STORA-ABG

Selective measurement of alpha, beta, gamma and X-ray radiation

Operation with telescopic rod

Mode of PC connection via Bluetooth

Damp and dustproof body IP54

FEATURES

- Alpha-beta-gamma-sensitive Geiger-Mueller counter with mica window
- Energy-compensating filter, which allows to obtain a reliable energy dependence of the radiometer readings when measuring photon ionizing radiation in the energy range from 12 KeV to 3 MeV
- Large display with luminescent backlight, which provides simultaneous display of measurement units, measurement errors, threshold level, real time; and an analog indicator of instantaneous radiation intensity
- Ability to perform measurements with a preset error
- Prompt evaluation of gamma background within 10 seconds
- Automatic subtraction of gamma radiation component when measuring beta radiation parameters
- Automatic subtraction of gamma and beta radiation components when measuring alpha radiation parameters
- Programming of threshold levels of the alarm system activation for each parameter of measured radiation
- Automatic setting of measurement intervals and ranges
- Audio signaling of each registered gamma quantum, alpha or beta particle with the possibility of its deactivation
- Two-tone audio alarm of exceeded programmed threshold levels
- Recording in non-volatile memory up to 1 000 measurement results
- Viewing the measurement results previously recorded in non-volatile memory on the indicator, as well as transfer the information to a personal computer via Bluetooth
- Four-level indication of the battery discharge
- New software has been developed to work with the device
- Software is used for:
  - readout of measurement results from the dosimeter memory into the PC as a dosimeter measurement protocol
  - viewing measurement results on the PC monitor, preparation and printout of the report, saving measurement results to a file without changes or as a report for further use

DESCRIPTION

A compact search device with a telescopic rod for quick detection and localization of alpha, beta, gamma and X-ray radiation sources.

PURPOSE OF USE

- Measurement of ambient dose equivalent rate (DER) of gamma and X-ray radiation (photon-ionizing radiation)
- Measurement of surface beta-particles flux density
- Measurement of surface activity of beta-emitting radionuclides
- Measurement of surface alpha-particles flux density
- Measurement of surface activity of alpha-emitting radionuclides
- Indication of pulse counting speed from the detector of alpha-beta-gamma radiation

