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// General Information

General advice for this instruction manual



Carefully read this instruction manual and follow all listed instructions. This way, you ensure a reliable operation and a long durability of the device.

Warning symbols and key words used in this instruction manual



CAUTION!
Warning of immediate risk of death!

WARNING!
Warning of potential risk of death and/or serious irreversible injuries!



WARNING!
Warning of risk of electric shock!



WARNING!

Observe instructions in order to avoid injuries or property damage!



CAUTION!

Observe instructions in order to avoid property damage!



NOTICE!

Further instructions for the use of the device!



NOTICE!

Observe instructions in the manual!

NOTICE!

Usage tips!

// Introduction

The Power2Cell device is a treatment system of the electrotherapy category (biological cell regulation / BCR therapy) that uses micro current for the treatment of pain in medical therapy. The device is used by hospitals, doctors, physical therapists and naturopaths.

For the continuation of therapy at home, the patient can purchase the device. The Power2Cell is based on the Clinic-Master professional (MSTG), which has been in the market since 2004. The Power2Cell is thereby an extension of the Clinic-Master professional (MSTG).

The Power2Cell uses the same parameters (current, frequency, rise, polarity) as the Clinic-Master.

The device is to be used as a therapy device for treatment at home.



For all additional information, please refer to the „general information“ section on page 44 of this booklet.

// Adequate Use

Scope of Application / Indications:

The focus of use for the Power2Cell is on treatment of pain.

Intended users:

- Doctors
- Physical therapists
- Naturopaths
- Hospitals
- Pharmacies
- Patients for home use



For all additional information, please refer to the „general information“ section on page 44 of this booklet

// Responsibility of the user

This product is designed in a way that it works in accordance with this instruction manual, if it is used according to the instructions and provisions provided here. A defective product shall not be used. Parts that are damaged, obviously worn, incomplete or contaminated, or missing shall be replaced immediately. If a repair or replacement is necessary, we recommend that these procedures be performed by the manufacturer. The user of the product carries the sole responsibility for any malfunction that results from improper use, inadequate maintenance or repair, damage, or modification by another person other than Dr. Schwab Gesellschaft für Technologieberatung mbH or the service personnel authorized by them.

// **Indications and Contraindications**

Indications:

- Treatment of pain

Contraindications

- Pace setter
- Small children under the age of 6
- Pregnancy
- Malignant Tumors
- Hematological malignancies
- Epilepsy
- Auto-immune diseases
- Heart rhythm disturbances
- Morbus Paget
- Avian bone disease
- Muscular dystrophy

// Undesired side effects

Undesired side effects that may occur in conjunction with the Power2Cell are:

- Increased secretion from wounds, especially during the early postoperative stage
- Tingling of the skin under the electrodes (if the patient is highly sensitive to electrical currents)
- Redness and itching of skin under the electrodes (if the patient is highly sensitive to electrical currents)
- Increased urge to urinate
- Temporary worsening of the symptoms
- Flashes of light in the eyes when treating the head



For all additional information, please refer to „general information - contraindication“ on page 45 of this booklet

// Principle of operation

The Power2Cell device is a treatment system of the electrotherapy category (biological cell regulation / BCR therapy) that uses micro current for the treatment of pain in medical therapy.

The MSTU is controlled by a central microprocessor. All data entry and information for the user are performed via a set of buttons and a backlit display. A newly developed hardware for the generation of the micro currents allows for the independent generation of current pulses with frequencies of up to 1 kHz for two channels with currents of up to 999 μ A. A measurement of skin conductance on each channel allows for an automated optimization of treatment.

The generation of the initial voltage of 60V for each channel is galvanically separate for each channel, and allows for the ideal interference treatment (two currents crossing at the primary point of pain), which is not provided in cheap devices. The galvanic isolation of the channels with voltages of up to 60V and the measurement of the emitted currents requires the use of advanced and complex circuitry as well as intricate programming. This causes a higher price for the device, but also insures that you will be able to cover all requirements with this micro current device.

The use of a flashable processor easily allows the installation of software updates by the manufacturer.



For all additional information, please refer to the „general information“ section on page 44 of this booklet

// Warnings and Precautions



- The device may only be stored and used in a dry environment
- Only use the device in temperatures between +5 and +40 °C
- Don't expose the device to humidity levels below 15% or above 93%
- To charge the batteries, only use the supplied charger
- Make sure your mains voltage is within the specifications for the charger
- Never use damaged patient cables
- Only use accessories approved for use with the device
- Immediately stop the use of an obviously not properly functioning device. Contact your Power2Cell retailer for details about repairs
- Don't insert objects into device openings
- Prevent liquids and dust from entering the device
- The device is not meant to be used in explosive environments and may not be used in these
- Only use the electrodes approved for use with the device. These electrodes should be replaced after each use
- Never try to repair damaged accessories yourself. Contact the manufacturer
- Clean the device regularly and disinfect accessories as needed

- The charger may not be used in immediate vicinity to other devices or stacked on top of other device. If this can't be avoided, the charger must be monitored to insure adequate use in this arrangement
- Consider the recommendations concerning electromagnetic compatibility at the end of this instruction manual
- In order to avoid damage to the device by electrostatic discharge, avoid charging yourself by e.g. inadequate clothing, carpet, low humidity, etc.
- Set the device up in a way that it is stable and make sure that cables are routed in a way that they are not easily damaged or pose a hazard
- Avoid exposing the device to direct sunlight
- The device is designed so that it can only be opened with the use of tools – the device is only to be opened by the manufacturer – Opening the charger while it is connected to power carries the risk of death
- The device is not to be used in conjunction with other medical devices (e.g. ECG)
- Only one Power2Cell is to be used on a patient at any given time
- Never connect accessories from other devices to the Power2Cell – this can lead to malfunction and the endangerment of the patient
- Only connect the patient cables to the corresponding connectors on the device
 - don't connect them to other device or create a connection to other patients
- The battery cover may only be opened once the charger is no longer connected to the outlet or the Power2Cell
- Place all cables in a way that no one can step on them or trip over them
- Avoid high force to the connectors, as this may cause damage to the device
- Don't use force when connecting or disconnecting cables or connectors and observe the proper orientation of the connectors

- Avoid shorts or cable fracture by not squeezing or bending cables
- Regularly check the rechargeable batteries for signs of damage/leaking and replace defective batteries
- Replace rechargeable batteries at least every 2 years
- Only use the batteries specified in this instruction manual. Contact the manufacturer
- Observe the local regulations for proper disposal of batteries
- Observe the correct polarity when inserting batteries
- Only charge the rechargeable batteries using the supplied charger AC48. The use of an inadequate charger may lead to the destruction of the batteries and may cause damage to the device
- Don't use the supplied charger to charge other batteries/battery packs
- The charger is only to be used with a line voltage of 230V. If you want to use the device abroad, inform yourself about the local line voltage and plugs. Contact the manufacturer about adequate chargers for other countries
- Always use the supplied case to transport the device
- Remove the batteries before storing or transporting the device



Please read the instruction manual carefully before operating the device. If you are uncertain how to operate the device, please contact the manufacturer – they will be happy to help you!

// Advice for treatment

For the use of the MSTU, a quiet and comfortable environment should be created for the patient. The patient should be treated seated or laying down, depending on their ailments. Depending on the anamnesis, diagnosis or indication by the doctor, naturopath or physical therapist, the treatment is to be planned and coordinated with the patient.

For the treatment of acute ailments, a daily treatment is recommended. For the treatment of chronic issues, a rhythm of 2 to 3 times a week is appropriate.

The skin of the patient in the area where the electrodes will be applied should be free from oil and without wounds. Make up or similar is to be removed prior to applying the electrodes.

It is very important to make sure that the entire surface area of the electrodes sticks to the skin.

The electrodes have to stick to the skin with their entire surface area throughout the treatment.

Should the electrodes fail to fulfill the above requirements, they need to be replaced with new ones.

- The patient should be in a secure and relaxed position during treatment
- Except when specifically desired, the body of the patient should not be wet
- The device should be out of reach of the patient
- Stop treatment if something unexpected happens
- Don't apply the electrodes over fresh surgery scars and over open wounds
- Avoid contact between the electrodes and metal such as belt buckles or necklaces
- Don't use knotted or damaged cables
- The device may not be opened, don't drop it, and don't expose it to shock or vibration
- If you are unsure about the use, obtain professional help



For all additional information, please refer to the „user manuel“ section of this booklet

// Accessories

Pad electrodes

PG470



PG473



General description

The pad electrodes “Gel-Pad PG470” and “Gel-Pad473” are available through our distributors. In order to insure optimal success, only use these types of electrodes.

Dimensions:

PG470: 35 x 45 mm

PG473: 45 x 80 mm



Please observe the following instructions when using the pad electrodes

The skin of the patient should be free of oil and wounds in the area of the electrodes. Skin creams or similar have to be removed.

It is very important to make sure that the entire surface area of the electrodes still has the full adhesive effect.

The electrodes have to contact the skin with their entire surface area throughout the treatment and may not detach.

Should the electrodes at hand not fulfill the above requirements, they have to be replaced with new electrodes.

When treating different patients, the electrodes have to be replaced after each treatment.



