONSE TIME – Within 10% of final reading in 4 sec at 10 mSv/hr ; returns to background within 4 sec. Meets ANSI N42.17A.

Environmental Parameters:

- OPERATING TEMPERATURE – $-50 \text{ }^\circ\text{C}$ to $60 \text{ }^\circ\text{C}$ ($-58 \text{ }^\circ\text{F}$ to $140 \text{ }^\circ\text{F}$).
- STORAGE/TRANSPORT TEMPERATURE – $-60 \text{ }^\circ\text{C}$ to $70 \text{ }^\circ\text{C}$ ($-76 \text{ }^\circ\text{F}$ to $158 \text{ }^\circ\text{F}$).
- HUMIDITY – 0 to 100% relative humidity.
- IMMERSION – 3 ft or 1 m for 30 min.
- DUST – Meets MIL-STD-810G, Method 510.5, Proc. I.

- FUNGUS – Built from inherently fungus resistant materials. Meets MIL-STD-810G, Method 508.6.
- SALT FOG – Meets MIL-STD-810G, Method 509.5.
- VIBRATION – Meets MIL-STD-810G, Method 514.6, Procedures I (Cat 4) and II (Cat 5).
- FUNCTIONAL AND TRANSIT SHOCK – Meets MIL-STD-810G, Method 516.6, Procedure I and IV.
- BALLISTIC SHOCK – Meets MIL-S-901D, Grade A, Class 1, Type A.
- ALTITUDE – 4572 m (15 000 ft).
- EXPLOSIVE ATMOSPHERES – Will not cause ignition of explosive gas mixtures. Meets MIL-STD-810G, Method 511.5.
- NUCLEAR SURVIVABILITY – Meets Nuclear Survivability criteria TOP 1-2-620 (for HEMP) and 1-2-612 for HEMP, Prompt Gamma Dose Rate, Gamma Total Dose, Neutron Fluence, Nuclear Air Blast & Nuclear Thermal Radiation.

External Communications:

- 12-pin Hiroshi type of connector, towards earphone/serial RS-232 for PC/GPS – with breakout cable (optional).
- External alarm jack output.

ORDERING INFORMATION

- RDS-110V Base meter kit, containing:
 - 7082644 Radiac Meter, RDS-110V
 - D47081 Beta/Gamma probe
 - 3085169-03 Green Carrying Case

OPTIONS

- D3085430 – Vehicle mount (vertical) for RDS-110V with vehicle power converter (needs 7083376 cable).
- 7083637 – Vehicle mount (horizontal) for RDS-110V with vehicle power converter (needs 7083376 cable).
- 7083376 – RDS110 Vehicle mount Y-power cable.



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