

UNISCAN 7215M



Portable Selective Metal Detector

Operation Manual

1. GENERAL INFORMATION

UNISCAN portable eddy-current metal detector is designed to search for metal objects in dielectric and low conductive media.

The detector can be applied:

- by the departments of the Ministry of Internal Affairs, security services of banks, companies, at customs to view things in order to identify weapons and firearms, explosives, contraband, as well as to inspect the premises of walls and furniture in order to identify the variety of metal inclusions.

- by military field medical services to locate bullets and shrapnel in human body;

- in construction to determine the position of valves, electrical wiring, etc.

- in archeology.

The metal detector is designed to operate under the following conditions:

- Ambient temperature from -15 °C to +45 °C;

- Relative humidity of up to 98% at temperature of +25 °C;

- Atmospheric pressure from 630 to 800 mm Hg.

2. MAIN TECHNICAL CHARACTERISTICS

Maximum detection range of metal objects, sm:

Makarov gun	30
Drain hatch	80
Screw M3×7	8
Brass disk 25×1	15

Technical characteristics:

Dimensions, mm	400x145x35
Power source	DC 9V (6F22 type battery)
Continuous operation time powered by fresh 6F22 type battery, at least, hours	40
Weight, up to, g	260
Alarm type	Audible and visual
Sensory decrement at low battery from 9 to 7V	none
Operating temperature range, ° C	-15+45
Threshold of low battery automatic audio signal, V	7,2 ± 0,3

Selection parameters:

The detector allows it to distinguish Makarov gun from any portable household item made of non-ferrous metals.

