PMD3 Plus

with BUILT-IN GAMMA PORTAL MONITOR

ENHANCED WALK-THROUGH METAL AND GAMMA DETECTOR

METAL DETECTOR FEATURES

• Accurate Detection of magnetic, non-magnetic and mixed-alloy metal weapons
• Multi-Zone target indication over the entire transit area
• Extremely High Discrimination and flow rate
• Very High Immunity to electromagnetic and mechanical interferences
• Detection of radioactive substance shielding containers
• Compliant with and certified to the applicable Standards for Enhanced Metal Detectors

GAMMA DETECTOR FEATURES

• Detection of Gamma emitting threats
• Embedded, high-sensitivity, full-height radiation sensors for uniform coverage of the transit area
• Multi-Zone indication of Gamma Sources
• Compliant with and certified to the applicable detection requirements for Gamma Portal Monitors

AVAILABLE IN OUTDOOR VERSION (IP65)
The **PMD3 Plus** is a Walk-Through Weapons and Gamma Radiation Detector that combines two advanced detection technologies in a single lightweight Portal.

**TWO ADVANCED DETECTION TECHNOLOGIES**

Metal weapons such as miniaturized assembled and disassembled firearms, in magnetic and/or non-magnetic metal, are detected independent of their orientation and position of transit, thanks to an extremely uniform inspection field.

At the same time, innocuous items, such as keys, coins, shoe shanks and belt buckles, are effectively discriminated thus **reducing the nuisance alarm rate five or more times** compared with other available metal detection systems.

The **PMD3 Plus** is also equipped with an array of sensitive gamma sensors, covering the full height of transit, allowing **accurate detection of radioactive substances carried by the people in transit**. The detection capability includes a wide range of energies for a complete coverage of the possible radioisotopes.

The gamma detectors adapt themselves to the background radiation level, adjusting the threshold to the optimum value for the installation environment.

At the same time, a special algorithm prevents the adaptation to unusual background levels and changes.
PMD3 Plus

The gamma-ray detection technology utilized in the PMD3 Plus has been tested in Government-Authorized Laboratories.

PREVENTION OF RADIOACTIVE SUBSTANCE SHIELDING
Any attempt to smuggle radioactive substances using masking containers is effectively prevented by a specific detection function.
Two advanced detection technologies are therefore combined in order to enhance each single capability.

HIGH LEVEL OF ELECTRONIC AND MECHANICAL RELIABILITY
The overall system is characterized by sturdy, reliable electronic and mechanical construction, ease of installation, automatic reset calibration and very high immunity to external electrical and mechanical interference.
Detection features of the PMD3 Plus have been verified by Competent Governmental Authorities. Test reports available upon request.

CHECKPOINT SECURITY COVERAGE USING THE PMD3 Plus AND GAMMA OPTION CAN BE COMPLETED BY A G-SCAN DETECTOR POSITIONED AT THE EXIT OF THE HAND-LUGGAGE INSPECTION X-RAY MACHINE
The **PMD3 Plus** is an integrated Metal and Gamma Detector Portal, designed to detect metal and radioactive threats simultaneously.

Metal weapons, gamma sources and shielding containers are indicated on the bar display with appropriate optical signals. Threat transit zones are indicated by means of 20 independent optical indicators.

All detection data and programming operations are available through the Network monitoring software (see current netID literature).

Two different Alarm Signalling modes can be set, according to the preferred operating procedures:

### LOCAL MODE

- **METAL WEAPONS**: acoustic alarm, position indication by red color zone and bar-graph intensity on the control unit.
- **RADIOACTIVE SOURCES**: dedicated acoustic alarm, position indication by blue color zone and bar-graph intensity on the control unit.

Detection of metal threats and radioactive sources carried by the same transiting person are displayed simultaneously.

### REMOTE MODE*

- **METAL WEAPONS**: acoustic alarm, position indication by red color zone and bar-graph intensity on the control unit.
- **RADIOACTIVE SOURCES**: intensity and position remotely alarmed through network monitoring software to a supervisor station.

In remote-operation mode, local display of alarms caused by radioactive substances can be deactivated.

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**Metal Signal Under the Alarm Threshold**

- 2
- 3

**Metal Signal Over the Alarm Threshold**

- 4
- 5

**Gamma Signal Under the Alarm Threshold**

- 2
- 3

**Gamma Signal Over the Alarm Threshold**

- 4
- 5

**Green and Red Metering Signals Proportional to the Metal Mass of the Detected Threat**

**Red Metering Signals Proportional to the Intensity of the Radioactive Threat (Displayed on the Control Unit Only If Enabled)**

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* See NetID literature for more information on Remote Mode
PMD3 Plus

- SINGLE METAL THREAT DETECTION AND INDICATION
- MULTIPLE METAL THREATS DETECTION AND INDICATION
- SIMULTANEOUS DETECTION OF A METAL THREAT AND A RADIOACTIVE SUBSTANCE (LOCAL MODE)
- SHIELDING CONTAINER DETECTION

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The NetID System manages CEIA inspection equipment and stores the information in a centralized database.

