

Diamond Shield

Zapper IE

Instruction Manual



Valid for version 2.0

Index

Introduction	5
Important Notices.....	7
Safety Instruction	7
Unpacking.....	7
Storage and transportation	8
Intended Usage	8
Maintenance	8
Feature Identification	9
Front Side	9
Connection Side	10
Back side	11
Bringing into service	12
Insert the battery.....	12
Connecting the cables	12
Operation	13
Menu Navigation.....	14
Main Menu	15
„Standard“ menu	16
Display.....	17
Menu „Settings“	18
Working with the chip cards.....	19
Playing frequency programs from a chip card	19
Technical Data	20
Declaration of Conformity	21
For disposal	22

Introduction

The Diamond Shield Professional is a very effective Zapper:

- Very wide frequency range of 0.5 Hz to 2 MHz.
- Possibility of very small voltages (0.1 V) to high voltages (16 V)
- Impulse discharge
- Wobble functionality
- Modulation of the output frequencies
- Constant current control
- Operating frequencies from special chipcards (optional accessories)

The operation can be done via a 9V battery or an appropriate rechargeable battery.

The device can be used to enhance the well-being.

Important Notices

Safety Instruction



- Use only the supplied grounding cable (optional accessory). Under no circumstances use a different cable for grounding.
- Under any circumstances never insert a plug into an electrical outlet.
- Always insert the grounding cable to the Diamond Shield and then connect it to the power outlet.
- Never use this device to anyone who has a pacemaker.
- Never use this device in the eye area.
- Keep the Diamond Shield always clean and dry – wiping it with a damp cloth is permitted.

Unpacking

Before using this device, please check of the completeness of the supplied accessories:

- Connection cable for hand- or bracelet-electrodes
- Grounding cable (optional accessory)
- 2 Bracelet electrodes
- 9V Battery

Storage and transportation

The equipment shall be always stored in dry, closed rooms. If the device is transported or stored in extreme temperatures, a period of at least 2 hours should be observed for acclimatization before handling.

Intended Usage

The device is used to increase the subjective well-being of people who are open to such an approach.

The devices are intended for use in clean, dry rooms. They cannot be used in extreme dust, damp, danger of explosion or chemical vapours.

Protect the Diamond Shield from direct sunlight.

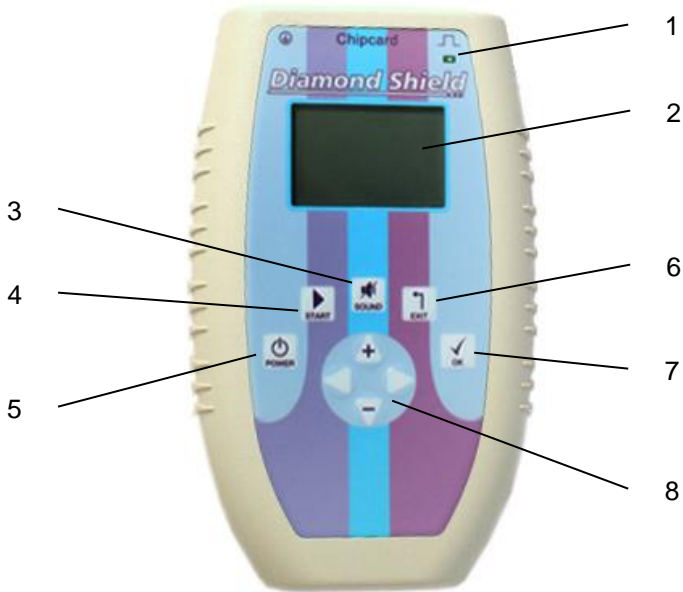
The permissible operating temperature ranges from +15°C to +30°C. During storage or transportation, the ambient temperature can be between -20 °C and +70 °C. If condensation has been formed during transportation or storage, the device must acclimate for about 2 hours and dried by appropriate circulation. Thereafter, the operation of the device is permitted. Nominal data with tolerances are valid after a warm-up time of minimal 30 minutes at an ambient temperature of 23 °C. A value without tolerances is a guiding value for the device.

Maintenance

The outside of the device should be cleaned regularly with a soft, non-linting cloth. The Diamond Shield should never be cleaned with alcohol or other solvents.

Feature Identification

Front Side



- | | | |
|----------------|------------------|----------------|
| 1. LED | 3. Mute Switch | 6. EXIT-button |
| 2. LCD-Display | 4. START-button | 7. OK-button |
| | 5. On-Off switch | 8. Arrow keys |

Connection Side



1. Grounding connection
2. Chip card slot
3. Connection for hand- or bracelet-electrodes

Back side

1. Battery compartment



Bringing into service

Insert the battery

1. Open the battery compartment cover on the back of the device.
2. Insert the supplied battery. Please keep in mind that the battery has to be inserted correctly according to its polarity. (If however the battery is inserted incorrectly, the device will not be damaged by that.)

