EMP 4 PRO

Four-channel transcutaneous muscle and nerve stimulator

Art.-No. 104061

Instruction Manual Art.-No. 101447-V01

schwa·medico
MEDICAL EQUIPMENT

Contents

General Information

Intended use
The EMP 4 PRO device has been designed for the transcutaneous stimulation of muscles and nerves and may not be used for any other purposes.

Safety instructions

Please read the operating instructions carefully before using the EMP 4 PRO.
- The EMP 4 PRO is only to be used for stimulation purposes on one patient at any one time.
- Only use the EMP 4 PRO with original accessories.
- The size of the electrodes should to be not less than 2 cm^2.
- The electrodes should be positioned in such ways that the current flow will not cross through the heart.
- Keep the EMP 4 PRO away from water or other liquids. Do not drop the EMP 4 PRO, do not use it inappropriately or expose it to extreme temperatures or high levels of humidity (not less than 10 °C or more than 40 °C or a relative humidity of more than 90 %).
- Do not use the EMP 4 PRO if it is not working properly or if it has been damaged in any way.
- Be careful when using the EMP 4 PRO near or on children. Keep the unit away from children.
- Always store the EMP 4 PRO in its case to protect it from damage and dust.
- To avoid reciprocal interference, the EMP 4 PRO should not be operated in the vicinity of other electronic devices. If this is not possible, the various unit functions should be closely monitored during operation so that proper use in accordance with the regulations is ensured.
- The simultaneous connection to the patient of a high frequency surgical unit can lead to burning under the electrodes or around the probe.
- Operating close (for example 1m) to short wave and microwave units or mobile telephone systems can cause fluctuations in the output values of the electric current stimulation unit.
- Do not use the machine during the simultaneous operation of other machines, when driving or when asleep.

Contra indication

Please check with your physician before using the EMP 4 PRO if one of these apply to you:
- Patients with electronic implants such as heart pacemakers, defibrillators or pumps
- Patients with cardiac rhythm disorders
- During pregnancy

- Patients subject to seizure disorder / epilepsy
- Patients with skin disorders in the vicinity of the electrodes
- Patients with malignant diseases in the region of application

Side effects

- Pain caused by the stimulation: The stimulation can be perceived as uncomfortable/ painful if the electric current is too intensive or if the electrodes have been positioned unfavorably. Unpleasant side effects can be avoided by adjusting the intensity, using another program with other parameters and the possible re-positioning of the electrodes.
- Skin intolerance which can result from the electrodes, the electrode gel or the electric current impulses. The physician should be consulted in cases of reddening, burning, itching or blistering under the electrodes or in the vicinity of the electrodes. Slight skin reddening of short duration in the area of the electrodes following stimulation is quite normal because blood circulation has been improved by the effects of the stimulation.
- Muscular pain: If the stimulation has been too intense or too long muscular aches in terms of sore muscle can occur. Shorten the treatment time and the intensity of stimulation at the beginning of muscle stimulation to avoid muscle ache.

Description of the symbols


Attention: Read accompanying documents, especially user manual!


BF type application part. Protection against electric shocks.


The year of construction of the product follows this symbol.

The article or order number of the product follows this symbol.

The serial number of the product follows this symbol.


This equipment is marked with the recycling symbol. It means that at the end of the life of the equipment you must dispose of it separately at an appropriate collection point and not place it in the normal domestic unsorted waste stream. This will benefit the environment for all.

CE 0197 By labelling with CE certificate, the manufacturer states that the product meets all active requirements of the regarding EU Directive. A conformation evaluation process has been successfully completed. The code number of the conformation evaluation process is given in accordance with the CE labelling of the involved notified body.

NiMH

This product works with a nickel metal hydride rechargeable battery. The rechargeable battery must be recycled. At the end of the working life of the rechargeable battery you must dispose of it separately at an appropriate collection point and not place it in the normal domestic unsorted waste disposal. In the interests of environmental protection please observe those laws and regulations of your country which relate to rechargeable battery disposal.

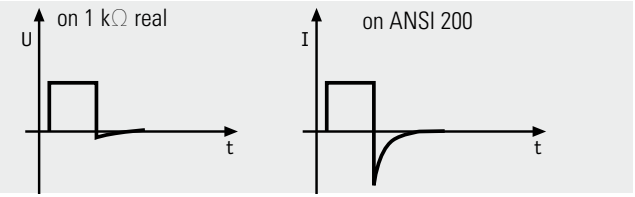
Technical specifications

Four-channel nerve and muscle stimulator with electrically insulated channels, constant current characteristic, output short circuit control element (AKS), 60 integrated pre-set programs and 8 user programs.

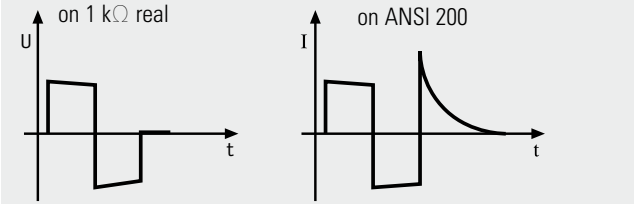
Output current:	100mA (with an actual resistor of 1k)
Frequency range:	1-120 Hz
Pulse width:	50-350 µs
Power supply:	- mains supply transformer 12V / 1.25A or - 9.6 V NiMH rechargeable battery
Dimensions:	14.5 x 9.2 x 4.2 cm
Weight	approx. 308 g (incl. rechargeable battery)