3. OVERLOOK

Detector's Appearance

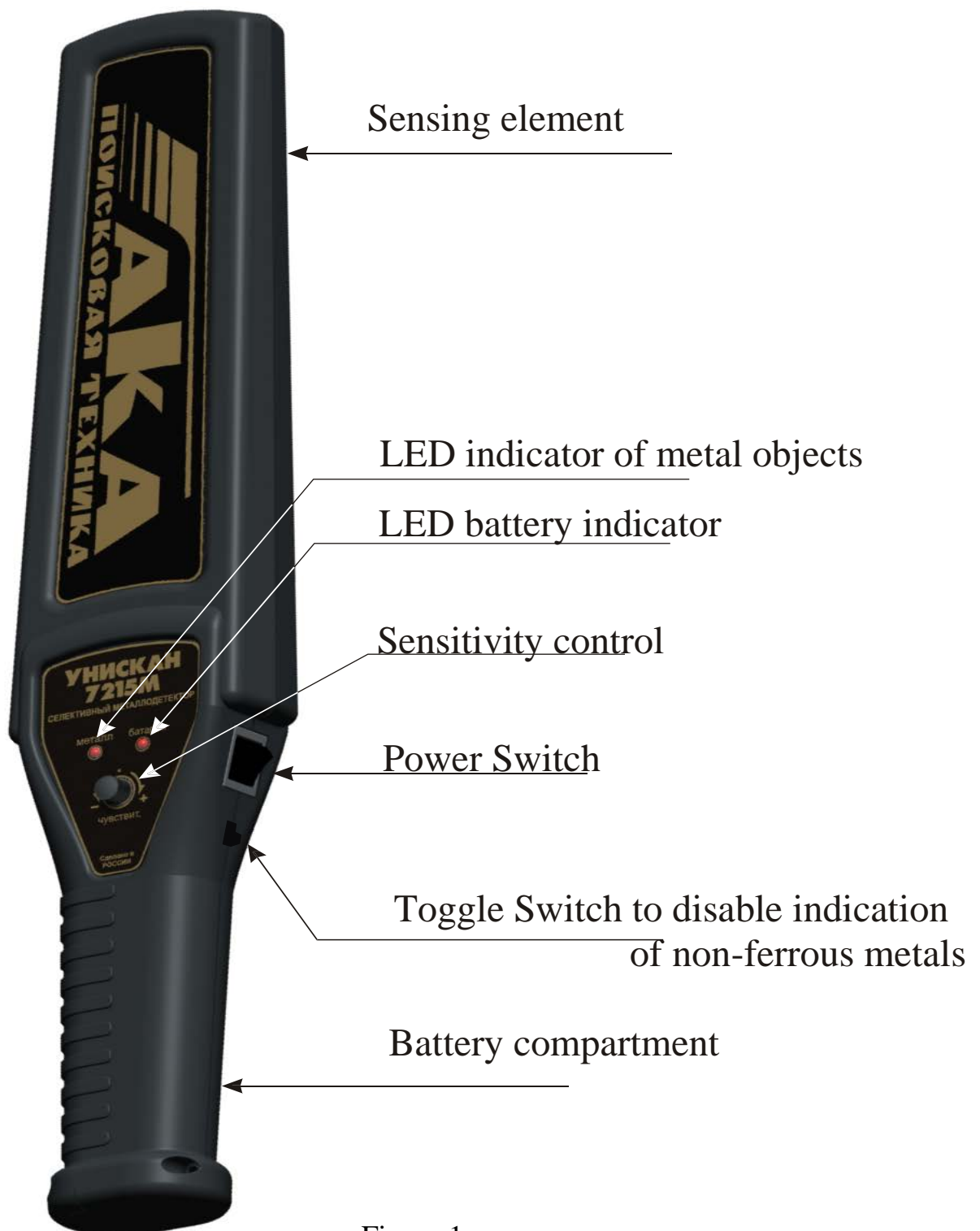


Figure 1

UNISCAN is a selective eddy-current metal detector with compensated eddy-current converter. Signal of metal objects' detection is produced by sending a signal to the built-in piezoelectric transducer and the LED indicator. The device is also equipped with LED automatic monitoring of battery discharge. When discharge level is below (7,2) V, the detector starts producing intermittent light and sound signals.

In case of detecting a ferromagnetic object (e.g., a Makarov gun), the device produces monotonous signal of 2-3 kHz frequency. In case of detecting a non-ferrous metal object (aluminum, copper, gold, etc.), light and sound indication is intermittent (nightingale trill).

The detector does not distinguish objects with large contours of eddy currents according to metal grades, i.e. bulky items (pit covers, network of reinforced concrete structures, body armor). However, these items are identified by the user according to the detection range. In this case, this value can be up to 80 cm. The device has a dynamic operation mode, i.e. metal object is detected when moving the detector over this object.

UNISCAN has the following controls (Figure 1) and indication:

- Power Switch
- Operation Sensitivity Control
- LED Power Indicator
- LED Indicator of metal objects
- Toggle Switch to disable indication of non-ferrous metals

4. PREPARATION AND OPERATION ORDER

Remove battery compartment cover and install the battery. Turn on the device. This should be followed by a sound signal and the LED power indicator lights up. By rotating the knob of operation sensitivity control, set the desired value of this parameter, bringing to the indicator this or that metal object (watch, coin). Recommended scanning speed while inspection is about 0.5 m/s. During inspection in order to identify firearms, do not hold the device too close to the inspected person. Recommended distance is 15- 25cm. This is because a human body has low electrical conductivity, to which the detector may react. In addition, in order to avoid false alarms it is necessary that the inspection area within a radius of 1,5-2 m is free of large metal objects (turnstiles, safes, reinforced concrete structures).

5. HOW TO MAKE USE OF SELECTIVE PROPERTIES OF THE DEVICE

The nature of electromagnetic interaction of the device sensor and a metal object is very complicated. In practice, this may lead to some ambiguities in determining the type of object material. Example. If you take a steel sheet size of 200x200 mm, and bring it down flat to the sensor device, the latter will react with 'nightingale trill',

that is characteristic of the reaction to a copper coin or other object made of non-ferrous metal. If you orient the sheet perpendicular to the sensor, in this case it will be identified as a steel object according to the sound. If you perform the same operation with an aluminum sheet, in all orientation cases, the sound reaction of the device will only be a response to the non-ferrous object. Thus if audio signals of Uniscan 7215M during scanning, combine both intermittent and continuous sounds, the object is either steel or contains steel fragments. Hence, there is one important practical recommendation. In case of difficulty identifying objects by an audible signal, more accurate information on object can be obtained by orienting the sensor with respect to the object in various ways.

6. WARRANTY

The manufacturer guarantees proper operation of the device provided all the operation conditions have been met by the user.

Warranty is 24 months from the date of purchase.

During warranty period, any manufacturing defect is eliminated by the manufacturer.