

# TRITIUM AIR / STACK MONITOR

For Public Release Level and Below

Model # STG-7L2 5 Decade Concentration

Model # STG-7L2A 7 Decade Concentration

## FEATURES:

- $3 \times 10^{-10} \mu\text{Ci/cc}$  ( $10 \text{ Bq/m}^3$ ) in 24 hrs
- $5 \times 10^{-9} \mu\text{Ci/cc}$  ( $185 \text{ Bq/m}^3$ ) in 1 hr
- $1 \times 10^{-8} \mu\text{Ci/cc}$  ( $370 \text{ Bq/m}^3$ ) in 20 min
- $1 \times 10^{-7} \mu\text{Ci/cc}$  ( $3.7\text{K Bq/m}^3$ ) in 3 sec
- STABLE
- SELF CONTAINED
- RS-232 and Built-In WEB SERVER  
For Readout Anywhere in USA
- GIVES CONCENTRATION
- GIVES TOTAL DAILY RELEASE
- INCLUDES REAL-TIME ALARM
- OPTIONAL HARD COPY PRINTER
- DYNAMIC BACKGROUND COMPENSATION
- CAN ACTUATE REMOTE CONTROL
- PARTICULATE + ION INLET FILTERS
- WALL MOUNTABLE
- Optional  
MEASURES TRITIUM AS HTO IN PRESENCE OF OTHER RADIOACTIVE GASSES (STG-7ATL)



Figure 1: STG-7L2

**GENERAL DESCRIPTION:** Technical Associates' STG-7L2 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 de-ionized 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. Related models are available to selectively measure only airborne HT or only HTO or C-14 or to exclude Ar-41, Ra etc.

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

**TA**

**TECHNICAL ASSOCIATES**

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\$Revision: 1.3 \$

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## SPECIFICATIONS:

Model:	ALL MODELS BOTTOM OF RANGE	STG-7L2 TOP OF STD RANGE	STG-7L2A TOP OF EXTENDED RANGE
Rate:	$1 \times 10^{-7} \mu\text{Ci/cc}$ 0.1 pCi/cc 3.7K Bq/m <sup>3</sup>	$1 \times 10^{-3} \mu\text{Ci/cc}$ 999.9 pCi/cc 37M Bq/m <sup>3</sup>	1.0 $\mu\text{Ci/cc}$ 0.999 $\mu\text{Ci/cc}$ 37G Bq/m <sup>3</sup>

  

Model:	STG-7L2 BOTTOM OF RANGE	TOP OF RANGE	INTEGRATION TIME
Integrate for Determining Concentration:	$3 \times 10^{-10}$ (10 Bq/m <sup>3</sup> )	$1 \times 10^{-6} \mu\text{Ci/cc}$ (370 Bq/m <sup>3</sup> )	24 Hrs
	$5 \times 10^{-9}$ (185 Bq/m <sup>3</sup> )	$1 \times 10^{-5} \mu\text{Ci/cc}$ (3.7K Bq/m <sup>3</sup> )	1 Hrs
	$1 \times 10^{-8}$ (370 Bq/m <sup>3</sup> )	$1 \times 10^{-4} \mu\text{Ci/cc}$ (37K Bq/m <sup>3</sup> )	20 Min

### Integrate to Determine

**Total Daily RELEASE:** Model STG-7L2 automatically multiplies real-time concentration by your average daily stack output and reports total daily release from 0  $\mu\text{Ci/day}$  to  $10^{99} \text{ Ci/day}$ .

**Background:** Essentially eliminated by subtractive balanced chambers.

**Smoke, Dust & Ion Elimination:** Filter and de-ionizer reduce effects to negligible levels.

**Circuit:** Electrometer circuit amplifies net difference between a 25 liter tritium internal chamber and internal background chamber of identical size and configuration.

**Detector:** Air stream is passed through sample chamber to measure all radioactive gas content; normally as tritium, optionally as other (e.g. Xenon, Krypton, <sup>14</sup>CO<sub>2</sub>, etc.)

**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.



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## Level & Data Outputs

<b>Digital:</b>	RS-232 serial output. One count per second per $1 \times 10^{-7} \mu\text{Ci/cc}$ .
<b>Analog:</b>	Optional 0-5 volt or 4-20 mA.
<b>Built-in Web Server:</b>	For Intranet or Internet readout anywhere in the USA.
<b>Alarm:</b>	High Level: Red flashing light plus warbling sound. System Fault Alarm: White steady light.
<b>Remote Alarm:</b>	TTL closure for system failure. TTL closure for high level alarm.
<b>Hard Copy: (optional)</b>	32 column digital printer with RS-232 input. Includes date & time.
<b>Dimensions:</b>	36" wide x 30" high x 17.5" deep.
<b>Shipping Weight:</b>	220 lbs. (100kg)
<b>Optional Features/Accessories:</b>	Remote alarm (audible & visual) Model RAL-8 (including 25 ft of cable). Can be used to 500'. 4-20 mA for computer. Other manual range switching or auto-range features. Relay contacts for high or low alarm, or both. Interconnection to/from port of other gas or particulate monitor. Readout as radioactive gas other than tritium.



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