The RAM DA 2000 Meter

Portable Radiation Survey Meter with external probes for all kinds off Radiation

Features

- Large, easy to read, illuminated, digital & analog custom made LCD
- Unique algorithms to achieve fast response and stable readings
- Bar code laser scanner for location identification of reading
- Built-in memory to store measurements data
- RS-232 communication port
- SMARTS and RMV software compatibility
- Automatic self-test of meter and detector
- Various types of external detectors
- Automatic detector identification
- No need for re-calibration with each detector change
- Wide range internal gamma detection tubes
- Autoranging
- Automatic recording of dose accumulation
- Freeze mode to record highest dose rate
- Manually set threshold alarm
- Low battery, overflow and failure alarms
- Two alarm relay contacts for external interface
- Versatile: Can function either as ratemeter or scaler
- CE marked

RAM DA-3-2000 with wide range internal detector
RAM DA-2000 without internal detector

Description

RAM DA-3-2000 is a further development of the RAM series, a family of versatile, user friendly meters and detectors designed to give highly reliable alpha, beta, gamma and X-ray measurements. The **RAM DA-3-2000**, a microprocessor based meter, includes an internal detector with two energy compensated GM tubes; ZP1201 and ZP1313 (Air kerma dose equivalent) or ZP1202 and ZP1314 (Ambient dose equivalent (H*10)) for wide range gamma fields measurement, from 0.5 µSv/h to 1 Sv/h (50 µR/h to 100 R/h). Meters are available in either Sievert or Roentgen measuring units. **The RAM DA-3-2000** provides a straightforward, fast and reliable method to collect and store monitoring data on site for later use. The measurements' data, date and time, are stored in a built-in memory. The stored data records can be downloaded by the SMARTS (Survey Mapping Automatic Radiation Tracking System) or the RMV (ROTEM Meter View) software packages.
The **RAM DA-3-2000** is ideal for use in nuclear power plants, nuclear medicine, radiography and radiotherapy facilities, life science laboratories, nuclear research centers and in other industrial applications.

The Standards Institution of Israel SI ISO 9001 Quality Assured Firm

ROTEM
ROTEM INDUSTRIES Ltd. רותם תעשיות בע"מ

RAM DA-2000 SERIES – MULTI-PURPOSE SURVEY METER

The RAM DA-2000 series was developed to solve the problem of rapid instrument obsolescence. The flexibility and modularity of the RAM DA makes it possible to maintain the highest standards of safety, by using different types of detectors for different applications.

RAM DA-2000 / RAM DA-3 2000

RAM DA-2000 series: Without internal detector
RAM DA-3 2000 series: With wide range internal detector

Applications:

- Nuclear Power Plants, nuclear and medical research centers, H.P. departments, radiology clinics, radiation and environmental protection authorities.

Features:

- Communication to PC Calendar/Clock, Non-volatile memory.
- Two output relay contacts for threshold and failure alarm.
- RMV (Rotem Meter View) compatible.
- Different types of detectors can be connected.
- Automatic detector identification and selection of readout units.
- Freeze mode to record the highest dose rate.
- Manually set alarm threshold.
- Low battery & Overflow alarm.
- Ability to display several units of measurement (cps, cpm, uSv/h, mR/h, counts…).

RAM DA-3 2000 Measuring Range: 0.5 µSv/h to 1 Sv/h (50 µR/h to 100 R/h)

MAIN DETECTORS FOR RAM DA 2000

GM-40 Series (GM-40, GM-41, GM-42)

IRP-51-H*(10) version available

For Gamma Radiation over a very wide range.
Based on different types of energy compensated GM tubes.
Extended hook-up cable of up to 100 meters can be used.

Measuring Range:

GM-40: 250 µSv/h to 10 Sv/h (25 mR/h to 1000 R/h)
GM-41: 50 µSv/h to 1 Sv/h (5 mR/h to 100 R/h)
GM-42: 0.5 µSv/h to 10 mSv/h (50 µR/h to 1 R/h)

GM-10 Detector

Efficient surface monitoring of alpha, beta and gamma radiation contamination, based on 1¾" Pancake GM tube.

