

Previous model number: 5105

B5532-440

Pedestrian Homeland Security Portal Monitor

Introduction

The ANTECH B5532-440 Pedestrian Homeland Security Portal Monitor is designed to detect radioactive materials. It has both gamma-ray and neutron detection capacity. The gamma-ray measurements are performed by sensitive shielded and collimated plastic scintillator detectors that use low noise photo multiplier tubes with state of the art digital electronics based on ORTEC digiBASE. The neutron measurements are performed by polyethylene moderated, high pressure ^3He detector tubes that identify the presence of plutonium by passive neutron counting. They are connected to high-speed charge collection electronics and operate in totals counting mode.

The technology behind the B5532-440 is derived from work performed at the Los Alamos National Laboratory (LANL) in the United States and implemented in the late 1980s by Jomar Systems. Since the transfer of this technology to ANTECH, extensive improvements have been made and ANTECH portal monitoring technology represents the current state of the art for Homeland Security monitoring. ANTECH continues to work with technology developers at LANL who are engaged in a process of continual development with a view to optimising the performance of portal monitors for Homeland Security and defence related applications.

The operation of ANTECH portal monitors is automated through the use of an onboard microprocessor controller that performs system diagnostic testing, input monitoring and background discrimination. The controller employs algorithms based on the Sequential Probability Ratio Test (SPRT), developed originally by Fehlau and others at LANL. The B5532-440 contains all the necessary electronics, including controller, power supplies, amplification, single channel analyser and high voltage bias supplies to constitute stand alone instruments.

The B5532-440 contains an occupancy circuit. The MCU is incorporated into a local panel that contains lights and sounder. It is also possible for data and alarms to be displayed on an operator screen. An optional battery and charger suitable for a minimum of 12 hours off-line working may also be incorporated into the local panel.

The B5532-440 is available in the standard configuration of twin vertical pillars and top cover (as illustrated above) or it can be re-configured for special applications. The bottom (floor) unit containing detectors is optional. The B5532-440 is compliant with the requirements of ASTM C1112-93 and the units follow the guidelines ASTM C1189-95 for calibration and ASTM C993-92.

Features

- Gamma-ray and neutron detection
- Micro-controller based automated operation with diagnostic functions
- RS-232/Ethernet interface for controller set-up or remote monitoring
- User selectable alarm provided as visual, audio or electronic signal
- Digital detector electronics including state of the art ORTEC digiBASE
- Archiving of detection and background statistics
- Operation in continuous pass through or hold and measure mode



Benefits

- Reliable operation with a low rate of false alarms
- Uses digital electronics with reduced electrical noise
- Two detection technologies may be combined in a single monitor
- Unattended automatic operation with optional operator screen
- Applicable to indoor or harsh outdoor operation

Specification

Typical dimensions of each pillar (H x W x L)		2200 mm x 140 mm x 680 mm (86.61 in x 5.51 in x 26.77 in)
Plastic scintillator detectors	Standard configuration	4
	Configuration with bottom (floor) unit fitted	5
Detection levels		0.4 g total Pu (military grade)