

AT930 Pedestrian Radiation Monitor

Purpose

AT930 Pedestrian Radiation Monitor (PRM) operates in a continuous automatic control mode and is designed to detect sources of gamma radiation in a stream of pedestrians.

Conformance to international standard **IEC 62244:2006**

Radiation protection instrumentation – Installed radiation monitors for the detection of radioactive and special nuclear materials at national borders



Application

- Radiation control in pedestrian traffic:
 - In public places and institutions
 - In airports, bus terminals, railway and underground stations
 - At access control points on nuclear industry objects

Features

- Rapid accommodation to changed radiation background
- Sound and light alerts are emitted when the threshold levels are exceeded
- Mobile and capable of creating safety lanes
- Self-testing of components during operation
- Continuous and occasional radiation monitoring
- 230V-50Hz mains/integrated battery operation

Operating principle

Pedestrian Radiation Monitor is based on a smart gamma radiation detection unit.

PRM powers on and automatically enters natural gamma background measurement mode. The result of measurement is used for calculating and setting the threshold gamma radiation level – an alarm level.

When a pedestrian crosses the control zone border, the PRM switches to continuous gamma radiation measurement mode, calculates the count rate and compares the measured values to alarm threshold level. When obtained data exceeds the set alarm threshold level, the monitor activates audio and visual (red light) alarm to inform the staff (security guard) of a gamma radiation source detection.



Additional base for operation without anchoring to the floor



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INSTRUMENTS AND TECHNOLOGIES FOR NUCLEAR
MEASUREMENTS AND RADIATION MONITORING

AT930 Pedestrian Radiation Monitor

Specifications

Pedestrian Radiation Monitor	AT930	
Detector	Scintillation plastic 1000x100x50 mm	
Registered radiation	Gamma radiation	
Energy range	60 keV – 3 MeV	
Typical sensitivity to gamma radiation	²⁴¹ Am	60000 cps/(μ Sv·h ⁻¹)
	¹³⁷ Cs	31000 cps/(μ Sv·h ⁻¹)
	⁶⁰ Co	16500 cps/(μ Sv·h ⁻¹)
Detection threshold for unshielded source at 1 m height under natural radiation background conditions not more than 0.1 μ Sv/h (Distance to source 1 m, source travel speed 5 km/h, probability of source detection 80 % under confidence level P=0.95)	²⁴¹ Am	530 kBq
	¹³⁷ Cs	70 kBq
	⁶⁰ Co	35 kBq
	^{99m} Tc	180 kBq
	¹³³ Ba	75 kBq
	¹³¹ I	50 kBq
Minimum detectable amount of radioactive materials at 1 m height under natural radiation background conditions not more than 0.1 μ Sv/h (Distance to source 1 m, source travel speed 5 km/h, probability of source detection 95% under confidence level P=0.95)	²³⁵ U	15 g
	²³⁹ Pu	1.2 g
Alarm	Sound and light	
Initialization time	≤5 min	
Power supply options	1) 230 VAC 50 Hz mains 2) Backup rechargeable battery	
False alarm rate	≤1 per 1000 passings	
PC interface	RS485	
Protection class	IP54	
Mean operating life	≥15 years	
Operation temperature range	-30°C to +50°C	
Relative air humidity	Up to 95% (non-condensing, ≤+35°C).	
Overall dimensions	1610x450x300 mm when anchored to the floor (An additional base of 930x760 mm size is included into the delivery set for operation without anchoring)	
Weight	70 kg (83 kg with additional base)	

The pedestrian radiation monitor complies with: GOST R 51635-2000, IEC 62244:2006, Safety requirements of IEC 61010-1:2010, EMC requirements of EN 55011:2009, IEC 61000-4-2:2008, IEC 61000-4-3:2008, IEC 61000-4-4:2004, IEC 61000-4-5:2005, IEC 61000-4-6:2008, IEC 61000-4-8:2009, IEC 61000-4-11:2004

Design and specifications are subject to change without notice



ATOMTEX[®]
<http://www.atomtex.com>

5 Gikalo st., Minsk 220005,
Republic of Belarus
Tel./Fax: +375-17-270-81-42
E-mail: info@atomtex.com



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