

AT1125 AT1125A

Portable high sensitive radiation monitors intended to search and detect gamma radiation sources, measure ambient gamma radiation dose equivalent rate and alpha and beta radiation flux density from contaminated surfaces and estimate ^{137}Cs specific activity in environment samples

Features

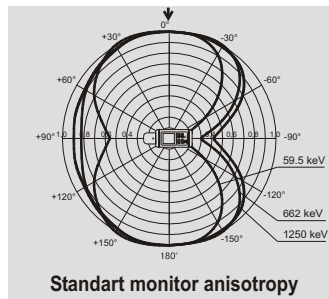
- Multifunctionality
- High sensitivity
- Fast response to radiation background changing
- Wide-temperature operation under field conditions (IP54)
- Built-in LED stabilization system of the measuring path providing no need to use a reference source
- 256-channel MCA
- Special large backlit LCD
- Alarm at threshold exceeding
- Keeping up to 100 measurement results in the instrument memory
- Logging and transfer measurement results to PC
- Specific activity measuring under field conditions as an option
- Three power types
- Scrap metal radiation monitoring

Application

- Search, detection and location of radiation sources
- Scrap metal radiation monitoring
- Radiation monitoring of environment, area, targets and materials
- Dosimetric and radiometric monitoring at industrial enterprises
- Monitoring of contamination fluctuations
- Radiometric control of Cs-137 in agricultural products under field conditions
- Radiation monitoring of scrap metal
- On-site radioactive monitoring of mushrooms and berries

RADIATION MONITOR

SEARCH - $350 \text{ cps}/\mu\text{Sv}\cdot\text{h}^{-1}$
30 nSv/h - 100 mSv/h
50 keV - 3 MeV 50 - 10^5 Bq/kg



The main function of the radiation monitors AT1125 and AT1125A is to search, detect and locate gamma radiation sources and measure ambient gamma radiation dose equivalent rate from near-background levels. The instruments are high sensitive and have fast response to slight radiation background changes due to using scintillation NaI(Tl) and at the same time they provide accurate dose rate measuring in the 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. The radiation monitor AT1125A has scintillation NaI(Tl) as well as a G-M tube, which extends greatly ambient gamma radiation dose equivalent rate measuring range. The instrument can be connected to the external intelligent smart probe BDPS-02, providing alpha and beta radiation flux density measuring from contaminated surfaces and also ambient x-ray and gamma radiation dose equivalent rate and dose measuring. The radiation monitors can have an optional operation mode of ^{137}Cs specific activity monitoring in liquid and granular samples under field conditions.



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

Specification

Detector

AT1125, AT1125A	Nal(Tl) - Ø25x40 mm
AT1125A	Built-in G-M tube
BDPS-02	G-M end-window counter

Ambient X-ray and gamma radiation dose equivalent rate measuring range

AT1125	30 nSv/h - 300 µSv/h
AT1125A	30 nSv/h - 100 mSv/h
BDPS-02	0.1 µSv/h - 30 mSv/h

Ambient X-ray and gamma radiation dose equivalent measuring range

AT1125	10 nSv - 10 mSv
AT1125A	10 nSv - 10 Sv
BDPS-02	0.1 µSv - 1 Sv

Intrinsic dose and dose rate measurement error

AT1125, AT1125A	±15%
BDPS-02	±20%

Flux density measuring range

alpha radiation	
BDPS-02	2.4 - 10 ⁶ part./(min·cm ²)
beta radiation	
BDPS-02	6 - 10 ⁶ part./(min·cm ²)

X-ray and gamma radiation energy range

AT1125, AT1125A	0.05 - 3 MeV
BDPS-02	0.02 - 3 MeV

Alpha radiation energy range BDPS-02

BDPS-02 4 - 7 MeV

Beta radiation energy range

BDPS-02 155 keV - 3.5 MeV

Energy sensitivity response

AT1125, AT1125A	± 15 %
BDPS-02	± 30 %

Sensitivity on ¹³⁷Cs

AT1125, AT1125A	350 cps/µSv · h ⁻¹
BDPS-02	6.6 cps/µSv · h ⁻¹

¹³⁷Cs specific activity measuring range ..

50 - 10⁵ Bq/kg

Intrinsic ¹³⁷Cs specific activity measurement error

..... ±20%

Count rate measuring range 1 - 10⁵ s⁻¹

Measurement time of natural radiation background of 0.1 µSv/h at statistical error of ± 20 % (P=0.95) less than 15 s

Detection time of a ¹³⁷Cs source, 10 kBq at 5 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

Relative humidity at 35°C 90%

Protection class

AT1125, AT1125A	IP54
BDPS-02	IP65

Power requirements

built-in accumulator unit	6 V
AC mains, frequency of 50 Hz	220 V
DC supply	12 V

Radio disturbance

EN 55022:2006

Electromagnetic compatibility

IEC 61000-4-2:1995
IEC 61000-4-3:2002

Weight

AT1125, AT1125A	1.0 kg
BDPS-02	0.3 kg

Dimensions

AT1125, AT1125A	85x258x67 mm
BDPS-02	138x86x60 mm

Complete set: radiation monitor, AC adapter, handle, holster and Manual.

Smart probe BDPS-02, cable to connect to PC and applied software, cable for DC supply, telescopic bar, 1.1 m, packing case or bag, kit of accessories to measure specific activity (support, measuring vessels, 0.5 l) are options and they are supplied on additional order.

Radiation monitors AT1125 and AT1125A have pattern approval certificates of Republic of Belarus, Russian Federation, Ukraine and Kazakhstan.
They comply with IEC 60846 and IEC 61563 International standard requirements.

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