Sensitivity (^{137}Cs):
~350 cpm/µSv/h
(3500 cpm/mR/h)

Measuring Range:
0 to 42,000 cps

PA-100 Detector

Surface monitoring for Alpha contamination.
Based on Ionization chamber.
Very easy to maintain.
100 cm^2 (15.5 sq. in.)

Surface Sensitivity:
530 cpm per Bq/cm^2

Measuring Range:
0 to 50,000 cps

IC-10 Detector

IRP-51-H*(10) version available

Wide range gamma, x-ray and beta radiation measurement.
Based on 0.5 liter atmospheric ionization chamber.
Uses special features and advanced technology.

Measuring Range:
1.0 µSv/h to 250 mSv/h
(0.1 mR/h to 25 R/h)

PM-10 Detector

Gamma scintillation probe for improved x-ray and low energy gamma radiation detection,based on thin Nal 2" diameter scintillator (2" dia. X 0.04" thickness).
S.C.A. can be set within the energy range, optimized for ^{125}I detection and/or other isotopes.

Energy range: 10 to 80 keV

^{125}I surface sensitivity: 440 cpm/Bqcm^2

Measuring range: 0 to 50,000 cps

PM-11 Detector

Scintillation probe for high energy gamma radiation detection.
Nal 2" x 2" diameter scintillator.
Single channel analyzer (SCA) - optional.

Surface Sensitivity (in contact):
^{131}I: 320 cpm/Bq/cm^2
^{99m}Tc: 315 cpm/Bq/cm^2

Measuring range: 0 to 50,000 cps

Technical Data

Display LCD readout showing:

- 20-segments, autoranging analog scaled bargraph
- Four digits for accurate and easy readout
- Two digits for identifying type of detector connected
- Operating conditions, including:
  - measuring units
  - freeze, dose, or count modes
  - detector failure, exceeding of threshold, low battery
  - display illumination on/off
  - audible indicator on/off

Measuring units cps, cpm, counts, Sv/h, Sv (R/h, R), other units upon request.
The measuring unit and display range are set automatically for each type of detector, and the measuring unit can be also changed manually.

Power source Three 1.5 V C-type cells

- 150 hours minimum continuous operation with alkaline batteries (excluding display lighting), using internal detector. 100 hours with all other external detectors
- Automatic battery check under full load
- Option: 3 rechargeable C-type cells & charger, or 4.5 VDC external adapter

Temperature range **Operation:** -10°C to +50°C (15°F to 122°F)
Storage: -20°C to +60°C (-5°F to +140°F)

Humidity range 10% to 95% RH (non-condensing)

Casing Splash-proof plastic case

Dimensions Width: 142 mm (5.6")
Length: 244 mm (9.6")
Height: 115 mm (4.5")

Weight 1.5 Kg (3.3 lb) including batteries and internal detectors

Data logging 347 data records (1415 with extended memory)

Communication Serial communication port (RS-232)

Laser scanner Class II, maximum power 1.0 mW

Relays Two relay contacts: fail alarm, threshold alarm

Memory E^2EPROM for the meter parameters

Internal Detector (RAM DA-3-2000)

Measuring range 0.5 µSv/h to 1 Sv/h (50 µR/h to 100 R/h)

Display range 0.01 µSv/h to 1 Sv/h (1 µR/h to 100 R/h)

Accuracy ±10% of reading

*** Energy response** ±30% over the range of 50 keV to 1.3 MeV
±20% over the range of 60 keV to 1.3 MeV

Angular dependence ±20% for ±45° of preferred direction

* related to ^{137}Cs

Ordering #		
	RAM DA-2000	2-0030-10
	RAM DA-3-2000	2-0033-10

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