

DEVICE FOR SOUNDING OF BUILDING
STRUCTURES AND WORKS

RASCAN-5/4000 (7000)

USER MANUAL

CERTIFICATE

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Overview

RASCAN-5 is a lightweight, portable holographic radar system intended for sounding structural components of buildings (brickwork, wall panels, cast in place concrete and reinforced concrete, etc.) for detection of buried objects (wiring, reinforcement, voids, various kinds of discontinuities and foreign bodies). Software forms representation of the internal structure of examination area.

RASCAN-5 produces plan view gray scale images of the subsurface objects using five simultaneous frequencies. The images can be focused by special algorithms for improving their resolution.

Technical characteristics

- **Maximum sounding depth (depends on medium properties), mm:**
 - in concrete: 75***
 - in brick wall: 150***
 - in wall board: 180***
 - in wood: 180***

* Maximum sounding depth is given for homogeneous and dry materials. Moisture and heterogeneity in the medium cause the decreasing of the penetration ability.

- **Resolution in plane of sounding at shallow depths, cm:** 1.5
- **Number of frequencies:** 5
- **Transmitter power, mW:** <10
- **Power source, W:** <3
- **Supply voltage, V**
AC: 100...230 (50...60 Hz)
DC: +12
- **Dimensions, mm:**
Control unit: 157 x 63 x 200
Head: 95 x 148 x 119
In package: 380 x 460 x 130
- **Weight, kg:** 1.9
- **Control unit:** 0.6
- **Head:** 0.7
- **In package:** 5.5
- **Productivity, ml per hour:** 4..6
- **Operating temperature, °C:** +10...+35
- **Relative humidity, %:** <90

Safety Precautions

Being an electronic device, RASCAN-5 has to be treated with the caution and care necessary when such devices are used. Any failure to observe the safety precautions given or any use for purposes other than the ones it is conceived for may result

in a damage or destruction of the processing unit and connected components.

If used properly the device normally does not pose any health hazards. According to the All-Union state standard 12.1.006-84, i. 2.4, the high-frequency signals are not harmful to the human body on account of their low power.

Controls and Connectors



1. "Start line" button.
2. Marching wheel.
3. Control unit connector.
4. Power-on switch.
5. Power-on LED.
6. Reset button.
7. Sounding head connector.
8. PC connector.
9. Power supply connector.

Hardware Connections

Only three simple connections need to be made before you can start the system.

1. Connect head to control unit via cable with RJ45 connectors on both ends.
2. Connect control unit to the PC via USB cable.
3. The male end of the DC power cable should be connected to the power supply connector on the control unit.

NOTE: *Alternatively control unit can use external 12 VDC power source (find mating connector in the package).*

CAUTION: *Internal electrode should be connected to the positive terminal of the power source.*

After all other connections have been made connect the power cable to the power source.

Transport and storage

Convey by any transport in original packaging in following conditions:

- **Temperature, °C:** -10...+ 50
- **Atmospheric pressure, atm:** 0.5...1.2
- **Relative humidity, %:** < 90
- **Shock, g:** 10

Keep in dry warm storage.

Delivery set

1. Head
2. Control unit
3. Straight sounding head cap
(ships mounted)
4. Angular sounding head cap
5. Cable for connecting head to control unit
6. Cable for connecting control unit to PC
7. Power supply unit
8. Mating part for external +12 VDC power supply socket (connect internal electrode to the positive terminal of the power source)
9. Package
10. Software CD
11. User manual