



RADIATION PORTAL MONITOR YANTAR-1ZH

FIXED-SITE RADIATION MONITOR FOR DETECTION OF FISSILE AND RADIOACTIVE MATERIALS IN RAILWAY TRANSPORT

INTENDED USE

Automatic detection of gamma and neutron radiation sources passing through the search area at railway crossings.

APPLICATION

High sensitivity, reliability, ease of use and maintenance allow the Yantar-1Zh radiation monitors to be successfully operated at railway checkpoints of various purpose, configurations and throughput in various climates.

KEY FEATURES

- Operating mode - continuous, automatic
- Sound and visual (optional) 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

DESIGN

Yantar-1Zh consists of two metal pillars mounted along the railway tracks opposite each other. The pillars contain electronics units, gamma and neutron detectors. They are equipped with sound alarming devices.

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

Infrared occupancy sensors ensure reliable detection of vehicles in the search area even in extreme weather conditions.

The pillars, detectors and electronic units are climatically protected well enough to withstand harsh environments. Optional anti-vandal cages help to avoid mechanical damage of equipment.

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





YANTAR-1ZH

SPECIFICATIONS

Detection channels	gamma and neutron
Gamma detectors	plastic scintillators
Neutron detectors	^3He 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 6.2 m and speed of up to 25 km/h	900 kBq (^{133}Ba) 900 kBq (^{137}Cs) 450 kBq (^{60}Co) 30,200 neutron/s (^{252}Cf)
False alarm rate	0.001
Ingress protection	IP54
Environmental	-50 to +50 °C, 95 %
Dimensions	(2746×1150×400) mm (1 pillar)
Weight, max	450 kg (1 pillar)
Power supply	(85-265) V, (47-63) Hz, max 140 V·A
Run time on the built-in batteries, min	10 hours
Installation place	outdoor
Objects	railway transport

CERTIFICATION

- Registered in the State Register of Measuring Instruments under No 16756-10
- Complies with the requirements of the Technical Regulations of the Customs Union on safety of low voltage equipment (TR CU 004/2011), Technical Regulations of the Customs Union on electromagnetic compatibility of technical means (TR CU 020/2011)



By 2024, over 8200 Yantar radiation monitors of various modifications have been produced and put into operation.