For all additional information, please refer to the „user manuel“ section of this booklet

Patient cables



The patient cables create the electrical connection between the micro current device Power2Cell and the patient. Two patient cables are provided with the device. These cables are to be connected to the connectors "A" and "B" on the device. The other end is connected to the red or black adapter, which is then connected to the electrodes. The patient cables don't require any maintenance and should only be cleaned using a damp cloth from time to time.

CAUTION! Important safety advice!



Connecting or inserting patient cables that are connected to a patient into a device different from a Power2Cell or connecting them to patients that are connected to other medical devices poses a risk to the life of the user and patient.

Only connect the patient cables of the Power2Cell to the intended connectors on the Power2Cell and don't insert them into other devices/outlets or create a connection to another patient.



Don't use any entangled, twisted or damaged patient cables.



The clips on the patient cables are small parts that may be swallowed by little children, and therefore present a choking hazard. Also, becoming entangled in the patient cables may lead to strangulation. Always keep the device and its accessories out of the reach of children. Only use the device on children under the supervision of adults.



For all additional information, please refer to the „user manual“ section of this booklet

// Portable Use

The micro current device Power2Cell can be worn on the body with the use of a provided carrying belt.



The device can either be worn on the arm or around the hip, the length of the belt can be adjusted.





When using the device in portable mode, always ensure a good fit of the carrying strap and the device, in order to guarantee proper operation and to avoid damage.



In portable mode, route the patient cables in a way that no strain or pressure is placed on the connectors and the connection can't be interrupted during movement.



Only leave the device, the cables, and the pads connected to the body as long as is necessary for the treatment.



Becoming entangled in the carrying belt may lead to strangulation. Always keep the device and its accessories out of the reach of children. Only use the device on children under the supervision of adults.

// **Storage & Transport**

Remove the rechargeable batteries before storing or transporting the device.

Store the device in a dry location out of the reach of children and don't use it in an environment where it could be exposed to the following:

- Magnetic fields or electromagnetic radiation
- Very high or very low temperatures (above 70°C or below -25°C storage/transportation temperature). If the device has been exposed to very low temperatures and is to be used in a warm environment, please allow 1 to 2 hours before using the device, in order for condensation to evaporate
- High humidity
- Direct sunlight
- Shock or vibration

Don't place any containers containing liquid on the device!



Always use the supplied case when transporting the device in order to avoid damaging the device.



Batteries may only be stored at transported at temperatures from -20°C to +40°C. Remove batteries from device for storage.

// Cleaning & Maintenance

Before cleaning the device, disconnect the battery charger. The case and the cables may be cleaned using water and a mild detergent on a damp cloth. Make sure that no liquid will enter the openings of the device and don't use any sprays. When cleaning the display area, make sure it does not get damaged by harsh or abrasive cleaning agents. The pad electrodes are to be cleaned using water and mild detergent after each use. When using the device on different patients, the electrode pads have to be replaced before each treatment.

Check the cables and connectors before each use. Damaged cables may not be used! Contact the supplier.



CAUTION!
The device may only be opened by trained personnel!



CAUTION!
There are no user serviceable or cleanable parts inside the device!

CAUTION important safety notice!



- The charging adapter may not be opened under any circumstances!
- Touching live parts inside the adapter carries the risk of death!

// Scope of delivery

- 1 x Power2Cell device
- 4 x Pad electrode - PG470
- 4 x Pad electrode - PG473
- 1 x Patientcable Channel A
- 1 x Patientcable Channel B
- 2 x Adapter for pad electrode - red
- 2 x Adapter for pad electrode - black
- 1 x Battery charger AC48
- 4 x NiMH rechargeable battery (set of 4)
- 1 x Carrying case
- 1 x Carrying strap
- 1 x User manual
- 1 x Warranty card

// Initial operation



Please read the instruction manual carefully before operating the device. If you are uncertain how to operate the device, please contact the manufacturer – they will be happy to help you!



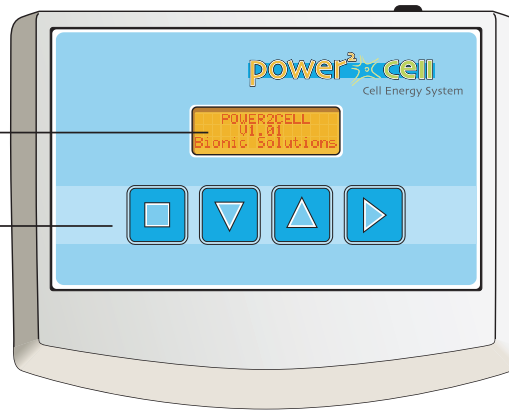
CAUTION!

The device is to be operated under the observation of the chapters “Warnings and precautions” and “Advice for treatment” of this instruction manual. Make sure to especially observe the safety precautions concerning power supply and environmental conditions.

// TOP - Overview

Display

Buttons

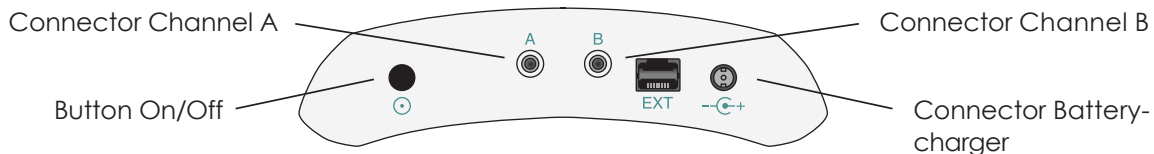




The Power2Cell device is easily operated via 4 buttons on the top side of the device.

- ▶ **START** - Button: has the function of an "Enter" button and is used to advance to the next menu and to start a program.
- ▼▲ **UP / DOWN** - Buttons: used for scrolling in menus.
- **STOP** - Button: has the function of an "Escape" button and is used to stop a program.

// BACK - Overview

The following buttons/connectors can be found on the back of the device:



- „ On / Off“- button: turns the device on or off.
- Channel „A“-Connector: connector for the patient cable that is attached to the body horizontally.
- Channel „B“-Connector: connector for the patient cable that is attached to the body vertically
- „EXT“-Connector: PC-Interface for service purposes.
- „+“



The Power2Cell can be used for up to 50 hours on a single battery charge.
The use of the device is NOT possible, when the charger is connected.

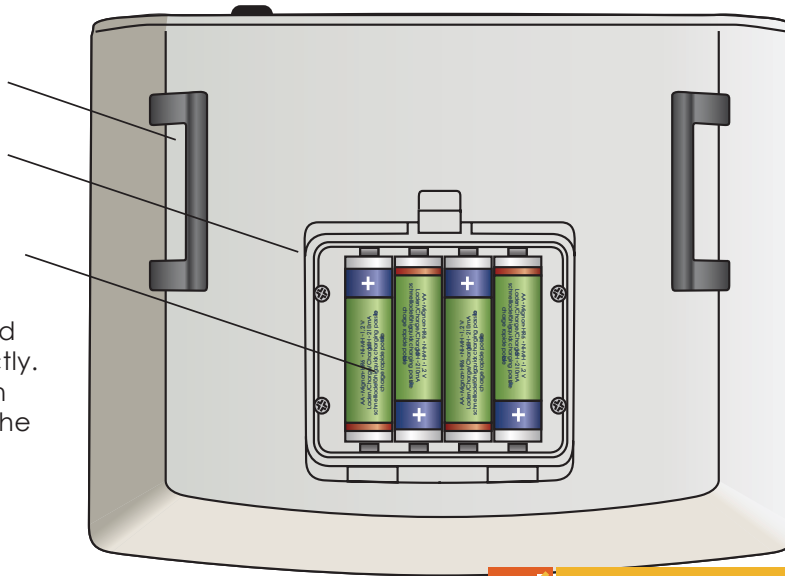
// BOTTOM - Overview

Attachment for
carrying-strap

Battery flap (opened)

Batteries (Mignon HR6 AA)

Open the battery flap and
insert the batteries correctly.
The polarity is indicated in
the battery case. Close the
lid by inserting it with light
pressure.



Batteries are include



CAUTION: Improperly inserted batteries will not be charged and the device will not operate!

When turned off, power is disconnected from the Power2Cell and the batteries will be charged via the external charger. The red indicator light on the charger will light up when charging is in progress. The user is responsible for disconnecting the charger from the device after approximately 6 hours in order to avoid overcharging the batteries.

The device should only be used with the supplied rechargeable batteries.

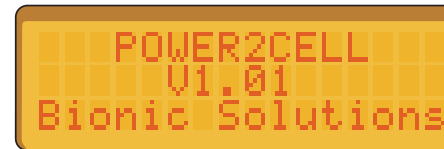


CAUTION: Non-rechargeable batteries should not be used and may under no circumstances be charged with the battery charger!

The duration of use on batteries is dependent on the charge state and the number of used channels. Ideally, up to 50 hours of treatment are possible on one charge.

a. TURNING ON

After turning the Power2Cell on via the on/off button, the text display will show "Power2Cell" and the software version.






after approx. 5 Sec.

Afterwards, the user selection appears, where the last selected user is highlighted.







>> User selection

Use the   UP / DOWN -key to select the desired user and confirm the selection with the  START- button






The display will show the selected user, the currently selected program and the number of performed treatments with the current program by the user.

