



# RDS-100V

## Military Radiac Set



Nuclear



Healthcare



Homeland  
Security  
& Defense



Labs and  
Education



Industrial and  
Manufacturing

### FEATURES

- Wide dynamic range for gamma dose rate and gamma dose
- Pre-settable audio and visual alarms
- 100 hr battery life
- Vehicle mount for operation using vehicle or aircraft power (available option)
- Not affected by EMP
- Nuclear hardened
- Designed to meet MIL-STD-810G for military operational 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
- Compatible with existing AN/VDR-2 probe (needs recalibration)

### KEY BENEFITS

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

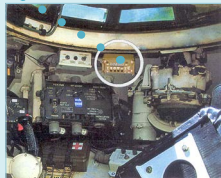
### APPLICATIONS

- Aircraft and vehicle
- Personnel

### DESCRIPTION

The RDS-100V 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 unequalled performance and reliability. It includes the unique 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-100V also lends itself to use in military land vehicles and helicopters and easily fits within the space-constrained interiors of aircraft and fighting vehicles (see circled RDS-100V at left). With the probe mounted internally, the attenuator button provides the capability for indication of the outside dose rate by estimating the self shielding factor caused by the vehicle. Its detection probe may be mounted outside the land vehicle or helicopter for direct external radiation assessment. With the optional RDS-100V Vehicle Mount, the radiac is capable of operating on vehicular or aircraft power.



The RDS-100V has been developed using the same form, fit and function as the AN/VDR-2 radiac meter and is backwards compatible with the same dedicated beta gamma specific hand held probe. This offers the advantage of reusing existing probe and obtain newer electronics for maintaining the task performance.

## SPECIFICATIONS

### Features:

- PRE-SETTABLE AUDIBLE AND VISUAL – Dose and dose rate alarms.
- SETUP TIME – For all checks and alarms <1 min.
- ACCURACY –  $\pm 15\%$ .
- CIRCUIT PROTECTION – RDS-100V is 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 with Beta/Gamma Probe: 18.2 x 10.4 x 4.8 cm (7.2 x 4.1 x 1.9 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).
- VOLUME –
  - Radiac with Beta/Gamma Probe: 909 cc (58 cubic in.).

### Probe Detectors:

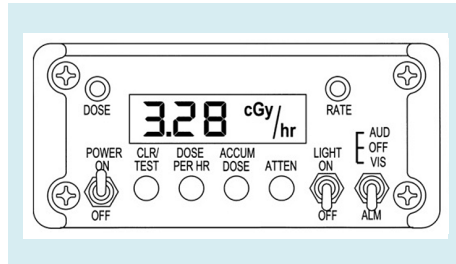
- Two GM Tubes; low range EWGM and high range GM.
- BETA RADIATION – 0.01  $\mu\text{Gy/hr}$  to 5 cGy/hr.
- GAMMA RADIATION – 0.01  $\mu\text{Gy/hr}$  to 999 cGy/hr (dose rate) and 0.01  $\mu\text{Gy}$  to 999 cGy (total dose).
- ENERGY RESPONSE –  $\pm 15\%$  80 keV to 3 MeV.
- DOSE RATE – Minimum detectable level 0.01  $\mu\text{Gy/hr}$ .
- RESPONSE TIME – Within 10% of final reading in four seconds at 1.0 cGy/hr; returns to background within four seconds.

### Alarms:

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

### Display:

- An auto ranging LCD can be read at 3 ft, back lit for night use, updated every two seconds.
- DOSE PER Hour dose rate readout in units  $\mu\text{Gy/hr}$ , cGy/hr, Gy/hr for dose rate. (Other readout units available on request – Rads or Sieverts).
- ACCUMULATED (TOTAL) DOSE READ OUT with readout in units of  $\mu\text{Gy}$ , cGy, Gy – Will not be erased when read, resettable to zero as desired.
- ATTENUATED read out – Will assess the outside dose rate by including a self-shielding factor due to vehicle absorption (fixed conversion factor).



### Environmental Parameters:

- OPERATING TEMPERATURE –  $-46\text{ }^{\circ}\text{C}$  to  $+49\text{ }^{\circ}\text{C}$  ( $-51\text{ }^{\circ}\text{F}$  to  $120\text{ }^{\circ}\text{F}$ ).
- STORAGE/TRANSPORT TEMPERATURE –  $-51\text{ }^{\circ}\text{C}$  to  $+71\text{ }^{\circ}\text{C}$  ( $-60\text{ }^{\circ}\text{F}$  to  $160\text{ }^{\circ}\text{F}$ ).
- HUMIDITY – 0-94%.
- IMMERSION – 3 ft for at least 2 hr.
- DUST – Operates in winds to 1750 ft/min with exposure to fine dust.
- FUNGUS – Built from inherently fungus resistant materials.
- VIBRATION AND SHOCK – Withstands vibration associated with transport and shocks of dropping in use.
- ALTITUDE – 4572 m (15000 ft).
- EXPLOSIVE ATMOSPHERES – Will not cause ignition of explosive gas mixtures.

### Power:

- Three 9 V batteries.
- Minimum battery life of 100 hr of continuous monitoring.
- Low battery LCD indication with 10 hr of battery life remaining, a "Go/No Go" feature provides battery status.

### Reliability and Maintainability:

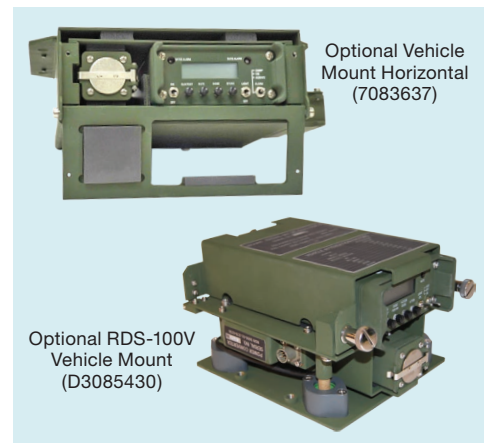
- MEAN TIME BETWEEN FAILURE (MTBF) – Greater than 2000 hr.
- MEAN TIME TO REPAIR (MTTR) – 15 min.

### ORDERING INFORMATION

- RDS-100V BASE METER KIT, P/N: RDS-100V, containing:
  - D48895A BASIC RDS100-V RADIACMETER
  - D47081 BETA/GAMMA PROBE
  - 3085169-03GRN POUCH with strap

### OPTIONS

- D3085430 – Vehicle mount (vertical) for RDS-100V with vehicle power converter (needs 7083377 cable).
- 7083637 – Vehicle mount (horizontal) for RDS-100V with vehicle power converter (needs 7083377 cable).
- 7083377 – RDS100V Vehicle mount Y-power cable.



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