



Model 421-HMI

Smart Tritium in Air Monitor

Wide Range, Dual or Quad Chamber

MODEL 421-HMI

MODULAR TRITIUM IN AIR MONITOR WITH WIDE RANGE AND DUAL OR QUAD IONIZATION CHAMBERS

The **Model 421-HMI** features an extended measurement range of up to 6.5 decades and either dual 2L or quad 2L ionization chambers for gamma compensation. Useful for measuring low levels of tritium across wide ranges.

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 421.

SELECT IONIZATION CHAMBER SIZE AND RANGE

The Model 421-HMI typically supports two different chamber sizes and ranges:

Typical Measurement Ranges:

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

HMI TOUCH-SCREEN DISPLAY

The Model 421-HMI includes a LCD touch-screen display to handle all controls (alarm set-points), indicator, and display functions.

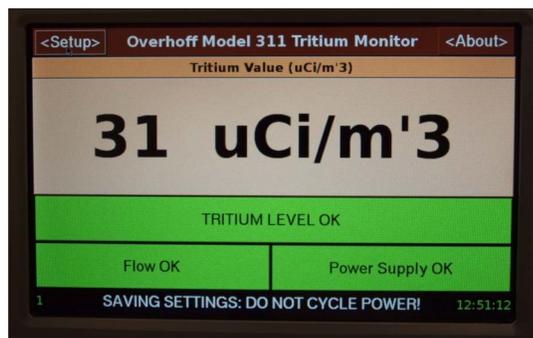
Alarm system includes: two adjustable tritium level alarms, audible and visual alarm indicators, low flow alarm and system failure alarm (high voltage failure, low voltage failure, or electrometer failure), and up to 3 alarm relays (two level alarm relays and one malfunction alarm relay).

Unless otherwise requested, the ionization chamber is remotely mounted (25 ft cable standard) from the 421 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
- ◆ Gamma Compensation
- ◆ Wide Measurement Range
- ◆ Remotely Mounted Detector
- ◆ Modular customization of detectors, range, alarms, outputs, pump system



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TECHNICAL SPECIFICATIONS

RANGES	<u>Available in the following ranges:</u> Dual 2 Liter: *1 $\mu\text{Ci}/\text{m}^3$ to 199.99 mCi/m^3 *0.1 to 1,999.9 MBq/m^3 Quad 2 Liter: 0.1 to 19,999 $\mu\text{Ci}/\text{m}^3$ 0.01 to 1,999.9 MBq/m^3 *Can also be configured for extra sensitivity down to 0.1 to 19,999 $\mu\text{Ci}/\text{m}^3$ or 0.01 to 1,999.9 MBq/m^3 Note: Additional or wider ranges and configurations may be available.
DISPLAY	LCD touch-screen display
ACCURACY	± 10 % of reading
ALARM SYSTEM	-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 steady visual red indicator -system failure alarm (high or low voltage out of tolerance, or electrometer failure) includes up to 3 alarm relays: two level alarm relays and one malfunction alarm relay
RESPONSE RATE	two linear electronics time constants, automatically switched
OVER RANGE INDICATOR	the LCD will flash "OVER RANGE" when the range has been exceeded
OFFSET COMPENSATION	compensation control provided to offset the effects of gamma and/or tritium buildup
DATA LOGGING	USB port for the attachment of a memory stick
DATA OUTPUT	ethernet
ENVIRONMENTAL	storage: -40°C to $+60^\circ\text{C}$ operating: 0°C to $+50^\circ\text{C}$ 0 to 95 % R.H. non-condensing
ENCLOSURE	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

Helium Leak Testing (ordering code: HLT)



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

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