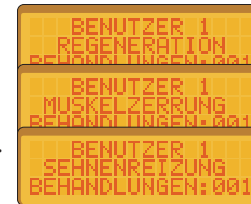
>> Enter your own username:

The default usernames, "user 1" to "user 5", can be overwritten. To do so, select the relevant name in the user's selection, and press the  STOP - button for 5 seconds. The selected user name appears in the first line of the display with the note "INPUT NAME" below. Now, the individual letters of the name can be changed with the  UP / DOWN-key. The new name can be up to 14 characters long. Push the  START-button to go to the next digit. The input position moves by a flashing marked bar. With the  STOP-button the name is accepted and displayed in the future even after the device is temporarily switched off.





b. PROGRAM SELECTION

>> Program selection

Use the   UP / DOWN -keys to scroll through the available programs. Select the desired program by pressing the  START-button. The name of the program is shown in the display, followed by the maximum output current in % and the program duration. After switching to a different program, the treatment counter shows the number of treatments performed with the newly selected program



>> Output current

Use the   UP / DOWN-buttons to set the strength of the output current in 1% steps, between 10 and 100%. The preset current is 100%. The application period is displayed in the format **Hours-Minutes-Seconds**. With the   UP / DOWN -keys the output current can also be changed during a program is running.

>> Program start

After pressing the ► **START**-key, the selected program will begin to run.

The display will show current output at the top by moving arrows. The second line of the display shows the selected output current in %, and the last line shows the remaining time.






>> Change output current

Use the ▼▲ **UP / DOWN** - buttons to set the strength of the output current in 1% steps, between 10 and 100%. The preset current is 100%.

c. FUNKTIONEN

>> Interrupt treatment



A running treatment can be interrupted at any time by pressing the  STOP - button (pause). Pressing the  STOP - button again terminates the program. Pressing the  START - button instead, resumes the program execution.

>> Menu selection

By pressing the  STOP - button, the user can return to the higher menu level.



>> Treatment counter

After completion of a program, the treatment counter is increased for the current-user. This way, everyone can see, how often he has already used a certain program. The counter is individual for each program and user.

d. *SETTINGS*

>> Program options

The Power2Cell contains up to 20 programs, which are available depending on the purchased options.

>> Unlocking of programs

If the STOP button is pressed and held while the device is turned on, "Activation Code" is displayed.

Entry of the unlock code starts on the very left. The position is marked by a flashing bar. With the ▼▲ UP / DOWN - buttons, the user can now scroll through the space character, the number 0-9, and the alphabet from A-Z.

Once the desired number or letter is reached, press

▶ **START** and continue with the entry of the next position. If an incorrect character was entered, press the ▶ **START** - button until you return to the incorrect position.

Once all 8 positions have been entered, the unlock code is confirmed by pressing

■ **STOP**.

If the code was entered correctly, the additional programs will be unlocked, and the user can access them through the program selection as described above.

If an incorrect code was entered, this will be shown on the display, and the user can get back to the code entry by pressing ■ **STOP**. If unlocking of programs is to be aborted, press ▶ **START**.

e. GENERAL INFORMATION

Before the first use of the pwoer2cell device, the included patient cables have to be inserted into the two connectors (channel A and channel B) until they lock. The adapters (with snaps) for the connection with the pad electrodes are to be attached to the other ends of the cables. Before attaching the electrodes to your body, please read the instruction manual to ensure proper placement of the electrodes.

When the batteries are almost empty, the message "Recharge Battery" is displayed. The started program should be completed. Only after completing the program should the batteries be recharged by connecting the battery charger. If the battery charge is too low for proper operation, the device will turn off on its own. The power2cell device cannot be charged while it is in operation.



If the device is turned on and has not been used for a while, the message "turn off!" appears. You should turn off the device to avoid discharging of the batteries.

CONTRAINDICATIONS

The power2cell may used if one of the following conditions exists:

- >> cardiac pacemaker
- >> Small children up to 6 years
- >> during pregnancy
- >> malign tumors
- >> malign blood disorders
- >> epilepsy
- >> auto immune diseases
- >> cardiac arrhythmia
- >> Paget's disease
- >> brittle bone disease
- >> muscular dystrophy



CAUTION: do not use while operating a vehicle!



CAUTION: do not apply directly to the eyes!

Face: Some people display a certain hypersensitivity to electrical currents, this can happen particularly in the face. In this case, the intensity of the current should be reduced.

Screws, plates, nails, dental prosthetics, implants, artificial joints or prosthetics do not pose a contraindication.

APPLICATIONS

General instructions for use

>> How do I use the power2cell?

Most applications are performed while **resting**, but it is also possible to use the power2cell with the carrying strap and skilfully placed electrodes while standing, on a stationary bike or during physical therapy.

>> How do I apply the electrodes?

The electrodes and channels have to be applied as described in the detailed instructions and **may not touch each other**, as a positive effect can not be guaranteed otherwise.

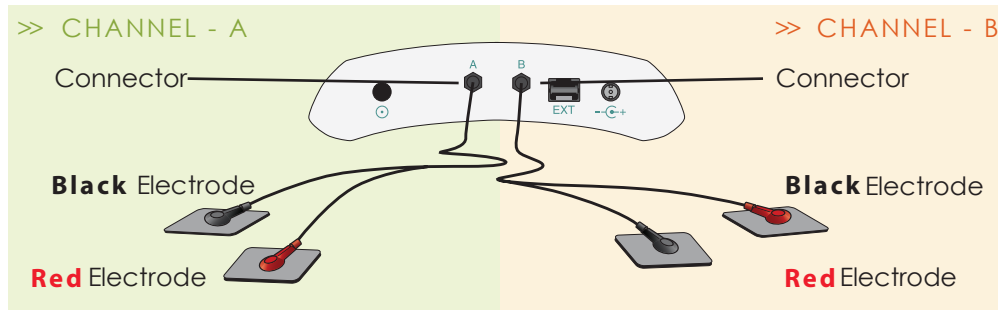
>> How often should I treat myself?

You can treat yourself **several times a day**. However, it makes more sense to only repeat certain applications only 2 to 3 times and combine them with the energy mode (see detailed instructions).

>> Are all types of conditions treated the same way?

From experience, old and **chronic conditions** require more applications (10-15), before a significant effect can be seen than younger and **acute conditions**.

The following knowledge is relevant for correct electrode placement.
For the application, there are two different channels.



CAUTION:
Always observe these recommendations for the placement of the electrodes. Only then can a successful use of the power2ce be ensured.

The electrodes of channel A are generally applied across the body axis (horizontally), while the electrodes of channel B are applied along the body axis (vertically), with the black electrode of channel B normally applied on top. With few exceptions, the paths of the two channels cross. The intersection of the channels is always at the center of your symptoms.

// JOINT PAIN 1 & 2



“Joint pain 1” is the treatment program for acute complaints.

“Joint pain 2” is the program for chronic problems.

- >> 1 acute: acute swelling and pain, pain at rest and direction under loads, redness of the joint, cooling reduces the pain
- >> 2 chronic: swelling at or after exposure to load, abrasion proved by radiological findings, limited mobility

These characteristics don't all have to be present at the same time. Sometimes, a known (chronic) joint degeneration can cause acute pain (especially after excessive exercise). In this case, the acute symptoms dominate the chronic ones.

The use in case of chronic symptoms leads to increased circulation of the joint and metabolic processes of the still intact cartilage as well as the articular capsules, the bone and the synovial membrane. In this manner, the function and the resilience of the joint are improved and the pain is reduced.

Example:
Shoulder



>> Placement of pad electrodes:

The intersection of the channels is always at the center of your symptoms.



CAUTION: Electrodes may not touch!

A-Channel: **black** and **red** on the right and **left** side of the affected joint.

B-Channel: **black above** and **red below** the joint.

The treatment can be repeated 2 to 3 times per day. Experience has shown that there is a significant relief after a few days of treatment. In chronic conditions, this may take several weeks.

>> Good to know:

You will find other examples (hand, hip, knee, ankle) on page 86 / 87 of this booklet.



// BACK PAIN



Back pain usually comes from signs of wear of the spinal column and / or an intervertebral disc damage. Often the pain radiates into the arms or legs.

>> Placement of pad electrodes:



LUMBAR SPINE

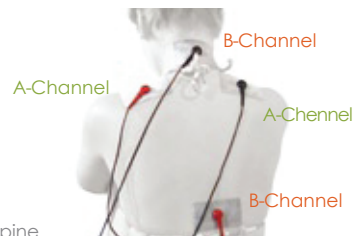
A-Channel: **Black right** and **red left of spine** at the level of the damage or the complaints.

B-Channel: Along the spine, **neck black**, **sacrum red**.

CERVIAL SPINE

A-Channel: **Right Black** and **red left** of the cervical spine.

B-Channel: Along the spine, **neck black**, **red between the shoulder blades** (below the complaints).



Example: Cervical Spine

>> Good to know:

Further applications (lumbar spine, lumbago - with radiance) can be found on page 86 / 87.



Users that have had surgery, whose pain does not disappear despite extended treatment with the power2cell, should be aware that the symptoms could also stem from postoperative scarring.

Alternative to the stated program, use the "**scars**" program with the same placement of electrodes.

