

User manual

impulse III

Impulse metal detector

impulse III – is an impulse metal detector designed to search for metal objects in ground, water¹ and other environment.

impulse III has no discrimination mode, i.e. detectable metals are not classified as ferrous and non-ferrous.

To this device, depending on the purpose of the search, you can connect search sensors (coils) of different sizes, as in table 1.

To search for large metal objects deep underground - use larger coils - "deep coils".

Table 1

Coil diameter	Shape	Number of turns	Wire diameter	Inductance	Resistance
120 mm.	Circle	36	0,4 mm.	405 uH	1,9 Ohm
150 mm.	Circle	31	0,4 mm.	395 uH	2,0 Ohm
200 mm.	Circle	26	0,4 mm.	406 uH	2,2 Ohm
250 mm.	Circle	22	0,4 mm.	380 uH	2,3 Ohm
300 mm.	Circle	20	0,5 mm	390 uH	1,6 Ohm
400 mm.	Circle	17	0,5 mm.	396 uH	1,8 Ohm
500 mm.	Circle	15	0,5 mm.	400 uH	2,0 Ohm
1M x 1M.	Square	10	0,7 mm.	405 uH	2,0 Ohm
1,4M. x 1,4M.	Square	8	0,7 mm.	387 uH	2,2 Ohm
1,8M. x 1,8M.	Square	7	0,8 mm.	398 uH	1,7 Ohm

1. When using the device underwater, a sealed housing is required to protect against moisture ingress on the printed circuit board and electronic components on it..

Connection

1. The power source can be a 12 Volt lead battery or 3S or 4S lithium ion, lithium polymer, lithium iron phosphate batteries. Or other batteries, the voltage of which is in the range of 10 to 16 volts..
2. Connect the coil, battery and speaker as shown in Figure 1:



Figure 1.

During operation, do not short-circuit the coil contacts - this may damage the device!

DISPLAY

Most of the time, during operation, the display shows the main (work) screen, which is shown in Figure 2.

It contains the following:

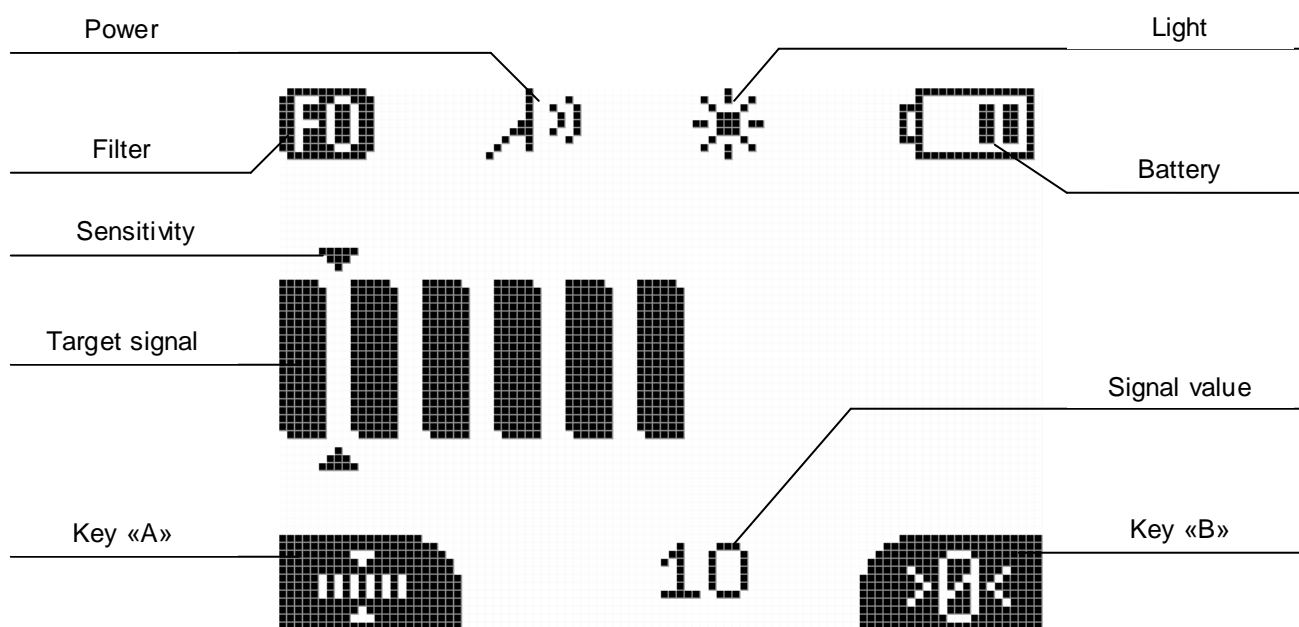


Figure 2

Power – current pulse emitted by the coil. The width of this pulse affects the detection depth of metal objects. More power provides deeper target detection. However, as the power increases, the “interference” from the ground can also increase. Therefore, if during operation you get a lot of false alarms, try to reduce the power.

