

RC4138

Vehicle Radiation Detection System



Detection of Radioactivity in High Density Materials

The RC4138 Radiation Detection System, part of the RC4000 series of radiation detection systems, has been designed to detect very low Gamma Ray emissions in high density materials. The vehicle size and type will help determine the appropriate panel size and configuration. The RC4000 is supplied in a variety of detector panel sizes with any configuration for up to 8 detector panels. The RC4000 detection systems utilize RadComm's high quality Polyvinyl Toluene (PVT) scintillators, electronics and Photomultiplier Tubes (PMT).

Simplified System Operation

The RC4000 utilizes real-time statistical algorithms that are based on Gamma Energy Distribution to ensure alarm thresholds levels are optimized. The RC4000 utilize a user-friendly graphical interface allowing the operator to easily move through the wide range of user options. All detailed Clean Scan, Testing and Alarms records are stored on the internal hard drive and can be easily retrieved and interpreted as required.

Remote System Access

The RC4000 Controller is equipped with a network adaptor allowing remote monitoring, data retrieval and maintenance functions. The internal software and hardware designs are extremely flexible allowing remote software updates and electronic hardware adjustments when necessary. Supervisors can monitor the system operation in real-time to ensure normal system operation is maintained. Also, with a network connection the system has the capability of emailing alarms and system malfunctions.

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)
- Ability to retrofit or upgrade existing systems

RC-4138

SPECIFICATIONS

OVERVIEW

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



RADLINK CONTROLLER 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 installation, training, service and monitoring
- Radiation levels (Mr/h, nSv/h, cps)
- Vehicle speed measurement in mph or Km/h
- Ambient temperature displayed in Fahrenheit and Celsius
- Adjustable audio alarm
- Counter for number of scans in a 24-hour period and to-date for incoming and outgoing scans
- Detailed alarm information displayed and stored after every alarm
- Configurable email reporting



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 -4° to +131°F (-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

RESPONSE/SENSITIVITY

- Energy range: 20KeV to 3.0MeV (incident)

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 measurement 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/ft ³ (1.0 g/cm ³) of scrap metal)			
RC4138 can be 1, 2, 3 or 4 detector assemblies per system. <i>3 detectors provides greater coverage area and reduces chances of missing a source or NORM due to orientation or shielding.</i>			
Product Code	Number of Detectors		
RC4138R-1	1		
RC4138R-2	2		
RC4138R-3	3		
RC4138R-4	4		

