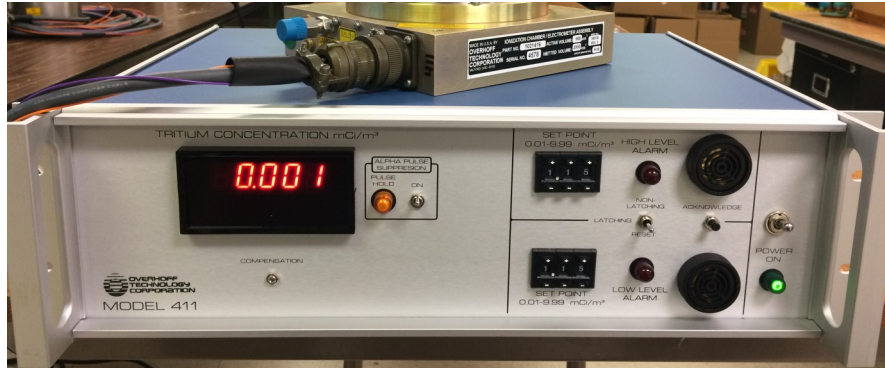


Model 411

Tritium in Air Monitor, Wide Range, Single Chamber



MODULAR TRITIUM IN AIR MONITOR WITH WIDE RANGE AND SINGLE IONIZATION CHAMBER (NON-GAMMA COMPENSATED)

The **Model 411** features an extended measurement range of up to 6.5 decades and a single ionization chamber. Useful for applications that don't require gamma compensation or for measuring higher concentrations of tritium, such as in process or glovebox applications.

Unique gold-plated, wire-grid ionization chambers are offered that are plate-out proof, reducing tritium/gamma contamination up to 1,000x, which is essential when measuring high levels of tritium.

SELECT IONIZATION CHAMBER SIZE AND RANGE

The Model 411 typically supports a single 50mL or 2L chamber depending on your desired measurement range and sensitivity:

Typical Measurement Ranges:

- Single 2L: $1 \mu\text{Ci}/\text{m}^3$ to $199.99 \text{ mCi}/\text{m}^3$, or 0.01 to $1,999.9 \text{ MBq}/\text{m}^3$
- Single 50mL: 0.01 to $1,999.9 \text{ Ci}/\text{m}^3$ or 0.001 to $199.99 \text{ TBq}/\text{m}^3$
 0.001 to $199.99 \text{ Ci}/\text{m}^3$ or 0.1 to $19,999 \text{ GBq}/\text{m}^3$

SELECT DISPLAY TYPE

The Model 411 is available in two different display types:

SDD, Standard Digital Display (1-19,999 range)
PDD, Programmable Digital Display (1-99,999 range)

Alarm system includes: two adjustable tritium level alarms, audible and visual indicators, acknowledge (mute), latching or non-latching modes, and up to three alarm relays (two level relays and one malfunction relay)

Optional alarm indicators: low flow alarm and malfunction alarm (low voltage failure, high voltage failure, or electrometer failure).

Unless otherwise requested, the ionization chamber is remotely mounted (25 ft cable standard) from the 411 electronics. An external pump system can be added that consists of a pump, filter, and flowmeter assembly.

Applications:

- ◇ Room air
- ◇ Stacks, Hoods, or other effluents
- ◇ Process piping
- ◇ Glove boxes
- ◇ Wide Measurement Range
- ◇ Remotely Mounted Detector
- ◇ Modular customization of detectors, range, alarms, outputs, pump system

AVAILABLE OPTIONS:

- ◇ Pump, Filter, and Flowmeter Assembly
- ◇ Remote Alarm and Display Units
- ◇ RS232, USB, Ethernet Output
- ◇ Gold Plated / Wire Grid Electrodes
- ◇ Logarithmic/4-20mA Output
- ◇ Helium Leak Test
- ◇ Tritium Gas Calibrator and Calibration Resistor
- ◇ Detachable Electrometer
- ◇ Alpha Pulse Suppression

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TECHNICAL SPECIFICATIONS

RANGES

Available in the following typical ranges:

	Ci	Bq
2 Liter:	1 $\mu\text{Ci}/\text{m}^3$ to 199.99 mCi/m^3	0.01 to 1,999.9 MBq/m^3
50mL:	0.01 to 1,999.9 Ci/m^3 0.001 to 199.99 Ci/m^3	0.001 to 199.99 TBq/m^3 0.1 to 19,999 GBq/m^3

Note: Additional or wider ranges and configurations may be available.

DISPLAY

4 ½ digit panel meter (standard digital display)

ACCURACY

±10 % of reading

ALARM SYSTEM

-two independent level alarms, with adjustable set point via 3-digit thumb-switch
mode: three position toggle switch selector for latching or non-latching modes and reset
indicators: alarm condition activates a visual red LED flashing indicator, acoustic indicator, and failsafe relay closure
mute: acknowledge push button to silence acoustic indicator after alarm is tripped

includes up to 3 alarm relays: two level alarm relays and one malfunction alarm relay

OPTIONAL alarms include: low flow alarm and system failure alarm (high and low voltage failure, electrometer failure)

OFFSET COMPENSATION

compensation control provided to offset the effects of gamma and/or tritium buildup

ENVIRONMENTAL

storage: -40° C to +60° C
operating: 0° C to +50° C
0 to 95 % R.H. non-condensing

ENCLOSURE

5.25" H x 17" W x 13" D, 15 lbs.
115-220VAC, 50/60 Hz

OPTIONS:

Pump, Filter, and Flowmeter Assembly (ordering code: PFA)

Externally mounted pump, filter, and flowmeter assembly.

USB, Ethernet, or RS-232 Data Output

4-20mA Output and Log Converter Board (ordering code: 4-20mA)

Remote Display Unit with digital display and audible alarm (ordering code: RDU)

Alpha Pulse Suppression (ordering code: APS)

Eliminates instrument response to unwanted radon.

Low Flow Alarm (ordering code: LFA)

System Failure Alarm Monitor (ordering code: SFM)

Detects and signals failure of low/high voltage power supplies and electrometer failure.

Gold Plated Chamber (ordering code: GP)

Reduces effects from tritium plate out contamination

Wire-Grid Electrode (ordering code: WG)

Special wire-grid chamber reduces tritium plate out contamination by up to 1000x



Wire-Grid Chamber Design, reduces tritium contamination by up to 1000x

Released 10/26/20