Pulse form

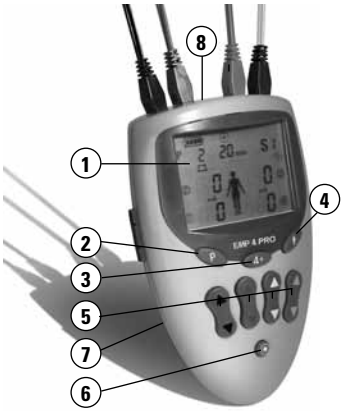
Biphasic impulses with AKS

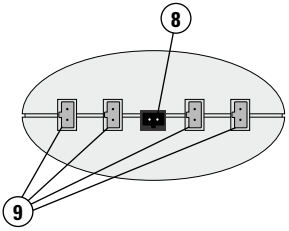


Biphasic symmetric impulses with pause and AKS



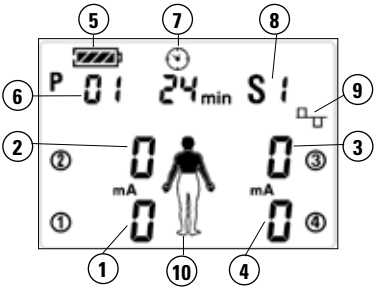
Description of the EMP 4 PRO





1. Display
2. **P** key: program selection key
3. **4 +** key: program start key and simultaneous increase of all channels
4. key: selection of stimulation area / Pause + EDIT function for USER programs
5. Keys to adjust the intensities of each channels
   ▲ Increasing intensity
   ▼ Decreasing intensity
6. ON/OFF key
7. Battery compartment
8. Output socket for the battery charger / main circuit transformer
9. Output sockets for the cables
10. Main circuit transformer / charger

Description of the display



1. Intensity of channel 1
2. Intensity of channel 2
3. Intensity of channel 3
4. Intensity of channel 4
5. Battery level
6. Program in use
7. Stimulation time
8. Sequence number
9. Electrical current form
10. Stimulation area

Display of electrical current form

- Stimulation pause
- Stimulation rising ramp
- Stimulation work phase
- Stimulation falling ramp
- Biphasic asymmetric impulse
- Biphasic symmetric impulse
- Biphasic symmetric impulse with pause

Operating the EMP 4 PRO

Power mode

You can use the device directly from the 220 Volt mains or with the rechargeable battery in the device.

Using the 220-Volt mains adapter

- Connect the cable to the central supply socket on the front face of the device between the channel outlets 2 and 3 (number 8).
- Connect the mains adapter to your mains circuit socket.

The device operates from the mains supply whether or not a rechargeable battery has been inserted.

Using the battery

New devices:

The battery is already inserted in new devices. Please fully charge the battery before first use of the EMP 4 PRO.

Otherwise:

Open the battery compartment, plug the battery into the connector inside the compartment (upside right), place the battery in the compartment, close the compartment. The device is ready for battery mode operations. The mains power adapter is only necessary to recharge the battery.

Battery level

The battery symbol on the display indicates the battery level. A completely charged battery shows all bars in the symbol. The fewer the bar symbols, the lower the battery charge level.

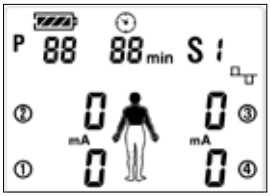
Recharging the battery

The battery must be recharged if the battery display indicates empty.

- Switch off the device.
- Ensure that the battery is in its compartment, correctly inserted and the compartment closed.
- Connect the mains adapter to the socket in the centre of the upper part of the device (number 8).
- Connect the mains adapter to the mains circuit.
- The display shows an increasing number of bars. The charging time lasts up to 3 hours. The charger stops automatically once the battery is fully charged.
- To check if the battery is fully charged, disconnect the device from the mains adapter and switch on the device. The battery indicator on the top left side of the screen displays the battery level.

Switching ON the EMP 4 PRO

Press the • key to start the device (number 6).
The program shown on the display is the last program used.
The device automatically switches OFF after 2 minutes of disuse.



Connecting the cables and the electrodes

- Connect the electrodes with the cable(s) (always 2 electrodes per cable).
- Connect the cables to the EMP 4 PRO on socket no. 9.
- Place the electrodes on the desired area (see electrode placement).

Selecting a program

Select a program by pressing the **P** key. To scroll through the programs, press the **P** key as often as necessary until you have selected the program of your choice. To return to the previous program, press the ▼ key of channel 1 (far left side).

Selecting an area of stimulation

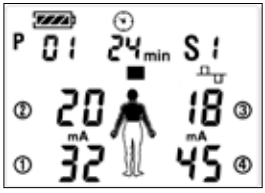
Depending on the selected program you can choose between upper and lower limbs. The body symbol on the display is half colored, depending on the selected limbs. The pulse width is increased for lower limbs.

Press the key to select the area of stimulation.

Programs with a possibility of upper and lower limbs stimulation:

P1 - P4, P6, P17, P21 - P26, P32, P38, P40 - P47, P49 - P60

Setting the intensity



Start the stimulation by increasing the intensity with the ▲ key of the channel(s) connected to the electrodes.

Alternatively you can increase the intensity of all four channels simultaneously by pressing the "**4 +**" key. You can then adjust the intensity of each channel by using the ▲ and ▼ keys.

You increase the intensity with the ▲ key.

You decrease the intensity with the ▼ key.

The intensity of each channel is displayed on the screen. The intensity can be set between 0 and 100 mA.