Filter – One of four filters designed to reduce noise and false alarms. For more details, see the section "Filter settings".

Light – Backlight operation indication. Setting the brightness and turning off the backlight is carried out in the "Backlight" menu.

Battery – Battery discharge indicator. For correct readings, select the type of batteries used in the "Battery" menu.

Target Signal – A scale that shows the distance and size of a metal object. The closer the metal detector coil is to the metal and the larger the metal object, the more the scale is filled and the greater the signal value.

Sensitivity – Alarm threshold. If the target signal scale is greater than the threshold value, the sound signal is turned on.

Button «A»  - Switching to the sensitivity setting mode (response threshold)

Button «B»  - Zero setting.

It is necessary to press this button after switching on, as well as in case of signal drift, increased noise and false positives.

Lift the coil off the ground, and move it away from metal objects - press the "B" button.

If, after zeroing, false alarms often appear, it is necessary to increase the alarm threshold.

SENSITIVITY ADJUSTMENT (TRIGGER THRESHOLD)

From the main screen, press the "A" button. 

The screen will look like in Figure 3.

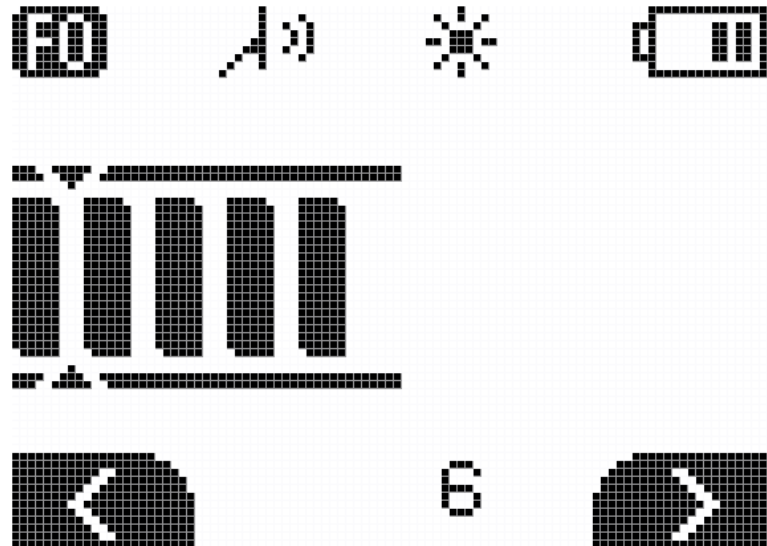


Figure 3

Now, with buttons "A" and "B" you can adjust the response threshold. Exit from the threshold settings occurs automatically if no button is pressed for a few seconds.

SETTINGS MENU

To enter the settings menu, you need to hold down the "A" button for a few seconds.

Further, the buttons "A" and "B" are used to select a category, after which it is necessary to hold down the button "A" for several seconds.

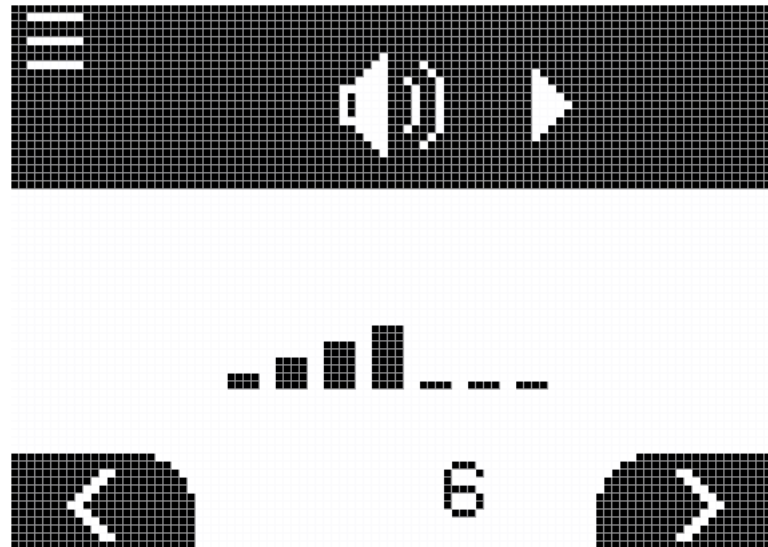
Now you can change the parameters of the current menu item.

