

New Version & New Features

# SARA ENVINET



### SARA – Spectroscopic Detection System

Utmost caution is required when handling radioactive materials to protect mankind and the environment. The growing requirements for radiation protection can be met by state-of-the-art technology that detects and monitors radiation. Industry, medicine, power generation and supervisory authorities are increasingly being called upon to improve radiation monitoring to keep the risks involved in dealing with radioactive materials to a minimum. The spectroscopic acquisition of gamma radiation represents a significant contribution to this protection.

# SPECTROSCOPIC DETECTION OF GAMMA RADIATION

SARA marks the beginning of a new era in radiation monitoring. With its completely innovative product series, ENVINET provides solutions for the spectroscopic online monitoring of the ambient gamma radiation in air and water that, for the first time, meet all the requirements for unrestricted automatic remote monitoring under the harsh operating conditions of continual outdoor use.

## APPLICATIONS

The different technical specifications allow a wide range of applications, from stand-alone deployment right through to diverse and complex monitoring networks.

For example, SARA supports the following applications:

- Ring monitoring systems around nuclear facilities
- Nationwide monitoring networks
- Area monitoring
- Laboratory and system monitoring
- Temporary measurement
- Transport monitoring
- Civil defense and disaster control
- Desalination plant
- Sea and fresh water monitoring

## FEATURES

SARA's most important feature is its ability to detect extremely low levels of artificial radiation in the environment rapidly and automatically in air and water. In addition, the new measuring system stands out due to the following features:

- Continuous acquisition of the gamma spectra
- In-situ isotope identification
- Isotope-based alarm management
- Nuclide-specific dose rate determination
- Detection of the gamma dose rate and specific activity
- Data exchange according to ANSI N42.42 (XML based)
- Quick and easy to install and commission
- Designed for use in extreme weather conditions
- Operation depth for water detector up to 500 m
- No maintenance required



Spectroscopic Gamma Detector



Spectroscopic Gamma Monitoring Station



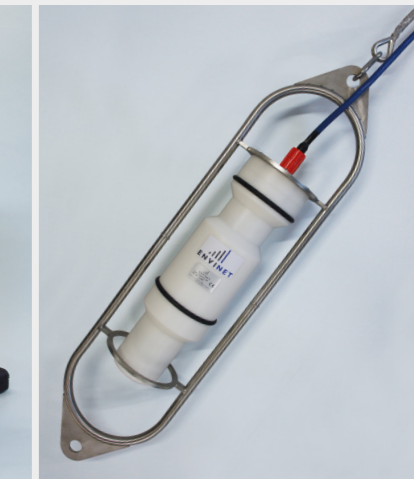
Autonomous Spectroscopic Monitoring Station



Mobile Spectroscopic Monitoring Station



Autonomous Spectroscopic Monitoring Station for low solar insolation



Spectroscopic Water Gamma Detector with mooring bracket

## SCINTILLATION DETECTOR FOR EACH APPLICATION

Different scintillator materials are available. The crystal dimension can be between 1.0" x 1.0" up to 3.0" x 3.0":

Material	Resolution	Benefit
CeBr <sub>3</sub>	4 %	Low intrinsic background
NaI(Tl)	7 %	Cost-effective
LaBr <sub>3</sub> (Ce)	3 %	High resolution

It is possible to extend the dose rate detection rate by deploying an innovative high dose rate spectrometer or an additional Geiger Mueller detector.

## HIGH DOSE RATE SPECTROMETER

The HIGH DOSE RATE SPECTROMETER is a compact system that can measure the gamma spectrum up 100 mSv/h. The spectrometer is integrated in the SARA detector housing.

## COMMUNICATION

The standard communication interface is Ethernet. Integrated wireless communications are LTE, RADIO and WiFi (for servicing). RS232, RS485, digital radio (TETRA) and DSL are also possible, depending on the configuration.

SARA is easy to configure and operate over an integrated web interface.

## MODELS AND APPLICATIONS

### Spectroscopic Gamma Detector

Single application with 12 VDC power supply

### Spectroscopic Gamma Monitoring Station

Pole or wall mounting with a mains power supply

### Autonomous Spectroscopic Monitoring Station (Stationary)

No infrastructure needed for installation, solar power supply with battery backup

### Mobile Spectroscopic Monitoring Station

Quick deployment for incident application, battery power supply

### Spectroscopic Water Gamma Detector

Submersible to 500 meters, also available as complete Spectroscopic Water Station.

## BENEFITS

- Early detection of extremely low levels of artificial radiation in the environment
- Improved early warning function due to rapid detection of nuclear incidents
- Automated nuclide identification to facilitate necessary countermeasures
- Low operating costs due to:
  - low purchase cost
  - easy installation and high level of automation
  - no consumables or wear and tear
  - remote configuration and monitoring

## NEW FEATURES

SARA's success story is entering a new era. The hardware has been redesigned and the firmware updated. The changes are:

- Optimized glass fiber housing for low energy gammas
- Supports LTE cellular network
- Integrated LTE and GPS antenna
- Integrated RADIO modem
- Non-volatile memory for 3 years of data or more
- Three-user configurable aggregation intervals from 1 minute up to user needs
- Optional high dose rate spectrometer up to 100 mSv/h
- Integrated WiFi for wireless servicing
- Supports N42.42-2012



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