



Excellence in Monitoring

Ronan Model XSD-1000 Gamma Radiation Detection System Automatically Detects Hidden Gamma Radioactive Materials in Vehicles, Rail or Cargo Containers



Highly Accurate

- Greatest Sensitivity As Found in Independent Testing
- Proprietary Statistical Discrimination of Background Radiation
- PVT, NaI and Liquid Detectors
- Pinpoints Location of Radioactive Isotope

User Friendly

- Windows Based
- Touch Screen Navigation
- Data Presented in Easily Understood Formats
- Data Logging in Microsoft Access Data Base

Worldwide Support

- 24-hr Service
- Experienced Applications Engineers
- Large Inventory of Spares

For more than 25 years Ronan has provided the Radiation Monitoring industry with unsurpassed products in the harshest environments. With a philosophy of designing new products to be backward compatible, our customers have the confidence of an installed base of thousands of systems. A worldwide network of dealers, 24-hr factory certified Field Service Engineers and an experienced staff of Applications Engineers are ready to assist with your monitoring needs.

The XSD-1000 radiation detection system detects the presence of very low-levels of gamma radioactive materials hidden within a vehicle or container. In industrial applications the system is invaluable in helping catch radioactive material in scrap material before it enters a facility and causes contamination, resulting in costly cleanup expenses. Use of the system in areas of interest for homeland security provides for the early detection of gamma radiation materials, which could be used as a threat to national security.

The Ronan XSD-1000 radiation detection system is modular and expandable in design to meet your specific detection needs. A variety of detector and frame configurations are available to meet any application. The system operates on a windows environment with touch screen navigation for ease of configuration. All data presented in an easily understood format without the need for the operator to have an understanding of physics.

Changing background radiation levels are a major source of false alarms for several other systems on the market. Ronan solves this problem through a unique algorithmic approach to radiation detection by constantly monitoring the background radiation and automatically adjusting the reference points. The system effectively self-calibrates; giving a true reading of any target radiation sources that may be present.

Advantages

The greatest limitations to the detection of target sources are the varying presence of natural background radiation, and the density of the medium within which the isotope is contained.

Gamma radiation occurs naturally in nature and ambient levels vary between locations reflecting differences in altitude (cosmic radiation), radioactivity in the soil (terrestrial radiation), and slight variations at a single location due to weather patterns. Changes in ambient radiation cause a unique set of problems when trying to differentiate low-levels of radiation emitted from a target source from those naturally occurring in nature.

Radiation detection systems which attempt to negate this fluctuating background radiation by placing the alarm threshold just above the maximum predicted background levels are susceptible to false alarms and run the severe risk of missing the presence of target sources.

Ronan's design approach is unique and is founded upon determining the statistical probability of radioactive material being present in a container rather than relying solely upon the mR/h radiation level that can be detected.

The Ronan XSD-1000 proprietary microprocessor continuously tracks and analyzes the variable background radiation and at the same time detects for any increased levels of radiation emitted by the target. The system provides software and hardware enabled audible and visual alarms whenever the radiation limits as sensed by the detectors exceed predetermined parameters. The alarm limit parameters are the minimum radiation levels that can be detected without causing false alarms due to the fluctuating nature of background.

Each system configuration is optimized for the particular type of transportation system being monitored. The system sensitivity is such that not only does it detect the presence of a target source, it also pinpoints the location of the isotope within the vehicle or container. In comparative testing with other systems on the market Ronan was found to have the best sensitivity with an ability to detect target radioactive isotopes at significantly lower levels than the other systems. *Source: Health Physics Associates Data Analysis KESI, March 2000.*

Applications

Scrap Detection
Commercial and Homeland Security
Security - Border Crossings, Ports, Interstate Weigh Scales