To exit the current menu item, hold down the "B" button for a few seconds.

To return to the main (working) screen, you need to hold down the "B" button again for a few seconds..

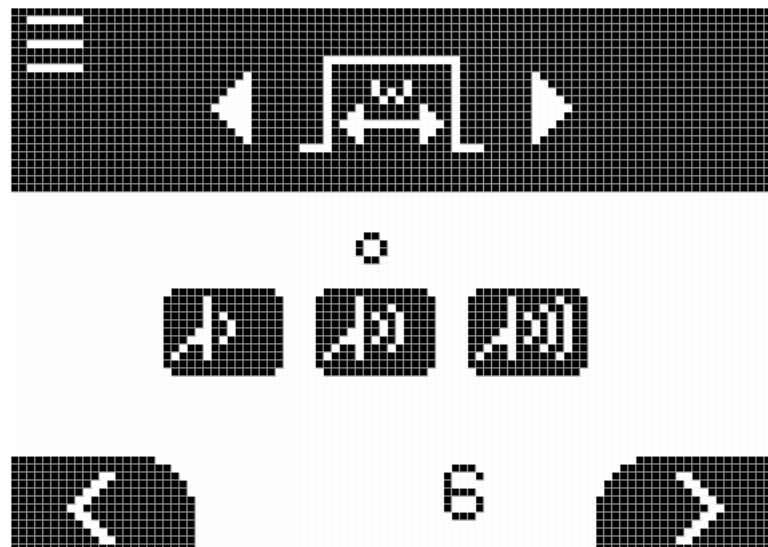
The following settings are available in the menu:

SOUND VOLUME



Selecting the Optimal Sound Volume.

POWER



A pulse metal detector for metal detecting transmits a "pulse" to the coil. Depending on the "duration" of this pulse, the target detection range changes. Small or large coil can also be optimally tuned.

But with a large pulse width, the consumption of the device increases, and an undesirable effect of the device's reaction to the ground (false alarms) may appear.

FILTER



To reduce false positives, select one of four filters:

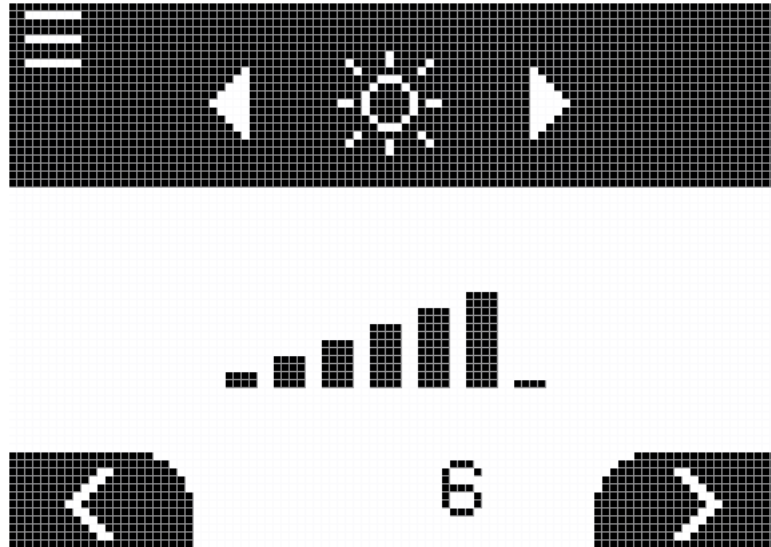
F0: the arithmetic mean of the signal - the sensitivity is good, the probability of false alarms is medium

F1: average - weighted value of the signal - sensitivity is good, the likelihood of false alarms is low

F2: several response values above the threshold, followed in a row - the sensitivity is medium, the probability of false alarms is medium

