



# Model 321-HMI

## Smart Tritium in Air Monitor

### Single Range, Dual or Quad Chamber

#### MODULAR TRITIUM IN MONITOR WITH A SINGLE RANGE AND DUAL/QUAD IONIZATION CHAMBERS

The **Model 321-HMI** features a single measurement range of up to 4.5 decades and either dual 2L or quad 2L ionization chambers for gamma compensation. Useful for measuring low levels of tritium which require gamma compensation.

Quad 2L chamber assembly arranged in a cruciform geometry provides the best sensitivity, stability, and omnidirectional gamma compensation.

A color-touch screen display interface replaces the standard digital display and discrete controls used in the standard Model 321.



#### SELECT IONIZATION CHAMBER SIZE AND RANGE

The Model 321-HMI typically supports two different chamber sizes and ranges:

##### Typical Measurement Ranges:

1. Dual 2 Liter: 1 to 19,999  $\mu\text{Ci}/\text{m}^3$  or 0.1 to 1,999.9  $\text{MBq}/\text{m}^3$
2. Quad 2 Liter: 0.1 to 1,999.9  $\mu\text{Ci}/\text{m}^3$  or 0.01 to 199.99  $\text{MBq}/\text{m}^3$

##### Applications:

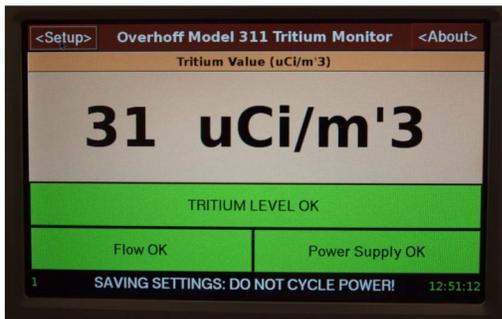
- ◆ Room air
- ◆ Stacks, Hoods, or other effluents
- ◆ Process piping
- ◆ Glove boxes
- ◆ Gamma Compensation
- ◆ Remotely Mounted Detector
- ◆ Modular customization of detectors, range, alarms, outputs, pump system

#### HMI TOUCH-SCREEN DISPLAY

The Model 321-HMI includes a LCD touch-screen display to handle all controls (alarm set-points), indicator, and display functions.

Alarm system includes: two adjustable tritium level alarms, audible and visual indicators, low flow alarm and system failure alarm (high voltage failure, low voltage failure, or electrometer failure), and up to 3 alarm relays (two level alarm relays and one malfunction alarm relay).

Unless otherwise requested, the ionization chamber is remotely mounted (25 ft cable standard) from the 321 electronics. An external pump system can be added that consists of a pump, filter, and flowmeter assembly.



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#### TECHNICAL SPECIFICATIONS

<b>RANGES</b>	<u>Available in the following ranges:</u> <b>Dual 2 Liter:</b> 1 to 19,999 $\mu\text{Ci}/\text{m}^3$ * 0.1 to 1,999.9 $\text{MBq}/\text{m}^3$ * <b>Quad 2 Liter:</b> 0.1 to 1,999.9 $\mu\text{Ci}/\text{m}^3$ 0.01 to 199.99 $\text{MBq}/\text{m}^3$
	*Can also be configured for extra sensitivity down to 0.1 to 1,999.9 $\mu\text{Ci}/\text{m}^3$ or 0.01 to 199.99 $\text{MBq}/\text{m}^3$
<b>DISPLAY</b>	LCD touch-screen display
<b>ACCURACY</b>	$\pm 10$ % of reading
<b>ALARM SYSTEM</b>	-two independent level alarms, with adjustable set point <i>low level:</i> activates non-latching steady visual red indicator and audible alarm <i>high level:</i> activates latching flashing visual red indicator and pulsing audible alarm -low flow alarm: differential pressure switch, activates audible and visible alarm -system failure alarm: high or low voltage out of tolerance and electrometer failure  includes up to 3 alarm relays: two level alarm relays and one malfunction alarm relay
<b>RESPONSE RATE</b>	two linear electronics time constants, automatically switched
<b>OVER RANGE INDICATOR</b>	the LCD will flash "OVER RANGE" when the range has been exceeded
<b>OFFSET COMPENSATION</b>	compensation control provided to offset the effects of gamma and/or tritium buildup
<b>DATA LOGGING</b>	USB port for the attachment of a memory stick
<b>DATA OUTPUT</b>	ethernet
<b>ENVIRONMENTAL</b>	storage: $-40^\circ\text{C}$ to $+60^\circ\text{C}$ operating: $0^\circ\text{C}$ to $+50^\circ\text{C}$ 0 to 95 % R.H. non-condensing
<b>ENCLOSURE</b>	19" rack mounting, 8.75" H, 14" D 115-220VAC, 50/60 Hz

#### OPTIONS:

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

Externally mounted pump, filter, and flowmeter assembly.

**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.

**Gold Plated Chamber (ordering code: GP)**

Reduces effects from tritium plate out contamination, useful for high tritium concentrations

**Wire-Grid Electrode (ordering code: WG)**

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

**Detachable Electrometer (ordering code: ELEC)**

**Helium Leak Testing (ordering code: HLT)**



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

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