

AT1125 AT1125A

Hand-held high sensitive radiation monitor to search and detect gamma radiation sources and measure dose rate and specific activity of ^{137}Cs in environmental samples

RADIATION MONITOR

30 nSv/h – 300 Sv/h
50 keV – 3 MeV **20 – 10^5 Bq/kg**

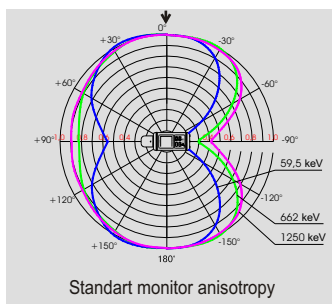
Features

- Multifunctionality
- High sensitivity
- Fast adaptation to radiation background change
- Wide temperature range operation under field conditions (Ip54)
- Built-in LED stabilization system of measuring path providing no need to use reference source
- 256-channel MCA
- Remote measuring with remote control
- Special large LCD with backlighting
- Alarm at threshold exceeding
- Keeping up to 100 measurement results
- Measured spectra saving, keeping and transferring to PC
- User's Instrument calibration to measure specific activity of ^{137}Cs and other radionuclides
- Specific activity express control under field conditions
- Three power types



Application

- Radiation monitoring of environment, area, targets and materials
- Dosimetry and radiometry monitoring at industrial enterprises
- Radiometry monitoring of ^{137}Cs in food, agricultural materials, the gifts of nature and other environmental targets



The main AT1125 and AT1125A function is to search, detect and locate gamma radiation sources, measure near-background ambient equivalent gamma radiation dose rate. It is possible to enable specific activity express control of liquid and dry sample under field conditions by customer's order. The instrument is high-sensitive with the possibility to response quickly to slight radiation background change because of scintillation NaI(Tl) and it provides dose rate measuring in wide gamma radiation energy range because of the correction function "instrument spectrum-dose" in 13 intervals of the whole energy range of 0.05 – 3 MeV.



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**INSTRUMENTS AND TECHNOLOGIES FOR
NUCLEAR MEASUREMENTS AND RADIATION MONITORING**

AT1125A radiation monitor has Geiger-Muller tube as well as scintillation NaI(Tl), which extends greatly ambient equivalent gamma radiation dose rate measuring range. At activity measuring there is the possibility to input the mass and account the sample density automatically. At instrument switching-on there are 29 Sv/h and 180 Sv as threshold levels, which can be changed with a keyboard. There is audible and visual alarm at threshold exceeding. At switching-on and during instrument operation there is continuous self-testing. The instrument provides data transfer to PC with the rate from 300 to 19200 baud.

Specification

Detector size, NaI(Tl)	25x40 mm
Ambient equivalent gamma radiation dose rate measuring range	30 nSv/h - 300 Sv/h
Ambient equivalent gamma radiation dose measuring range	30 nSv - 10 mSv
Intrinsic dose and dose rate measurement error	±15%
Energy range	0.05 - 3 MeV
Energy sensitivity response in the energy range of 0.05 - 3 MeV	±15%
Minimum measuring ¹³⁷Cs activity for one hour at statistical error of ± 50 % (P=0,95)	
with protection unit	30 Bq/kg
without protection unit	50 Bq/kg
¹³⁷Cs specific activity measuring range	
with protection unit	20 - 10 ⁵ Bq/kg
without protection unit	50 - 10 ⁵ Bq/kg
Intrinsic ¹³⁷Cs specific activity measurement error	±20%
Counting rate measuring range	1 - 10 ⁵ s ⁻¹
Measuring time of natural radiation background of 0.1 µSv/h at statistical error of ± 50 % (P=0,95)	
less than 20 s	
Detection time of ¹³⁷Cs source of 10 kBq at the distance of 7 cm	less than 2 s
Operation mode setup time	1 min
Continuous operation time	
AC mains or DC supply	24 h
built-in accumulator unit	24 h
Operating temperature range	-20 +50 °C
Complementary measurement error at temperature range	±10%
Relative humidity at the temperature of 35°C	95%
Power requirements	
built-in accumulator unit	6 V
AC mains, frequency of 50 Hz	220 V
DC supply	12 V
Radio disturbance characteristics	
CEI/IEC CISPR 22:1997	
Electromagnetic compatibility	
CEI/IEC 61000-4-2:1995	
IEC 61000-4-3:1995	
Weight	
monitor	1.0 kg
protection unit	17.0 kg
Dimensions	
monitor	85x258x66.5 mm
protection unit	190x363 mm

Complete set: the radiation monitor AT1125 (AT1125A), AC adapter A51212DG, holster, handle, Manual. **By additional order** it is possible to include into the monitor complete set specific activity measurement technique, protection unit, support, cable to connect PC, cable to connect DC supply, Marinelly's measuring vessels of 0.5 l, applied software", remote control with 25m cable.

The radiation monitor AT1125 has pattern approval certificate of Republic of Belarus.

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