



RZB-01A

BETA CONTAMINATION MONITOR

INTENDED USE

RZB-01A is designed to measure contamination of surfaces with beta-active substances (measurement of flux density, measurement of surface activity).

DESIGN AND OPERATION

RZB-01A includes one or more beta detection units and a local controller unit, as well as a bracket for placing a remote detection unit on the wall.

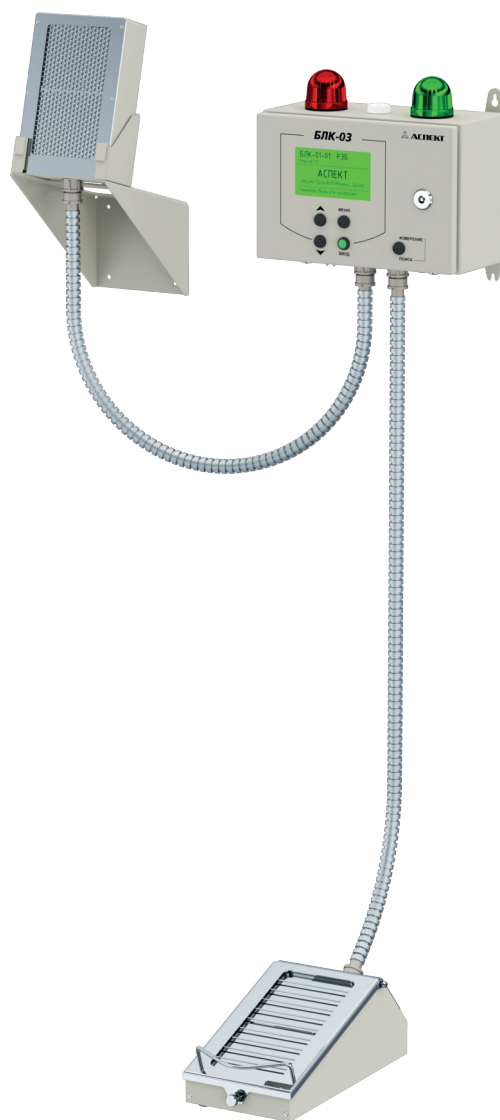
The detection unit is a sealed case with gas detectors inside. It provides effective measurement of beta radiation flux density in the search area. RZB-01A can come with two different units: the BDB-05 unit is fixed-site and is designed to measure the degree of contamination of shoes, the BDB-01-01 unit can be moved manually and is designed to search for sources of contamination and measure the degree of contamination of hands and body.

The local controller unit contains indication and alarm devices and serves to indicate the results of measurement completion.

Communication between the local controller unit and the detection units is carried out via a main bus including an RS-485 interface and a power line for the product modules.

APPLICATION

The device is used to organize a local radiation monitoring point used to examine the skin, special clothing and other personal protective equipment of personnel for contamination with beta-active substances at various radiological facilities, radiochemical production facilities, and nuclear power plants.





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SPECIFICATIONS

Range of registered beta energies	0.15 to 3.5 MeV
Beta radiation flux density measurement range	1.5 to 10,000 parts/(min·cm ²)
Limits of permissible basic relative error in measuring the beta radiation flux density (for ⁹⁰ Sr+ ⁹⁰ Y)	±(20+20/φ) %, max
Operating mode setting time	10 minutes, max
Detector type	gas
Service life	10 years, min
Electromagnetic compatibility	III A according to GOST 32137-2013
Interface for data transfer	Ethernet or RS-485
Environmental	от +5 до +50 °C, 80 % at 35 °C and lower temperatures without moisture condensation
Power supply	(187 – 242) V, (47 – 51) Hz, 20 V·A
Dimensions and weight:	
- BDB-05 Beta Detecting Unit	(341×173×139) mm; 3.25 kg
- BDB-01-01 Beta Detecting Unit	(234×146×99) mm; 1.8 kg
- Local Controller Unit	(300×283×173) mm; 5.9 kg
- Bracket	(270×154×222) mm; 1.4 kg

CERTIFICATION

- RZB-01A is registered in the State Register of Measuring Instruments under No. 56899-15 as part of the SKRO-01A radiation monitoring system
- RZB-01A complies with the requirements of the Technical Regulations of the Customs Union on safety of low voltage equipment (TR CU 004/2011), Technical Regulations of the Customs Union on electromagnetic compatibility of technical means (TR CU 020/2011)
- RZB-01A is certified in the conformity assessment system in nuclear energy area as part of the SKRO-01A Radiation Environment Monitoring System