The system is accessed via the NetID suite of multi-user software applications which is resident on a dedicated machine (NetID Elsa) and can be called up by any number of operators at non-specialized workstations.

CEIA inspection equipment communicates with the management system via an encrypted channel (AES-1) on a standard shareable Ethernet network connection. Any number and combination of CEIA inspection devices can be added to the system.

The NetID System allows control the operating parameters of the devices, check their operational status remotely and receive automatic warnings if malfunctions or anomalous situations occur.

All results from CEIA inspection equipment are transmitted and stored in a centralized database for further analysis, which can be carried out using NetID applications. Analysis results can be exported in standard formats.

In the event of gamma-ray source detection, the NetID system immediately sends a signal via the NetID Monitor display showing the signal record of the device involved and other information which will help to identify the subject that has triggered the alarm.
DETAILED ANALYSIS OF DETECTION OF A RADIOACTIVE SUBSTANCE

**Gate 1**

**Count per zone in the cursor position**

- Zone 1: 4.8
- Zone 2: 11.5
- Zone 3: 10.5
- Zone 4: 10.3
- Zone 5: 4.0

Alarm Threshold: IEC 62244

**Count in cursor position:** 11.6 x (Alarm Threshold)

Maximum count: 11.6 x (Alarm Threshold)

**Date:** 12/18/2008 – 17:38.19

**Alarm Threshold:** IEC 62244
**PMD3 Plus**

### TECHNICAL FEATURES

#### WALK-THROUGH GATE STRUCTURE
- State-of-the-art, compact panels
- Made entirely of advanced technical materials
- Extremely robust, elegant and lightweight
- Protected against aging, weather and wear-and-tear

**TOTAL DIMENSIONS:**
- 835 x 660 x 2255 mm (WxDxH)

**TRANSIT AREA:**
- 720 x 2050 mm (WxH)

#### CENTRAL CONTROL UNIT
- Ergonomic and robust design
- High Visibility alphanumeric display and programming keyboard
- Made of advanced plastics (IP20 protection degree) or stainless steel (AISI 316L - IP65 protection degree)
- Access to the front panel protected by hardware key

**TOTAL DIMENSIONS:**
- 387 x 80 x 178 mm (WxDxH)

#### ALARM SIGNALLING
- 10 programmable acoustic tones. Intensity programmable to 10 levels, with max. pressure of 90 dB (A) at 1 m
- Green and red optical bar-graph display, readable at 6 m. under 4000 lux of ambient light:
  - Indication proportional to the transiting metal mass
  - Indication proportional to the intensity of the transiting gamma source (only when local mode is selected)
- Height-of-transit display bar equipped with 20 independent multicolor indicators for:
  - “System Ready” signal (green lights)
  - Position signalling of the detected metal mass (red light)
  - Position signalling of the detected gamma emitting source (blue lights if local mode is enabled)

#### PROGRAMMING
- LOCAL by Control Unit alphanumeric display and keyboard
- REMOTE via RS-232 or Ethernet networking connection
- SECURITY LEVEL selectable through:
  - International Standard (IS) command
  - Chip card
- Programming and chip card access protected by (user and super-user) password

### OPERATIONAL FEATURES
- Very high discrimination and transit flow rate, five or more times compared with other metal detection systems
- Quick reset time, programmable from 0.2 sec.
- Very high detection speed (up to 15 m/sec.)
- Build-in operational and technical functional verification
- One-touch key reading of inbound, outbound and Security Level Data
- No initial or periodical calibration requirement

### INSTALLATION DATA
- Automatic synchronisation between two or more metal detectors with a reciprocal distance of down to 5 cm without the use of external cables
- Build-in floor sensitivity adjustment function
- Build-in general noise (GN) and electromagnetic noise (EN) digital read-out

### ENVIRONMENTAL DATA
- PROTECTION DEGREE:
  - Indoor Model: IP20 - IEC529
  - Outdoor Model: IP65 - IEC529
- OPERATING TEMPERATURE: from -20°C to +70°C
- STORAGE TEMPERATURE: from -35°C to +70°C
- RELATIVE HUMIDITY: from 0 to 95% (without condensation)

### CERTIFICATION AND COMPLIANCE
- Tested and Certified as compliant with the applicable electromagnetic Standards on Human Exposure and pacemaker safety
- Compliant with and certified to the applicable detection requirements for Gamma Portal Monitors
- Compliant with and certified to all Airport Security Standards worldwide
- Approved by Ministries and Competent Governmental Authorities
- Compliant with and certified to the applicable CE Standards for electrical safety and EMC
- Harmless to magnetic media (floppy disks, tapes, etc.)

### RELATED EQUIPMENT
- **G-SCAN**: Hand-baggage inspection system for the detection of radioactive substances at the X-Ray scanner exit point. Available for various sizes of X-Ray tunnels.
- **METAL DETECTOR SPACER**: Divider between Metal & Gamma Detectors and X-Ray scanners, specifically designed to optimize system compatibility (strongly recommended for X-Ray scanner applications).
  - Dimensions: 35 x 65 x 129 cm (WxDxH)