User manual

impulse M

pulse induction metal detector

Impulse M is a pulse metal detector designed for locating metallic objects in soil, water[1], and other environments.

Unlike previous models (Impulse 2 or Impulse III), this device has removed or made non-disableable settings for insignificant functions, resulting in a significantly more user-friendly interface. Additionally, algorithms have been introduced to improve the performance and stability of the device.

The Impulse M does not feature a discrimination mode. Metals are not classified as ferrous or non-ferrous; the device detects them equally well.

Depending on the search objectives, various sizes of search coils can be connected, as shown in Table 1. To locate large metallic objects that are deep underground, it is recommended to use larger "depth coils."

Coil diameter	Form	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 1 m.	Rectangle	10	0,7 mm.	405 uH	2,0 Ohm
1,4m. x 1,4m.	Rectangle	8	0,7 mm.	387 uH	2,2 Ohm
1,8m. x 1,8m.	Rectangle	7	0,8 mm.	398 uH	1,7 Ohm

Table 1

Connection

A power source can use batteries or accumulators with a voltage of 12 to 16 volts. The power battery can be of any type (lead-acid, lithium-ion, lithium-polymer, lithium iron phosphate, or other).

Do not connect a battery with a voltage greater than 16 volts, as this may damage the device.

1. When using the device underwater, a watertight case is required to protect the printed circuit board and its electronic components from moisture.

Connect the coil, power battery, and speaker as shown in Figure 1:

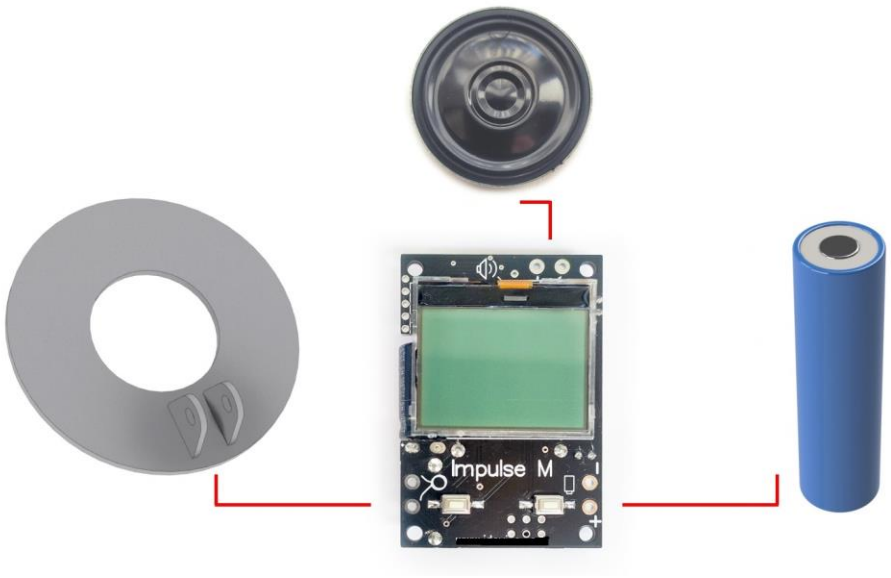

Figure 1

Do not short-circuit the coil contacts, as this may damage the device!

Calibration of the Coil

Every time you use the Impulse M with a new coil, calibration is necessary.

There are two calibration methods: automatic and manual. It is recommended to use the automatic calibration method, as it allows the Impulse M to operate with MultiPoint2 technology. However, if for any reason automatic calibration cannot be performed or if the operation of the Impulse M after such calibration is unsatisfactory, you can try performing calibration in manual mode.

Automatic Coil Calibration

For the correct operation of the Impulse M, before calibration, position the coil away from any metallic objects!

1. Connect the search coil to the Impulse M.
2. Press and hold the "A" button and the "B" button.
3. While holding the buttons, connect the power to the Impulse M.

4. After the Impulse M logo appears and disappears on the screen, release the buttons.

During calibration, levels will appear on the screen (see Figure 2).

Figure 2

If 8 levels are displayed on the screen, you can bring metal close to the coil and observe the change in levels. To complete the calibration, you need to press the "B" button, or press the "A" button for recalibration. (There should be no metal near the coil!)

If the Impulse M cannot perform auto-calibration, an error message will be displayed (see Figure 3).

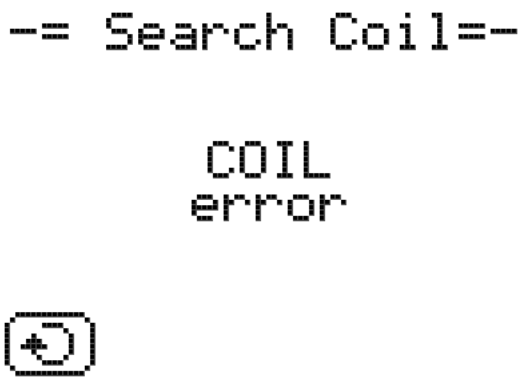

Figure 3

In that case, you need to check the coil and its connection, and then perform recalibration or try to carry out calibration in manual mode.

