PROGRAMMABLE COUNTING SYSTEM

Available Model
PSI-PCS2

A system for quantitative measurement of radio-activity comprises a counting system and an appropriate detector probe and associated electronics. The counting system includes timing and counting circuits for counting the electronic pulses produced by the detector by itself or in conjunction with another device. The electronics usually comprises a High Voltage and a pulse shaping circuit which produces a conditioned electronic pulse compatible with counting system.

Salient Features

- Rechargeable battery powered operation
- Auto-Power save feature
- Key-lock switch for power control
- Alphanumeric LCD of 20 character X 4 line
- Key pad with 17 keys for enhanced user interface
- User friendly programming of parameters
- Program storage capability for re-usability
- Preset Time and Preset Counts modes of counting
- High counts capacity
- PC interface and data transfer facility

Model PSI-PCS2 is a micro-controller based instrument, which includes not only the timing and counting circuits but also encompasses electronic circuits for providing the high voltage, signal conditioning and operator interface. It is user programmable and provides to the user a number of facilities for different types of radiation measurement applications. When used in conjunction with a compatible detector probe it permits detection and counting of Alpha and Beta or Gamma and Beta not simultaneously but sequentially.

For alpha and gamma counting applications using a Scintillator-photomultiplier combination, PCS 2 provides the required high voltage through an HV connector and also includes the circuitry for noise discrimination, amplification and pulse shaping. It also provides the requisite High Voltage supply through another HV connector, the paralysis time circuitry, pulse shaping circuitry etc. appropriate for a halogen quenched GM detector for beta counting applications.

The programmability of PCS2 is characterized by the facility to set the values of the various parameters into the inbuilt non-volatile memory program memory of the instrument and to use the same over and over again. The settable (programmable) parameters include Type of Radiation, High Voltage, Discriminator bias, Amplifier gain, Paralysis Time, Start time of Counting (Manual or Real time), Mode of Counting / End Event of Counting (Preset Time / Preset Counts) .

Up to 16 programs can be stored with different preset parameter values. It allows for setting up of 99 samples wherein a (sample) number is associated with a program number. PCS2 also includes the facility to view and edit these set parameters from either the front panel or through a PC.

Compatible Detectors

Alpha Detector	ZnS (Ag) Scintillator coupled to Photomultiplier Tube
Beta Detector	GM Counter
Gamma Detector	NaI (Tl) Scintillator coupled to Photomultiplier Tube
Radon, Thoron and progeny	Lucas Cell and Lucas cell PM Probe

Detailed Technical Specifications

High Voltage and Pulse Shaping Electronics

EHT	Encapsulated Module Programmable through keypad from 100 Volts to 1200 Volts corresponding to the detector
Accuracy	0.1%
EHT Display resolution	1 Volt
Discriminator bias	0 to 2500 mV
Amplifier gain	1 to 11
Paralysis Time	250, 450,550 millisecond (Applicable for Beta only)

Timing and Counting

Counting Mode→ / Specification↓	Preset Time	Preset Counts
Maximum Number of Programs	16	
Maximum Number of groups per program	16	
Maximum Number of Cycles per group	99	
Maximum Cycle length	999 time units	
Time Units	Selectable from : Seconds, Minutes	
Maximum Number of Counting sets		16
Maximum Number of preset counts per counting set		99999
Count display resolution	1 Count	

Display and Keypad

Display	20 character X 4 line alphanumeric LCD module with blue backlight
Number of Keys	17 Keys
Numeric Keys	0 to 9
Scroll keys	4 (up, down, left, right)
Program / Edit Control keys	2 (Escape, Enter)
Standby key	Toggles to put PCS2 into standby / active mode

PC Interface

Communication Port	USB type A (device)
USB mode	PCS2 is identified as HID
Programming and data retrieval software	Windows based application software

Operating Environment

Battery	Li- ion battery, 1700 mAH with built-in intelligent charger
Mains input	230 V AC ± 10%
Dimensions & Weight	23 cm x 20 cm x 28 cm 3.5 Kg

Accessories

Alpha Source

Related products

Alpha Detector Probe Model PSI-ACD1
Beta Detector Probe Model PSI-BCD1
Gamma Detector Probe Model PSI-GCD1
Lucas Cell PM Probe Model PSI–RCD1
Low Level Radon Detection System Model PSI-LLRDS 1

Distributed and supported by
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