Setting the intensity of agonist/antagonist program (P37 and P67):

When you are using agonist/antagonist programs (P37 and P67), first set the intensity of channel 1 and 2 and then set the intensity of channel 3 and 4.

Active channels are identified by flashing intensity values.

If the intensity of all channels is not changed over a three seconds period, the device starts with the agonist/antagonist stimulation. Please note that the stimulation is alternating between channel 1 and 2, respectively 3 and 4.

If you are stimulating with dynamic programs (P56 to P60 and P65 to P66) or agonist/antagonist programs (P37 and P67), active channels are identified by flashing intensity values.

Pausing the stimulation

You can temporarily stop the stimulation by pressing the key during the stimulation. The word "PAUSE" then flashes on the display.

You can then adjust the position of the electrodes.

Press again to re-start the stimulation. The intensity levels slowly increase to the level set before the pause.

Automatic change of the sequences

Some programs consist of several sequences. Each sequence uses different parameters. The device changes from one sequence to the other automatically. This change is indicated by an acoustic signal. The sequence number is displayed on the screen at the top right side next to the "S" symbol.

The intensity of the stimulation is then automatically adjusted depending on the sequence. It may be necessary to re-adjust the intensities to the desired level.

Manual change of the sequences

If you want to skip one or more sequence(s) manually, first press to temporarily stop the stimulation (see pausing the stimulation), then press the "**4+**" key to select the sequence of your choice. The sequence number is displayed on the screen at the top right side next to the "S" symbol.

Press again to re-start the stimulation. For safety reason the intensity is set back to zero if you skip a sequence. Adjust the intensity by pressing the "**4+**" or the "▲" and "▼" keys (see setting the intensity).

Important note:

The stimulation time can only be changed for programs with a single sequence. The time cannot be changed for programs with an asterisk* (see program overview).

Stopping the stimulation

You can stop the stimulation at any time by pressing the **P** key or the • key. When the therapy time is completed, the stimulation stops automatically. The end of stimulation is indicated by a double acoustic signal.

Switching OFF the EMP 4 PRO

Press the • key to switch OFF the device. This is indicated by an acoustic signal. The device switches OFF automatically if:

- the power supply is too low (battery mode only)
- the device has not been used for 2 minutes.

Electrode recognition for enhanced safety

The EMP 4 PRO constantly monitors the correct connection of electrodes and cables. The EMP 4 PRO automatically stops the stimulation if:

- an electrode detaches itself from the skin
- electrodes are not attached correctly in pairs
- electrodes are not conductive enough
- the connection between the cables and the electrodes is interrupted
- the connection between cables and device is interrupted.

The intensity then returns to 0; this is indicated by a short acoustic signal.

Overview pre-set programs

No.	PROGRAMS FOR PAIN MANAGEMENT
1	Gate Control 80 Hz*
2	Gate Control 100 Hz*
3	Endorphine 2 Hz*
4	Endorphine Burst*
5	Modulation
6	Gate Control + Endorphine*
7	Cervicalgy
8	Dorsalgy
9	Lombalgy
10	Ischialgia / sciatic pain
11	Torticollis
12	Gonarthrosis
13	Coxarthrosis
14	Epicondylitis
15	Algodystrophy
16	Hyperalgia
17	Phantom limb pain*
18	Cervicobrachial nevralgia
19	Carpal tunnel syndrome
20	Arthritis of the hand

No.	PROGRAMS FOR REHABILITATION
21	Amyotrophy 1st phase*
22	Amyotrophy 2nd phase*
23	Amyotrophy prevention*
24	II A muscle fiber strengthening*
25	II AB muscle fiber strengthening*
26	II B muscle fiber strengthening*
27	Combination: active wrist joint motion + pain management

No.	PROGRAMS FOR REHABILITATION
28	Combination: active elbow joint motion + pain management
29	Combination: active knee joint motion + pain management
30	Combination: active ankle joint motion + pain management
31	Combination: Hemiplegia of the shoulder + pain management
32	Spastic limb stimulation*
33	Urology: urge incontinence
34	Urology: mixed incontinence
35	Urology: stress incontinence
36	Urology: pain control
37	Agonist/antagonist stimulation

No.	VASCULAR PROGRAMS
38	Venus reflux*
39	Lymphatic drainage (heavy legs)
40	Cramp prevention*
41	Capillarisation*

No.	PROGRAMS SPORT
42	Endurance*
43	Resistance*
44	Strength*
45	Explosive strength*
46	Active recovery*
47	Cleansing*
48	Relaxing percussion

No.	FITNESS PROGRAMS
49	Hypertrophy*
50	Warm-up*
51	Toning*

No.	AESTHETIC PROGRAMS
52	Cellulo lipolysis*
53	Thigh-buttock firming*
54	Adipose tissue vascularisation 1*
55	Adipose tissue vascularisation 2*

No.	RELAXATION PROGRAMS
56	Slow wave relaxation massage (soft)*
57	Fast wave relaxation massage (soft)*
58	Slow wave relaxation massage (against muscle spasm)*
59	Fast wave relaxation massage (against muscle spasm)*
60	Zip wave relaxation massage (soft)*

Programs for upper and lower limbs

Programs marked with an * are programs with a possibility of upper and lower limbs stimulation (key).See Page 9.

User programs for own settings

The EMP 4 PRO has 8 user programs. Each user program corresponds to a type of stimulation and consists of one single sequence. The stimulation time can be set between 10 and 90 minutes.

