

AT2327

ALARM DOSIMETER

Flexible and reliable multi-channel stationary radiation monitoring system to perform environmental and area radiation monitoring of radiation-sensitive rooms and targets

From 1 to 10 control posts
in one alarm dosimeter
From 1 to 32 alarm dosimeters
in one system

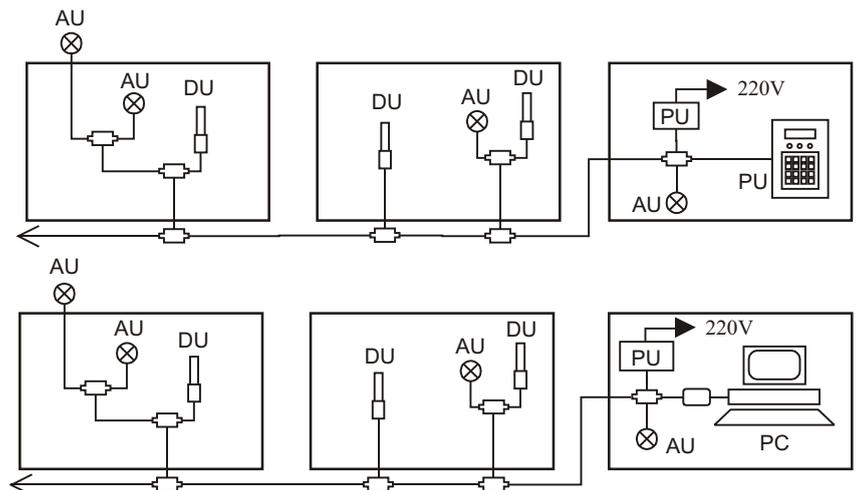
Features

- Gamma and neutron radiation smart probes
- Independent measuring in each channel within wide gamma and neutron radiation dose rate and neutron radiation flux density ranges
- Audible and visual alarm at threshold exceeding for each smart probe
- High reliability
- Failure diagnostics
- Database of dose rate values and alarm threshold excesses
- Applied software to display current radiation environment in real time
- Backup power unit
- Mobile one-channel design



Application

- Nuclear industry
- Radiology
- Industry
- Radioisotope and dosimetry laboratories
- Civil defense



The alarm dosimeter may consist of gamma radiation smart probes (AT2343, BDKG-02, BDKG-04, BDKG-11/1, BDKG-17) and neutron radiation smart probes (BDKN-02, BDKN-04) (SP). The smart probes are completely independent instruments measuring gamma and neutron radiation dose rate and neutron radiation flux density every 2 s and triggering audible and visual alarm. One or several audible and visual alarm units (AU) may be connected to each smart probe to notify the staff in the case of radiation hazard. Data from smart probes are transferred to the processing unit via RS-485.



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The processing unit displays measured values of the selected smart probe and real time. Alarm threshold exceeding or a failure of any system units is accompanied by audible and visual signals showing symbolically the problem location on the display. The processing unit is intended to setup thresholds for each smart probe, monitor smart probe state, correct the real-time clock, protect several service functions with a password and review dose rate and threshold exceeding history of any smart probe.

When PC is used as a part of a radiation monitoring system, applied software running under Windows 2000 is intended to configure the system, read out readings and process them.

The map of the monitoring area or target and dose rate values as charts and tables in measuring posts are displayed on PC. Alarm threshold exceeding in any smart probe or failure of any system units are displayed on PC as color zones and accompanied by audible alarm. Measured dose rate values in measuring post are stored in a database (Microsoft Access-2000).

Specification

Number of smart probes in one alarm dosimeter	from 1 to 10	Intrinsic measurement error	± 20 %
Number of alarm dosimeters in one radiation monitoring system connected to PC	32	Operating temperature range	
		smart probes	-30 ÷ +50 °C
		other units	+5 ÷ +40 °C
Ambient dose equivalent rate measuring range		Interface	
gamma radiation		(cable communication)	RS 485
BDKG-02	0.1 µSv/h - 10 Sv/h	3-level visual and audible alarm	
BDKG-04	0.05 µSv/h - 10 Sv/h	Maximum distance between a smart probe and the processing unit (cable communication)	1000 m
BDKG-11/1	0.01 - 100 µSv/h	Protection class	
BDKG-17	1 mSv/h - 100 Sv/h	detection units	IP57
neutron radiation		other components	IP50
BDKN-02 (from Pu-Be sources)	0.1 µSv/h - 10 mSv/h	Radio disturbance	
BDKN-04 (0.025 eV - 14 MeV) ..	0.1 µSv/h - 10 mSv/h	EN 55022:1998	
Gamma radiation absorbed dose rate measuring range (AT2343)	25 nGy/h - 10 Gy/h	Electromagnetic compatibility	
Neutron radiation flux density measuring range		IEC 61000-4-11:2004	
BDKN-02, BDKN-04	0.1 - 10 ⁴ neutron/(cm ² ·s)	IEC 61000-4-4:2004	
Sensitivity on ¹³⁷ Cs		IEC 61000-4-2:2001	
BDKG-02	4.0 cps/µSv·h ⁻¹	IEC 61000-4-3:2005	
BDKG-04	70 cps/µSv·h ⁻¹		
BDKG-11/1	1970.0 cps/µSv·h ⁻¹		
BDKG-17	0.004 cps/µSv·h ⁻¹		
AT2343	15000 cpt/µSv		
Neutron sensitivity from Pu-Be sources		Power supply	
BDKN-02	1.15 cps/(neutron/s ⁻¹ ·cm ⁻²)	AC mains	220 (+22;-33) V; frequency 50 (±2) Hz
BDKN-04	1.5 cps/(neutron/s ⁻¹ ·cm ⁻²)	Accumulator battery at emergency	12.6 (+1.3;-1.6) V or 25.2 (+2.6;-3.2) V
Energy sensitivity response respect to ¹³⁷ Cs	not more than +35 ÷ -25 %		
Gamma radiation energy range			
BDKG-02, BDKG-17	60 keV - 3 MeV		
BDKG-04	15 keV - 3 MeV		
AT2327	50 keV - 3 MeV		
Detecting neutron radiation energy range	2.5 · 10 ⁻⁵ keV - 14 MeV		

Complete set: processing unit, smart probes AT2343, BDKG-02, BDKG-04, BDKG-11/1, BDKG-17, BDKN-02, BDKN-04, alarm units, terminal-block boxes, AC adapter, Manual, complete of assembly parts and accessories.
Backup power unit, applied software, PC and interface adapter are option and they are supplied **on additional order.**

Alarm dosimeter AT2327 has pattern approval certificates of Republic of Belarus, Russian Federation, Ukraine and Kazakhstan.
It complies with IEC 61017-7 International standard requirements. They also conform with the 89/336/EEC directive complying with EN 61000-4-3, EN 61000-4-2, EN50371, EN61010-1 standard requirements.

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