The "**inflammation**" program can be used and may be helpful in combination, if a chronic irritation is the cause of your symptoms.

Additionally, the use of the "**lymph**" program is recommended in cases of radiating pain.

// WOUNDS



This program is for the treatment of pain in wound healing after operations and small accidents. The power2cell reduces pain. The sooner the power2cell is used after a wound was created, the better is the expected treatment result.

The "Wounds" program may be used several times per day and can be applied all over the body.



>> Placement of pad electrodes:

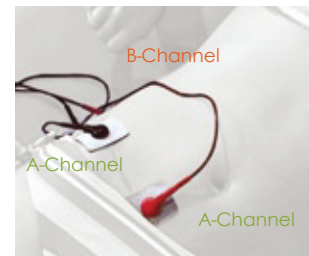
A-Channel: **Black Right** and **red left** of the wound.

B-Channel: **Black below** and **red above** the Wound.

SURGERY ON THE LEGS:

A-Channel: **Black Right** and **red left** of the wound.

B-Channel: **Black collarbone**, **red sole** of the foot.



SURGERY ON THE ARMS:

A-Channel: **Black right** and **red left** of the wound.

B-Channel: **Black collarbone**, **red between thumb and forefinger** of the relevant arm.

>> Good to know:

You can use the **“Lymph”**-program in combination!

If the wound is infected, use **“infection 1”** or **“inflammation”** in addition!



// INFLAMMATION



This program addresses complaints that are caused by irritation or inflammation of tendons, ligaments, joint capsules, bursas and joints, but also of organs (liver, stomach, pancreas,...)

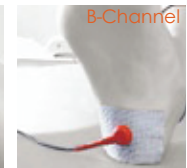
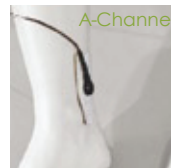


>> Placement of pad electrodes:

AChannel: The inflamed area is positioned between the **black** and **red** electrodes.

B-Channel: **Black above** and **red below** the ignition.

Example:
Achilles heel



STOMACH AND PANCREAS:

AChannel: **Black on the spine** (back) opposite the sternum, **red underneath the sternum**.

B-Channel: **Black at the left collarbone** and **red below the navel**.

LIVER:

AChannel: **Black on the spine** (back) opposite the red electrode, **red below the right costal arch**.

B-Channel: **Black on the right collarbone** and **red at the right groin**.

>> Good to know

The applications should be repeated several times per day. Also use the **“Energy Mode”** between the treatments with the same position of the electrodes.



// FRACTURE



The healing of a fracture can be sped up significantly by the this treatment. Ideally the device is used directly after an injury. However, treatment can start at any point after a fracture hapened.



>> Placement of pad electrodes:

AChannel: **Black right** and **red left** of the fracture.

B-Channel: **Black above** and **red below** the fracture, diagonal through the affected body part.

FRACTURE OF ARM:

AChannel: **Black right** and **red left** of the fracture.

B-Channel: **Black** at the collarbone, **red between Thumb and forefinger** of the affected side.

IN CASE THE PATIENT HAS A CAST:

AChannel: **Black above the cast**, **red at the back of the hand**.

B-Channel: **Black at the collarbone**, **red at the fingers** of the affected side.

FRACTURE OF LEG:

A-Channel: **Black right** and **red left** of the fracture.

B-Channel: **Black at the groin**, **red at the sole** of the affected foot.

IN CASE THE PATIENT HAS A CAST:

A-Channel: **Black above** the cast, **red at the dorsum** of the foot.

B-Channel: **Black at the collarbone**, **red at the fingers** of the affected side.

FRACTURE OF VERTEBRAL BODY:

A-Channel: **Black right** and **red left** of the fracture.

B-Channel: **Black in the neck** (below the hair line), **red at the sacrum**.

>> Good to know:

The application should be repeated several times per day in combination with the **“Energy Mode”**. Therefor use the same position of the electrodes. In the beginning it is also advisable to use the **“Lymph”**-program 1 to 2 times per day in addition.



// TENSION



The program "**Tension**" relieves the pain of your muscles in **chronic tension**. It thereby promotes blood circulation in the muscle tissue and relieves tension overly acidic pain. The application of the electrodes vary according to the affected body region.

The tense muscle is positioned between the two output channels. Muscles in the pelvic region as well as in the area of the shoulder girdle can be **stimulated simultaneously**.



>> Placement of pad electrodes:

SHOULDER-NECK / PELVIS-HIP

A-Channel: **Black right** and **red left** below the strained muscle.

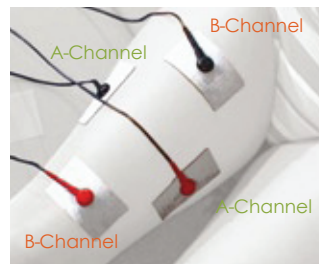
B-Channel: **Black at the top** and **red at the bottom** of the muscle.



>> Good to know:

The treatment can be combined with **“Muscle Relaxation”** or **“Energy Mode”**.

You can repeated the treatment up to 2 or 3 times per day.



Example:
Thigh muscles

// LYMPH



This program reduces or eliminates acute or chronic swelling of the arms and legs, as caused by lymph blockages. The “**Lymph**” program can be used in combination with many other programs that deal with swollen limbs.



>> Placemet of pad electrodes:

ARM:

A-Channel: **Black electrode in front** of and **red behind** the swollen area.

B-Channel: **Black electrode below** the clavicle and **red between** the thumb and index finger of the affected side.

LEG:

A-Channel: **Black electrode** and **red electrode in front** of and **behind** the swollen area.

B-Channel: **Black electrode** in the groin area and **red on the sole** of the foot of the affected side.



>> Good to know:

Repeat the **“Lymph”** program several time a day until the swelling has been reduced. This program may lead to an increased need to urinate.

You will find other examples (lymph short and lymph long) on page 86 / 87 of this booklet.

Example:
Arm (left) und Knee (right)



// IMMUNE SYSTEM



This program serves to strengthen the immune system and is also used as a prophylactic. If you have overworked physically, you can also boost your immune system.



>> Placement of pad electrode:

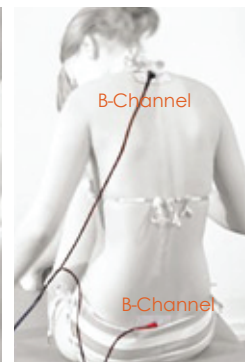
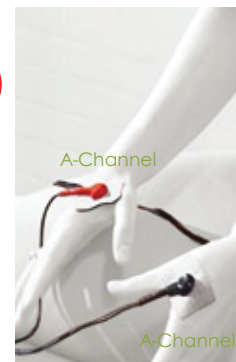
AChannel: Electrodes between the thumb and forefinger of the **right (black)** and **left (red)** hand.

B-Channel: At the spine in the **neck (black)** and the **sacrum (red)**.



>> Good to know:

Repeat the program two times per day.



// INFECTION 1 - COLD

The treatment of a **bacterial type infection** can be carried out both systemically and locally. There are different types of infections: the simple upper wound infection, infection of the joints and bones, infections of the throat and sinuses, and the very serious systemic sepsis.



The treatment with the “power2cell” is a complementary measure in addition to conventional medical therapy use by your doctor. If you discover any changes through the use of the “power2cell”, discuss them with your doctor.

>> Placement of pad electrodes:

SYSTEMATIC:

A-Channel: Electrodes between the thumb and forefinger of the **right (black)** and **left (red)** hand.

B-Channel: At the spine in the **neck (black)** and the **sacrum (red)**.



LOCAL:

A-Channel: **Black** and **red** electrode on each side of the infected spot.

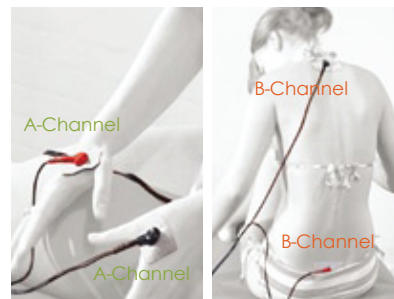
B-Channel: **Black electrode below** and **red electrode above** the infected spot.

ARM :

A-Channel: **Black** and **red** electrode on each side of the infected spot.

B-Channel: **Black below the collarbone** and **red between thumb and forefinger** of the relevant arm.

Example:
systematic



LEG:

AChannel: **Black** and **red** electrode on each side of the infected spot.

B-Channel: **Black at the groin, red at the sole** of the affected foot.

PARANASAL SINUSES:

AChannel: **Black** and **red** electrode on each side of the forehead or cheek (dependent on the location of the pain)

B-Channel: **Black electrode at the collarbone** of the relevant side,
red electrode in the center of the forehead



The output of the current can be reduced for facial treatments!

>> Good to know:

Repeat this treatment 2-4 times per day. It can also be combined with **"Immune System"**.



// INFECTION 2



In a **viral infection** is usually a systemic infection and more rarely a local infection. Viral infections often occur in the context of influenza epidemics and are absorbed through the nose, throat or lungs. In rarer cases, there is a local occurrence, as in herpes simplex (cold sores or shingles).