SPECIFICATIONS

Measurement range of photon-ionizing radiation DER	0.1 … 100 000 μSv/h
Display range of photon-ionizing radiation DER	0.01 … 100 000 μSv/h
Main relative permissible error limit when measuring photon-ionizing radiation DER at ^{137}Cs calibration with a confidence probability of 0.95	(15+2/M) %, where M is a dimensionless value that is numerically equal to the DER value measured in μSv/h
Energy range of photon-ionizing radiation being registered	0.012 … 3 MeV
Energy dependence of radiometer readings when measuring photon-ionizing radiation DER relative to 0.662 MeV (^{137}Cs) - in the energy range from 0.012 to 0.04 MeV, not more - in the energy range from 0.04 to 1.25 MeV, not more	 ± 35 % ± 25 %
Measurement range of surface beta-particles flux density	5 … 999 999 part./(cm^2·min)
Display range of surface beta-particles flux density	1 … 999 999 part./(cm^2·min)
Measurement range of surface activity of beta-emitting radionuclides	0.22 … 9 999 Bq/cm^2 for C0 source type (^{90}Sr/^{90}Y) (efficiency of C0 type sources is 0.377)
Display range of surface activity of beta-emitting radionuclides	0.01 … 9 999 Bq/cm^2
Main relative permissible error limit when measuring surface beta-particles flux density in the range from 5 part./(cm^2·min) to 999 999 part./(cm^2·min) at ^{90}Sr/^{90}Y calibration with a confidence probability of 0.95	(20+150/F) %, where F is a dimensionless value that is numerically equal to the value of surface beta-particles flux density measured in part./(cm^2·min)
Main relative permissible error limit when measuring surface activity of beta-emitting radionuclides in the range from 0.22 Bq/cm^2 to 9 999 Bq/cm^2 at ^{90}Sr/^{90}Y calibration with a confidence probability of 0.95 from C0 source type	(20+10/A) %, where A is a dimensionless value that is numerically equal to the value of surface activity of beta-emitting radionuclides measured in Bq/cm^2
Energy range of beta-particles being registered	0.15 … 3 MeV
Measurement range of surface alpha-particles flux density	5 … 999 999 part./(cm^2·min)
Display range of surface alpha-particles flux density	1 … 999 999 part./(cm^2·min)
Measurement range of surface activity of alpha-emitting radionuclides	0.2 … 9 999 Bq/cm^2 for П9 source type (^{239}Pu) (efficiency of П9 type sources is 0.490)
Display range of surface activity of alpha-emitting radionuclides	0.01 … 9 999 Bq/cm^2
Display range of pulse count rate from alpha, beta, gamma radiation counter	0.001 … 9 999 cps
Main relative permissible error limit when measuring surface alpha-particles flux density in the range from 5 part./(cm^2·min) to 999 999 part./(cm^2·min) at ^{239}Pu calibration with a confidence probability of 0.95	(20+150/F) %, where F is a dimensionless value that is numerically equal to the value of surface alpha-particles flux density measured in part./(cm^2·min)
Main relative permissible error limit when measuring surface activity of alpha-emitting radionuclides in the range from 0.2 Bq/cm^2 to 9 999 Bq/cm^2 at ^{239}Pu calibration with a confidence probability of 0.95 from a standard П9 source type	(20+10/A) %, where A is a dimensionless value that is numerically equal to the value of surface activity of alpha-emitting radionuclides measured in Bq/cm^2
Window area	13.8 cm^2
Typical sensitivity to photon-ionizing radiation with an energy of 0.662 MeV (^{137}Cs)	4.5 cps/(μSv/h)
Time of operating mode setting of the radiometer, not more	1 min
Time of continuous operation of the radiometer when powered from a new battery of two 1 200 mAh AAA galvanic cells under normal conditions and given gamma background not more than 0.5 μSv/h, disabled sounding of registered gamma quanta and disabled backlight of the scale, not less	2 000 h
Operating supply voltage	3 V
Additional relative permissible error limit when measuring photon-ionizing radiation DER, surface beta-particles flux density and surface alpha-particles flux density in the range of supply voltage from 2.4 V to 3.2 V	± 5 %

Additional relative permissible error limit when measuring photon-ionizing radiation DER, surface beta-particles flux density and surface alpha-particles flux density caused by changes in the environmental temperature from minus 20 °C to + 50 °C	± 0.5 % per each 1 °C of deviation from 20 °C
Operating temperature range	- 20 … + 55 °C
Overall dimensions of the radiometer, not less	160 × 75 × 37 mm
Length of the folded telescopic rod	382 mm
Length of the unfolded telescopic rod	937 mm
Weight of a telescopic rod	0.21 kg
Weight of the radiometer without a telescopic rod, not more	0.4 kg
Weight of the radiometer in package, not more	4.2 kg (case – 3.2 kg)

DELIVERY KIT

- radiometer-dosimeter
- cover No.1 (energy compensating filter for measurement of photon-ionizing radiation DER)
- cover No.2 (alpha, beta filter for gamma radiation component measurement when measuring beta radiation characteristics)
- cover No.3 (alpha filter for gamma and beta component measurement when measuring alpha radiation characteristics)
- cover No.4 (a grid to protect the counter when measuring alpha radiation characteristics)
- gaskets kit (30 microns - 10 pcs.)
- telescopic rod
- holder
- screw (2 pcs.)
- software
- operating manual
- stacking bag
- packing case
- package

THE DELIVERY KIT MAY BE COMPLETED UPON CUSTOMER'S REQUEST

BRANCHES OF USE

CUSTOMS AND BORDER SERVICES

MEDICINE

SANITARY DOSIMETRY AND ECOLOGY

INDUSTRY