No.	USER PROGRAMS
61	TENS continuous mode
62	Frequency modulation
63	EMS excito-motor stimulation
64	Endorphin burst stimulation
65	Massage through dynamic stimulation (one direction)
66	Massage through dynamic stimulation (both directions)
67	EMS agonist/antagonist stimulation
68	2+2 mode (Ch. 1 & 2: EMS / Ch. 3 & 4: TENS)

Overview user programs

No.	USER Program type	Possible parameters
61	TENS continuous mode	• Frequency (1-100 Hz) • Impulse width (50-250 µs) • Stimulation time (10-90 min)
62	Frequency modulation	• Lowest frequency: from 1 to 100 Hz • Highest frequency: from the lowest frequency + 10 Hz to 100 Hz • Impulse width (50-250 µs) • Stimulation time (10-90 min)
63	EMS excito-motor stimulation	• Frequency (1-60 Hz) • Impulse width (50-350 µs) • Rising ramp time: 2 s • Plateau working time: 6 s • Falling ramp time: 1 s • Pause time: 6 s • Stimulation time (10-90 min)
64	Endorphin burst stimulation	• Frequency (1-100 Hz) • Impulse width (50-200 µs) • Rising ramp: 0.25 s • Stimulation time (10-90 min)
65	Massage through dynamic stimulation (one direction)	• Frequency (1-60 Hz) • Impulse width (50-350 µs) • Rising ramp time: 2 s • Plateau working time: 1 s • Falling ramp time: 1 s • Stimulation time (10-90 min)
66	Massage through dynamic stimulation (both directions)	• Frequency (1-60 Hz) • Impulse width (50-350 µs) • Rising ramp time: 2 s • Plateau working time: 1 s • Falling ramp time: 1 s • Stimulation time (10-90 min)
67	EMS agonist/antagonist stimulation	• Frequency (1-60 Hz) • Impulse width (50-350 µs) • Rising ramp time: 2 s • Plateau working time: 3 s • Falling ramp time: 1 s • Stimulation time (10-90 min) You must first adjust the intensities of channels 1 and 2 and then channels 3 and 4. The intensities of the active channels flashes on the screen.

No.	USER Program type	Possible parameters
68	2+2 mode Ch. 1 & 2: EMS Ch. 3 & 4: TENS	**For channels 1 and 2:** • Frequency (half of frequency from channel 3 and 4) • Impulse width (50-200 µs) • Rising ramp time: 3 s • Plateau working time: 1 s • Falling ramp time: 3 s • Pause time: 6 s • Stimulation time (10-90 min) **For channel 3 and 4:** • Frequency (1-90 Hz) • Impulse width (50-200 µs) • Stimulation time (10-90 min) The pulse width must be the same for all 4 channels

Setting parameters for user programs

- Select a user program (61 to 68) depending on the desired type of therapy by pressing the **P** key (see selecting a program).
- Press the key for 3 seconds to enter the setting mode.
- The first parameter to be changed flashes.
- Press the ▲ and ▼ keys of any channel to change the parameters.
- Press again to go to the next parameter.
- Press the ▲ and ▲ keys of any channel to change the parameters.
- Press again to go to the next parameter.
- Press the ▼ and ▲ keys of any channel to change the parameters.
- Press after changing the last parameter to save the changes in the user program.

Press **P** at any time if you want to abort the settings. The changed parameters up to that point are then not saved.

Acoustic signal
It is possible to turn off the acoustic signal.

Simultaneously press the key and the ▼ key of channel 3 for 3 seconds to enter the setting mode.

Press the key to turn the acoustic signal ON and OFF.

Press the **P** key to get back to the standard mode.

Information on total stimulation duration
The muscle stimulation unit saves the total stimulation duration.

Simultaneously press the key and ▼ key of channel 4 for 3 seconds to enter the checking mode.

Press the key and the **P** key simultaneously to reset the timer to zero.

Press the **P** key to get back to the standard mode.

Settings, modifications and repairs
The manufacturer is only responsible for the safety and performance of the EMP 4 PRO when settings, adjustments, alterations and repairs are carried out by authorized persons and when the EMP 4 PRO is used in accordance with the operating instructions.

Warranty
Legal right of warranty is applied according to German Civil Code.

Guarantee
The manufacturer issues a guarantee of 12 months from the date of purchase.
The guarantee does not apply in the following cases:
- damage due to improper handling
- defects the customer is aware of on the date of purchase
- damage caused by the customer
- for wearing parts and consumable supplies like, for instance, electrodes, batteries and cables.

Maintenance and cleaning

No special cleaning or care agents are required for the EMP 4 PRO. Clean the unit with a soft, fluff-free cloth. Please ensure that no moisture permeates the unit. If moisture does permeate the unit, a technical check must be carried out before re-use.

Classification of the device

In accordance with the law on medical devices, the EMP 4 PRO is classified as being a Class IIa medical device.

Technical check

We recommend a technical check on the EMP 4 PRO every 24 months.
This includes:

1. Confirming that user instructions have been included in the accompanying documentation.
2. Checking the equipment for completeness.
3. Visual check:
   - for mechanical damage
   - for damage to all cables and sockets
4. Functional Safety
   - checking the output signals with a load resistance of 1 kΩ real current and voltage
   - checking the frequency
   - checking the pulse width

These technical checks may only be carried out by suitably qualified persons. The results must be documented with the date and name of the person carrying out the check.

