

RC4000 - Conveyor Radiation Detection Systems



The **RC4000 Conveyor Radiation Detection System** consists of two main components - the RCD conveyor radiation detectors and RC4000 Control Console. RCD radiation detectors are mounted on the infeed conveyor to the shredder and downstream conveyor after the shredder. The RCD detectors are connected to the RC4000 console via a low voltage signal communication cable. The signal cable utilizes double-shielded, multiple twisted-pair conductors that carry low voltage DC power and logic levels that are virtually immune from electrical noise.

FEATURES

- Single or double detector configuration
- 2108 in3 minimum detector volume
- RC4000 design proven in over 2000 installations world-wide
- Detailed alarm display and analysis

The RCD detectors measure the ambient radiation levels on a continuous, uninterrupted basis. These measured levels are converted into digital signals that are transmitted to the RC4000 computer and then analyzed by the high-speed microprocessor system. The software analysis controls the sampling of the incoming measured signal for the purpose of establishing a continuous running reference of the ambient background radiation level.

Each RCD detection unit will be scanned and alarm levels calculated independent of the other detection units in the system. During normal operation, the RCD units utilize indicators on the top level display that allow the operator to view the operational status of each detector. During normal operation the indicators will be green. In the event of an alarm condition on any one or all of the RCD units, the indicator will turn red with an accompanying alarm level indicating the intensity of the radiation level. When the alarm occurs, all of the detailed information regarding the alarm condition will be stored in memory and can be retrieved from Menu option Data. The alarm information will include the detector number, alarm condition, alarm data collected, date, time and specific sample status (e.g. highest reading taken). The system never stops analyzing the measured radiation levels from the RCD detectors regardless of the system operating condition.

The system also provides digital logic output that can be used to operate external audio and visual system status and alarms and to control conveyor motors. Each conveyor can be controlled independently depending upon the location of the suspect material. For example, if the suspect material is located on the infeed conveyor, only the infeed conveyor will be stopped leaving the downstream conveyor running to remove the cleared material. If the suspect material is in the downstream conveyor (too well shielded for the infeed detector to detect until shredded) then all the conveyors stop to prevent contamination of previously shredded and cleared material.

The RC4000 has many additional features other than alarm data retrieval such as; time/date, display of RCD measured radiation levels, system configuration adjustments, system testing without a radioactive source, and remote factory access by modem or internet. Many of the system features are protected by a security code entry.

