

# C-14 AIR & STACK MONITOR

## C-14 空气&烟囱道监测器

MODEL # CARB F—9A  
MODEL # CARB F—9B  
MODEL # CARB F—9C

Continuous Multiple Readouts: Net Organic C-14, Inorganic C-14 and Iodine and Particulates – (CARB-9C)  
连续多重读数: 净有机 C-14, 无机 C-14, 碘和粒子-(CARB-9C)

### FEATURES:特点

AIRBORNE CONCENTRATION 气溶胶浓度

- INTEGRATED EXPOSURE 综合辐射暴露
- HIGH SENSITIVITY 高灵敏
- REAL TIME ALARM 实时报警
- LINE OPERATED 电源线供电
- SEMI-PORTABLE 半便携
- STANDARD FM-9 MODULES 标准 FM-9 模块
- CAN DRAW AIR FROM HOOD, DUCT, ETC. 从风柜, 烟道等处抽取气体
- QUICK CHANGE FILTER 快速更换滤尘器
- REGULATED AIR FLOW 调节气流
- COMPUTER PORT – USB OR ETHERNET 电脑接口-USB 或以太网
- DATA LOGGER - BUILT-IN 数据录入器-内置
- DATA ANALYSIS BUILT-IN 数据分析仪-内置



### APPLICATION:应用

The **CARB F9** Air Monitors assure safety against airborne radioactivity contamination by means of constant check with alarm and record capability. It provides integrated exposure information and can provide hard copy via external printer or computer. It is a complete system but may be expanded per need with modules of the FM-9series. The **CARB F9 is more sensitive and versatile version** of the broadly used long time standard, the FM-5-ABNI. They may be used to monitor stack effluent down to EPA levels as well as hoods, glove box or workplace air.

CARB- F9 空气监测器使用带报警记录功能通过连续检测气溶胶辐射污染方式以确保安全。提供综合一体辐射暴露信息, 通过外接打印机或电脑提供硬拷贝。此系统完全一体, 但如需要可用 FM-9 模块系列进行功能拓展。CARB F9 比长期广泛使用的标准版本 FM-5-ABNI 更灵敏更多功能, 可以测量烟囱道排放物, 排风管, 手套箱或车间空气低到 EPA 标准

DESCRIPTION: The CARB F9 uses combination of charcoal, Ascarite or Soda-Lime filters in TA's unique quick change, no leak holder to trap Carbon-14 in CO<sub>2</sub> and particulate and aerosol forms. The filters are under constant surveillance via a thin window beta detector. Air is drawn by a regulated pump through the inlet hose and exhausted via a flow meter through the exhaust hose. These hoses may be extended to allow monitoring of hoods, glove boxes, stacks, etc. Time is recorded by a timer wired into the pump circuit. The unit is completely self-contained and semi-portable. Complete with 10 filter cartridges.

描述: CARB F9 使用结合使用炭, 碱石棉或钠石灰滤尘器, TA 独有快速更换无泄漏卡托捕获气溶胶, 尘粒和 CO<sub>2</sub> 中碳-14 滤器通过一个薄窗 β 探头被持续监测。通过进气软管空气被一个调节泵吸入, 流经流量表通过排气管排出。这些软管可延伸长度以便监测排风管, 手套箱, 烟囱道等。时间由一个连接到泵线路的定时器记录下来, 此装置完全一体, 半便携, 带 10 个滤芯。

### SPECIFICATIONS 规格

Sensitivity: Limit of sensitivity organic and inorganic (C-14) at 120 liters/minute air flow rate is  $4 \times 10^{-9} \mu\text{Ci/cc}$  Integrated over an 8 hour period, or  $8 \times 10^{-10} \mu\text{Ci/cc}$  for a 40 hour period. This corresponds to 0.6% of the California Safety Code Title 17 and USNRC Title 10 limit for 40 hour weekly exposure to most hazardous beta and/or gamma emitter in absence of Ac227.

灵敏度: 流量 120L/min 有机和无机 C-14 综合暴辐 8 小时, 灵敏度值为  $4 \times 10^{-9} \mu\text{Ci/cc}$  或 40 小时值为  $8 \times 10^{-10} \mu\text{Ci/cc}$ .

