

TRITIUM GAS DECONTAMINATION SYSTEM

Model ~ TRI-DECON

FEATURES:

HIGH EFFICIENCY TRITIUM DECONTAMINATION

SYSTEM INCLUDES INLET & OUTLET TRITIUM MEASUREMENT:

- USER SETTABLE UNITS - $\mu\text{Ci/l}$ or Bq/m^3 etc.
- WIDE RANGE - DIGITAL ACCURACY
- PROGRAMMABLE DIGITAL READOUT
- SENSITIVE FOR OCCUPATIONAL EXPOSURE
- DYNAMIC BACKGROUND COMPENSATION
- BUILT-IN HIGH LEVEL ALARM
- BUILT-IN LOW FLOW ALARM
- IN-LINE

**CONVENIENT
&
EASY TO USE
MINIATURE TRITIUM GAS
REMOVAL FACILITY**



PTG-9 ELECTRONICS

DESCRIPTION:

Technical Associates **TRI-DECON** is a system for Tritium removal from air or gas.

- A rugged system for harsh environments.
- In-line operated.
- Inlet and outlet hoses allow decontamination of interiors of fume hoods, exhaust stacks, etc.
- User friendly controls are provided.



TECHNICAL ASSOCIATES

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US NUCLEAR CORP

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SPECIFICATIONS FOR TRITIUM MONITORS:

MID TO HIGH (PTG-9H) ~ ULTRA LOW (PTG-9)

DETECTOR:

Ranges:

PTG-9: 1×10^{-3} to $10 \mu\text{Ci/l}$ (37 KBq/m^3 to $3.7 \times 10^7 \text{ Bq/m}^3$)

PTG-9H: 1×10^{-3} to $1 \mu\text{Ci/l}$ TO $10,000 \mu\text{Ci/l}$

ELECTRONICS:

Display:

Compact, easy to read digital LCD readout.

Smoke, Dust & Ion Elimination:

Filter and deionizer reduce effects to negligible level.

Circuit:

Electrometer circuit amplifies net difference between 0.7 liter Tritium internal chamber and a sealed background chamber of similar configuration.

Alarms:

Low Air Flow, Alarm High Level Alarm: Red Lamp and Audio Alarm.

Controls:

Power, Pump On/Off, Battery Check, Set (calibration aid), Zero Adjust, Meter Programming (Two buttons).

Calibration:

Can calibrate internally with Tritium gas, or on a calibration course, or (at a single point) with optional Beta or Gamma source.

Data Port:

RS-232 serial port is built in (fully addressable).

Case:

Deep drawn aluminum case, with handle and gasket lid, easily cleanable anodized finish.

Backup Battery:

9V rechargeable sealed.

Battery Life:

20 hours between charges.
Battery charger is built-in.

WEIGHT & DIMENSIONS:

ELECTRONICS:

Dimensions:

Instrument Case (Including handle): 9"W x 13"L x 9" H.

Front Panel:

9" H x 13" Wide.

Weight:

18 lbs.

FULL SYSTEM WEIGHT & DIMENSIONS WILL BE DETERMINED BY THE REQUIRED CAPACITY & FLOW RATE PER CUSTOMER SPECIFICATION.



