



# RZS-02A

## PERSONNEL CONTAMINATION MONITOR

### INTENDED USE

Monitoring of skin, overalls, special footwear and other personal protective equipment for contamination with beta active radionuclides.

Detection of gamma contamination of personnel.

### FEATURES AND PERFORMANCE

- Separate registration and processing of beta and gamma radiation by each detecting unit
- Transfer of measured parameters, as well as data on the technical condition of devices to external devices of the automated radiation monitoring system
- Optional video system to record the person being screened at the level of their faces using video cameras with two-way audio communication
- Automatic monitoring of RZS-02A configuration and operability of detecting units
- Automatic gamma background compensation
- Visual and voice support for the measurement procedure
- Double barrier at the entrance and exit to prevent unauthorized crossing of the controlled zone
- Easy decontamination due to stainless steel housing
- Supports identification of the screened personnel using electronic cards (passes) used at the NPP

### DESIGN AND OPERATION

RZS-02A is a measuring booth containing 25 detecting units and a panel computer. The detecting units are based on thin plastic scintillators highly sensitive to gamma and beta radiation.

If the threshold levels of contamination are exceeded, the entrance and exit swing doors are blocked, and the monitor issues an alarm message, including sound and light signal, a mnemonic scheme displayed on the panel computer screen indicating the place and type of gamma and/or beta contamination detected on the object, as well as measured beta contamination values.





## RZS-02A

### SPECIFICATIONS

Range of measured beta energies	0.1 to 2.5 MeV
Range of detected gamma energies	0.05 to 3 MeV
Range of measured beta flux density	1 to 15,000 part/min·cm <sup>2</sup>
Minimum detectable activity of <sup>137</sup> Cs gamma sources	(2.0 ± 0.3) kBq
False alarm rate for gamma sources, max	0.001
Tolerable basic relative error of beta particles flux measurement ( $\varphi$ ) with confidence level P = 0.95 %, max	±(19 + 10/ $\varphi$ ) %
Range of settable thresholds for beta alarms	1 to 15,000 part/min·cm <sup>2</sup>
Threshold setting resolution over the entire measurement range	1 part/min·cm <sup>2</sup>
Detector type	scintillation
Detector sensitive area for monitoring the body surface	600 cm <sup>2</sup>
Detector sensitive area for monitoring small items	450 cm <sup>2</sup>
Number of detectors for monitoring the body surface	24
EMC Group according to GOST 32137	III A
Interface for data transfer to higher levels of the automated radiation monitoring system	Ethernet and (or) RS485
Operating conditions	+5 to +50 °C
Power supply	(187 – 242) V, (47 – 51) Hz, 300 V·A
Overall dimensions	(2449×1000×1226) mm
Weight	498 kg

### CERTIFICATION

- Registered in the State Register of Measuring Instruments under No. 49307-12
- Complies with the requirements for products of safety class 3N according to OPB-88/97, as well as with the Customs Union Technical Requirements “Safety of Low Voltage Equipment” (CU TR 004/2011) and “Electromagnetic Compatibility of Technical Means” (CU TR 020/2011)
- Certified in the conformity assessment system in the field of atomic energy use (Certificate of Conformity No. OIAE.RU.156 OS.00227)
- Complies with the requirements of STO 1.1.1.02.004.1078-2015 “Stationary radioactive contamination monitors for monitoring of nuclear power plant personnel. General technical requirements, types and test methods”