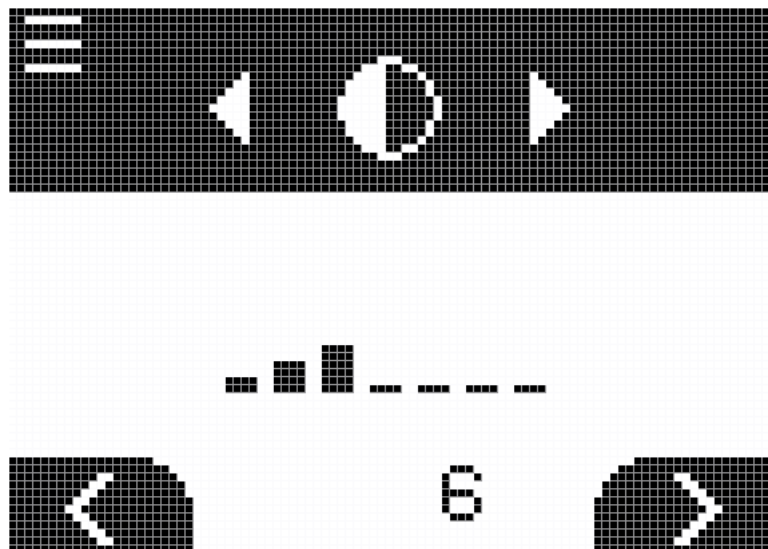
F3: dynamic filter. Automatically adjusts to signal changes. Medium sensitivity, low probability of false alarms.

BRIGHT



Set the brightness of the LCD backlight to the desired brightness for working in poorly lit areas or at night.

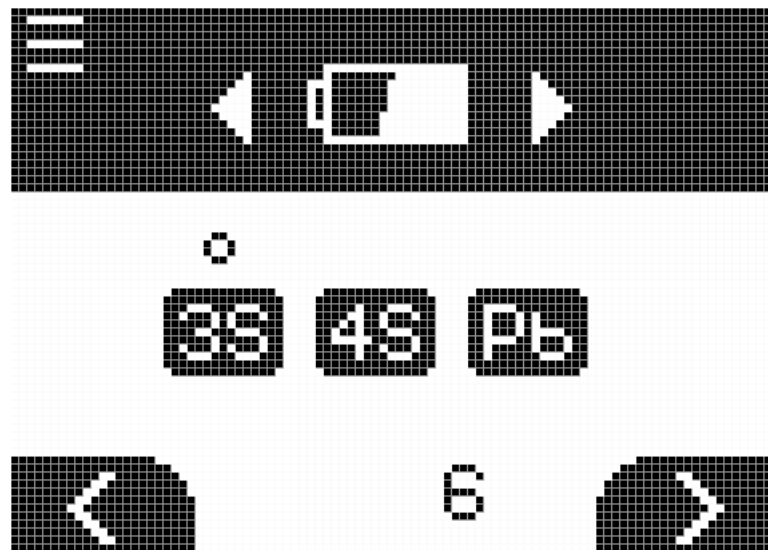
CONTRAST



Allows you to select the desired LCD contrast.

Some LCD indicators have automatic contrast adjustment and do not allow manual contrast adjustment.

BATTERY



For the correct display of the battery charge value, select the type of connected power source:

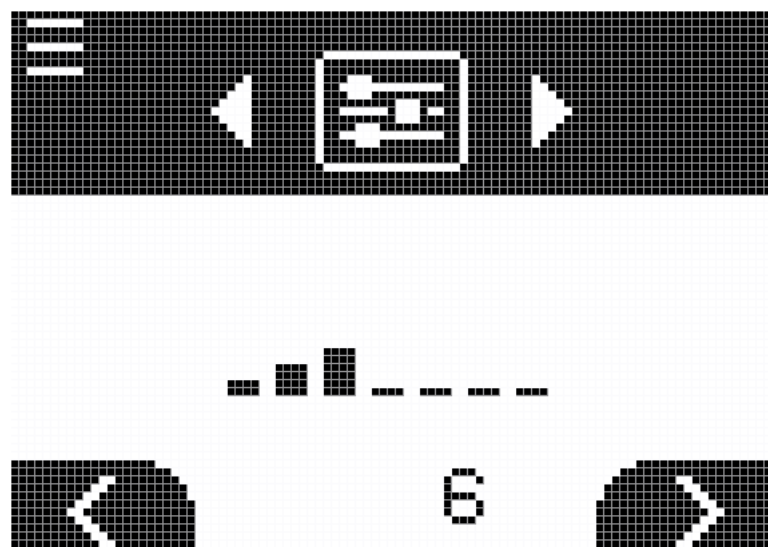
3S three series lithium batteries

4S four series lithium batteries

Pb Lead battery 12 Volt.

*Do not connect power sources with voltage higher than 16V to the device!
This could damage the device.*

OFFSET SIGNAL



The device allows you to change the bias voltage to its internal circuits, thereby choosing the best mode of operation.

When using different search coils with different parameters, it is necessary to select such an offset, at which there will be fewer false alarms and a higher sensitivity of the device.

CONTACT INFORMATION