If possible, start immediately after the first occurrence of your symptoms with the use of the "**power2cell**" and complement the "**Infection 2**" treatment with the programs "**Immune System**" or "**Energy Mode**".



>> Placement of pad electrodes:

SYSTEMATIC:

A-Channel: Electrodes between thumb and forefinger of the **right (black)** and **left (red)** hand.

B-Channel: At the spine in the **neck (black)** and the **sacrum (red)**.

LOCAL (SHINGLES):

A-Channel: **Black electrode at the spine, red electrode next to** the infected spot.

B-Channel: **Black electrode below and red electrode above** the infected spot.

FACE (HERPES SIMPLEX):

A-Channel: **Black and red** electrodes on each side of the lips.

B-Channel: **Black electrode at the collarbone** of the affected side,
red electrode in the **center of the forehead**.



The output of the current can be reduced for facial treatments!

>> Good to know:

Repeat this treatment 2-3 times per day. It can also be combined with
“**Immune System**” (1-2 times per day).



// ENERGY MODE



The "**Energy Mode**" can be used with all complaints and is compatible with all other programs. In combination with other programs, you simply take over the application of the electrode.

In "**Energy Mode**", there are 2 specific variations:

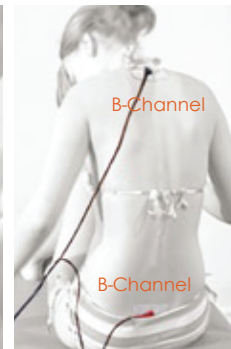
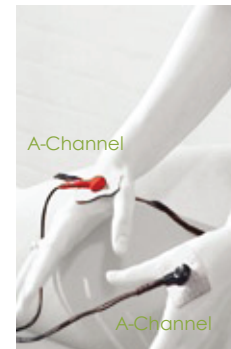


>> Placement of pad electrodes:

VARIATION I:

A-Channel: Electrodes between thumb and forefinger of the **right (black)** and **left (red)** hand.

B-Channel: At the spine in the **neck (black)** and the **sacrum (red)**.



VARIATION II:

A-Channel: **Black electrode** at the **collarbone**, **red electrode** on the **sole of the right foot**.

B-Channel: **Black electrode** at the **collarbone**, **red electrode** on the **sole of the left foot**.

>> Good to know:

Repeat this treatment 2-5 times per day.



// VEGETATIVE BALANCE



The “**Vegetative Balance**” leads to inner harmony and balance after exertion and stress. Run this application exclusively in a resting phase, or in the evening, because you will achieve a very relaxed state after treatment.



>> Placement of pad electrodes:

A-Channel: **Black electrode** at the **collarbone**, **red electrode** on the **sole of the right foot**.
 B-Channel: **Black electrode** at the **collarbone**, **red electrode** on the **sole of the left foot**.



>> Good to know:

Repeat this treatment 1-2 times per day.



// STIMULATION

“**Stimulation**” leads the body to produce energy, power and motivation and increases your resistance to stress. It is recommended that you use the stimulation program in the morning or ahead of stressful situations.

>> Placement of pad electrodes:

A-Channel: **Black electrode** to the **right of the spine** by the shoulder and **red** on the **sole of the right foot**.

B-Channel: **Black electrode** to the **left of the spine** by the shoulder and **red** on the **sole of the left foot**.

>> Good to know:

Do not repeat this treatment!



// PURIFICATION



The liver and the kidney are supported in their function. **"PURIFICATION"** is especially useful after medical treatments, after surgeries and during special diets.



>> Placement of pad electrodes:

LIVER:

A-Channel: **Red electrode** below the **right costal arch**, **black** on the **back opposite the front**.

B-Channel: **Black electrode** on the **right clavicle**, **red in the groin area**.

KIDNEY:

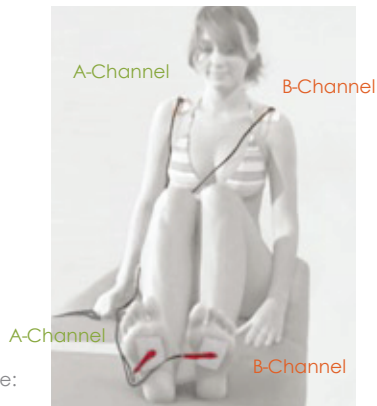
A-Channel: **Black electrode** on the **clavicle** and **red** on the **sole of the right foot**.

B-Channel: **Black electrode** on the **clavicle** and **red** on the **sole of the left foot**.

>> Good to know:

Repeat the **“Purification”** program at the beginning of a diet one to two times a day, during the diet once a day.

“Purification” can be combined with the **“Lymph”** system.



Example:
Kidney

// PULLED MUSCLE



If you have injuries like sprains or tears of muscle fiber, accompanied by bruising, use the **“pulled muscle”** program immediately after detecting them.

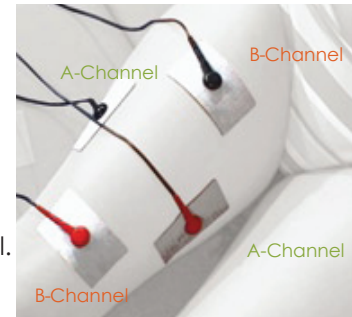


>> Placement of pad electrodes:

A-Channel: **Black electrode** to the **right** and **red** to the **left** of the injured muscle.

B-Channel: **Black electrode above** and **red below** the injured muscle.

The part of the muscle that is affected the most should be between the electrodes of the A-Channel. If a bandage is present, the black electrode will be applied above and the red electrode below the



bandage, so that the injured region lies between the electrodes. In this case, the B-Channel can be applied diagonally to the A-Channel.

>> Wissenswertes:

“**Pulled muscle**” can be combined with the programs “**bruise**” and “**Lymph**” and alternated with “**energy mode**”.



Repeat the program 2 to 4 times a day in combination with the other recommended programs.

// MUSCLE RELAXATION



If you expose yourself to severe and repeated strain during sports or at work, your muscles may cramp up to differing degrees and may not fully recover. This is also true for painful muscular conditions due to other causes. **“muscle relaxation”** improves the circulation and relaxation of muscles and greatly helps with these ailments.



>> Placement of pad electrode:

A-Channel: **Black electrode** to the **right** and **red** to the **left** of the tense muscle.

B-Channel: **Black electrode above** and **red below** the tense muscle.



>> Good to know:

“Muscle relaxation” combines well with **“vegetative balance”**, **“Lymph”** and **“tension”**.

// TENDON IRRITATION

Pulled tendons usually occur around the joints after chronic strain, monotonous movements, or sports. They generally appear in the wrist, the shoulders, and the ankle (e.g. Achilles tendon).



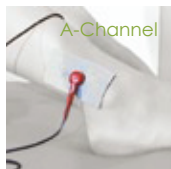
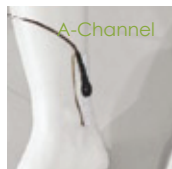
>> Placement of pad electrodes:

A-Channel: **Black electrode** to the **right** and **red** to the **left** of the painful tendon.

B-Channel: **Black electrode above** and **red below** the painful spot, along the course of the tendon.



Example:
Achilles tendon





Sometimes the area of pain is small - Make sure that the electrodes
DO NOT TOUCH!



>> Good to know:

Combine **“tendon irritation”** with **“energy mode”** and **“Lymph”** using the same placement of the electrodes.

The program can be repeated 2 to 3 times a day.

// SCARS

This program can be used for both superficial scars as well as deeper scars after surgeries or shrinking of capsules in joints (shoulder, elbow, knee, hip, ankle).

You can also use the “**scars**” program immediately after stomach surgeries and the associated adhesions.



>> Placement of pad electrodes:

A-Channel: **Black electrode** to the **right** and **red** to the **left** of the scar.

B-Channel: **Black electrode above** and **red below** the scar.



JOINT:

A-Channel: **Black electrode** to the **right** and **red** to the **left** of the joint.

B-Channel: **Black electrode above** and **red below** the affected joint.

STOMACH:

A-Channel: Black electrode on the **left** and **red** on the **right side** of the stomach.

B-Channel: Black electrode on the **left clavicle**, **red below the navel**.



>> Good to know:

A while after surgery, you can combine “**scars**” with the “**energy mode**”.

This program can be repeated 2 to 3 times a day.



// DISTORTION

Use this program to treat sprained joints (ankle, wrist, fingers, toes, knee, etc.). Signs of distortion are swelling and pain. Make sure to have the injury checked by a doctor, in order to rule out fractures or tendon injuries.



>> Placement of pad electrodes:

A-Channel: **Black electrode** to the **right** and **red** to the **left** of the joint.

B-Channel: **Black electrode** **above** and **red below** the affected joint.



HAND:

A-Channel: **Black electrode** to the **right** and **red** to the **left** of the joint.

B-Channel: **Black electrode** between thumb and index finger of the **right hand**, **red** between thumb and index finger of the **left hand**.

FOOT

A-Channel: **Black electrode** to the **right** and **red** to the **left** of the joint.

B-Channel: **Black electrode** in the **groin area**, **red** on the **sole of the foot** of the affected side.



When treating your fingers or toes, make sure that the electrodes
DO NOT TOUCH!



>> Good to know:

Repeat this treatment 2 to 3 times a day and combine with **“energy mode”** or **“Lymph”**.

