

The Thermo Scientific Model PCM-2 provides rapid and convenient detection, localization and control of alpha and beta/gamma personnel contamination.

## PCM-2 Alpha/Beta Personnel Contamination Monitor

The enhanced counting geometry of the PCM-2 uses an array of 34 counting zones contoured in both the vertical and horizontal planes with 16 gas flow



proportional detectors. This allows the PCM-2 to accurately measure alpha and low energy beta contamination over the entire surface of the body. Earlier designs with flat banks of proportional detectors

could only detect higher energy beta contamination. The new geometry, and its related ability to detect alpha contamination, allow the PCM-2 to measure radon progeny and correct for them.

The PCM-2 is the first whole body contamination monitor that can eliminate nuisance alarms caused by the radon progeny attached to clothing. Each of 34 counting zones has separate, simultaneous alpha and beta/gamma channels. Also up to 75 "Sum Zones" can be defined as 2, 3, or 4 adjacent detectors for maximum detection of contamination that is spread over multiple detectors. Sum zones reduce the possibility that contamination spread across detectors will be missed. A mathematical "Sum Channel" comprised of all 34 detectors is used to detect low-level, widely distributed contamination. Individual detector channels within the PCM-2 are independently controlled by distributed microprocessors. A Pentium-class computer is also built-in to provide a user-friendly interface for the system. This enhanced controller also simplifies calibration and maintenance of the unit, and presents test results clearly to the user in an easily understood graphic format.

Enhanced counting geometry

Alpha and beta sensitivity

Radon progeny rejection

Reduced gas consumption (with optional Gas Management System)

PC-Based with distributed microprocessors

Radnet compliant & networkable

The optional voice annunciator provides user prompts to supplement the visual indicators and graphic screen. A full keyboard is stored inside the unit for setup, calibration and troubleshooting.

The PCM-2 is capable of logging measurement data in any of several formats to a hard drive, printer and/or host computer system via RS-232 or RS-485. The PCM-2 can also broadcast its results over an Ethernet network to multiple computer systems using the RadNet networking protocols.

### PCM-2 Specifications

Size:	220 x 91 x 69 cm (86.5" x 36" x 27") Depth increases to 112 cm (44") with access control option.
Weight:	300 Kg. (660 lbs.)
Operating Temperature:	0 °C to 45 °C (32 °F to 113 °F)
Counting Gas:	P-10 (90% Argon, 10% Methane) or P7.5 (92.5% Argon, 7.5% Methane).
Power:	90-132 or 180-264 V ac, 50/60 Hz, 250 Watts for the basic model.
Computer:	Controlling Pentium class-based IBM PC compatible with 8 Mbyte RAM, VGA graphics video card, serial port, parallel port.
Counting:	7.3 MHz Intel-87C51FA microprocessor with 32 kbyte EPROM.
Computers:	Separate computer controlled thresholds for beta and alpha pulses and anti-coincidence circuitry to discriminate between alpha and beta pulses.
HV Supply:	Microprocessor-based, computer-controlled high voltage adjustment up to 2,200 volts, failure sensing provided.
Detectors:	Sixteen Separate gas flow proportional detectors subdivided into thirty-four counting zones. Detectors are minus screws, fast-rebuild type with "surface mount" anode wire installation to reduce sensitivity loss around edges.

### OPTIONS

PCM2 OPT1	100 cm <sup>2</sup> hand frisking probe, gas flow proportional detector.
PCM2 OPT2A	Voice annunciator, ISA Sound Board, Speaker, software.
PCM2 OPT3	Printer Port, Printer, 9 inch Dot Matrix, Parallel Printer Cable, Mounting Shelf.
PCM2 OPT5	Access control gates, entry gate, exit gate, magnetic lock, emergency bar.
PCM2 OPT5A	Access control, Exit Gate Only, magnetic lock, emergency bar.
PCM2 OPT7H	Magnetic Swipe Card Reader.
PCM2 OPT8	Poly Film Dispenser
PCM2 OPT9	Enclosure, Gas Bottle.
PCM2 OPT11	High heel perforated grid, small hole grid plate.
PCM2 OPT12	PCM2 Gas Management System, gas manager, tubing.
PCM2 OPT15	Spare detector, Detector Assembly, Long, Detector Assembly, Medium, Detector Assembly, Small, mounting brackets, tubing.
PCM2 OPT15A	Spare detector mount, mounting brackets, tubing.
PCM2 OPT16	High sensitivity detector screen, stainless steel, etched, 88% open grid.
PCM2 OPT17	Head/shoulder position switch.

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