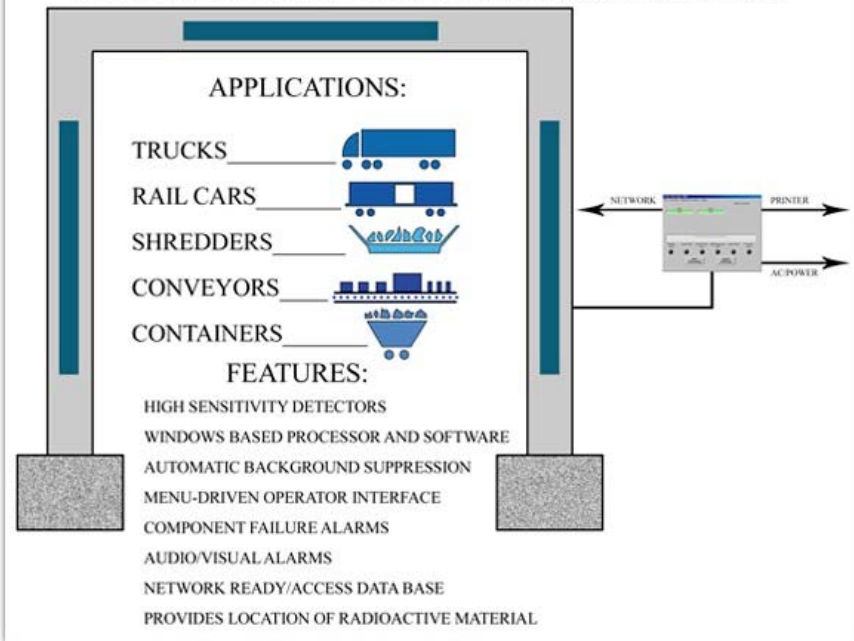
Transport Systems Monitored

Truck
Rail
Conveyor
Container

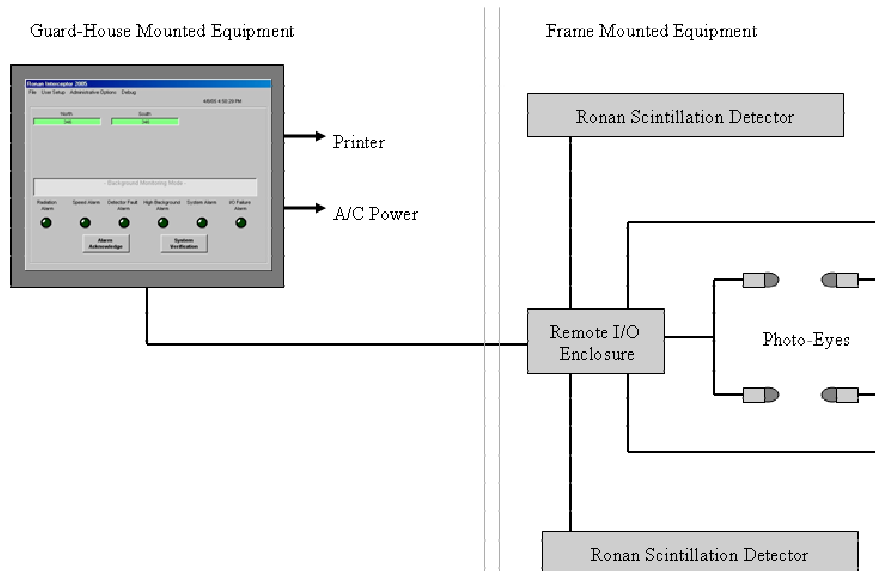


XSD-1000

GAMMA RADIATION DETECTION SYSTEM



System Overview



XSD-1000 Specifications

Frame Components

Electrical	Supply	+ 5 VDC @ 7.5A max +12 VDC @ 4.5A max 120 VAC @ 6A max /220 VAC @ 3A max for Heater Option
	Signal	RS-485 Communications Wireless Ethernet for Camera Option
	Connections	6 Position Terminal Block for Cable from Monitor Panel All Detector and Photo-Eye Connections are Local to the Frame.
Environmental	Operating Temp	-20°C to +60°C Normal -40°C to +60°C with Heaters
	Storage Temp	-40°C to +60°C
	Humidity	0 – 100%
	Classifications	NEMA 4
Mechanical	Frame Material	Steel – Painted
	Frame Weight	Dependant upon Configuration
	Detector Material	PVT, NaI or Liquid Scintillation
	Detector Weight	Dependant upon Configuration
	Options	Detectors – 1 to 12 (Single or Dual) Photo-Eyes – 1 to 8

Monitor Panel Components

Electrical	Supply	85 – 265 VAC @ 2A max, 50/60Hz Individual DC Fuses for each Supply
	Signal	RS-485 Communications to/from Frame Optional Wireless Ethernet to Camera
	Connections	AC Power, 6 Position Terminal block for Power/Communications to Frame, 4 Alarm Relays (Form 'A'), Keyboard, Mouse, Printer, Ethernet.
Environment	Operating Temp	0°C to +50°C
	Storage Temp	-20°C to +60°C
	Humidity	0% to 95% Non-Condensing
	Classification	Designed for NEMA 12
Mechanical	Material	Steel – Painted Enclosure Glass – Touch Screen Aluminum – Screen Bezel
	Size	Enclosure – 16" x 12" x 5" (400mm x 300mm x 120mm) LCD Panel – 8.4" (213mm) Color with Touchscreen
Computer	Weight	Dependant upon Configuration
	Type	Single Board VIA 733 MHZ with Low Power C3 Processor
	Operating Sys.	Windows XP Running from Compact Flash Card Transaction/Data Logging in Microsoft Access Data Base
	Hard Disk	40G Hard Disk for File Storage
Options	Camera	Capture Images when Alarms Occur
	Host Software	Consolidation of Multiple XSD-1000 Units I/O for Traffic Light, Gate Control, Audible and Visual Alarms