Delivery content

Ref. no.	Article Description
104061	EMP 4 PRO
450781-0026	Rechargeable battery
104709	Main circuit adapter / charger
104769	Electrode cables set, type 7 (black, red, grey, yellow)
283400	STIMEX self-adhesive electrodes 50x50 mm
283600	STIMEX self-adhesive electrodes 50x90 mm
	Transport case
101447	Instruction manual

The EMP 4 PRO may be used together with all accessories mentioned in the chapter „Accessories“

Accessories

The following accessories can be combined with the EMP 4 PRO.

Stimex self-adhesive electrodes

Art. No.	Article	Pieces
281000	Stimex 32 mm round	4
282000	Stimex 50 mm round	4
283400	Stimex 50x50 mm	4
281032	Stimex 50x50 mm	20
283600	Stimex 50x90 mm	2
281007	Stimex 50x90 mm	4
283000	Stimex 50x130 mm	2
283100	Stimex 80x130 mm	2
281027	Stimex sensitive 50x50 mm	4

Silicone electrodes (to be used with contact gel)

Art. No.	Article	Pieces
107090	Silicone electrode 20 mm round	2
107060	Silicone electrode 25 mm round	2
107075	Silicone electrode 40x28 mm	2
107035	Silicone electrode 56x28 mm	2
107020	Silicone electrode 75x30 mm	2
107055	Silicone electrode 90x35 mm	2
107011	Silicone electrode 38x45 mm	2
107010	Silicone electrode 48x48 mm	2
107050	Silicone electrode 70x65 mm	2
107070	Silicone electrode 70x140 mm	2
108000	Contact gel for silicone electrodes (60 g)	1

MedicoBack

For the treatment of low back pain

Low back support bandage with pelotte and integrated electrodes to be used with pain management programs of the EMP 4 PRO.
MedicoBack P-type offers patients lumbar vertebrae stabilization and support as well as easy stimulation provided by the integrated electrodes. The pelotte with its massage nubs enhances the pain relieving effect. MedicoBack P-type may be used for slight or acute pain as well as for chronic pain in the lower back area.

Art. No.	Article	Size	Length
107034	MedicoBack P-type	S	80 - 90 cm
107036	MedicoBack P-type	M	90 - 100 cm
107037	MedicoBack P-type	L	100 - 110 cm
107038	MedicoBack P-type	XL	110 - 120 cm
107039	MedicoBack P-type	XXL	120 - 130 cm

Stimex garment electrodes: gloves and socks

The gloves and socks used in combination with the EMP 4 PRO provide stimulation of the entire hand and/or foot and ankle and avoid the sometimes tiresome attachment of self-adhesive electrodes on the hand or the foot.

Gloves

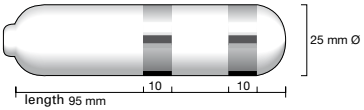
Art. No.	Article	Size	Pair
107014	Stimulation gloves	S	1
107021	Stimulation gloves	M	1
107022	Stimulation gloves	L	1

Socks

Art. No.	Article	Size	Pair
107023	Stimulation socks	M	1
107024	Stimulation socks	L	1

Vaginal probes
To be used with URO programs only

Art.-No.	Article	Pieces
101471	Vaginal probe V21B (type 7)	1



Cables

104765 Pair of electrode cables type 7 (black)
104766 Pair of electrode cables type 7 (red)
104768 Pair of electrode cables type 7 (grey)
104767 Pair of electrode cables type 7 (yellow)

Setting of intensity levels

Do not try to achieve a higher and higher level of intensity. Set the intensity in such a way that you get a comfortable feeling during the stimulation. Increase the intensity carefully to a maximum tolerable and then reduce it slightly step by step to a comfortable level.
Note that the intensity settings change depending on the stimulation area and the time. This is normal and can be explained as follows:

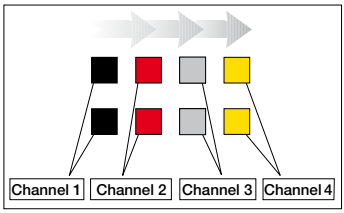
- Resistance of the skin:
  Dry skin has a lower conductivity level than damp skin (due to sweating). The skin does not show the same resistance to linear current on all parts of the body. For example, the resistance level of horny skin can be twice that of the skin in the hollow of the knee. The innervation differs greatly according to the area of the body. This results in a difference of sensitivity.
- Volume of the muscle mass:
  If you stimulate muscles with a high volume you will automatically need to set a higher intensity than for the stimulation of small muscles.

- Muscle fatigue:
  A tired muscle will only tolerate a lower intensity.
- Age of electrodes:
  Self-adhesive electrodes do not last forever. You can use them up for up to 60 stimulation sessions. This depends on the quality of the electrodes but also on the skin of the user. Old electrodes have a higher resistance and their conductivity levels decline. It is important to replace electrodes regularly.
- Adaption to the current:
  The nerves adapt rapidly to the current. It is normal to feel "less current" after a few minutes of stimulation with specific parameters. In such a case feel free to increase the intensity in order to get the best results.
- Frequency and pulse width:
  Frequencies and pulse widths differ depending on the programs. There-fore the intensity can not be set at the same level for all the programs even if the electrodes are placed in the same position. The higher the frequency is set, the lower you will be able to set the intensity.
  The higher the pulse width is set, the lower you will be able to set the intensity.

