

RC4138

Vehicle Radiation Detection System



The RC4138 Radiation Detection System, part of the RC4000 series of radiation detection systems, is RadComm's most advanced vehicle radiation portal monitoring system specifically designed to detect radioactive material contained in a moving vehicle loaded with scrap metal/material. The innovative design of the RC4138 is the result of over 18 years of engineering design and field application experience that has provided the Metals Industry with the best proven safety record to-date. The RC4138 incorporates state-of-the-art components and the most advanced software/hardware technology currently available worldwide.

The system menus are based on a Windows environment in order to allow a clear and precise understanding of the RC4138 operations without the additional requirement of a background in physics. The software is flexible, allowing the user to easily configure the system's general operations including; setting of passwords, adjustment of detector parameters, pinpointing the location of a radioactive source when detected in a vehicle, and the storing and retrieval of alarm information.

In addition, the RC4138 computer controller performs all non-real-time tasks such as the management of data received from the detector assemblies and configuration of system operational parameters. The advanced design of the individual high-speed micro-based RC4138 detector assemblies performs all real-time tasks such as pulse analysis from the detectors and vehicle speed measurement. This individual detector functionality is an extremely important and desirable feature of the RC4138 system. In order to achieve the high level of detection capability the RC4138 provides, high-speed real-time signal processing and alarm analyses is performed simultaneously with no interruption of the radiation monitoring process.

This system is specially designed to work in scrap metal/waste recycling and steel manufacturing facilities. This system has been tested and proven in a number of customer sites and has demonstrated key technology features such as high sensitivity, fewest false alarms, easy to use menus, supervisor remote system access, traceability and accountability. When combined with RadComm Systems responsive technical support and on-line service, the RC4138 is clearly the system of choice throughout the Steel and Scrap Industry.

FEATURES

- Innovative Design with Multiple Detector Sizes
- Energy Specific Alarm and Background Statistical Analyses
- Real-Time Density Tracking Algorithm
- Unique PVT Aging Monitoring
- Network Capability with Email
- Easy to install, User Friendly, Easy to Operate
- Neutron Detection Capability (Optional)

SPECIFICATIONS

OVERVIEW

- Detector assemblies (1-8 panels)
- RadLink embedded controller
- Smart Infrared presence sensors
- Large touch screen monitor
- Remote communications package (optional)

RADLINK CONTROLER FEATURES

- Large touch screen LCD monitor
- Large storage capacity for system operational information and alarms
- Easy to follow multilingual menu outlines and descriptions
- Multi-level security password control
- Detailed alarm and scan data storage
- Manual scanning for pinpointing source location within the vehicle load
- Easy to set alarm configuration menu
- Network access for remote service and monitoring
- Radiation levels displayed in counts per second (mR/h, nSv/h)
- Vehicle speed measurement in Km/h or mph
- Ambient temperature displayed in Celsius and Fahrenheit
- Adjustable audio alarm
- Counter for number of scans in a 24-hour period for incoming and outgoing scans
- Detailed alarm information displayed and stored after every alarm
- Various String Outputs
- Configurable email reporting
- Adaptable for specific customer needs



Integrated Stands

DETECTOR FEATURES

- Large premium grade PVT scintillators
- 34.3 to 69 liters PVT volumes available (single panel)
- Low density shield on face of detector panel
- Dual layer thermal insulation protection (-20° to +55°C)
- High signal to noise ratio PMTs (up to 2)
- High speed micro-controller with programmable CPLD technology for signal/alarm analysis
- Dual input high speed pulse processor
- Noise reduction hardware/software
- Background characterization for variable ambient background suppression
- Smart infrared vehicle presence with speed monitoring
- 8 output drivers (24Vdc@50mA) for remote indicators
- Internal non-radioactive test source for detailed and repeatable system checks
- 24Vdc input voltage @2.3A (8 Panels)

OPTIONS

- Camera
- External alarms
- Supervisory Software
- Neutron Detector (He3 or alternative)

Model #	RC4069	RC4110	RC4138
System Size (in ³)	4,216	5,264	8,432
System Size (L)	69	91	138
System size is based on 2 panels. Systems may be expanded with additional panels			
Per/Panel Size (in ³)	2,108	2,632	4,216
Per/Panel Size (L)	34.5	45.5	69
# PMT's Per/Panel	1	2	2
*Detection Capability/Overall Sensitivity- Unshielded Source (Shielded Source)	1.6uCi (58mCi)	1.4uCi (50mCi)	1.1uCi (41.mCi)
* Radiation meausrement of 137Cs (point source) at 1 meter from the face of the detector (the radiation exposure level is comparable to a 75mmø x 150mm 137Cs lead sealed source buried in 65 lbs/ft3 (1.0 g/cm3) of scrap metal)			

