Future Series

VLF emitter

User's manual

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1 Preface

Dear customer,

in the first instance we want to thank you that you made your decision on a product of OKM Ortungstechnik GmbH.

With our team of specialists we guarantee that our products are under recurrent control. Our specialists try to implement new developments in terms of further quality improvements for you.

Of course by selling our products we cannot guarantee that you really make a find during your research. The recognition of hidden objects and structures depends on a hugh number of factors - like you know. Determining factors are the dielectricity constant of the ground, the grade of mineralisation and the dimensions of an object relating to its depth. Specially in very wet soil, clay and sand with high conductivity of the ground, recording of the measured results can be falsified strongly.

With this product you purchased a device which stood the tests in regular operation like all other products of us. If you are interested in where our devices have gone into action please visit our homepage.

For our company it is necessary that we protect our developments within the framework of existing legislation to a patent or trademark registration. Therewith we offer you a higher warranty while using our products.

Please take your time consecutively, read this user‘s manual and familiarize yourself with the utilisation and operation of this VLF emitter.

2 Technical Specifications

The following technical indications are medial values. During operation small variations are quite possible.

Dimensions (H x W x D)	25 x 22 x 17 cm
Weight	ca. 7.4 kg
Operating Temperature	0℃ – 50℃
Storage Temperature	-20℃ – 60℃
Air Humidity	5% – 75%
Waterproof	Nein
Frequency Range	7 – 60 kHz
Amplified Output Power	10 W
Internal Battery	24 V
Operating Time (full charged battery)	about 3 h
Charging Time	about 10 h
Maximal Sphere of Action	about 10 m

Table 1: Technical Specifications (Control Unit)

3 Usage

3.1 Very Low Frequency Sender (VLF)

With the *VLF* a sender is available which can optimize your search for metallic objects.

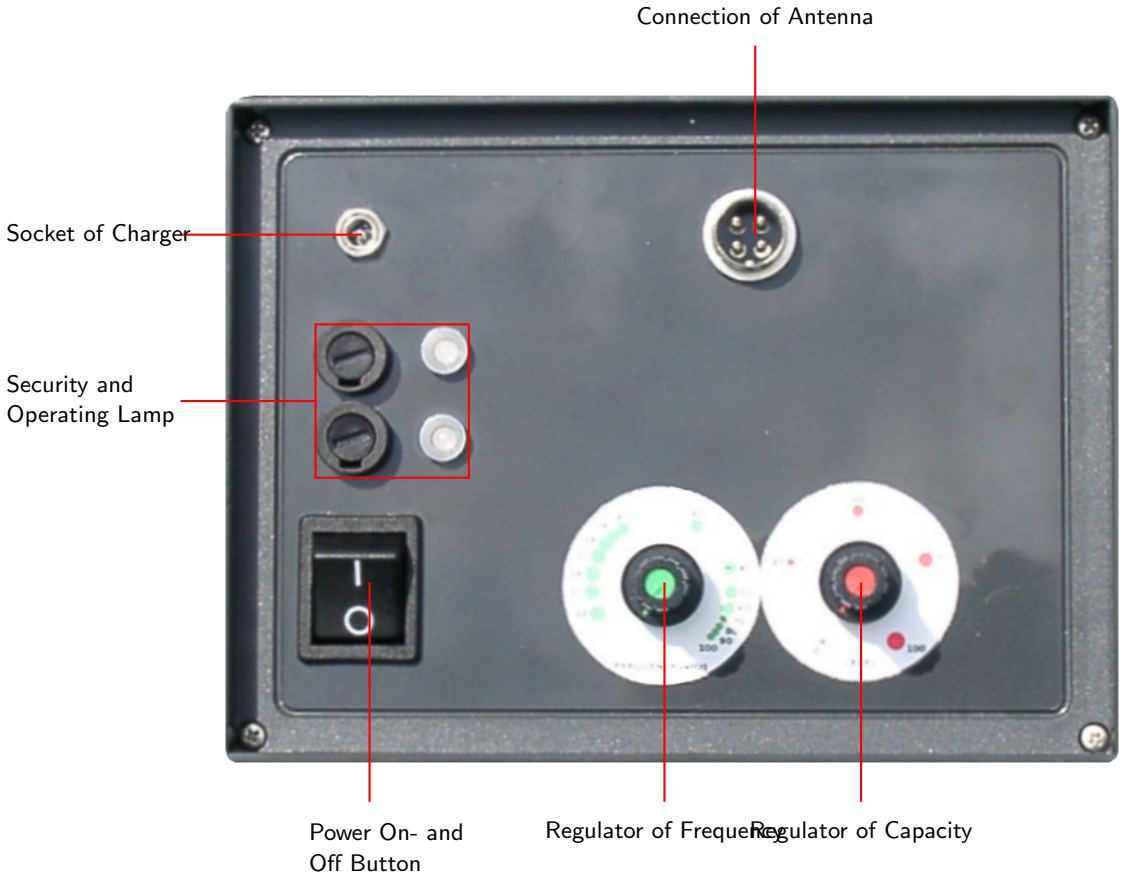

Figure 1: Control Elements of the VLF Sender

With the Power On- and Off Button the device can be switched on and off.