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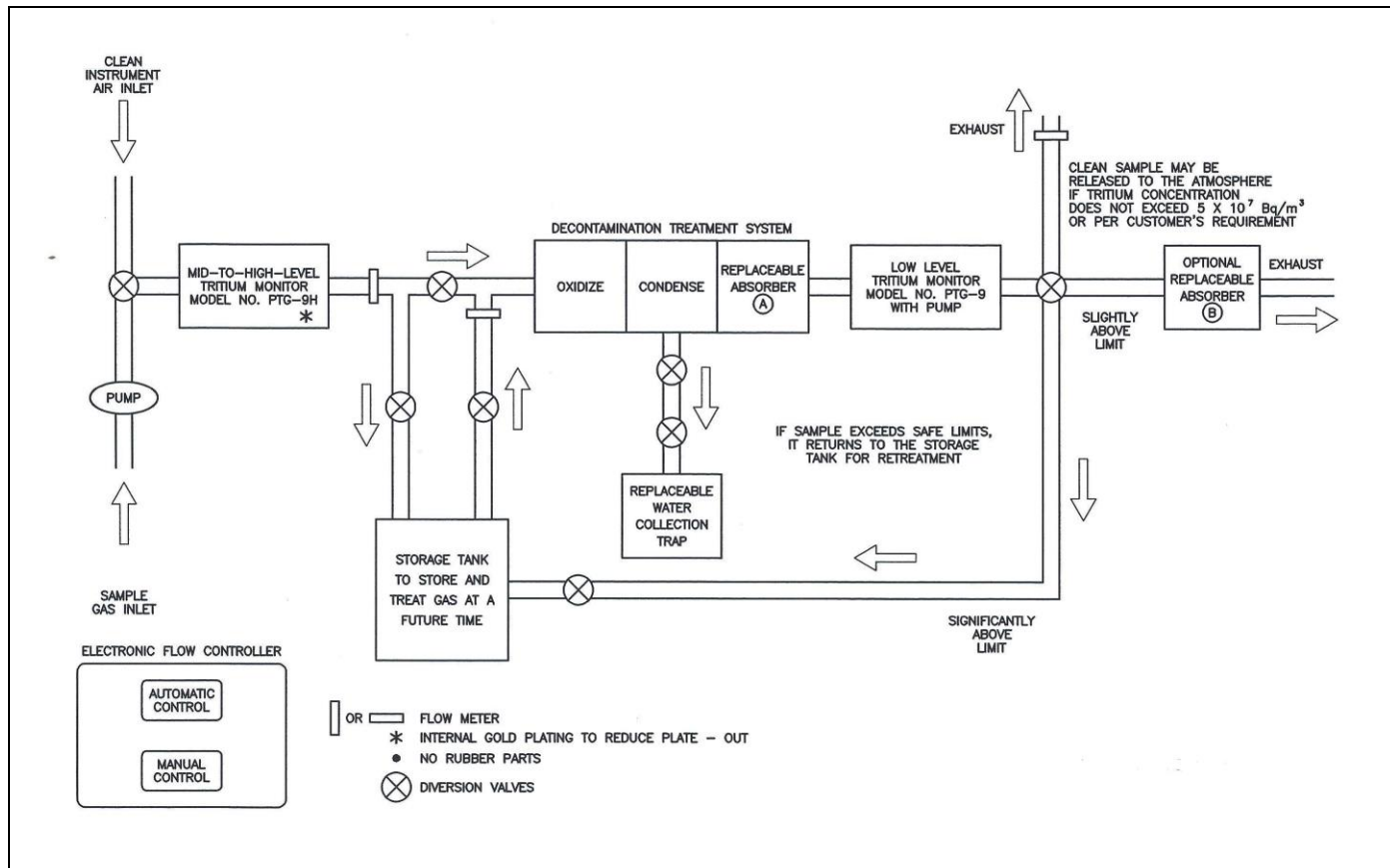
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TRI-DECON FLOW PATH

- Contaminated air or gas enters the system through a pump, goes into the Mid to High level Tritium Inlet Monitor (PTG-9H) to gauge the pre-treatment contamination level.
- It may then go straight into the treatment / decontamination system or be routed into a storage tank for later treatment.
- The treatment system starts with an oxidizer to convert any elemental Tritium (T_2 or HT) into water vapor (T_2O or HTO).
- The gas stream then enters a condenser which routes the liquid water into the water collection trap.
- In line absorber finishes the drying process of the air stream.
- Air stream passes through the low level Tritium exit Monitor (PTG-9).
- The clean sample is sorted to the exhaust.
- The dirty sample is diverted for further scrubbing, repeating the cycle until finished and clean.



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