MS-SGP

Autonomous high-resolution spectroscopic gamma-radiation probe

The new Mission Support spectroscopic gamma-radiation probe is designed to work autonomously within various applications that require acquisition of high-resolution photon spectra in lightweight, low power consuming and wide temperature range applications. It includes a high-resolution $SrI_2(Eu)$ scintillator of approximately 1"×1" volume with SiPM array readout. This may include unmanned vehicles and aerial drones, stand-alone weather stations, intelligent sensor systems and similar.

The probe acquires 2048-ch spectra and, due to the SiPM readout, is resistant to temperature variations and mechanical impacts, thus making it easy to operate and service — the probe does not need any frequent calibration of spectra using reference sources to stabilise gain. All this allows identification of the isotopes of interest built into the probe; thus, the user may just upload the library required for the selected application and get the final result ready for decision making.

The probe is powered from an external battery over the wire, but a built-in rechargeable for the case of unforeseen power interruptions is also an option. The operation of the probe, sending-receiving data and commands in real time, is performed over the RS-485 interface compliant to ANSI N42.42 data format, which makes it easy to integrate into existing sensor networks. The user-friendly configuration software as well as the optional USB interface makes it convenient for lab use, which extends the range of applications to measurement of food and soil contamination, air and water activity and similar.

FUNCTIONAL HIGHLIGHTS

- <3.5% energy resolution
- Wide range temperature gain stabilization
- IP67 rated weatherproof aluminium enclosure
- Multiple communication interfaces
- Low power consumption
- Automatic radionuclide identification
- Built-in spectra identification

COMMUNICATION INTERFACES

- RS-485 Modbus industrial
- USB
- ANSI N42.42 data format for easy integration

TYPICAL APPLICATIONS

- Environmental and industrial monitoring
- Early detection of effluent releases in case of emergency
- Nuclear Power Plants area monitoring
- Radiological studies and monitoring
- Waste processing plants and NORM storage areas

Specifications

Metrological	
Detector	1"×1" SrI_2(Eu)+SiPM array
Dose equivalent rate range	0,05 µSv/h to 10 mSv/h
Energy range	from 40 keV to 3 MeV
Accuracy	±20%

Spectroscopic	
Resolution	< 3.5% at Cs-137 (typical 3.2%)
Spectra format	2048 ch
Isotopes of interest	automatic detection of Cs-137, I-131, Co-60, Xe-135 releases (customizable)

Communication	
Interfaces	RS-485 Modbus, USB
Protocol compliance	ANSI N42.42

Power supply	
External	5V DC, 100 mA
Built-in (optional)	Li rechargeable battery

Mechanical	
Ingress protection	IP67
Dimensions, mm	Ø45 × 120 mm
Weight	120 g

Environmental	
Temperature range	from -50 to +50 °C
Pressure	from 84,0 to 106,7 kPa
Humidity	from 0 to 100%

Specifications are subject to change without notice.
Copyright © 2026 Mission Support. All rights reserved.

Mission Support · Alexanderveld 5, 2585 DB The Hague, Netherlands
E: info@cbrn-missionsupport.com · cbrn-missionsupport.com