

# 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.

Full 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.



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INSTRUMENTS AND TECHNOLOGIES FOR NUCLEAR  
MEASUREMENTS AND RADIATION MONITORING

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## Specifications

Pedestrian Radiation Monitor	AT930	
Detector	Scintillation plastic 1000x100x50 mm	
Registered radiation	Gamma radiation	
Energy range	60 keV – 3 MeV	
Sensitivity to gamma radiation	<sup>241</sup> Am	≥30000 cps/μSv·h <sup>-1</sup>
	<sup>137</sup> Cs	≥30000 cps/μSv·h <sup>-1</sup>
	<sup>60</sup> Co	≥15000 cps/μSv·h <sup>-1</sup>
<b>Detection threshold</b> of an unshielded source at a height of 1-1.5 m under natural radiation background conditions not exceeding 0.1 μSv/h (distance to source is 1 m, source travel speed is 5 km/h, probability of source detection is 80 %)	<sup>241</sup> Am	1.7 MBq
	<sup>137</sup> Cs	70 kBq
	<sup>60</sup> Co	40 kBq
	<sup>99m</sup> Tc	180 kBq
	<sup>133</sup> Ba	55 kBq
	<sup>131</sup> I	50 kBq
<b>Minimum detectable amount of radioactive materials</b> at a height of 1-1.5 m under natural radiation background conditions not exceeding 0.1 μSv/h (distance to source is 1 m, source travel speed is 5 km/h, probability of source detection is 95 %)	<sup>235</sup> U	10 g
	<sup>239</sup> Pu	0.3 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	From -30°C to +50°C	
Relative air humidity	Up to 95% (non-condensing, ≤+35°C).	
Overall dimensions	1610x450x300 mm, when the PRM is fixed to the floor (if not fixed, an additional base of 930x760 mm size is supplied)	
Weight	70 kg (83 kg with additional base)	

AT930 Pedestrian radiation monitor conforms to standard GOST R 51635-2000, international standard IEC 62244:2006, safety standards IEC 61010-1:202014 and requirements for electromagnetic compatibility: EN 55011:2009, IEC 61326-1:2006, IEC 61000-4-2:2008, IEC 61000-4-3:2008, IEC 61000-4-4:2004+A1:2010, 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



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