

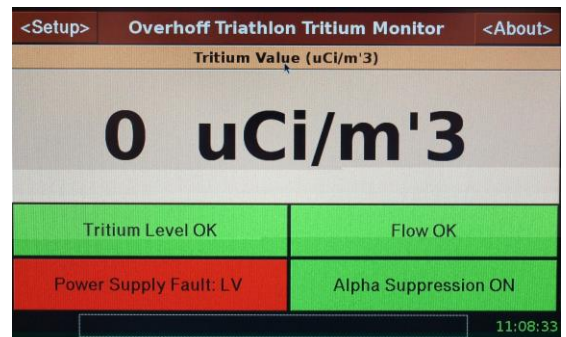
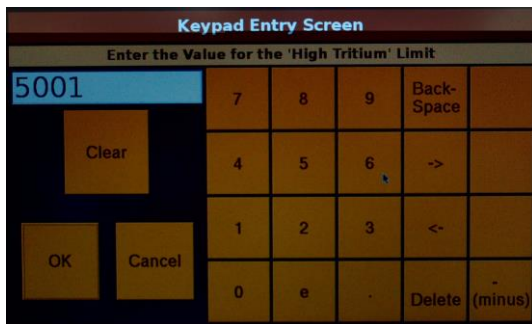
# TRITIUM & C-14 STACK MONITOR

## TRIATHALON SERIES

Triathalon CAM-TCI-H<sup>3</sup> plus Inorganic C-14 (CO<sub>2</sub>) ~Triathalon CAM-TCO- H<sup>3</sup> plus Organic C-14  
Triathalon CAM-TC – Multi-Nuclide System

### FEATURES:

- WALL MOUNT
- SENSITIVE TO:
  - H-3 10<sup>-7</sup> µCi/cc
  - CO<sub>2</sub> 10<sup>-8</sup> µCi/cc
  - Organic C-14 10<sup>-7</sup> µCi/cc
- READS DIRECTLY IN µCi/cc or Bq/l
- ALARM – USER SETTABLE
- DYNAMIC BACKGROUND COMPENSATION
- CAN ACTUATE REMOTE CONTROLS
- CAN OPERATE IN PRESENCE OF OTHER RADIOACTIVE GASES (See Chart)
- CLEANS GAS STREAM OF PARTICULATES AND IONS
- ON BOARD COMPUTER
- DIGITAL ACCURACY
- DATA ARCHIVE & DATA RETRIEVAL
- USB and ETHERNET PORTS
- OPTIONAL: TOTALIZER FEATURE



### APPLICATION:

**TRIATHALON MODEL CAM-TC Tritium & C14 Stack Monitors** are sensitive, rugged stack or effluent monitors designed and built for **Nuclear Power Plants**.

Commercial versions are available for research labs, room air, glove boxes and other applicable uses.



**TECHNICAL ASSOCIATES**

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### DESCRIPTION:

- The subtractive balanced chamber electrometer circuit and optional Radon Rejection decreases background effects to negligible levels.
- The deionized and filtered intake reduces to negligible levels spuriousity based on smokes, dusts, and existing ionization in the air.
- Inlet and outlet hoses provide return of monitored air to source: interiors of fume hoods and exhaust stacks, etc.
- An optional totalizer feature automatically computes the total Tritium release up the stack or effluent.

Airborne Activity	Model	TOTAL-6-TCI-H <sup>3</sup> Triathalon	TOTAL-6-TCO- H <sup>3</sup> Triathalon	TOTAL-6-TC- H <sup>3</sup> Triathalo	CAM-33-3-1P	CAM-33-3	CAM-33-4	CAM-33-6	CAM-3XG
	Chemical Form								
CHANNELS		3	3	3	3	3	4	6	3 OP - 4 /5
Tritium H3	T <sub>2</sub> , HTO T <sub>2</sub> O	YES	YES	YES	OP	NO	OP	YES	OP
<b>Carbon C-14:</b> Inorganic Organic	CO <sub>2</sub> Various	YES YES	YES YES	YES OP	OP OP	OP OP	OP OP	YES OP YES	OP OP
Particulate	Alpha				YES	OP	YES	YES	OP
Particulate	Beta				YES	YES	YES	YES	OP
Iodine				OP	YES	YES	YES	YES	OP
NOBLE GAS – GROSS - ALL				YES	YES	YES	YES	YES	YES
NOBLE GAS – Curie MeV									YES
ARGON				OP				OP	YES
XENON				OP				OP	YES
KRYPTON				OP				OP	YES
RADON		RX	RX	RX				OP - RX	

**Number of Channels:** YES = Measures Each Separately; RX = Rejects; OP = Optional

**NOTE:** TOTAL-6-TCO- H<sup>3</sup> = Tritium plus Organic C-14 –  
TOTAL-6-TCI- H<sup>3</sup> = Tritium plus Inorganic C-14

**Models TOTAL-6-TCO-H<sup>3</sup> & TOTAL-6-TCI- H<sup>3</sup> work best if no other nuclides are present**



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### SPECIFICATIONS:

Measurement Ranges of Optional Detectors	From	4 Decade Model	6 Decade Model
Tritium	10 <sup>-7</sup>	10 <sup>-3</sup>	10 <sup>-1</sup> uCi/cc
Inorganic C-14	10 <sup>-8</sup>	10 <sup>-4</sup>	10 <sup>-2</sup> uCi/cc
Organic C-14	10 <sup>-9</sup>	10 <sup>-5</sup>	10 <sup>-3</sup> uCi/cc
Alpha particulate	5 x 10 <sup>-8</sup>	10 <sup>-4</sup>	10 <sup>-6</sup> uCi/cc

### ELECTRONICS:

- Circuit:** Electrometer circuit amplifies net difference between a 30 liter Tritium internal chamber and a background chamber of similar size and configuration.
- Calibration:** Can be calibrated internally with Tritium (or HTO) and CO<sub>2</sub> gas,  
OR on a Gamma calibration course;  
OR can be checked at a single point with an external (not provided) Beta source.  
Organic Carbon Channel can be calibrated with C-14 disk source.
- All instruments are calibrated at the factory. Calibration check may be performed in the field with a license exempt µCurie level Beta source
- Alarm:** High Level: Red flashing light plus warbling sound  
System Fault Alarm: White steady light
- Remote Alarm:** 3 Relays provided for operators use
- Output:** USB Port is standard ethernet port is optional  
Optional 0-5 volt or 4-20 mA.
- Data-logging:** USB Serial port or on-board data logging optional
- Background:** Essentially eliminated by subtractive balanced chambers.  
**Optional** - Radon Rejection
- Smoke, Dust & Ion Elimination:** Filter and deionizer reduce effects to negligible levels.
- Construction:** Rugged, Carbon Steel, Wall Mount Enclosure

### WEIGHT & DIMENSIONS:

- Dimensions:** 16"W x 20"H x 9"D (40.6 x 50.8 x 22.8 cm)
- Shipping Weight:** 60 lbs.(27.2 kg)

### OPTIONAL:

- Interconnection to / from port of other gas or particulate monitors
- Alarm:** Remote Alarm (audio & visual) (Model RDX-8) includes 25" of cable.  
Can be used to 500 feet. 4-20 mA for computer.



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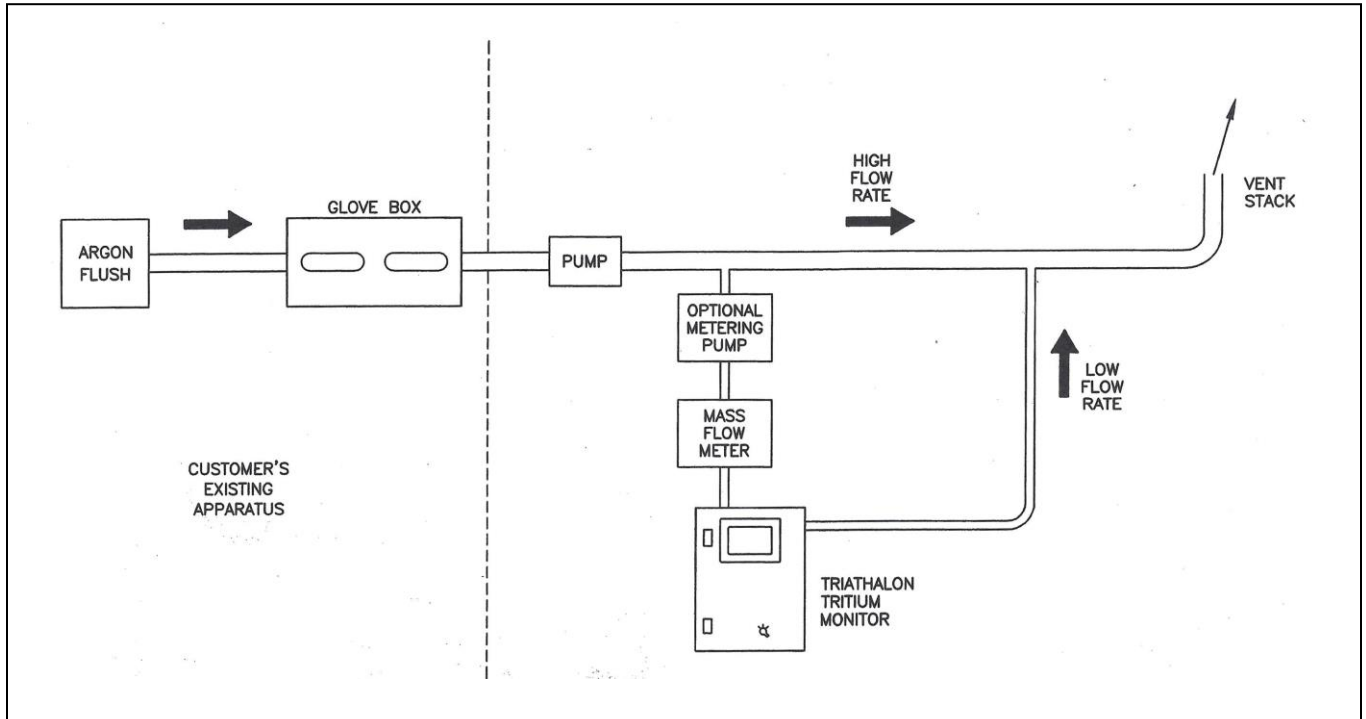


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TRIATHALON SERIES FLOW CHART



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