THORIUM MOLTEN SALT REACTOR
AIR & STACK MONITOR

Model ~ MSTR-A9

FEATURES:

- SENSITIVE TO:
  - THORIUM 232
  - H-3 $10^{-7}$ µCi/cc
- READS DIRECTLY IN µCi/cc or Bq/l
- VISUAL & AUDIO ALARM
- DATA LOGGING STANDARD
- HARD COPY PRINTER – (optional)
- DYNAMIC BACKGROUND COMPENSATION
- CAN ACTUATE REMOTE CONTROLS
- CAN OPERATE IN PRESENCE OF OTHER RADIOACTIVE GASES
- MICRO PROCESSOR OPERATION
- USB and ETHERNET PORTS
- DIGITAL ACCURACY

APPLICATION:

The TA-OVERHOFF Thorium Air & Stack Monitor is a sensitive, rugged stack monitor designed and built for Thorium Molten Salt Nuclear Power Plant use. Other versions are available for research labs, room air, glove boxes and other applicable uses.
THORIUM MOLTEN SALT REACTOR
AIR & STACK MONITOR

Model ~ MSTR-A9

DESCRIPTION:

- Optional Radon Rejection decreases background effects to negligible levels.
- The deionized and filtered intake reduces to negligible levels spuriosity 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 and exhaust stacks, etc.
- All instruments are calibrated at the factory. Calibration check may be performed in the field with a license exempt µCurie level beta source.

Thorium-Tritium Air & Stack Monitor Isotope Identification Guide

<table>
<thead>
<tr>
<th>AIRBORNE ACTIVITY</th>
<th>MSTR-A9</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEMICAL FORM</td>
<td></td>
</tr>
<tr>
<td>Tritium H3</td>
<td>T₂, HTO, T₂O</td>
</tr>
<tr>
<td>Inorganic Organic</td>
<td>CO₂ Various</td>
</tr>
<tr>
<td>Particulate</td>
<td>Alpha – Thorium 232</td>
</tr>
<tr>
<td>Particulate</td>
<td>Beta</td>
</tr>
<tr>
<td>Iodine</td>
<td>OP</td>
</tr>
<tr>
<td>Noble Gas:</td>
<td>Gross/All</td>
</tr>
<tr>
<td></td>
<td>Argon</td>
</tr>
<tr>
<td></td>
<td>Xeon</td>
</tr>
<tr>
<td></td>
<td>Radon</td>
</tr>
</tbody>
</table>

Number of Channels:  YES = Measures Separately
                      RX = Rejects
                      OP = Optional
**Measurement Ranges of Optional Detectors**

<table>
<thead>
<tr>
<th>Measurement Ranges of Optional Detectors</th>
<th>From</th>
<th>4 Decade Model</th>
<th>6 Decade Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpha – Thorium 232-Particulate</td>
<td>$5 \times 10^{-8}$</td>
<td>$10^{-4}$</td>
<td>$\mu$Ci/cc</td>
</tr>
<tr>
<td>Tritium</td>
<td>$10^{-7}$</td>
<td>$10^{-3}$</td>
<td>$10^{-1}$ $\mu$Ci/cc</td>
</tr>
<tr>
<td>Inorganic C-14</td>
<td>$10^{-8}$</td>
<td>$10^{-4}$</td>
<td>$10^{-2}$ $\mu$Ci/cc</td>
</tr>
</tbody>
</table>

**SPECIFICATIONS:**

- **Background:** Elimination by subtractive balanced chambers.
- **Smoke, Dust & Ion Elimination:** Filter and deionizer reduce effects to negligible levels.
- **Circuit:** Electrometer circuit amplifies net difference between internal chamber and a background chamber of similar size and configuration.
- **Output:** USB Port is standard ethernet port is optional. - **Optional** 0-5 volt or 4-20 mA.
- **Alarm Set Point:** User settable
- **Alarm:** High Level: Red flashing light plus warbling sound; - **System Fault Alarm:** White steady light.
- **Remote Alarm:** 3 Relays
- **Data-logging:** Serial port or on-board logging

**WEIGHT & DIMENSIONS:**

- **Dimensions:** 23" wide x 66" high x 36" deep.
- **Shipping Weight:** 635 lbs.

**OPTIONS:**

- **MODEL RDX-8 Remote alarm (audible & visual) (including standard 25" of cable).**
  - Can be used to 500 feet. 4-20 mA output.
- **Hard Copy Printer.**