// BRUISE

Use **“bruise”** for bruises and typical contusions, if possible immediately after the injury. Bruising may occur deep in the tissue, so it is only detectable via ultrasound.

>> Placement of pad electrodes:

A-Channel: **Black electrode** to the **right** and **red** to the **left** of the bruise.

B-Channel: **Black electrode above** and **red below** the bruise.

>> Good to know:

The effectiveness of **“bruise”** can be improved by combining the program with the **“lymph”** and – if muscles are affected – with **“pulled muscle”**.

Repeat the program 2 to 3 times a day and perform **“energy mode”** and **“lymph”** programs with the same placement of electrodes.



// REGENERATION



“Regeneration” is ideally used after physical exercise or stress – always at night and never before physical activity!

“Regeneration” leads to physical relaxation and regeneration



>> Placement of pad electrodes:

A-Channel: **Black electrode on the clavicle** and **red on the sole** of the foot of the **right side**.

B-Channel: **Black electrode on the clavicle** and **red on the sole** of the foot of the **left side**.

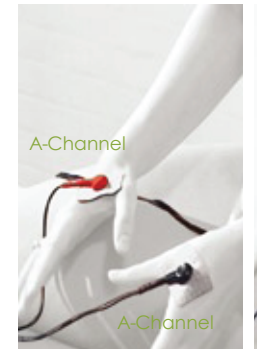
ALTERNATIVE:

A-Channel: **Black electrode** between the thumb and index finger of the **right hand**, **red** between thumb and index finger of the **left hand**.

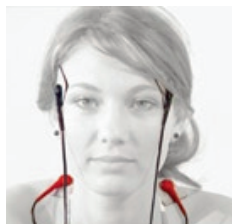
B-Channel: **Black electrode** on the spine at the **back of your neck**, **red** on your **sacral bone**.

>> Good to know:

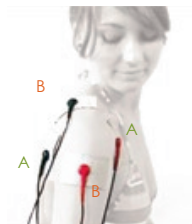
There is no need to use the “**regeneration**” program more than once a day.
Combinations with “**purification**” and “**vegetative balance**” are very effective.



Example:
Regeneration



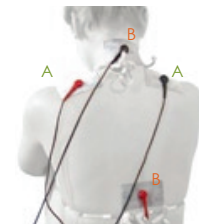
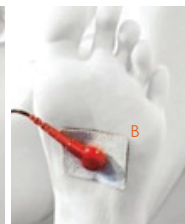
Head



Shoulder



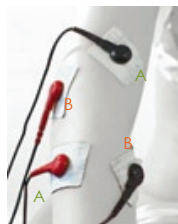
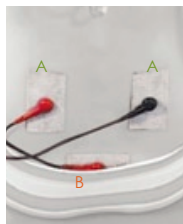
Back - radiating to leg



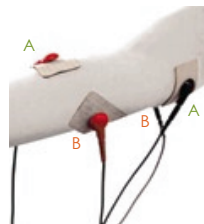
Back - Zervical spine



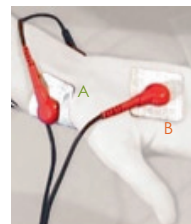
Back - Lumbar spine



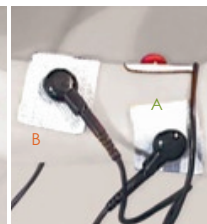
(Tennis)-Elbow



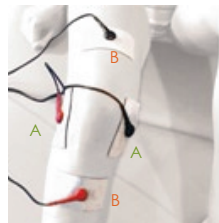
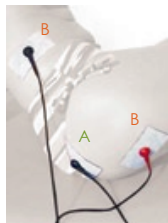
(Golfer's)-Elbow



Hand



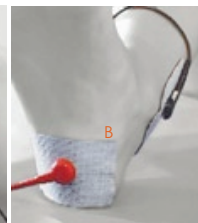
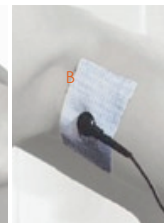
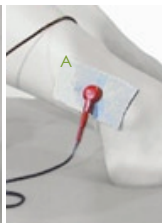
Hip

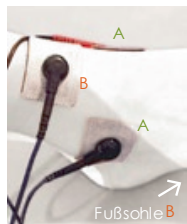


Knee

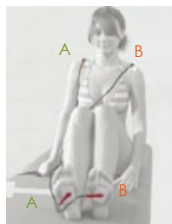


Foot / pulled tendon

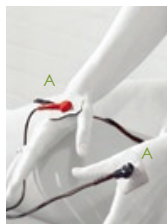




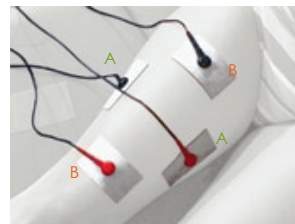
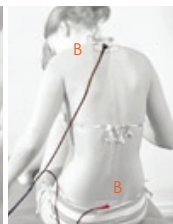
Foot



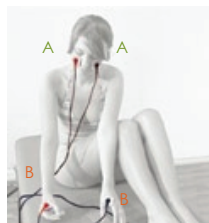
Full body / Var. 1



Full body / Var. 2



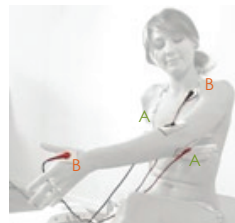
Muscle



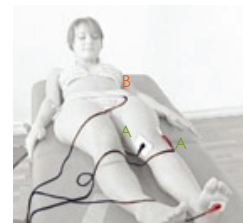
Infection 1



Infection 2



Lymph / Arm



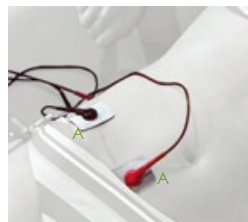
Lymph / Knee



Lymph / short



Lymph / long



Scar

// TECHNICAL MANUAL

Batteries and Charger

The micro current device power2cell is designed for the use with 4 rechargeable NiMH AA batteries with a capacity of 2100 mAh.

The device is only to be used with the supplied batteries. Replacement batteries can be ordered from the manufacturer under the part number 3566.

Regularly check the batteries for damage and leaks and replace defective batteries.

For safety reasons, batteries should be replaced every two years.

The charging time for empty batteries is 6 hours with the supplied charger AC48. Disconnect the charger after this time, to avoid over-charging the batteries.

Only open the battery cover after the charger has been disconnected from the power2cell or the wall socket.

Observe the correct polarity when inserting batteries.

Only charge the batteries with the supplied charger AC48. The use of an inadequate charger may lead to the destruction of the batteries and can cause severe damage to the device.

The charger AC48 is only suitable for a line voltage of 230V. For the use in foreign countries, a country specific charger needs to be obtained. Please contact your supplier.

Do not use the supplied charger AC48 to charge other batteries/battery packs.

A damaged charger may no longer be used.

Do not dispose of old batteries in household trash, but dispose of them at suitable recycling facilities!



Observe correct polarity when inserting batteries!



CAUTION important safety notice!

The device is equipped with a charger that has been developed and manufactured specifically for the use with the power2cell.

The charger may, under no circumstances, be replaced with a charger that has not been approved for this device.

The use of a non-approved charger may lead to severe injury or death of the user!

A device with a defective charger may not be used.
Please contact your supplier!

// Warranty, Service and Parts, Repairs

Warranty

The manufacturer grants a 2 year warranty for the technical and mechanical features of the device. Accessories that are used with the device are covered under a 1 year warranty from the date of sale. Patient cables, batteries, pad electrodes and the carrying strap are excluded from this warranty. Damage resulting from improper use, use of force, or acts of nature beyond control are excluded from this warranty.

All repairs on products covered under this warranty must be performed or authorized by Dr. Schwab or their distributors. Unauthorized repairs void all warranty claims. Additionally, the repair of any product, regardless of whether it is covered under warranty, is to be performed exclusively by qualified personnel of Dr. Schwab Gesellschaft für Technologieberatung mbH or their distributors.

Service and Parts

The expected service life of the power2cell micro current device, the patient cables, and the charger AC48 is 10 years.

Pad electrodes are consumables and should be replaced as described under "Accessories – pad electrodes".

Batteries are consumables and should be replaced when defective, when their capacity becomes too low, or generally after 2 years.

If the product does not work properly, or if support, service or parts are required, please contact the technical support of Dr. Schwab Gesellschaft für Technologieberatung mbH.

You can reach technical support at:

++49 (0)89 374 267 3

Before contacting Dr. Schwab Gesellschaft für Technologieberatung mbH, try to reproduce the problem and check all accessories in order to exclude them as cause for the problem.

Please provide the following information:

- Product name, model number and a detailed description of the problem
- The serial number of the product
- Your name as well as your address and phone number

Repairs

If your device requires repairs, please contact the technical support of Dr. Schwab Gesellschaft für Technologieberatung mbH. A technical support specialist will help you identify the problem and try to solve the issue to avoid an unnecessarily returning the device.

If a return is required, the technical support specialist will gather all the required information and provide you with the correct address for the return.