Manual Coil Calibration

1. Connect the search coil to the Impulse M.
2. Press and hold the "A" button.
3. While holding the button, connect the power to the Impulse M.
4. After the Impulse M logo appears and disappears on the screen, release the "A" button.

In manual calibration mode, the "A" button selects the parameter and the operation "+" or "-", while the "B" button performs that operation (see Figure 4).

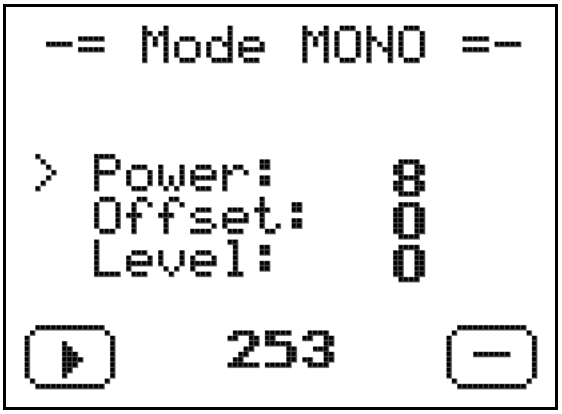

Figure 4

The "Power" parameter allows you to adjust the power within a small range, from 1 to 10. The default setting is 8.

The "Level" parameter allows you to change the level at which the signal is read, from 1 to 31. It is advisable to use values closer to 31.

The "Offset" parameter shifts the measurement point, from 1 to 50. You need to find a value that will respond to a metal object brought close to the coil.

To complete the calibration, use the "A" button to select "exit" from calibration (see Figure 5) and the "B" button to confirm the completion of the calibration.

Figure 5

Operating Mode

After powering on or completing calibration, the Impulse M is ready for use.

The operating mode screen is shown in Figure 6.

