

AT1117M Radiation Monitor



General control of contamination by radioactive materials in count rate mode



Components:

- BDPS-02 Detection unit
- PU Processing unit
- Cable

Specifications

Registered radiation	PU	Gamma radiation (γ)
	BDPS-02	Alpha (α), beta (β), x-ray (X), gamma (γ) radiation
Detector	PU	Geiger-Muller counter tube
	BDPS-02	Geiger-Muller counter tube, 14 cm ²
Impuls count rate measurement range		0.01 – 1.5 · 10 ⁵ s ⁻¹
Measurement range of surface alpha particles flux density [BDPS-02]		2.4 – 10 ⁶ particle · min ⁻¹ · cm ⁻²
Energy range of registered alpha particles [BDPS-02]		4 – 7 MeV
Measurement range of surface beta particles flux density [BDPS-02]		6 – 10 ⁶ particle · min ⁻¹ · cm ⁻²
Energy range of registered beta particles [BDPS-02]		155 keV – 3,5 MeV
Typical sensitivity [BDPS-02] - To alpha radiation from ²³⁹ Pu source - To beta radiation from ⁹⁰ Sr + ⁹⁰ Y source		0.045 cps/(particle · min ⁻¹ · cm ⁻²) 0.12 cps/(particle · min ⁻¹ · cm ⁻²)
Measurement range of ambient radiation dose rate equivalent	BDPS-02	0.1 μSv/h – 30 mSv/h
	PU	1 μSv/h – 100 mSv/h
Measurement range of ambient radiation dose equivalent	BDPS-02	0.1 μSv – 1 Sv
	PU	1 μSv – 1 Sv
Registered gamma radiation energy range	BDPS-02	20 keV – 3 MeV
	PU	60 keV – 3 MeV
Typical sensitivity to ¹³⁷ Cs gamma radiation	BDPS-02	6.6 cps/(μSv · h ⁻¹)
	PU	1.0 cps/(μSv · h ⁻¹)
Energy dependence relative to 662 keV (¹³⁷ Cs)	BDPS-02	±30% (20 keV - 3 MeV)
	PU	-25% to +35% (60 keV - 3 MeV)
Limits of tolerable intrinsic relative error		±20%
Burn-up life		≥100 Sv
Protection class		IP64
Continuous operation time		≥24 h
Operation temperature range		-40°C to +50°C
Power supply		1) Internal rechargeable battery 2) +12 VDC 3) 110-230 VAC, 50-60 Hz
Overall dimensions, weight	PU	177x85x124 mm, 1.2 kg
	BDPS-02	138x86x60 mm, 0.33 kg

The radiation monitor complies with: GOST 27451-87, Safety requirements of IEC 61010-1:2010, EMC requirements of EN 55011:2009, IEC 61000-4-2:2008, IEC 61000-4-3:2008

Radiation monitor with multifunctional detection unit BDPS-02 is designed to control general level of pollution by radioactive materials in impulse count rate mode. Radiation monitor features separate alpha particles flux density with beta particles flux density, as well as gamma radiation dose rate measurement mode.

Processing unit has a built in Geiger-Muller tube to control gamma radiation dose and dose rate at operator's site.

Operating principle

End window GM tube with detector working area of 14 cm² and thin end window to detect integral alpha, beta and gamma radiation with this window open. Supplied alpha filters can be used to measure alpha and beta particle flux separately. Compensating filter shall be used at BDPS-02 for dose rate and dose measurement.

BDPS-02 sends data to processing unit to be displayed on a big LCD-screen. Operation algorithm provides measurement continuity and real time statistical processing of measurement results.

Application

- Dosimetric and radiometric control of staff and public contamination during radiation accidents
- Dosimetric and radiometric monitoring in manufacturing facilities, research laboratories, medical institutions, etc.

Features

- Multiple functions
- Wide measurement range
- Wide energy range
- Sound and visual alarm for exceeded threshold levels
- Measurement results can be written and stored in non-volatile memory of Radiation monitor
- Can be attached to a telescopic bar
- Operation in harsh weather conditions

Design and specifications are subject to change without notice