Information on packaging

If you have to return devices for service or repair, please observe the following guidelines for packaging:

- If possible, use the original box as well as the original packaging materials.
- Send back all cables and accessories, even if you assume that they are not the cause of the problem
- Include a packing list and a detailed description of the problem

We recommend insuring all parts that you are sending back. All claims for loss or damage have to be made by the sender.

Information concerning limited warranty

Dr. Schwab Gesellschaft für Technologieberatung mbH guarantees that the product acquired by you conforms with the technical data set forth in this manual, and is free from defects that may occur within two year from the date of purchase. Accessories to be used with the device are covered under a one year warranty from the date of purchase.

The date of purchase is defined as: 1.) The date recorded in our files, if you acquired the device directly from us; 2.) The date provided to us by our distributor, if you did not obtain the device directly from us.

This warranty does not cover damages caused by; 1.) Handling during transport; 2.) Use or service that does not conform with the instructions in this manual; 3.) Changes or repairs by someone not authorized by Dr. Schwab Gesellschaft für Technologieberatung mbH; and 4.) accidents.

If a device or accessory covered under this warranty is damaged due to defective materials, components, or inadequate workmanship and a claim is made within the warranty period mentioned above, the damaged device or accessory will be repaired or replaced free of charge. The decision on this rests with Dr. Schwab Gesellschaft für Technologieberatung mbH.

THIS SUPERSEDES EXCLUDES ALL OTHER WARRANTIES, EXPLICIT OR IMPLICIT, INCLUDING BUT NOT LIMITED TO IMPLICIT WARRANTIES FOR THE MARKETABILITY OR FOR A CERTAIN USE. THE OBLIGATION OF DR. SCHWAB GESELLSCHAFT FÜR TECHNOLOGIEBERATUNG MBH IN ACCORDANCE WITH THIS WARRANTY IS LIMITED TO REPAIR OR REPLACEMENT OF A DAMAGED PRODUCT. THE DR. SCHWAB GESELLSCHAFT FÜR TECHNOLOGIEBERATUNG MBH IS NOT RESPONSIBLE FOR INDIRECT OR CONSEQUENTIAL DAMAGES CAUSED BY A PRODUCT DEFECT COVERED UNDER THIS WARRANTY

Spare parts

Article	Part. Nr.
Pad electrode PG470	4416
Pad electrode PG473	5371
Patientenleitung Channel A or Channel B	6356
Adapter for pad electrode - red	4152
Adapter for pad electrode - black	4151
Battery charger AC48	4900
Set of NiMH rechargeable batteries (4 pcs.)	3566
Carrying case	5224
Carrying strap	4929
Instruction manual	5368



To ensure the safety of the device, only use original spare parts from the manufacturer. Please contact customer service.

// Information about disposal

Packaging



Your device is located in a package to avoid damage during transport. Packaging contains resources that should be reused or recycled.

Device



Don't throw the device in your household trash at the end of its useful life under any circumstances! Contact your local authorities about the proper way to dispose of electronic devices.



conforms with RoHS 2002/95/EC

Batteries



Batteries may not be disposed in household trash, but only at adequate recycling facilities!

Troubleshooting

Disorder Device does not turn on	Possible cause batteries are low	Solution recharge batteries
	Batteries inserted incorrectly (wrong polarity)	insert batteries correctly (according to print in the battery compartment)
	On / Off switch defective	contact service
Warning „Akkus nachladen“ on Display	batteries are low	End treatment and recharge batteries with AC48 charger
Batteries are not being charged (charging indicator light does not light up)	no batteries inserted	insert batteries
	batteries inserted incorrectly (wrong polarity)	insert batteries correctly (according to print in the battery compartment)
	batteries defective	insert new batteries (only use batteries that are approved by the manufacturer)
	charger defective	contact service

Disorder	Possible cause	Solution
Batteries are not being charged (charging indicator light does light up)	batteries are too low (do not recharge)	insert new batteries (only use batteries that are approved by the manufacturer)
No microcurrent output on the electrode pads	electrode pads not connected with cable	check electrode pads
	cable not connected with device	check connection between cable and device
	electrode pads defective	renew electrode pads
	cable defective	contact service
Microcurrent output unequally over electrode pads	Electrode pads are dirty	clean or renew electrode pads
	oily or dry skin	clean skin, moisten electrode pads



In case the points listed under „Solution“ do not correct the malfunction, do not use the device any further. Please contact the manufacturer and describe the problem as accurately as possible.

// Technical data:

Product:	power2cell
Product type:	micro current device
Product shape:	table top/handheld/portable device
Material:	ABS plastic case
Protection class case:	IP22
CE-label:	0044
MPG-classification:	Medical device of class IIa with applicator of type BF
UMDNS-classification:	Electro therapy unit (11-503)
Dimensions:	w x d x h 200mm x 150mm x 55mm
Weight :	500g (including batteries)
Power supply :	4 NiMH batteries 1.2 V/2,100 mAh AA
Battery charger:	Type AC48 PRI. 230 V~ 50/60 Hz SEC. 4.8 V/350 mA
Max. power consumption:	2 W
Min. ambient temperature for storage/transport:	-25°C

Max. ambient temperature	
for storage/transport:	+70°C at 93% rel. humidity (non-condensing)
Ambient temperature for use:	+5°C to +40°C
Rel. humidity for use:	15 – 93% (non-condensing)
Atmospheric pressure for use:	700 to 1060 hPa
Connectors patient:	2
Patient current:	10 µA to 999 µA in 10 µA steps
Patient voltage (max.):	60 V
Patient frequency:	0.1 Hz to 1 kHz in 0.1 Hz steps
Diagnostics:	logarithmic resistance measurement
	(+/- 20% of 0-value)

// Meaning of symbols on label



Manufacturer



Type of applicator: BF



Protect from moisture



Carefully read instruction manual before first use and observe the contained information.



Electrical devices with this label may not be disposed of in household trash. Please observe the local rules for disposal of electrical devices.



EU Conformity Mark – number of the notified body

IP22

IP-classification (see page 105 of this instruction manual)

// Meaning of symbols on battery charger



Device protection class II



Short-circuit resistant safety transformer



Over-temperature protection



Only for dry environments



EU Conformity mark



Electrical devices with this label may not be disposed of in household trash. Please observe the local rules for disposal of electrical devices.

// Illustration of the IP classification

Schutzarten nach DIN EN 60529 (IEC 529/VDE 047 T1)

International protection classes according to DIN EN 60529 (IEC 529/VDE 047 T1)

Codebuchstaben
Code letters
(International
Protection)







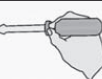



erste Kennziffer
first index figure
(Schutz gegen feste Fremdkörper)
(foreign bodies protection)







zweite Kennziffer
second index figure
(Schutz gegen Wasser)
(water protection)

IP

6

8

Kenn- ziffer Index	Schutzumfang Degree of protection		Kenn- ziffer Index	Schutzumfang Degree of protection	
0		Kein Berührungsschutz, kein Schutz gegen feste Fremdkörper No protection against acci- dental contact, no protec- tion against solid foreign bodies	0		Kein Wasserschutz No protection against water
1		Schutz gegen großflächige Berührung mit der Hand, Schutz gegen Fremdkörper mit $\varnothing > 50$ mm Protection against contact with any large area by hand and against solid foreign bodies with $\varnothing > 50$ mm	1		Schutz gegen senkrecht fallende Wassertropfen Protection against vertical water drips
2		Schutz gegen Berührung mit den Fingern, Schutz gegen Fremdkörper mit $\varnothing > 12$ mm Protection against contact with the fingers, protec- tion against solid foreign bodies with $\varnothing > 12$ mm	2		Schutz gegen schräg fal- lende Wassertropfen aus beliebigem Winkel bis zu 15° aus der Senkrechten Protection against diago- nal water drips (up to a 15° angle)
3		Schutz gegen Berührung mit Werkzeug, Drähten o. ä. mit $\varnothing > 2,5$ mm, Schutz gegen Fremdkörper mit $\varnothing > 2,5$ mm Protection against tools, wires or similar objects with $\varnothing > 2.5$ mm, protec- tion against solid foreign bodies with $\varnothing > 2.5$ mm	3		Schutz gegen schräg fal- lende Wassertropfen aus beliebigem Winkel bis zu 60° aus der Senkrechten Protection against diago- nal water drips (up to a 60° angle)
4		wie 3, jedoch $\varnothing > 1$ mm As 3, however $\varnothing > 1$ mm	4		Schutz gegen Spritzwasser aus allen Richtungen Protection against splashed water from all directions

5		Schutz gegen Berührung, Schutz gegen Staubbablagerung im Inneren	Full protection against contact, protection against interior injurious dust deposits	5		Schutz gegen Wasserstrahl (Düse) aus beliebigem Winkel	Protection against water (out of a nozzle) from all directions
6		Vollständiger Schutz gegen Berührung, Schutz gegen Eindringen von Staub	Total protection against contact, protection against penetration of dust	6		Schutz gegen Wassereindringung bei vorübergehender Überflutung	Protection against ingress of water in case of temporary flooding
<p>Darstellung in Anlehnung an/diagram in accordance with DIN VDE 470, DIN EN 60529, IEC 529</p> <p>Quelle/source: ZVEI - Zentralverband Elektrotechnik- und Elektroindustrie e.V.</p>				7		Schutz gegen Wassereindringung bei zeitweisem Eintauchen	Protection against ingress of water in case of temporary immersion
				8		Schutz gegen Wassereindringung bei dauerhaftem Untertauchen, Anforderung nach Absprache zwischen Anwender und Hersteller	Protection against ingress of water in case of continuous immersion, requirements under agreement of user and manufacturer



The micro current device power2cell is classified as class IP22. However, it is stressed that the device should only be used in dry environments. Any contact with liquids is to be avoided. Should liquid enter the device, discontinue use and contact technical support.

