

GAMMA RAY SPECTROMETER

SALIENT FEATURES

- AUTOMATICALLY SHIFTING BASE LINE
- CAN BE USED AS 250 CHANNEL SPECTROMETER
- MICROCONTROLLER BASED
- DATA STORAGE & RECALL OF READINGS
- PRESET TIME
- SERIAL PORT
- PRINTER PORT
- BIGGER LCD DIGITS
- MENU DRIVEN
- RANGE : 999999 COUNTS & 999 SECONDS / MINUTES



INTRODUCTION

Gamma ray spectrometer type GRS 301 is a single channel analyser with automatically shifting base line. Thus it can be used as 250 channel analyser and it has a built-in counting system. For spectral analysis of gamma radiation emitted by radioisotopes, the base line is shifted automatically after every reading, whereas the window is set manually. From the readings stored, the spectrum can be plotted either manually or by transferring data to the PC. Information about the identity & purity of isotopes, their relative abundance & the effects of scattering & absorption can be obtained. This unit is designed to be used with NaI scintillator probe PSP 649/N. The single desktop instrument design occupies less table space compared to the huge size of NIM standard.

TECHNICAL SPECIFICATIONS

Radiation Detected	: γ (Gamma)
Detector (optional)	: NaI(Tl) Scintillation with photomultiplier
Display	: 16 x 2 Character LCD (\approx 10 mm character height)

AMPLIFIER

Input	: Pulses from Scintillation probe
Input Impedance	: $> 1k\Omega$
Gain	: Max. 100, adjustable with 10 turn potentiometer with turns indicating dial
Time Constant	: Differentiation: $1\mu\text{sec}$ Integration: $1\mu\text{sec}$

ANALYZER

Operating Modes	: Window Mode or Integral Mode, selectable
Base Line	: 80mV to 10 Volts, automatically / manually adjustable in steps of 40mV
Window Width	: To be selected manually by 10 Turn dial in steps of 40mV
EHT	: Output available on EHT marked connector provided on rear panel
Output Voltage	: 0 to 1250 Volts, adjustable
Output Current	: 200 μ A max.
LV Output	: \pm 15 Volts DC / 100mA o/p available on rear panel (9 pin 'D' socket) (for pre-amplifier of scintillation probe)
User Interface	: Menu driven with START/STOP, CLEAR, UP, RIGHT, ENTER buttons
Preset Time Mode	: 6 Digit Counter, 999999 counts 3 Digit Timer, 1 to 999 seconds / minutes
Recall Menu	: Recalls the Data saved of counts along with time & Serial Number
Block Menu	: Readings of counts along with time & serial number can be printed, Dumped (on PC via serial port) or deleted with FROM & TO range
Data Storage	: Stores 25 samples in WINDOW mode / 400 readings in INTEGRAL mode : Counts, Monitoring Time & Serial number
Serial Port	: RS232 (RS485 optional) Data dumping to PC from block menu
Printer Port (optional)	: For printing on Centronics (SPP) compatible printers
Power Supply	: 230V \pm 10%, 50Hz Mains

- NOTES:**
- 1) GRS 301 is only the electronic instrument (without detector).
 - 2) All optional items are at an extra cost.

SCINTILLATION DETECTOR (optional at an extra cost)

- a) PEA Scintillation Detector comprising of NaI Solid / Well type Crystal coupled with Photo-multiplier tube with housing & preamplifier.
- b) NaI Scintillator 1”(H) x 1”(Dia.), 1.5”(H) x 1.5”(Dia.), 2”(H) x 1.5”(Dia.) or user's choice, probes available on request.

CAT. No. GRS301/1207

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