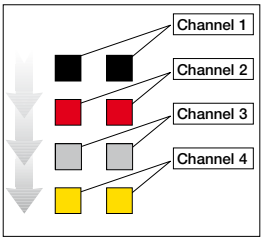
Principle of dynamic stimulation

The stimulation is not administered simultaneously on all channels. The current flows from one electrode to the other just like a wave undulating on the body. This kind of stimulation is far more comfortable than traditional neuro-muscular stimulation.
Dynamic stimulation can be used with high frequency parameters for better pain control or with low frequency parameters for optimized muscle stimulation. This treatment method also has an enhanced effect on lymphatic drainage stimulation.

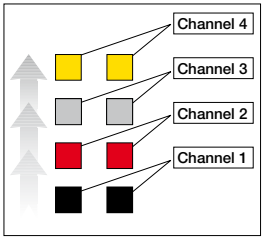
Positioning of the electrodes for dynamic stimulation



Sideways
Sideways movement:
E.g gluteus, stomach muscles



Vertical movement
E.g. back, legs
Falling
In order to apply a falling wave, the channels must be arranged as follows:
channel 1 (black)
channel 2 (red)
channel 3 (grey)
channel 4 (yellow)

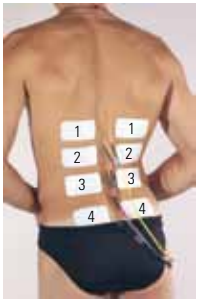


Rising
In order to apply a rising wave, the channels must be arranged as follows:
channel 4 (yellow)
channel 3 (grey)
channel 2 (red)
channel 1 (black)

Dynamic stimulation on legs:
Place one electrode of each channel on each leg (size 5x9 cm).

Dynamic stimulation on the back:
Place one electrode of each channel on each side of the spinal column (size 5x9 cm).

Important note:
If you use electrodes with two connectors, always connect them to the same pole color of the cables (either both white or both red).



Short instruction use

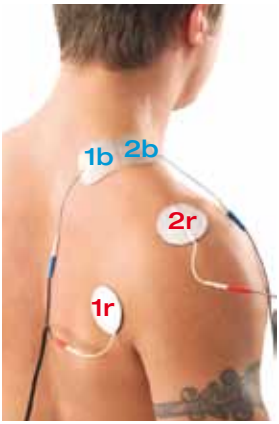
1. Connect the cables with the electrodes.
2. Plug in the cables into the sockets of the EMP 4 PRO.
3. Place the electrodes on the skin.
4. Select a program by pressing the **P** key. Scroll back in the program list by pressing the ▼ key of channel 1.
5. Select an area of stimulation by pressing the key. See upper or lower limb on the display.
6. Increase the intensity of all channel simultaneously by pressing the **4+** key.
7. Adjust the intensity of each channel by pressing the ▲ and ▼ key of each channel.

Electrode positioning

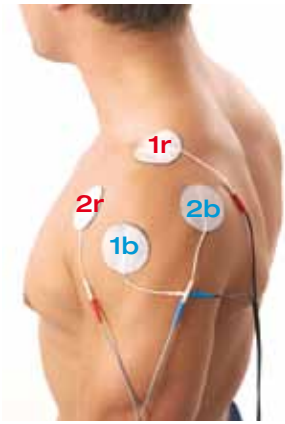
Electrode positioning for pain therapy (P1 to P7, P10 to P20)

Neck

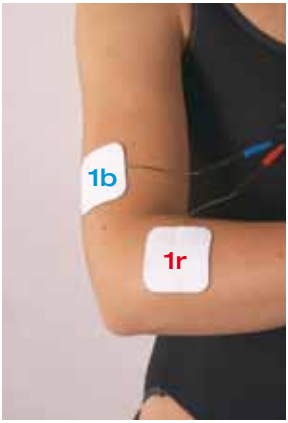
Trapezius



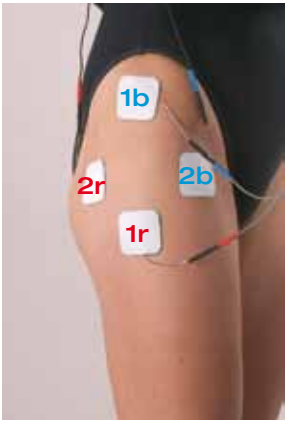
Deltoid



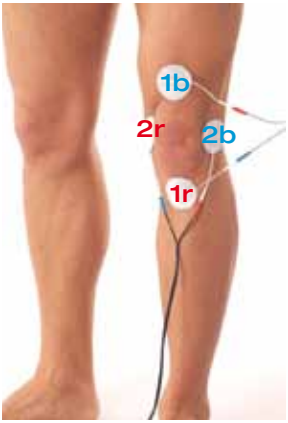
Elbow



Hip



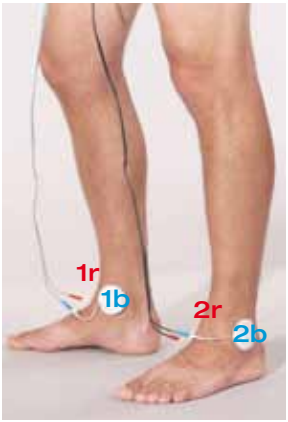
Knee



r = red (anode)
b = blue (cathode)