// Essential Characteristics

Max. output current:	999 μ A per channel
Max. output voltage:	60 V per channel
Frequency:	0.1 Hz to 1 kHz (square wave/pulse)

// Electromagnetic compatibility

Warnings and manufacturers declaration for electromagnetic compatibility according to DIN EN 60601-1-2:2007 + AC1:2010-05



The device power2cell and the associated charger AC48 may not be used in the direct vicinity of other devices, or stacked on other devices. Should such a situation be unavoidable, the power2cell device and the charger AC48 should be observed for proper functionality in this arrangement.

The power2cell and the associated charger AC48 should not be used in the vicinity of cell phones or radio units.

// Guidelines and manufacturer's declaration

Electromagnetic emissions

The power2cell is intended for use in an environment as described below.
 The user of the device has to make sure that it is used in such an environment.

Emission measurement	Conformity	Electromagnetic environment – guideline
HF emissions according to CISPR 11	Group 1	The power2cell only employs HF energy for its internal function. Therefore, its HF emissions are very low, and it is unlikely that it will interfere with other electronic devices in its vicinity.
HF emissions according to CISPR 11	Class B	The power2cell is suitable for use in all facilities, including those in the living quarters, and those directly connected to the public supply grid, which also supplies the buildings that are used for living.
Emission of harmonics according to IEC 61000-3-2	Class A	
Emission of voltage fluctuations /Flicker according to IEC 6000-3-3	conforms	

Electromagnetic immunity			
Interference immunity	EC 600601-Test level	Conformity level	Electromagnetic environment – guideline
Discharge of static electricity (ESD) according to IEC 61000-4-2	6 6 kV contact discharge	6 6 kV	Floors should be made of wood or concrete, or covered with ceramic tile. If the floor is covered with synthetic material, the relative humidity has to be above 30%.
	6 8 kV air discharge	6 8 kV	
Fast transient electrical disturbances/Bursts according to IEC 61000-4-4	6 2 kV mains leads	6 2 kV	The quality of supplied power should be similar to a typical business or hospital environment.
	6 1 kV for input and output leads	6 1 kV	
Impulse voltage/Surges according to IEC 61000-4-5	6 1 kV Voltage outer conductor - outer conductor	6 1 kV	The quality of supplied power should be similar to a typical business or hospital environment.
	6 2 kV Voltage outer conductor – ground	6 2 kV	

Electromagnetic immunity			
Interference immunity	EC 600601-Test level	Conformity level	Electromagnetic environment – guideline
Voltage drops, short-term interruption, and fluctuations of supply voltage according to IEC 61000-4-11	<p>< 5% U_T (> 95% drop for U_T) at 1/2 period (10 ms for 50 Hz)</p> <p>40% U_T (60% drop for U_T) for 5 periods (100 ms for 50 Hz)</p> <p>70% U_T (30% drop for U_T) for 25 periods</p> <p>< 5% U_T (> 95% drop for U_T) for 5 s</p>	<p>< 5% U_T (> 95% drop for U_T) for 1/2 period (10 ms for 50 Hz)</p> <p>40% U_T (60% drop for U_T) for 5 periods (100 ms for 50 Hz)</p> <p>70% U_T (30% drop for U_T) for 25 periods</p> <p>< 5% U_T (> 95% drop for U_T) for 5 s</p>	The quality of supplied power should be similar to a typical business or hospital environment. If the user of the power supply desires continued operation in the presence of drops in voltage supply, the use of an uninterruptible power supply or battery is recommended.
Magnetic field at supply frequency (50/60 Hz) according to IEC 61000-4-8	3 A/m	3 A/m	Magnetic fields with supply frequency should be similar to a typical business or hospital environment.

Note: U_T is the alternating mains voltage before applying the test levels

Electromagnetic immunity for devices or systems that are not life supporting

Portable and mobile radios should not be used within a distance to the power2cell and its cables, smaller than the one calculated from the formulas below.

Interference immunity	EC 600601-Test level	Conformity level	Electromagnetic environment – guideline
Conducted HF-interference according to IEC 61000-4-6	3 V _{Effective} 150 kHz to 80 MHz	3 V	$d = \left[\frac{3,5}{10} \right] \times \sqrt{P}$
Radiated HF-Interference according to IEC 61000-4-3	3 V/m 80 MHz to 2,5 GHz	3 V/m	$d = \left[\frac{3,5}{10} \right] \times \sqrt{P}$ for 80 MHz to 800 MHz $d = \left[\frac{7}{10} \right] \times \sqrt{P}$ for 800 MHz to 2,5 GHz

The following applies:
P nominal power of the transmitter in Watts (W) according to the specifications provided by the manufacturer of the transmitter and d recommended distance in meters (m). The field strength of stationary transmitters should be lower(b) than the conformity level at all frequencies in an on-site(a) survey.
Malfunction is possible in the vicinity of devices that carry this symbol:



Note 1: At 80 MHz and 800 MHz, the higher frequency spectrum is valid.

Note 2: These guidelines may not be applicable in all cases. The propagation of electromagnetic waves is influenced by absorption and reflection of buildings, objects, and people.

(a) The field strength of stationary transmitters, mobile transmitters, like e.g. AM and FM radio stations or TV stations and amateur radios can not be predicted exactly in theory. In order to evaluate the electromagnetic environment concerning the stationary transmitters, a study of electromagnetic phenomena at the site of the device should be considered. If the measured field strength at the site of use of the power supply exceeds the conformity levels mentioned above, the power supply should be carefully observed in order to insure proper operation. If unusual operation is observed, further measures may be required, as for example a different orientation or different location of the power supply.

(b) In the frequency band from 150 kHz to 80 MHz, the field strength should be below 3 V/m.

Recommended safety distance between portable and mobile HF-telecommunication devices and the power2cell

The power2cell is designed for use in an electromagnetic environment, where HF emissions are controlled. The customer or user of the power2cell can help avoid electromagnetic interference by observing a minimum distance between portable and mobile HF-telecommunication devices (transmitters) and the power2cell – depending on the output power of the communication device, as listed below.

Nominal power of the transmitter W	Safety distance depending on the transmitter frequency m		
	150 kHz to 80 MHz $d = \left[\frac{3,5}{3} \right] \times \sqrt{P}$	80 MHz to 800 MHz $d = \left[\frac{3,5}{3} \right] \times \sqrt{P}$	800 MHz bis 2,5 GHz $d = \left[\frac{7}{3} \right] \times \sqrt{P}$
0,01	0,12	0,12	0,23
0,1	0,37	0,37	0,74
1	1,17	1,17	2,33
10	3,69	3,69	7,38
100	11,67	11,67	23,33

For transmitters whose nominal power is not listed in the table above, the recommended safety distance in meters (m) can be calculated by using the formula from the corresponding column, where P is the maximum nominal power of the transmitter in Watts (W) according to the manufacturer of the transmitter.

Note 1: At 80 MHz and 800 MHz, the higher frequency spectrum is valid.

Note 2: These guidelines may not be applicable in all cases. The propagation of electromagnetic waves is influenced by absorption and reflection of buildings, objects, and people.

Declaration of conformity

EG-KONFORMITÄTSERKLÄRUNG	
Entsprechend Anhang II der EG-Richtlinie über Medizinprodukte 93/42/EWG (2007/47/EG)	
Wir: Dr. Schwab Gesellschaft für Technologieberatung mbH Max Planck Strasse 13 85716 Unterschleißheim Deutschland	
erklären in alleiniger Verantwortung, dass das Produkt:	
POWER2Cell	
Artikel Nummer:	MSTU-VWS-00
Klassifizierung:	Klasse IIa – Regel 9
Konformitätsbewertungsverfahren:	Anhang II
UMDNS-Code:	11-503 „Elektrotherapiegerät“
Den grundlegenden Anforderungen der Richtlinie 93/42/EWG über Medizinprodukte, Anhang I entspricht und alle zutreffenden harmonisierten Standards eingehalten werden.	
Zum Nachweis dazu liegt eine den Anforderungen der o.a. Richtlinie Anhang VII entsprechende technische Dokumentation nach Abs. 3 vor.	
Durchgeführt wurde das Konformitätsbewertungsverfahren von der Benannten Stelle:	
TÜV NORD CERT GmbH – Langenmarkstraße 20 – 45141 Essen CE 0044	
Das Zertifikat der Benannten Stelle trägt die Registriernummer: 44 232 127772	
Die Gültigkeit dieser Erklärung richtet sich nach der Gültigkeit des Berichts 3514 8179 der Benannten Stelle	
Ort, Datum	Unterschleißheim, 22.01.2015
 _____ -Geschäftsleitung- Dr. Gunther Schwab	

Certificates



ISO 13485



ISO 9001

Notes

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