RADIATION MONITOR RM-1SM-01

DETECTION OF FISSILE AND RADIOACTIVE MATERIALS IN PASSENGER FLOWS PASSING THROUGH AN ACCESS CONTROL DEVICE

INTENDED USE

Automatic detection of gamma radiation sources carried by a pedestrian through the search area.

APPLICATION

The RM-1SM-01 radiation monitor is used for radiation monitoring of pedestrian flows at transportation facilities, offices and other crowded areas. The monitor is intended for mounting in access control devices (turnstiles) installed at the building entrances.

KEY FEATURES

- Operating mode - continuous, automatic
- Settable detection thresholds
- Automatic classification of alarms into three safety categories set by the operator
- Possibilities of expansion and connection of external devices
- Generation of "dry contact" in case of an alarm event
- Automatic registration of events in a non-volatile archive
- Embedded automatic selftest system
- Access to the system parameters via RS-485 interface (optional Ethernet)
- Generation of video information on the target object (when video surveillance sets are connected)
- Can be embedded in an access control unit (turnstile)
- Service life is 12 years

DESIGN

The RM-1SM-01 radiation monitor consists of a detecting unit and a set of mounting parts. The detecting unit is a metal case containing gamma detector and electronic units. The monitor is mounted at the place of its installation using the set of mounting parts. The type and components of the set of mounting parts depend on the deployment place.

Application of a lead shield enhances efficiency of gamma radiation detection.

The radiation monitor transfers data to a control panel or a PC and mobile device with the installed dedicated software.

RM-1SM-01

SPECIFICATIONS

Detection channels	gamma
Gamma detector	plastic scintillator
Detection thresholds (detection with probability of no less than 0.5 at a confidence level of 0.95) for a search area width of 0.8 m and height 2 m and object speed of up to 5 km/h	140 kBq (^{133}Ba) 170 kBq (^{137}Cs) 85 kBq (^{60}Co)
False alarm rate	0.001
Ingress protection	IP54
Environmental	-50 to +50 °C, 95 %
Dimensions	(120×470×120) mm (w/o set of mounting parts)
Weight, max	6 kg (w/o set of mounting parts)
Power supply	(9–28) V, 10 V·A max
Installation place	indoor
Objects	pedestrians

CERTIFICATION

- Complies with the requirements for the functional properties of technical means of ensuring transport security, approved by the Decree of the Russian Federation Government dated September 26, 2016 No. 969
- Complies 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)

By 2023, over 8000 RM radiation monitors of various modifications have been produced and put into operation.

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