RADIATION MONITOR YANTAR-1P3

FIXED-SITE SYSTEM FOR DETECTION OF FISSILE AND RADIOACTIVE MATERIALS CARRIED BY PEDESTRIANS

INTENDED USE

Automatic detection of gamma and neutron radiation sources carried by pedestrians through the search area.

APPLICATION

The Yantar-1P3 radiation monitors are designed to be installed at pedestrian checkpoints in customs areas, at airports, train stations, nuclear power plant checkpoints, enterprises for the production and processing of nuclear materials, offices, banks and other industrial and civil facilities.

DESIGN

Yantar-1P3 is one pillar containing gamma and neutron detectors and electronics units. The pillar side panels have sound and light alarming devices that set off when the detection threshold is exceeded.

Lead shields used for gamma detectors serve to enhance gamma detection efficiency.

A compact microwave radar mounted in the upper part of the pillar is used as an occupancy sensor, which senses the presence of the object in the search area.

The radiation monitors transfer data to the control panel or a PC with the application specific software installed.

KEY FEATURES

- Operating mode - continuous, automatic
- Sound and visual alarms
- Settable thresholds for each detection channel
- 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
- Storage and output of archive data to external devices (when connected)
- 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)
- Service life is 12 years

YANTAR-1P3

SPECIFICATIONS

Detection channels	gamma and neutron
Gamma detectors	plastic scintillators
Neutron detectors	^{3}He counters
Detection thresholds (detection with probability of no less than 0.5 at a confidence level of 0.95) for a search area width of 0.7 m and height of 2 m and object speed of up to 5 km/h	34 kBq (^{133}Ba) 34 kBq (^{137}Cs) 17 kBq (^{60}Co) 4700 neutron/s (^{252}Cf)
False alarm rate	0.001
Ingress protection	IP54
Environmental	-50 to +50 °C, 95 %
Dimensions	(1853×535×234) mm (1 pillar)
Weight, max	145 kg (1 pillar)
Power supply	(85-265) V, (47-63) Hz, max 35 V·A
Run time on the built-in batteries, min	10 hours
Installation place	indoor
Objects	pedestrians, baggage

CERTIFICATION

- Registered in the State Register of Measuring Instruments under No 16756-10
- 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 2022, over 8000 Yantar radiation monitors of various modifications have been produced and put into operation.