AT6130C Radiation Monitor

Pocket Radiation Monitor

Applications

- Radiation protective measures in case of nuclear disasters
- Civil protection
- Radioecology
- Fire-fighting service
- Customs service
- Dosimetric monitoring in manufacturing facilities, health care and other institutions

Features

- Low weight and small size
- Automatic compensation of intrinsic detector background
- Sound and visual alarm in case threshold level is exceeded for dose and dose rate
- Rapid reaction to statistically significant change of dose rate (measurement process restart)
- Dose rate and dose thresholds can be selected in entire measurement range and saved when the radiation monitor is switched off
- Field operation capability over a wide temperature range
- In search mode each registered gamma quantum is indicated by a sound signal
- Up to 100 measurement results can be stored in non-volatile memory with information about measurement date and time
- Measurement results, current time, date and battery life indicator is displayed on matrix LCD screen
- Bright white backlit LCD-screen

Compact reasonably priced device intended for gamma and X-radiation radiation ambient dose equivalent and ambient dose equivalent rate measurement.

Operating principle

Device operating principle is based on the process of count rate measurement of impulses, generated in Geiger-Muller counter tube under the influence of gamma radiation.

Count rate is converted automatically into measurable physical values throughout the range. Energy compensating filter allows correcting energy dependence of sensitivity efficiently in entire energy range of gamma radiation.

Microprocessor-based unit is responsible for controlling the radiation monitor operating modes, calculations, storing and displaying measurement results and for self-checking function.

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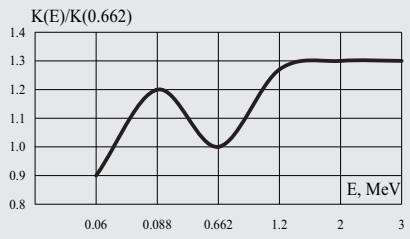
Specification

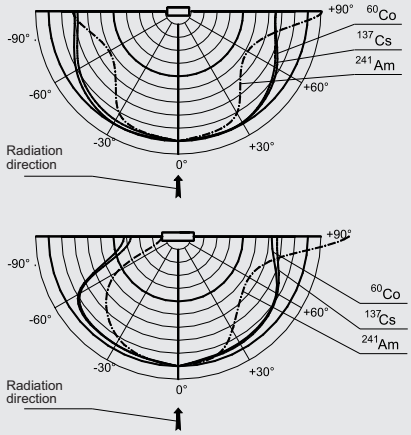
Ambient gamma and X radiation dose equivalent rate indication range	0.01 μSv/h – 1 mSv/h (*or* 1 μrem/h – 100 mrem/h)*
Ambient gamma and X radiation dose equivalent rate measurement range	0.1 μSv/h – 1 mSv/h (*or* 10 μrem/h – 100 mrem/h)*
Ambient gamma and X radiation dose equivalent indication range	1 nSv – 100 mSv (*or* 0.1 μrem – 10 rem)*
Ambient gamma and X radiation dose equivalent measurement range	0.1 μSv – 100 mSv (*or* 10 μrem – 10 rem)*
Limits of tolerable intrinsic relative error of dose rate measurement (in the range from 0.1 μSv/h to 1 mSv/h)	±20%
Energy range	50 keV – 3 MeV
Typical sensitivity to ^{137}Cs gamma radiation	2.8 cps/(μSv·h^{-1})
Response time for dose rate change from 1 to 10 μSv/h	≤7s (accuracy error ≤±10%)
Energy dependence relative to 662 keV (^{137}Cs)	±30%
Radiation overloading	Radiation monitor can withstand 100-fold rise of dose rate measurement upper range limit for 5 minutes with readings not lower than maximum
Burn-up life	≥100 Sv
Continuous run time in natural background conditions	≥700 h
Working temperature range	-20°C to +55°C
Relative humidity with air temperature ≤35°C without condensation	≤95%
Drop protection	From ≤1.5 m to hard surface
Protection class	IP40
Power supply	2 x AA-size batteries (LR 6) or 2 x AA-size rechargeable cells with nominal voltage 1.2 V
Overall dimensions, weight	111x70x28 mm, 0.2 kg

*** Units of measure are chosen during ordering procedure and cannot be altered later**

Design and specifications are subject to change without notice



Normal energy response of monitor sensitivity respect to ^{137}Cs gamma radiation of 662 keV



Standard sensitivity response upon gamma radiation incidence angle respect to the calibration direction

The radiation monitors comply with:
GOST 27451-87, GOST 28271-89, GOST 17225-85,
Safety requirements of IEC 61010-1:2010,
EMC requirements of EN 55011:2009,
IEC 61000-4-2:2008, IEC 61000-4-3:2008

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