



### MODEL 357RM

#### LOW COST MONITOR FOR DETECTION AND MEASUREMENT OF AIR BORNE TRITIUM

The model 357 tritium monitor is stable to  $1 \mu\text{Ci}/\text{m}^3$ . (1 S.D.)

Only OTC tritium monitors are designed and built to distinguish tritium against natural radon background. Instruments that do not have this feature will exhibit a noisy zero response even if the electronics is claimed to be stable.

With radon rejection, the Model 357 ignores radon and is, therefore, fast, sensitive and accurate. Once adjusted, it is long-term zero stable and, due to special electrometer design, its span calibration is permanently stable.

These monitors are simplified versions of OTC 300 series monitors which have been in continuous service for twenty years. They come in rack mount configuration and are also suited for table top use.

The only maintenance required for Model 357 is periodic service of the pump and replacement of the dust filter.

The sensitivity and noise level of Model 357 is superior to current competitive instrumentation by an order of magnitude.

#### OPTIONAL EQUIPMENT AVAILABLE

- Remote Alarm Units
- Remote Meter Displays
- Tritium Gas Calibrator
- Calibration Resistor
- RS232 Output
- Logarithmic Output
- 4-20mA Output
- Plate-Out proof wire grid chamber

**TECHNICAL SPECIFICATIONS**

MEASUREMENT	Tritium in Air Concentration
RANGE	1 – 19,999 $\mu\text{Ci}/\text{m}^3$
DISPLAY	Digital Meter, 4½" digit LED
ACCURACY	$\pm 10\%$ of reading, $\pm 1 \mu\text{Ci}/\text{m}^3$ , whichever is greater
STABILITY AND DRIFT LONG TERM	$\pm 1 \mu\text{Ci}/\text{m}^3$ , ambient temperature
NOISE	$\pm 1 \mu\text{Ci}/\text{m}^3$ , 2 sigma, with 20 second time constant
GAMMA COMPENSATION	second ionization chamber of equal volume, coaxially mounted, serves to cancel effects of external gamma fields
RESPONSE RATE ELECTRONICS	two linear time constants 20 seconds for measurements below approximately $80 \mu\text{Ci}/\text{m}^3$ 3 seconds for measurements above $80 \mu\text{Ci}/\text{m}^3$
ALARM SYSTEM	single alarm, with set point adjustable from 1 to $1,000 \mu\text{Ci}/\text{m}^3$
INDICATORS	acoustic signaler, red LED
IONIZATION CHAMBER VOLUME	measuring: 1,600 $\text{cm}^3$ total wetted: 2,000 $\text{cm}^3$
ION TRAP	Kanne Type, coaxial integral
PORTS	hose barb fittings for 3/16" I.D. vinyl tubing
FLOWMETER	0-10 LPM adjustable rotameter
DUST FILTER AND PUMP	High efficiency respirator type cartridge. Long life continuous duty oscillating piston positive displacement pump
ENVIRONMENTAL	Storage Temperature: $-40^\circ\text{C}$ to $+60^\circ\text{C}$ Operating Temperature: $0^\circ\text{C}$ to $+50^\circ\text{C}$  Humidity: 0 to 95 % RH non-condensing
POWER	115 VAC or 240VAC, 50/60 Hz
PHYSICAL CABINET	19" rack mount, frame constructed of aluminum extrusions, front and rear panel are 1/8" thick aluminum. Covers are aluminum sheet.
DIMENSIONS	8.8" [223mm] H x 19.0" [483mm] W x 16.0" [406mm] D
WEIGHT	40 lbs. [18.2Kg]
OPTIONS	Plate-out proof chamber design  Choice of one additional output; RS232 Serial Data, 4-20mA or logarithmic Output

**PARTS LIST FOR MODEL 357 TRITIUM MONITOR**

<u>Qty Req'd</u>	<u>Part No.</u>	<u>Description</u>
1	VCO-201-E1	120VAC Pump
	or	or
1	VCO301-P2	240VAC Pump
1	803562	HEPA Filter Cartridge (pack of three)
1	2-231-S604-70	O-Ring for Filter Cover (pack of ten)
1	2-036-S613-60	O-Ring for Filter Housing (pack of ten)
1	VFA-24-SSV	Flow Meter
1	AP-141-12-1	Digital Panel Meter, 120VAC
	or	or
1	AP-141-12-2	Digital Panel Meter, 240VAC
1	A41-43-36	Mains Transformer
1	A14-2.5-36	Transformer for High Voltage Power Supply
1	100251-ASSY	Main PCB Assembly for Model 357
1	100511-Model 357	4-20mA Output & Logarithmic Converter Board
1	100512-357	RS-232 Output Board
1	KL-701	Knob Lock for Compensation Control
1	MS91528-1N2B	Knob for Compensation Control
1	MDL-1	Fuse, 1 Amp (pack of 5)
1	17501	AC Power Cord
1	1020934	Ionization Chamber Assembly for Model 357
	or	Dual Solid Wall Electrodes
		or
1	1020974	Ionization Chamber Assembly for Model 357
		Wire Grid Measure Side and Solid Wall
	or	Compensation Side
		or
1	1021101	Ionization Chamber Assembly for Model 357
		Dual Wire Grid Electrodes