In the Socket of Charger the charger has to be connected to reload the internal batteries. The state of the batteries can be surveilled and controlled with the Operating Lamps. If the batteries are charged fully the operating lamps will shine green. With decreasing of the voltage the lamps will change the color themselves from yellow to orange up to red.

The Regulator of Frequency is used to adjust the sending frequency.

The Regulator of Capacity the sending capacity can be adjusted.

In the Connection of Antenna the delivered antenna has to be connected.

3.1.1 Assembly

This section describes how to assemble the sender and prepare for a measurement.

Figure 2: Connection of Sender Antenna

In figure 2 you can see how to connect the sender antenna. The antenna is fixed up with the velcro fastener on the outside of the VLF sender. Remove it and put in on the ground in a distance of about 50cm from the sender.

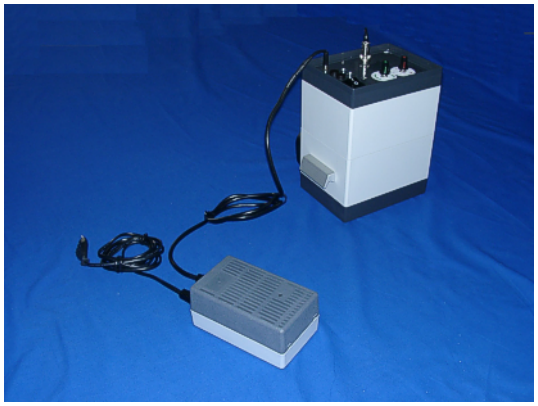

Figure 3: Connection of the Charger

If the batteries are empty you have to reload them. Figure 3 represents how to connect the charger.

3.1.2 Usage of the VLF Sender

After you have attached the antenna and loaded the batteries completely you can operate the VLF sender.

Beware that the Regulator of Capacity *(LEVEL) is switched on 0 before power on the sender and the antenna is put on the ground in a distance of about 50cm from the sender.*

After powered on the device both Operating lamps has to shine green, otherwise you should reload the batteries again.

Now adjust the desired frequency and capacity before scanning your area! With the Regulator of Frequency you can select the desired sender frequency. Normally frequencies of less than 40 kHz are used. The Regulator of Capacity is prosecuted generally between 50 and 100.

Figure 4: Placement of the VLF sender on a site

Place the four VLF sender in a square or rectangle and power on all sender. Now you can execute a normal measurement in operating mode *Ground Scan*, see figure 4. By using the VLF sender in particular all metallic objects will be enforced more than a measurement without sender. Important is the correct adjustment of the parameters of frequency and capacity. An exact specification is not possible because it is strongly depending on the particular ground circumstances.

3.1.3 Safety Guidelines

It is absolutely necessary to beware the following safety guidelines, to guarantee a secure work with the VLF sender.

- Do not hold any receiver, like metal detectors, probes or others directly over the sender antenna during the operation of the VLF sender. The enforced field of the antenna can destroy their electronics.
- Keep a distance of at least 50cm between antenna and VLF sender. Avoid close contact to the sender antenna during operation.

- If a change of electrical fuse should be necessary, only fuses which are structurally identical may be used, which value agrees with those on the equipment.
- Power off the device before loading the internal batteries.
- For charging use only the provided battery charger.
- Power off the device if it is not any longer used otherwise the batteries can be damaged.

4 Maintenance and Services

In this section you will learn how to maintain your measuring instrument with all included accessories to keep it in good condition a long time and to get good measuring results.

The following list indicates what you absolutely should avoid:

- penetrating water
- strong dirt and dust deposits
- hard impacts
- strong magnetic fields
- high and long lasting heat effect

If you want to clean your device please use a dry rag of soft material. To avoid any damage you should transport the device and accessories always in the appropriate carrying cases.

Beware that all batteries and accumulators are always charged fully while operating with your system. You should only load the batteries when they are completely discharged no matter if you are working with the external power supply or with the internal accumulators. In this way a long durability of the used batteries is guaranteed.

To load the external and internal batteries you have to use only chargers which are part of our scope of delivery.

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