Sciatic pain, Ischialgia

Ankle

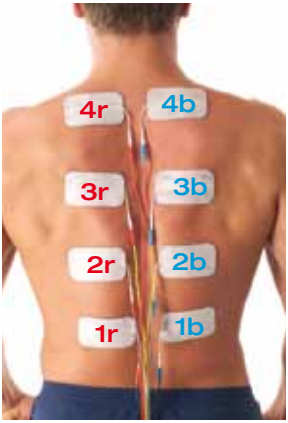


Wrist

r = red (anode)
b = blue (cathode)

Electrode positioning for pain therapy using dynamic stimulation

Back

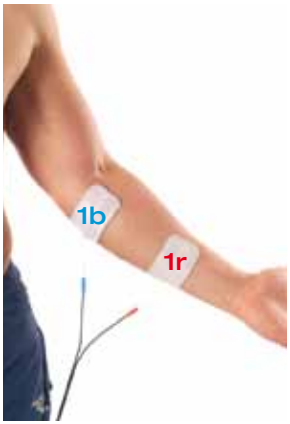


Lower back

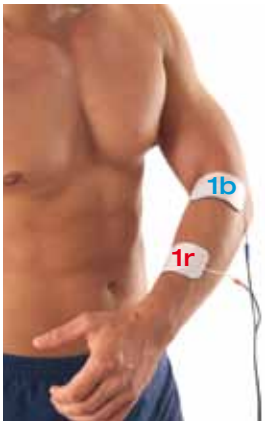
r = red (anode)
b = blue (cathode)

Electrode positioning for rehabilitation (P21 to P37), vascular disease (P38 + P41), sports (P42 to P47), fitness (P49 to P51), aesthetics (P53 to P55)

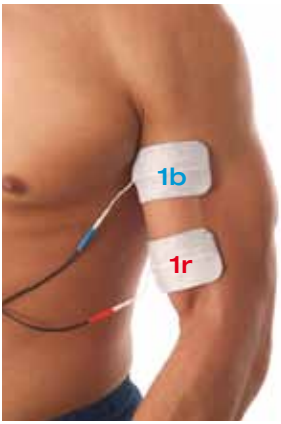
Hand flexor



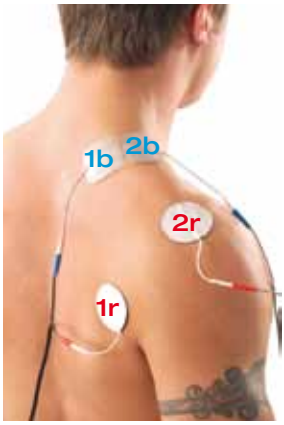
Hand extensor



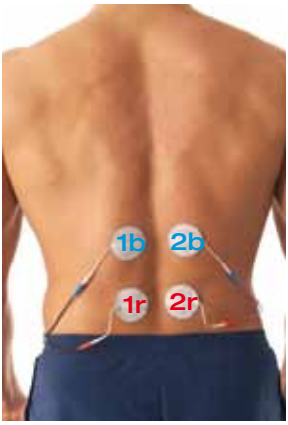
Biceps



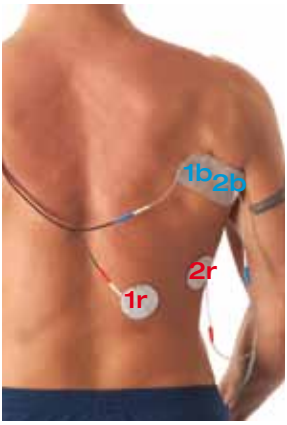
Trapezius



Back

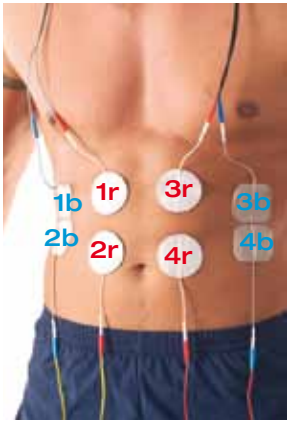


Latissimus

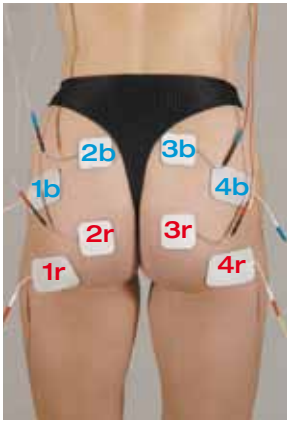


r = red (anode)
b = blue (cathode)