We recommend using alkaline batteries or rechargeable batteries.

Connecting the cables

1. Connect the connection cable for the bracelet-electrodes in the right socket (above LED)
2. Connect the bracelets.
3. If you want to work with grounding: Connect the grounding cable to the left socket. Then connect the grounding wire to the plug socket.

Operation

Switch On

For switching on the device please press briefly the *POWER* button.

Switch Off

Press the *POWER* button and hold it for about 1 second until the device is turned off.

Turn off automatically

If the unit is not performing a frequency program and/or is not used for 12 minutes, it will switch off automatically to save battery life.

Charge condition of the battery

The state of charge of the battery is displayed on the LED. If the device is switched on, the LED flashes. When the battery is full, the flashing frequency is slow. When the battery charge is low, the flashing frequency is faster. If the battery is empty, a message appears, and the device can no longer be used.

Activate / deactivate the loudspeaker

Press the *SOUND* button to switch the loudspeaker on or off. The current state is then displayed briefly.

Menu Navigation

Navigation through the menu structure of the Diamond Shield is simple and identical for all functional areas:

- The currently selected item is marked with a small black rectangle. Use the up arrow key ("+") to select the next higher element and down ("-") arrow key to select the following.
- A scroll bar on the display's right edge appears, when the current list has more entries than can be displayed. The scroll bar then indicates where you are in the list.
- If you have already selected the last item in the menu and then you press the down arrow key, the first item in the menu will be selected. If you press the up arrow key it will go back to the last entry. This allows you to change quickly between the last and the first item in the menu.
- Confirm your selection with the *OK* button. Then a new display corresponding to the selected item appears.
- Press the *EXIT* key to return one level up (if you are not already in the main menu).

Main Menu

A few seconds after switching on the device, the main menu will be displayed. You can always go back from any submenu to the main menu by pressing (repeatedly) the EXIT button.

The Main Menu shows the following items:

- *Chip card*: This entry is only shown if a chip card is inserted. It allows you to review and execute the content of the chip card.
- *Standard*: Via this menu you can use the preinstalled sequences and frequency programs.
- *Settings*: Via this menu point you conduct various settings.

Important Definitions

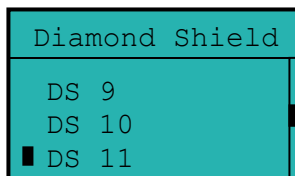
- *Frequency Program*: A frequency program includes all features of a single application, such as the frequency, intensity or duration.
- *Sequence*: A sequence is a serial arrangement of several frequency programs. For example, there is a sequence with the name "*Diamond Shield*", including the frequency programs *DS1*, *DS2* ... up to *26 DS*.

„Standard“ menu

Under *Standard* you find the pre-installed sequences the Diamond Shield Zapper Professional is supplied with by default.

These program sequences cannot be changed or deleted.

The first level of the menu shows the available sequences. When a sequence is selected and the OK button is pressed, a list of the frequency programs of the selected sequence will be shown.



Executing a sequence

Select the desired sequence with the + and - button. Then press the Start button. All individual programs of this sequence will be performed now.

The device first checks the electrical contact (see "Contact Control"). After that all the individual programs of the selected sequence are executed successively.

Contact Control

Before a sequence or a single program will be executed, the device checks whether the required electrical contact exists.

If the contact is not good enough, the unit will beep every 3 seconds. By pressing the "OK" button, the frequency program can be executed. However, this is only useful for testing purposes.

If the required contact is made, the unit will display for a short time the resistance in Kiloohm (k Ω) and then automatically start the execution of the frequency program.

Running a single program from a sequence

Select the desired sequence with the + and - button. Press the *OK* button. The individual programs of this sequence are displayed. Then select the desired single program.

This program is executed by pressing the *START* button.

Beforehand the device checks the electrical contact (see "Contact Control").

During the execution of frequencies

Display

Diamond Shield	DS 11
00:07	00:07
0.6V 0.30mA	0.6V 0.30mA

- In the headline the sequence name and the name of the current single frequency program are shown in turns.
- Below the remaining execution time is displayed (minutes: seconds).
- Below the intensity is displayed.
 - For frequency programs with current control the actual voltage is displayed on the left side. On the right side the selected intensity is displayed in milliamps (1/1000 amps).
 - For frequency programs without current control the actual voltage in volts is displayed.

