



# RADIATION PORTAL MONITOR YANTAR-1A-02

## FIXED-SITE SYSTEM FOR DETECTION OF FISSILE AND RADIOACTIVE MATERIALS IN VEHICLES

### INTENDED USE

Automatic detection of gamma and neutron radiation sources in vehicles passing through the search area.

### APPLICATION

High sensitivity, reliability, ease of use and maintenance allow the Yantar-1A-02 radiation monitors to be successfully operated at vehicle checkpoints of various purpose, configurations and throughput.

### KEY FEATURES

- Operating mode - continuous, automatic
- Sound and visual alarms
- Settable detection thresholds
- 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-1A-02 consists of two metal pillars mounted along the lane opposite each other. The pillars contain electronics units, gamma and neutron detectors. They are equipped with sound and light alarming devices, as well as performance status indicators.

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 including high humidity and salt fogs.

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





## YANTAR-1A-02

### SPECIFICATIONS

Detection channels	gamma and neutron
Gamma detectors	plastic scintillators
Neutron detectors	$^3\text{He}$ 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 6 m and speed of up to 15 km/h	200 kBq ( $^{133}\text{Ba}$ ) 180 kBq ( $^{137}\text{Cs}$ ) 90 kBq ( $^{60}\text{Co}$ ) 10,000 neutron/s ( $^{252}\text{Cf}$ )
False alarm rate	0.001
Ingress protection	IP54
Environmental	-50 to +50 °C, 95 %
Dimensions	(3057×995×370) mm (1 pillar)
Weight, max	500 kg (1 pillar)
Power supply	(85-265) V, (47-63) Hz, max 70 V·A
Run time on the built-in batteries, min	10 hours
Installation place	outdoor
Objects	vehicles, including trucks

### 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.