

Model 240 Series Alpha-Beta Floor and Wall Monitor

Features

- Quickly Surveys and Datalogs Large Areas with 173 cm (68 in.) Wide Path
- Hinged Array can be Folded for Easy Transportation
- 12 Alpha-Beta Detector Capability
- Can Use either Gas Proportional or Scintillation Detectors
- Measures and Warns Operator about Excessive Speed

Introduction

The Model 240 Alpha-Beta Floor and Wall Monitor allows a user to quickly survey large areas for alpha-beta contamination. Compatible with either gas-proportional or scintillation detectors, the Model 240 cart comes in a version that supports both floor and wall monitoring or a floor-style only version. Detector-to-surface spacing is adjustable and detectors are positioned for no “dead” zones when scanning. Gas proportional models come with a gas regulator, flowmeters, and gas lines, but the P-10 gas bottle is not included. The cart also provides two holders for spare detectors, to provide for replacement if a detector becomes damaged.

Utilizing an array of detectors instead of a single detector provides several advantages: 1) smaller detectors have lower backgrounds and thus lower minimum detectable activity (MDA); 2) smaller detectors allow the user to pinpoint the contamination; and 3) smaller detectors make it easier to maintain and replace fragile metallized polyester windows necessary for alpha detection.

The array of detectors is connected to an electronics box, which has a USB connection to a laptop. The electronics has 12 separate detector boards, each with its own settable high voltage, lower and upper thresholds, and alpha-beta count channels. The laptop display makes it easy to view all 12 detectors simultaneously, and provides setup wizards to help with establishing operating points for the detectors.

The system initially measures radiation background from the detector array, allowing the operator to see net counts during scanning. While scanning, a rolling average is checked on all 24 channels (12 each, alpha and beta) every half-second, and a momentary audible and visual alarm activates if any alarm points are exceeded. Measurements are also automatically logged to a file for subsequent reports.

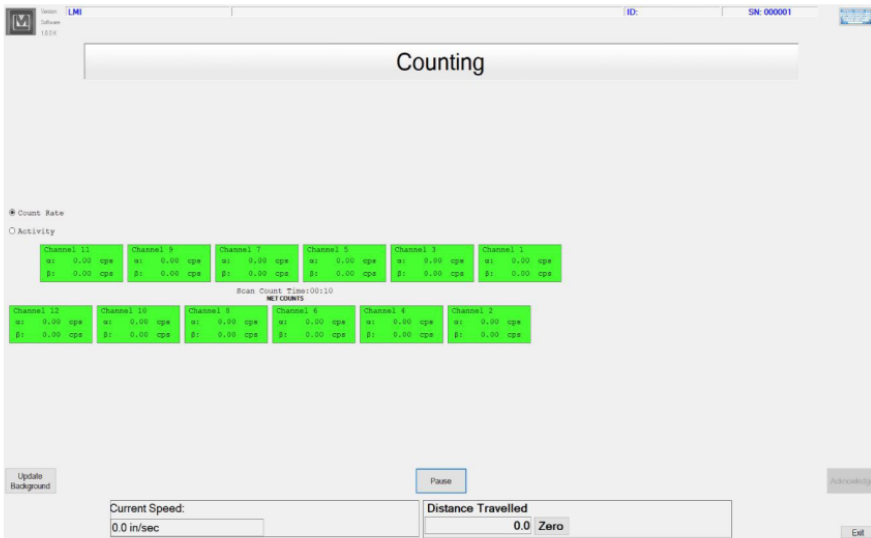


The above photo shows the gas proportional version (without cables) of the Model 240 (PN: 48-3956), in the wall monitoring position. Below is the Model 240S (PN: 48-4131), the scintillation version, shown in the floor monitoring position.



Model 240

Alpha-Beta Floor and Wall Monitor



Shown above is the counting screen, which is displayed on the provided Toughbook® laptop computer. Pictured right is the Model 240, ready to monitor the floor.



Specifications

INDICATED USE: floor and wall alpha-beta monitoring

DETECTORS: up to 12 gas proportional or ZnS-plastic scintillators

DETECTOR HEIGHT: adjustable from 0.48 to 2.2 cm (0.1875 to 0.875 in.) from surface to detector metallized polyester

DETECTOR HIGH VOLTAGE: adjustable from 0 to 2300 Vdc

DETECTOR ALPHA-BETA THRESHOLDS: adjustable from 5 to 330 mVdc

MAXIMUM WALL HEIGHT: 262 cm (103 in.)

WIDTH OF DETECTION PATH: 173 cm (68 in.) with no "dead" area between the detectors

EFFICIENCY: approximately 20% for both alpha and beta (see detector data sheets for more specific details)

SPEED RESOLUTION: 0.25 cm (0.1 in.) per second

TEMPERATURE RANGE: -15 to 50 °C (5 to 122 °F)

SIZE: model specific, but approximately 198 x 53.3 x 122 cm (78 x 21 x 48 in.) (H x W x L)

WEIGHT: model specific, but approximately 68 kg (150 lb)

Model Specifics

Model 240 Floor and Wall Monitor (PN 48-3956): includes 12 each Model 43-198 gas proportional 126 cm² detectors; Toughbook® laptop; gas regulator; input, output, and space (purge) flowmeter (no P-10 gas bottle provided).

Model 240S Scintillation Floor and Wall Monitor (PN 48-4131): includes 12 each Model 43-93 scintillation 100 cm² detectors and Toughbook® laptop.

Model 240-1 Floor Monitor (PN 48-4122): gas proportional system as above, floor version only.

Model 240-1S Scintillation Floor Monitor (PN 48-4132): scintillation system as above, floor version only.

Model 240/240S without Accessories (PN 4304-199): cart only; without detectors, laptop, or gas accessories.

Model 240-1/240-1S without Accessories (PN 4304-297): cart only, floor only version; without detectors, laptop, or gas accessories.