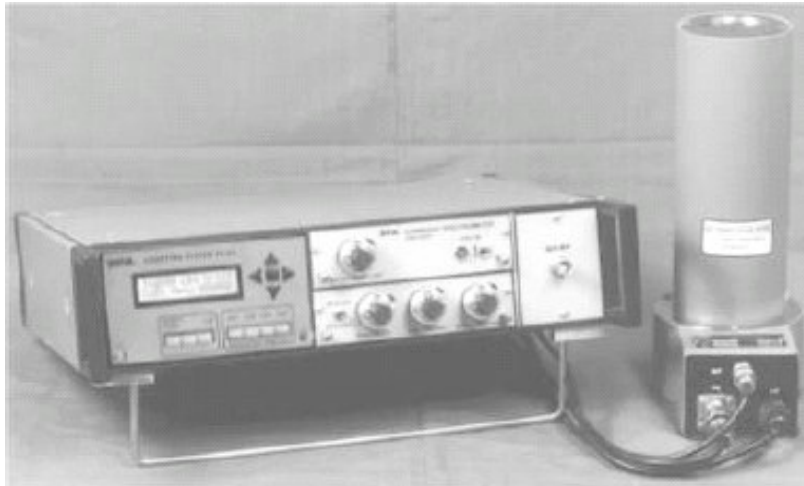


## **GAMMA RAY SPECTROMETER**

### **SALIENT FEATURES**

- SINGLE CHANNEL SPECTROMETRY • COMPACT DESIGN • 1 TO 9999 SECONDS SELECTION FOR TIMER • 0 TO 999999 COUNTS RANGE



### **INTRODUCTION**

Gamma ray spectrometer type GRS 101L is a single channel analyzer with built-in counting system for spectral analysis of gamma radiation emitted by radioisotopes. From the reading obtained, the spectrum can be plotted to yield information about the identity & purity of isotopes, their relative abundance & the effects of scattering & absorption. This unit is to be used with scintillator probe PSP 649/N. Single desktop instrument design occupies less table space compared to huge size of NIM standard.

### **TECHNICAL SPECIFICATIONS**

<b>Radiation</b>	: $\gamma$ (Gamma)
<b>Detector (optional)</b>	: NaI (TI) Scintillation with Photo-multiplier
<b>Energy</b>	: 30keV to 1.2MeV based on crystal size
<b>Amplifier</b>	: Gain : Max.100 adjustable with 10 turn dial (Max.10V o/p )
<b>Analyzer (2 modes)</b>	: Integral mode & Window mode. Baseline & window level adjustable with 10 turn dial
<b>Timer</b>	: 4 digit, Pre-settable from 1 to 9999 seconds.
<b>Scaler</b>	: 999999 Counts
<b>EHT</b>	: 0V to 2000V settable with the help of 10 turn dial

## AMPLIFIER

<b>Input</b>	: Pulses from Scintillation probe.
<b>Input Polarity</b>	: +ve or -ve pulses, selectable by internal switch
<b>Input Impedance</b>	: > 1k $\Omega$
<b>Gain</b>	: Max. 100, adjustable with 10 turn potentiometer with turns indicating dial.
<b>Differentiation Time Constant</b>	: 1 $\mu$ sec.
<b>Integration Time Constant</b>	: 1 $\mu$ sec.
<b>Test</b>	: Test terminal provided to monitor amplifier output.

## ANALYZER

<b>OPERATING MODE</b>	: Window Mode or Integral Mode, selectable by Toggle switch.
<b>BASE LINE</b>	: 0.05 to 10 Volts, continuously adjustable by means of a 10-turn helipot with turns indicating dial.
<b>WINDOW WIDTH</b>	: 0 to 2 Volts, continuously adjustable by means of a 10-turn helipot with turns indicating dial.

## DISPLAY

<b>Display</b>	: 16 x 2 Alphanumeric LCD for scaler and timer
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## TIMER

<b>GATE TIME</b>	: 1 to 9999 seconds, selectable
<b>AUTO / MANUAL</b>	: Push Button switch provided to select AUTO or MANUAL Gate time.
<b>PRESET TIME</b>	: Push Button switch provided to select Preset Time or Counts.

## SCALER

<b>INPUT</b>	: Compatible to internal Analyser output.
<b>PULSE PAIR RESOLUTION</b>	: 1 $\mu$ sec.
<b>RANGE</b>	: 0 to 999999 counts.

## EHT / LV

<b>EHT</b>	: Output available on EHT marked connector provided on rear panel.
<b>OUTPUT VOLTAGE</b>	: 0 to 2000 Volts continuously adjustable by means of a 10-turn helipot with turns indicating dial.
<b>OUTPUT CURRENT</b>	: 200 $\mu$ A max.
<b>LV OUTPUT</b>	: $\pm$ 15 Volts / 100mA o/p available on rear panel (9 pin 'D' socket) (for pre-amplifier of scintillation probe).

## POWER SUPPLY

<b>Power Supply</b>	: 230V $\pm$ 10%, 50 Hz Mains
<b>NOTE:</b>	GRS 101L is only the electronic instrument (without detector).

## SCINTILLATION DETECTOR (OPTIONAL)

PEA Scintillation Detector comprising of NaI Solid / Well type Crystal coupled with Photo multiplier tube with housing & preamplifier.

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. GRS101L/1005**

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