这符合加州安全法则 17 条和 USNRC 第 10 条标准-即在无 Ac227 情况下每周 40 小时暴露在最危险 β 和/或 γ 发



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射体下的辐射值

•Detector: Two each - 2" diameter probes with thin mica window, thin sealed gas detector, Model T-1190 for sensitivity to C-14 beta, Ion Chamber for CO<sub>2</sub> and Na I Scintillator for Iodine

探头: 两个- 2"直径探头带云母窗, 薄密封气体探头, 型号 T-1190 测量 C-14 β 灵敏度, 电离室用于 CO<sub>2</sub>, Na I 闪烁体用于碘。

•Electronic Modules Include: 电子模块包括

•MV-5.12.24: Power Supply

MV-5.12.24: 电源

•MAC-59: Air Control Timer; Low Flow Alarm Flow-meter

MAC-59: 空气控制定时器, 低流报警率表

•MGA-5202: Amplifier and bias voltage

MGA-5202: 扩音器和偏置电压

•FM-9 On Board computer with color monitor

FM-9 机载电脑带彩屏

•Data Analyzer and Display: Imbedded processor

数据分析和显示 嵌入式处理器

•Pump: Ultra quiet pump 115V 60Hz 2A. (230 V 50-60 Hz optional).

泵: 超静音泵 115V 60Hz 2A. (230 V 50-60 Hz 可选).

•Shielding: 1" lead equivalent shielding encloses sample and detector.

屏蔽 1"铅屏包围在样品和探头周围

•Available Ranges: 1 x 10<sup>-5</sup> to 1.000 μCi/l (370 to 3.7 x 10<sup>6</sup>Bq/M<sup>3</sup>) Other ranges, higher, lower are available

可达到量程 1 x 10<sup>-5</sup> -1.000 μCi/l (370 - 3.7 x 10<sup>6</sup>Bq/M<sup>3</sup>), 其它量程, 或高或低均可设计

•Alarm: Settable. 2000 Hz beeper and screen display.

报警 可设定 2000 Hz 蜂鸣音和屏显

•Engineering Units User can specify measurement units Bq/ M<sup>3</sup>, μCi/l or any other units.

单位 用户可指定测量单位 Bq/ M<sup>3</sup>, μCi/l 或任何其它单位

•Response Time: Settable 1 second to 40 hours.

响应时间 可设定 1 秒到 40 小时

•Readout: 7" Color LCD monitor built-in for digital and graphic user data display.

读数 7"彩色 LCD 显示器, 内置, 用于显示用户数字和图谱数据

•Power: 115V, 50-60 Hz (230 V optional).

电源 115V, 50-60 Hz (230 V 选择).

•Flow Rate: Regulated. Normally set at 50 liters/min.

流量 调节, 正常设定在 50L/分钟

•Filters: Includes package of 10 filters changes from the chart.

滤尘器 包括 10 个滤芯, 如图进行更换。

•Case Electronics housed in enameled aluminum case; carrying handles optional.

箱 电子学封装在铝箱中, 可选购提手

•Dimensions: Excluding pump and detector assembly: 20"W x 13"Hx 18" D.

尺寸: 不含泵和探头组件 20"W x 13"Hx 18" D.

探头组件 6"W x 12"H x 6" D.

泵组件 7"W x 8"H x 15"D.

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•Shipping Weight: 84lbs

装运重量 84 磅



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DESCRIPTION 描述	CARB F-9
Read-out Units (Typical) 读出单位 (典型)	Bq/m <sup>3</sup> μCi/cc
Measures 测量	Airborne Concentration
State of the Art Hardware 最新科技, 硬件	Calculations by Imbedded Processor On Board Data Logger 嵌入式处理器计数, 机载数据录入器
Available options 选项	Optional Electronic mass flow-meter 电子质量流量计



FILTER CARTRIDGE 滤筒	SUCCESSFUL GAS TRAPPING 成功捕获气体	COMMENTS 备注
Activated Charcoal 活性炭	All active airborne Chemicals 所有气溶胶化学物	Including Iodine and Organic C-14 包括碘和有机 C-14

				Models:	CARB-	F9A	F9B	F9C
Collectors	Target	Detects emitters	Detector type	Detectors number	Readouts			
Particulates	Various	Beta	2"dia gm	1	no	no	yes	
Chemicals (gross)	Organic C-14 +Iodine	Beta	2"dia gm	2	yes	yes	yes	
Chemicals	Iodine-131 etc.	Gamma	Nal(Tl)	3	no	yes	yes	
	Net Organic C-14			(2-3)	no	yes	yes	
Gases	Inorganic C-14 (CO <sub>2</sub> )	Beta	Ion-Chamber	4	yes	yes	yes	
	Total Carbon-14			4+ (2-3)	no	no	optional	
<b>OPTIONS</b>								
CART MOUNT								
Noble Gas Subtraction								
Subtraction of other beta+gamma emitters, in addition to I-131 (shown above)								
<b>NOTES:</b>								
High levels of other airborne radioactivity will result in higher variability and decreased accuracy.								

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