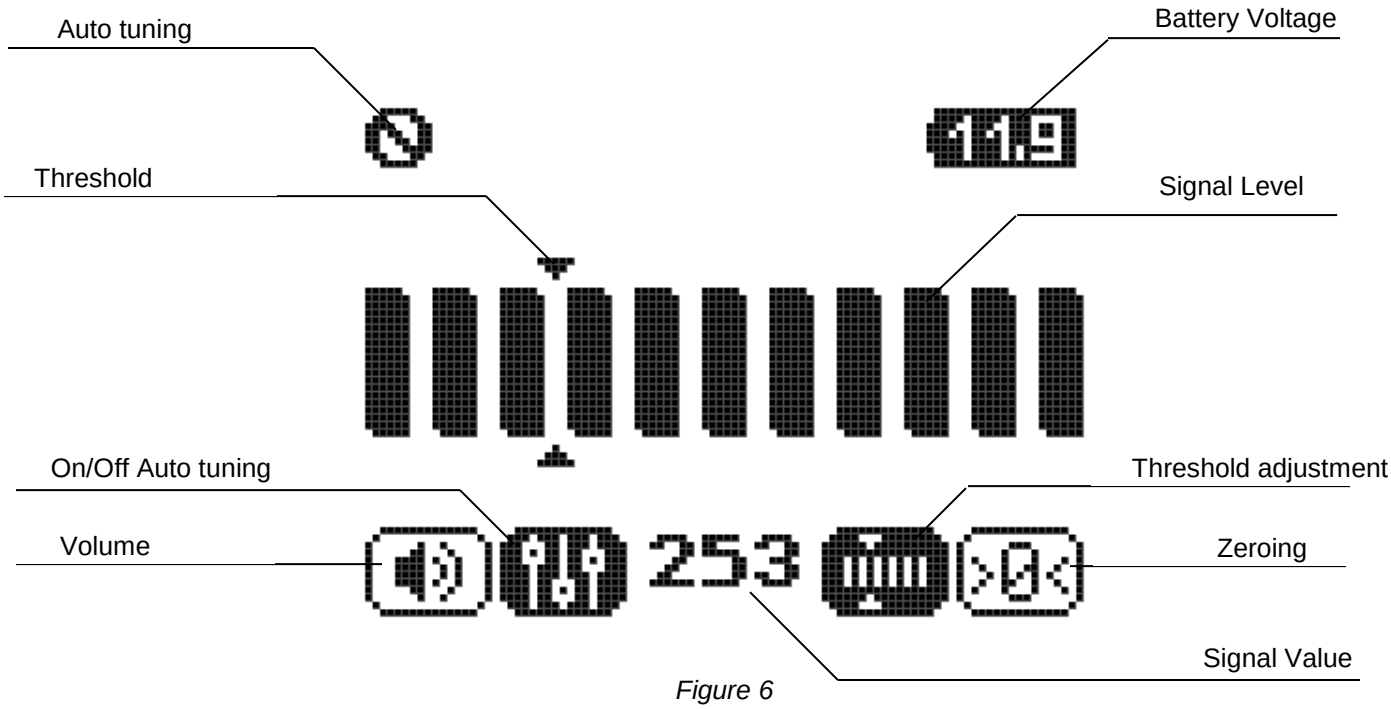

Figure 6

To start, you need to raise the coil above the ground (away from metallic objects) and briefly press the "B" button (Reset). The screen will appear as shown in Figure 7:

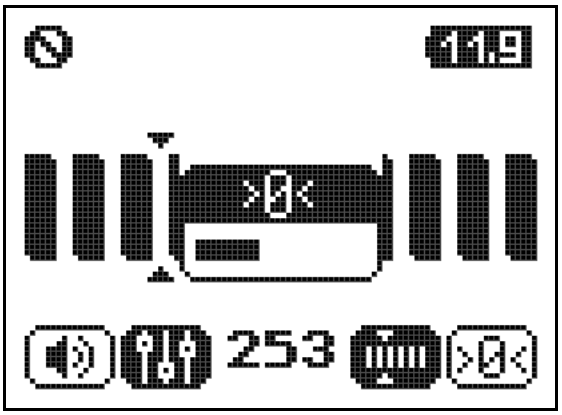

Figure 7

After completing the reset, you need to select the threshold level. The threshold is chosen in such a way as to avoid false triggers or to search only for larger objects. To change the threshold, press and hold the "B" button (see Figure 8).

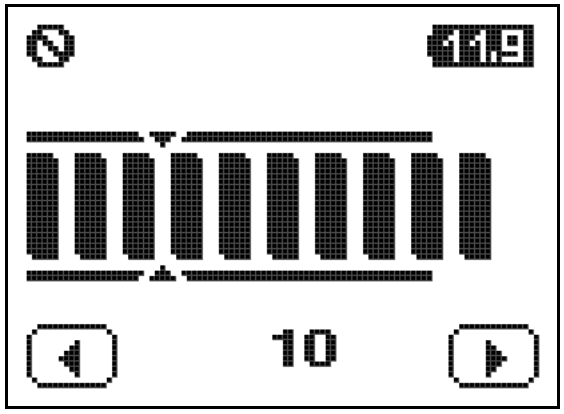

Figure 8

Then select the desired threshold using the "A" or "B" buttons.
The Impulse M will exit threshold mode if no button is pressed for a few seconds.
To choose the desired volume, briefly press the "A" button (see Figure 9).

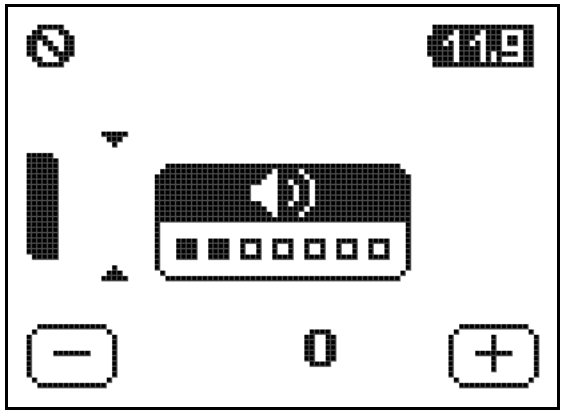

Figure 9

The adjustment is made using the "A" and "B" buttons. Exiting volume mode also occurs automatically if no buttons are pressed for a few seconds.
To turn "Auto Tuning" on and off, press and hold the "A" button. During this, the icon for the "Auto Tuning" function (in the upper left corner) will change, as shown in Figure 10:

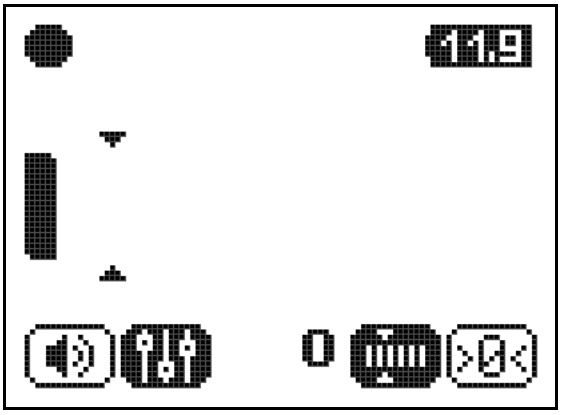

Figure 10

The "Auto Tuning" function allows the device to automatically adjust the zero point and also makes the sound smoother, reducing false signals.