Operating options

- Pressing the start button will stop the execution. Pressing the start button again allows the execution to proceed.
- Intensity is set by using the arrow keys to move up and down ("+" - keys and "-").
- Pressing the *EXIT* button cancels the execution.

Menu „Settings“

This menu is used to configure the device. The settings made here are retained even after turning off or changing the battery.

- **Language:** Select from English or German. The input is done with the arrow keys left and right.
- **Contrast:** Adjusts the contrast of the LCD display. The input is done with the arrow keys left and right.
- **Const amps:** enables or disables constant current control. If you press the left and right arrow then the input is done. If 'NO' is selected, the intensity of all the frequency programs (including those that are stored on the chip cards) is usually set on the voltage and does not have a constant current control.
- **Speaker:** the tone pitch of the internal speaker. Use the arrow keys left and right to choose 4 or 5 kHz.
- **HW Rev.:** Displays the hardware version of the device.

Working with the chip cards

Overview

As accessory, different types of chip cards are available:

- Predefined chip cards contain permanently stored sequences and frequency programs.
- Master chip cards are delivered empty and can be programmed by your therapist with individual sequences and frequency programs.

Playing frequency programs from a chip card

Regardless of the type of chip card, their sequences and frequency programs can be played as follows:

1. Insert the chip card in the device.
2. Press the POWER button.
3. Select the menu item "chip card" from the main menu and press the *OK* button.
4. A submenu will pop up displaying the sequence(s) of the chip card.
5. If you want to play an entire sequence, then select this sequence, and then press the *RUN* button.
6. If you want to play a single frequency program, you first select the corresponding sequence. Then press the *OK* button to enter the submenu. Then select the desired frequency program and press the *RUN* button.

Technical Data

General

- Operating temperature: +15 °C – +30 °C
- Storage temperature: -20 °C – +70 °C
- Power supply: 9V alkaline (manganese) battery or comparable accumulator.




Connections

- 3.5 mm socket (stereo) for grounding plug
- 3.5 mm socket (stereo) for signal outputs
- Chip card slot

Characteristic of the output signals

- Frequency range 0.5Hz - 2MHz
- Waveforms: square wave signal
- Minimum accuracy of the frequencies: 100 ppm
- Output Voltage: 0.1 - 16V (measured from the 0V line)
- Offset: No offset, positive offset, positive offset + 0.3V
- Modulation up to 254 times the output frequency (2 MHz must not be exceeded).
- Wobble (maximum up to twice the fundamental frequency)
- Voltage control to keep the output current constant (only at frequencies above 20 Hz)
- Internal resistance: 1 kOhm

Declaration of Conformity

	
<p>KONFORMITÄTSERKLÄRUNG / DECLARATION OF CONFORMITY</p> <p>Hersteller / Manufacturer: Dermavit GmbH + Co KG, Unterer Anger 15/Rgb., 80331 München, Germany</p> <p>Die Dermavit GmbH & Co KG bescheinigt die Konformität des Produkts / Dermavit GmbH + Co KG herewith declares conformity of the product</p> <p>Bezeichnung / Productname: Funktionsgenerator / Function Generator Typ / Type: Diamond Shield Professional</p> <p>mit den folgenden Bestimmungen / with applicable regulations:</p> <p>EMV Richtlinien / EMC Directives: 2004/108/EG;</p> <p>Elektromagnetische Verträglichkeit / Electromagnetic compatibility: DIN EN 61326-1; VDE 0843-20-1:2006-10 Elektrische Mess-, Steuer-, Regel- und Laborgeräte - EMV-Anforderungen - Teil 1: Allgemeine Anforderungen (IEC 61326-1:2005); Deutsche Fassung EN 61326-1:2006 DIN EN 61326-2-6; VDE 0843-20-2-6:2006-10 Elektrische Mess-, Steuer-, Regel- und Laborgeräte - EMV-Anforderungen - Teil 2-6: Besondere Anforderungen - Medizinische In-vitro-Diagnosegeräte (IVD) (IEC 61326-2-6:2005); EN 61326-2-6:2006</p> <p>Datum / Date: 13. 04. 2013 Unterschrift / Signature: </p> <hr/> <p>HP Ulla Burgard Geschäftsführerin / Managing Director)</p>	

For disposal

The Diamond Shield device must – as well as other electronic devices – not be disposed with normal household waste. You can submit to the local separate collection system for electrical appliances or return it to the address below (unfree postage will not be accepted).

Please also note that the disposal of batteries is prohibited on the normal household waste for environmental reasons. You can return them free of charge to the public collection of communities or wherever batteries are sold.

You are welcome to return the batteries to the following address (unfree postage will not be accepted):

DermaVit GmbH & Co. KG
Unterer Anger 15/Rgb.
80331 Munich

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