TSA TM850

Automatically screen moving trains or large vehicles for radioactive materials.

Portal Monitor for Trains or Large Vehicles

Continuously Screen Moving Cargo

High Throughput

Cost Effective

The TSA TM850 automatically screens railroad or vehicular traffic without the need for frequent calibration. High sensitivity allows the TM850 to be used at transportation hubs requiring a wider installation area and high throughput such as at ports and customs and border entry points. The TM850 is designed for use in harsh environmental conditions.

Advanced Design Features

The TSA TM850 is a train and large vehicle monitor with excellent sensitivity and reliability. The TM850 consists of two self-contained, weather resistant pillars placed on either side of the railroad track or roadway to be monitored. Each pillar contains two large plastic scintillator detectors, four neutron detector blocks with either two or four neutron detectors each, multiple occupancy sensors, and an amplifier. The master pillar also has a battery, power supply, battery charger, and a system controller.

Programmable Detection Parameters

Selectable settings for sensitivity, energy discrimination, and fault levels may be entered by the administrator.

Easy-to-Operate

When the system is powered up, it takes 120 seconds to acquire an initial background. The background is continually updated until the system is occupied. When the TM850 senses occupancy, the system starts comparing the current count to the most recent background data. Alarm comparisons are made every 200ms. If the count exceeds the alarm level, both audible and visual alarms will be triggered. The system monitors itself and indicates low and high background conditions.

Flexible Detection Options

The TSA TM850 is available in three configurations; Gamma, Neutron or a combination of Gamma and Neutron detection. Gamma provides detection of ionizing radiation and Neutron provides detection of Special Nuclear Materials (SNM) while the combined Gamma and Neutron provides the most powerful detection capabilities for radioactive isotopes even in shielded materials.

Interface Options

With the optional Remote Alarm Panel operators can view alarms up to 300m from the monitor. The TSA TM850 is compatible with TSA RAVEN™ communications software designed to both capture and view data and video images relating to a radiological detection incident.

Standard Features

- Programmable Detection Parameters
- Audio and Visual Indicators
- Relay Outputs for User Interface
- Universal Power Supply
- Ethernet Connectivity
- Battery Backup
- Controller Mounting Options
- NEMA 4 Rated Enclosure
- IP66 Rated Enclosure
- TSA RAVEN™ Compatible

TSA RAVEN™ (Radiation Alarm and Video Event Notification) communications software is used remotely to assist response personnel in the field to pinpoint radioactive sources. RAVEN can monitor multiple detectors and aid in managing individual detector activity.

Markets

- Aviation
- Critical Infrastructure
- Customs and Border Control
- Defense
- Ports

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TSA TM850

Specifications

Sensitivity	**Gamma**: Will detect 200 grams of ^{235}U (HEU) or 3 grams of ^{239}Pu in a 20 uR/hr background at a passage speed of 5 mph (8km/h). **Neutron**: Will detect greater than 200 grams of plutonium in a shielded container that reduces the gamma flux to 1% of the unshielded gamma flux.
Detectors	**Standard Gamma and Neutron**: Two, 48 h x 12 w x 1.5 d in. (121.9 x 30 x 3.8 cm) organic plastic scintillator detectors per pillar; four, 2 in. diameter x 36 in. (5 x 91.4 cm) He^3 tubes per pillar. **High Sensitivity Gamma and Neutron**: Two, 48 h x 12 w x 1.5 d in. (121.9 x 30 x 3.8 cm) organic plastic scintillator detectors per pillar; eight, 2 in. diameter x 36 in. (5 x 91.4 cm) He^3 tubes per pillar.
False Alarm Rates	Typically less than 1 in 1,000 passages
Alarm Indication	Alarms are indicated by a red strobe light mounted on the master pillar. High and low faults along with other fault conditions are indicated by an amber light. Neutron alarm is indicated by a blue strobe light.
Display	LCD, 4 lines x 20 characters
Communications	Serial Port and Ethernet communications capability
Power Requirements	90 – 250 Vac. 47 – 63 Hz, less than 100 VA
Battery Life	Greater than 8 hours of normal operation
Dimensions	120 h x 48 w x 10 d in. (305 x 122 x 25.4 cm)
Typical Pillar Spacing	236.2 in. (6 m)
Weight	1,100 lbs (499 kg) per pillar
Environmental	-4° to 122° F (-20° to 50° C) Designed for outdoor use in most climates. For extreme conditions, optional heating/cooling is available.
Standards	UL

*For neutron detection please contact your sales representative to determine availabilty and quantity of He^3 tubes.

Definitions

Gamma Detection - For the detection of ionizing radiation.

Neutron Detection - Typically used to detect Special Nuclear Materials (SNM).

Gamma and Neutron Detection - For full spectrum detection capabilities.

Options

Remote Alarm Panel

TSA RAVEN™ Communications Software

Wireless Output Capabilities

Heavy Duty Mounting Stand

Additional Lead Shielding

Heating or Cooling for Extreme Conditions

With continual development of our products Rapiscan Systems reserves the right to amend specifications without notice. Product pictures are for general reference. Please note that due to US laws and regulations, not all Rapiscan products are available for sale in all countries without restriction. Please contact your Rapiscan Systems sales representative for more information.

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