Stomach muscle

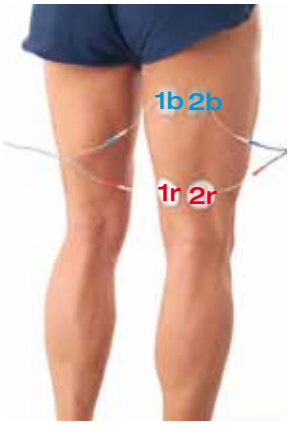


Gluteus

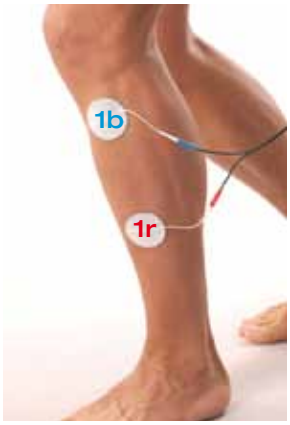


Quadriceps

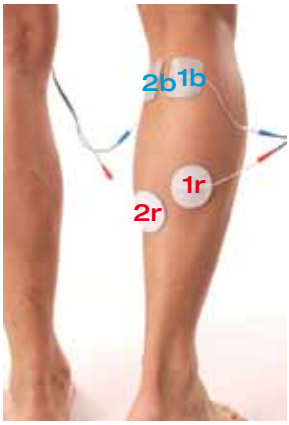
Flexor



Foot flexor



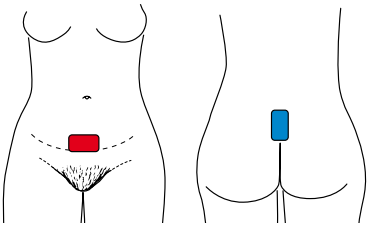
Foot extensor



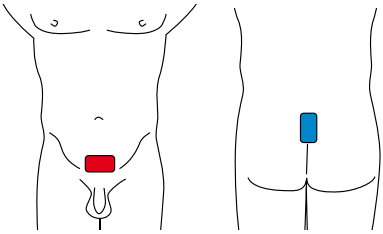
r = red (anode)
b = blue (cathode)

Electrode positioning for urological rehabilitation (P33 to P36)

Positioning on the pubic bone

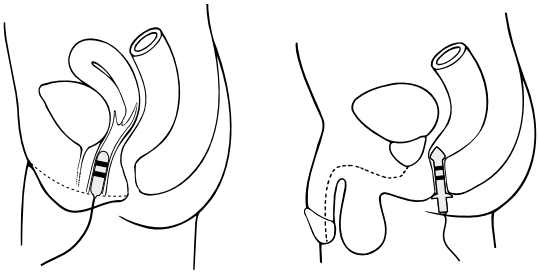


Anode (red) Cathode (blue)



Anode (red) Cathode (blue)

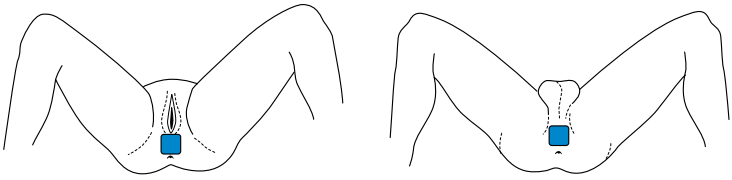
Training with a probe



Vaginal probe Anal probe

Positioning on the perineum

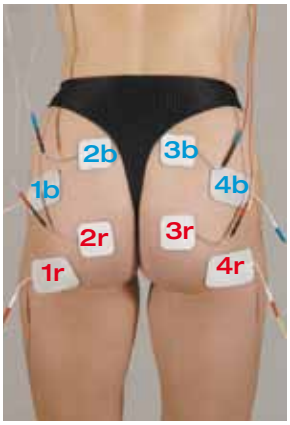
Place the anode (red) on the pubic bone



Cathode (blue) Cathode (blue)

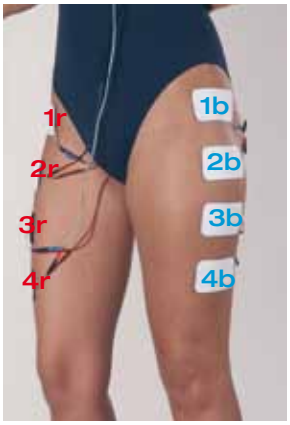
Electrode positioning for anti-cellulitis treatment using dynamic stimulation (P52)

Gluteus



Stomach muscle

Thigh



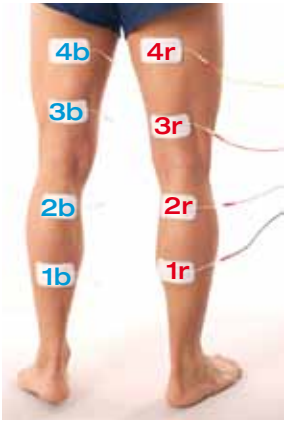
r = red (anode)
b = blue (cathode)

Electrode positioning for vascular desease (P39 + P48), relaxation (P56 to P60), dynamic stimulation (P65 + P66)

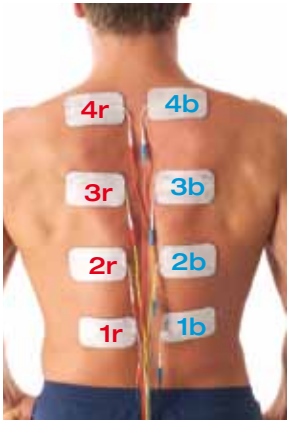
Flexor

Calf

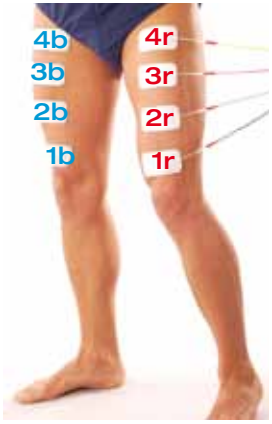
Flexor and calf



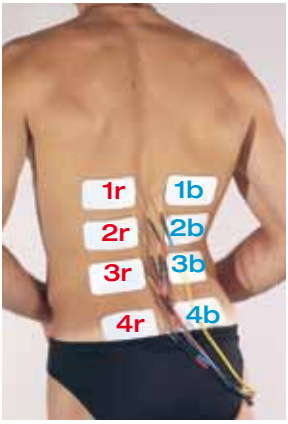
Back



Quadriceps



Low back



r = red (anode)
b = blue (cathode)

schwa·medico
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Art.-Nr. 451600-0339

CE 0197

Stand: 2010-11-03