PoliGate™ Vehicle G4N4 RPM

Double-sided gamma model equipped with four gamma detectors and four neutron detectors.

The **PoliGate™ Vehicle G4N4** is a double-sided **gamma-neutron** Radiation Portal Monitor (RPM) equipped with four 11L-gamma and four neutron detectors and is a **high-sensitive fixed system** designed for permanent installation and providing continuous radiation detection and monitoring of moving objects.

The **PoliGate™ Vehicle series** is an essential tool for safeguarding against the potential threat of nuclear materials entering secure areas and can be used for screening**trucks, vehicles, cargo containers, luggage, and people**.

Features

- IEC 62244:2019 compliance
- Control zone up to 6 x 4.5 (W x H)
- Wide gamma energy range from 20 keV to 3 MeV
- No stop of an object is required for the inspection
- Lead shielding for natural background rejection
- Ingress protection IP65
- Local and remote light and audible alarm annunciators
- Back-up battery providing at least 8 hours of operation
- Presence detection system (occupancy sensors)
- Adjustable sensitivity parameters for specific applications
- Optional video surveillance system

Operation Principle

The **PoliGate™ Vehicle series** may have a modular design and are available in one-pillar or two-pillar configurations, **adaptable height and width** according to customer requirements.

This series of RPMs comply with the **IEC 62244:2019** standard.

Equipped with highly sensitive scintillation detectors, the RPM can **continuously detect and measure ionizing radiation in real-time**. This means that as soon as radiation is present, the device swiftly captures and analyzes the data, providing immediate feedback.

The RPM is easy to operate and maintain, requires minimal training, and is supplied with user-friendly software that provides **real-time data and alarms**.

The connection to an operator computer or compatible external devices allows to effortlessly **transmit the recorded radiation measurements for further analysis and monitoring**. The real-time measurements are displayed in an easily readable format, ensuring a quick and accurate assessment of the radiation environment. This data transfer capability ensures that all measurements are logged and stored for comprehensive record-keeping and future reference.

The **Vehicle G4N4 RPM** models are equipped with a neutron channel based on a **^{3}He free detector**.

Application

- Customs and border control
- Waste management sites
- Airports and seaports
- Public events security
- Nuclear power plants
- Police and security
- Industrial facilities
- Scrap processing
- Railway

Specifications

Type of registered radiation	gamma, neutron
Detector	gamma: organic plastic scintillator (11000 cm^3) neutron: $^{10}B/ZnS(Ag)$ solid-state detector (^3He-free)
Number of detection units	4 gamma detectors 4 neutron detectors
Energy range	20 keV to 3 MeV
Gamma radiation sensitivity	251 cps per nSv/h (^{241}Am) 57 cps per nSv/h (^{137}Cs) 27 cps per nSv/h (^{60}Co)
Neutron radiation sensitivity	24000 n/s (^{252}Cf)
Power	110 (90-132) V AC or 220 (180-264) V AC, 47-63 Hz; 12 V built-in rechargeable battery (> 8 h of operation)
Power consumption	no more than 120 V•A
PC communication	Ethernet
Ingress protection	IP65
Weight	One Gamma Detector − 120 kg

	One Neutron Detector − 130 kg Control Unit − 20 kg
Operating temperature	−30 °C to 50 °C
Atmospheric pressure	84 to 106.7 kPa
Humidity	up to 98 % at 40 °C, no moisture
Mean recovery time	60 min
Mean service lifetime	8 years
Mean time between failures	10000 hours