Model 52-1
Personnel Portal Monitor

Radiation Detection for a Safer World

Ludlum Measurements, Inc.

Features

- **Portable**
- **Sets Up in Minutes**
- **Easy to Operate**
- **Plastic Scintillator Side Detectors**
- **61 cm (24 in.) Wide Opening**
- **Meets FEMA-REP-21**

Part Number: 48-3172

Introduction

The Model 52-1 Portal Monitor is used for Beta/Gamma personnel contamination monitoring and meets the FEMA standard for Emergency Response Portal Monitoring (FEMA-REP-21). It is designed to be set up in five minutes or less without any tools and then easily disassembled for convenient transportation and storage. A wheeled transport case is included with the Model 52-1.

The non-volatile parameters are preset at the factory to detect a 1.0 µCi ^{137}Cs source in a 10 µR/hr background field. The electronics are microprocessor-based for ease of setup and reliability. Status LEDs indicate count-cycle status. Audible signals accompany the LEDs for additional indication. These portal monitors can be operated in a walk-through basis with a quick scan occurring while a person is positioned within the portal.

The Model 52-1 is able to operate from 85-250 Vac 50/60Hz without a voltage selector switch. They may also be operated from three “D” cell batteries. Battery lifetime is approximately 24 hours.

Specifications

SENSITIVITY: This instrument will detect the beta gamma emissions from a 1.0 µCi ^{137}Cs source when it is located at mid-frame of the portal monitor in a 10 µR/hr background (per the suggested standard in FEMA report “Contamination Monitoring Standard for a Portal Monitor Used for Emergency Response,” Sept. 1992).
DISPLAY: two-line x 20-character LCD shows background rates from all detectors, and sigma values above background
COUNT TIME: adjustable from 0-20 seconds (0 second setting is for walk-through mode)
LED INDICATORS:
- ENTER/CHECKING: (green LED) indicates system is ready for use, flashing LED indicates a count is in progress
- INCOMPLETE/UPDATING: (amber LED) indicates the user has stepped out of the portal before counting was completed or that an update is in progress
- ALARM: indicated by red LED and audible signal (greater than 60 dB at 61 cm [24 in.])
- FAILURE: (red LED) indicates a high or low background

INFRARED SENSOR: senses portal occupancy
PARAMETERS: all parameters are stored in non-volatile memory
DETECTORS: 4 ea. 2.75 L (168 in^3), plastic scintillators
OUTPUT: RS-232 and relay output connectors located on the bottom of the electronics chassis
TEMPERATURE RANGE: -20 to 50 °C (-4 to 122 °F)
POWER: 85-250 Vac, 50-60 Hz, or three “D” cell batteries
BATTERY LIFE: typically 24 hours in a non-alarm condition
CONSTRUCTION: aluminum housing with beige powder coat paint
WEATHER PROTECTION: Crystal clear polypropylene tubing is provided to sleeve over monitor whenever protection against wet weather conditions is desired.
PORTAL DIMENSIONS: 211 x 71 x 45 cm (83 x 28 x 17.5 in.) (H x W x D)
PORTAL INSIDE DIMENSIONS: 206 x 61 cm (81 x 24 in.) (H x W)
WEIGHT: 32 kg (70 lb), approximately 45 kg (100 lb) shipping weight

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