

PORTABLE LIQUID SCINTILLATION COUNTING SYSTEM

Model Series - SSS-22

SSS-12P-1 - SSS-22P – SSS-22-MCA – SSS-22-PAL SSS-22-PAL-ID - SSS-22-LR

FEATURES:

- MEASURES ALL ALPHA - BETA EMITTERS AND LOW ENERGY GAMMA EMITTERS – INCLUDING
 - TRITIUM, CARBON-14, SULPHUR-35, RADON
- ALPHA / BETA SEPARATION
- TRITIUM ULTRA LOW (**SSS-22-LR**)
- **SSS-22-MCA** INCLUDES GAMMA ISOTOPE IDENTIFIER
- DUAL PM TUBE DESIGN FOR COINCIDENCE VERIFICATION
- SSS-12P-1 – SINGLE SAMPLE HOLDER
- SSS-22P – THREE SAMPLE HOLDER
- SETTABLE WINDOW CAN BE SET FOR ANY ISOTOPE
- DIVERSE SAMPLE TYPE: WATER, FOOD, SOIL, FABRIC, ETC.
- ALL IN ONE UNIT– (**SSS-22-PAL**) WITH MCA (**SSS-22PAL-ID**)
- **R-232** PC INTERFACE



PRS-7-DSC
Electronics SSS-22P & LR-



SSS-22PAL
Suitcase Version
ALL-IN-ONE



PRS-7
Electronics SSS-12P-1
SSS-22P



SSS-12P-1

APPLICATION:

A Liquid Scintillation Counting System is useful for measurement of radionuclides in many materials including food, soil, water, blood, etc.

The **SSS-12P-1 & SSS-22P** Manual Liquid Scintillation Counting Systems accurately quantitatively measures Carbon-14 and most other radioactive materials.

The **SSS-22P** also measures Tritium & is exceptional for measuring low levels of Tritium, C-14, S-35, Radon. **SSS-22-LR** for Ultra Low-Level Tritium detection.

SYSTEM DESCRIPTION:

Measuring Principal: The most sensitive method of detecting and quantitating Beta emitting isotopes is to intimately mix the sample with liquid scintillation fluor and count each individual scintillation event with a photomultiplier counter.

Alpha / Beta Separation.

Count Verification for Tritium.

An Energy Analyzer further selects the pulses and delivers the true signal.

A Detection cell is optically coupled to selected photomultiplier tubes.

SSS-12P-1 has a **1 Vial Capacity – 1 PM Tube**.

SSS-22P has a **3 Vial Capacity** providing faster thru-put and easy comparison of sample to calibration standard or to background – **2 PM Tubes**

SSS-22PAL has a **3 Vial Capacity** as does the SSS-22P providing faster thru-put and easy comparison of sample to calibration standard or to background. It is an **ALL-IN-ONE** SSS-22P contained within a suitcase with electronics, detectors, and sample holders for your convenience. With MCA Isotope Identifier **SSS-22PAL-ID**.

A User Manual is provided.



TECHNICAL ASSOCIATES

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DIVISION OF



OTCQB-UCLC

PORTABLE LIQUID SCINTILLATION COUNTING SYSTEM

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GAMMA BACKGROUND RADIATION REJECTION FEATURES:

- Energy analyzer window rejects pulses with energies outside the window setting
- Optional Lead Shielding around detector.

COUNTING ASSEMBLY FEATURES:

- Excellent repeatability
- Fully light tight system
- Fail safe interlock to protect PM tubes
- High transmission optical coupling to PM tube

PM TUBE & PRE-AMP NOISE ELIMINATION FEATURES:

- Coincidence Verification with High quality Dual PM tubes and preamps.
- Fully adjustable energy analyzer window rejects low energy pulses.
- **SSS-12P-1:** 1 Vial Capacity – 1 PM Tube.
- **SSS-22P:** 3 Vial capacity for faster thru-put and easy comparison of sample to calibration standard or to the background – 2 PM Tubes
- **SSS-22P:** 3 Vial capacity provides less wait time for dark adaption of phosphor.

DATA ANALYSIS & PRESENTATION:

- Scintillation counts detected by PM tubes are processed by a fully adjustable single channel analyzer which is centered on the energy peak of the isotope being measured. This deletes both higher energy pulses from background radiation and lower energy counts from the PM tube or circuit noise. The pulses feed to a digital scaler and optional digital printer.
- This process allows long count times for measurement of very minute samples.
- USB interface to computers or data stations.

PRS-7 ELECTRONICS:

- Single Channel Analyzer (**PRS-7**)
- Detects: Alpha, Beta, Gamma, X-Ray, Tritium, Positron, Meson, Cosmic Rays – Depending On Detector Selected
- Power: Ac & Rechargeable Battery And Charger
- Three Presettable Window Positions
- Switch Selectable; Six Decades
- Computer Interface: Rs-232, **Optional:** USB
- Crystal Controlled
- Use With Any T/A Gm, Proportional, Or Scintillation Alpha, Beta, Gamma, X-Ray, Neutron Probe
- **IP65**

PRS-7-DSC

- Dual Single Channel Analyzer
- 2 Independent Detector Inputs
- Coincidence Circuit Signals If Both Detectors See A Pulse At The Same Time



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SPECIFICATIONS:

H-3 Gross Efficiency:	>50% Gross, Coincidence efficiency >10% Verified.
H-3 Gross Efficiency:	>20% Gross, Coincidence efficiency >10% Verified (SSS-22-LR)
H-3 Sensitivity:	20,000pCi/l in 30 minutes; Below 10,000 pCi/l in 3 hours (SSS-22-LR)
Count Times:	1 sec. thru 99 sec. (1 sec. increments), and 1 min. thru 99 min. (in 1 min. increments).
Voltage:	0-1500 Volts - fully user settable.
Readout:	Digital - 6 digit LCD, (LED optional).
Outputs:	Standard: Serial pulse output and R-232.
Power:	Rechargeable Lithium batteries and AC adapter
Sample Size:	Accepts standard Liquid Scintillation vials 20-25 ml.
SSS-22 PAL Case:	Weather-tight NEMA rated tough, durable, lightweight. A “tongue-in-groove” continuous O”-ring system makes the case water, moisture, and dust tight. Plus a low profile pressure release valve.
OPTIONAL:	SSS-22P: Accepts 6-7 ml vials with Optional adapter.
Scintillation Fluors:	Accepts most scintillation fluors. Perkin-Elmer Ultima Gold-LLT is recommended for H-3 counting



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