

The PM-7 Option 13 is a 2-step counting function that significantly increases whole body sensitivity.

## PM-7 Option 13

Optional front and back measuring software system for the PM-7 Gamma Portal Monitor.

- Microcomputer controlled
- Automatic background subtraction
- RS-232C serial communication port
- Large-area plastic scintillation detectors



**PM-7 Operation in Two-Side Measurement Mode:**  
User measures back, then front, in two steps

### PM-7 Operation in Two-Side Measurement Mode

The PM-7 2-step counting function offers better sensitivity by having the individual enter the PM-7 and being in contact with the side detectors. This method allows for an increased solid angle which significantly increases whole body sensitivity.

The individual being monitored must be in contact with the side detectors, decreasing the distance from the source to the detectors. This increases the side detector efficiency by approximately a factor of 2, depending on the isotope of concern. Overall, the 2-side measurement mode allows for better detection of 'hot particles' or internally deposited contamination.

### PM-7 Operation in Two-Side Measurement Mode

The individual being monitored places themselves in contact with the side detectors, thereby decreasing the distance from any source to the detectors. This increases the side detector efficiency by approximately a factor of 2 to 4, depending on the isotope of concern. Overall, the two-step measurement mode allows for better detection of 'hot particles' and internally deposited contamination (i.e., passive monitoring).

The user approaches the PM-7 from either direction. Once inside the portal, the PM-7 Ready lights will remain on until the user breaks one of the photoelectric switch beams installed across the side panels. The PM-7 will turn off the Ready lights and sound its recount alarm (Recount lights [white] on and sonalert beeping intermittently) if the user attempts to leave the portal without completing both measurements. The user chooses either side of the PM-7 to perform the first measurement, and positions against the chosen side (the PM-7's diagonal beam and the beam across the side detectors must both be broken in order that the PM-7 perform a measurement).

The PM-7 signals it is counting by turning off the Ready lights, turning on the Counting lights (yellow), and emitting a short beep (if enabled). At the completion of the first measurement, the PM-7 turns off its Counting lights and emits a chime if there has been no contamination alarm, indicating that it is time for

the user to position against the second side of the PM-7. If the user attempts to leave the portal at this point, the PM-7 will sound its recount alarm until the user is back in the portal, breaking the diagonal beam, or until the PM-7's Alarm Hold Time is exhausted.

The user now positions against the other side of the PM-7 (the PM-7's diagonal beam and the beam across the side detectors must both be broken in order that the PM-7 perform a measurement). The PM-7 signals it is counting by turning off the Ready lights, turning on the Counting lights, and emitting a short beep (if enabled).

At the completion of the second measurement, the PM-7 turns off its Counting lights and emits a chime if there has been no contamination alarm, indicating that the user may now exit. In the event of a contamination alarm during either of the two measurements, the PM-7 turns off its Counting lights, turns on its Contamination lights (red), and turns on its sonalert.

The alarm lasts for the PM-7's Alarm Hold Time, an editable parameter (one to 60 seconds). Pressing one of the Alarm Acknowledge buttons will silence the sonalert, or the sonalert will automatically turn off and the alarm condition will be cleared at the end of the Alarm Hold Time interval. The PM-7 will not perform a second-side measurement if a contamination alarm occurs during the first-side measurement.

If the user attempts to leave the PM-7 or back away from the detectors before a measurement is complete, the PM-7 will turn off its Counting lights, and sound its recount alarm until the user is back in position, or when the PM-7's Alarm Hold Time interval is exhausted.

The user must complete a side measurement once it has been started (the user cannot switch sides during a measurement or leave the PM-7 portal). Breaking both side beams simultaneously during a measurement will result in a recount alarm with a steady sonalert.

### Part Numbers

PM7 OPT13: PM-7 Two-Side Measurement Installation Kit

### Recommended Spare Parts

SWMI105: Photocell (Photoelectric Switch) Emitter/Receiver Set

ICAVAL4941: IC1, Low Dropout 5V, 1A Regulator

ICVCNMR101: IC2, 5 to 12V Converter

SP18K: PM-7 Master Controller Board with Two-Sided Measurement Firmware

PGMPM7M5: 27C256 EPROM containing program PM7 V5.XX

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