

TRITIUM MONITOR

For Public Release Level
Model # STG-4S/D & STG-5ATL

FEATURES:

- MICRO PROCESSOR TO ESTABLISH UNITS AND PARAMETERS
- COMPUTER OUTPUT
- DIGITAL ACCURACY
- SENSITIVE TO 10^{-7} $\mu\text{Ci/cc}$
- MEASURES DOES-RATE AND DOSE
- INCLUDES ALARM
- INCLUDES HARD COPY PRINTER
- DYNAMIC BACKGROUND COMPENSATION
- CAN ACTUATE COMPUTER OR REMOTE CONTROL
- MEASURES TRITIUM AS HTO IN PRESENCE OF OTHER RADIOACTIVE GASES (STG-5ATL)
- CLEANS GAS STREAM OF PARTICULATES AND IONS

GENERAL DESCRIPTION: Technical Associates' STG-4S/D and STG-5ATL tritium monitors are sensitive, rugged stack or effluent monitors for detection and measurement of airborne tritium.

The subtractive balanced chamber electrometer circuit decreases background effects to negligible levels, and the deionized and filtered intake reduces to negligible levels spuriousness based on smokes, dusts, and existing ionization in the air. Inlet and outlet hoses allow the return of monitored air to source: interiors of fume hoods, exhaust stacks, etc. The STG-5ATL will measure airborne tritium as HTO in concentrations as low as 1×10^{-7} $\mu\text{Ci/cc}$ of air in the presence of other isotopes.

All instruments are calibrated at the factory. Calibration check may be performed in the field with a license exempt microCurie level beta source.

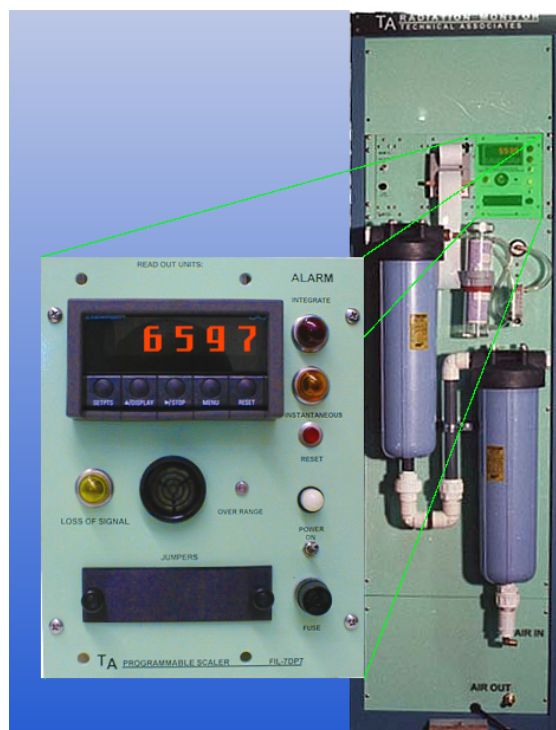


Figure 1: STG-4S/D

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TECHNICAL ASSOCIATES

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\$Revision: 1.1 \$

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SPECIFICATIONS:

Ranges:	(No range switching)
STG-4S/D:	Six decade 10^{-7} - 10^{-1} $\mu\text{Ci/cc}$ - Digital-Auto ranging.
STG-5ATL	Four decade 10^{-7} - 10^{-3} $\mu\text{Ci/cc}$ - Analog-Log Scale
Background:	Essentially eliminated by subtractive balanced chambers.
Smoke, Dust & Ion Elimination:	Filter and deionizer reduce effects to negligible levels.
Circuit:	Electrometer circuit amplifies net difference between a 50 liter tritium internal chamber and a background chamber of similar size and configuration.
Detector	
STG-4S/D:	Air stream is passed through sample chamber to measure all radioactive gas content; normally as tritium, optionally as other (e.g. Xenon, Krypton, C^{14} O_2 etc.)
STG-5ATL:	After first chamber, HTO is removed from air stream, which is then passed through second chamber. Reading of difference gives concentration of tritium as HTO in presence of other isotopes or other compounds.
Calibration:	Can be calibrated internally with tritium (or HTO) gas, or on a gamma calibration course; or can be checked at a single point with an external (not provided) beta source.
Output:	STG-4S/D - RS-232 serial output. STG-5ATL - Digital output. One count per 1×10^{-7} $\mu\text{Ci/cc}$. Optional 0-5 volt or 4-20 mA
Alarm:	High Level: Red flashing light plus warbling sound System Fault Alarm: White steady light
Remote Alarm:	TTL closure-failure. TTL closure-high level.
Hard Copy	
STG-4S/D:	32 column digital printer with RS-232 includes date & time.
STG-5ATL:	Included MRR-5 strip chart recorder gives permanent record. Covers same ranges as readout meter. 2" chart width, advance rate 2" /hour. Runs 30 days without reloading.
Dimensions:	23" wide x 66" high x 36" deep.
Shipping Weight:	635 lbs.
Optional Accessories:	Remote alarm (audible & visual) Model Ral-8 (including 25" of cable). Can be used to 500 feet. 4-20 mA for computer.
Optional Features:	Analog - 1 volt/decade Interconnection to/from port of other gas or particulate monitor. Readout as radioactive gas other than tritium.

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