

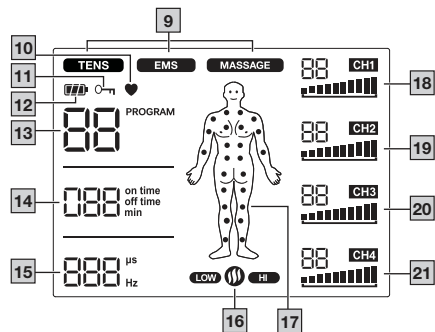
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EM 89 Heat

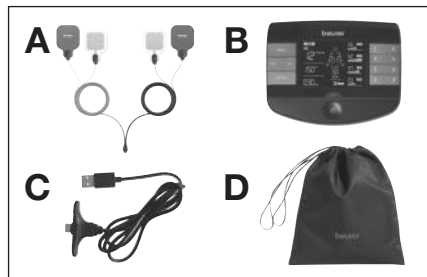


EN Digital TENS/EMS device with heat function
Instructions for use.....4

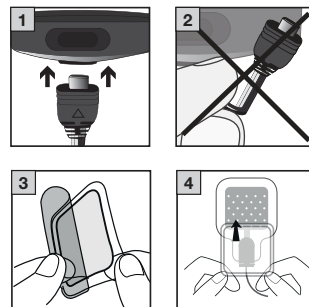
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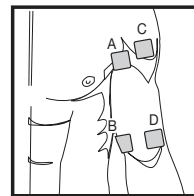
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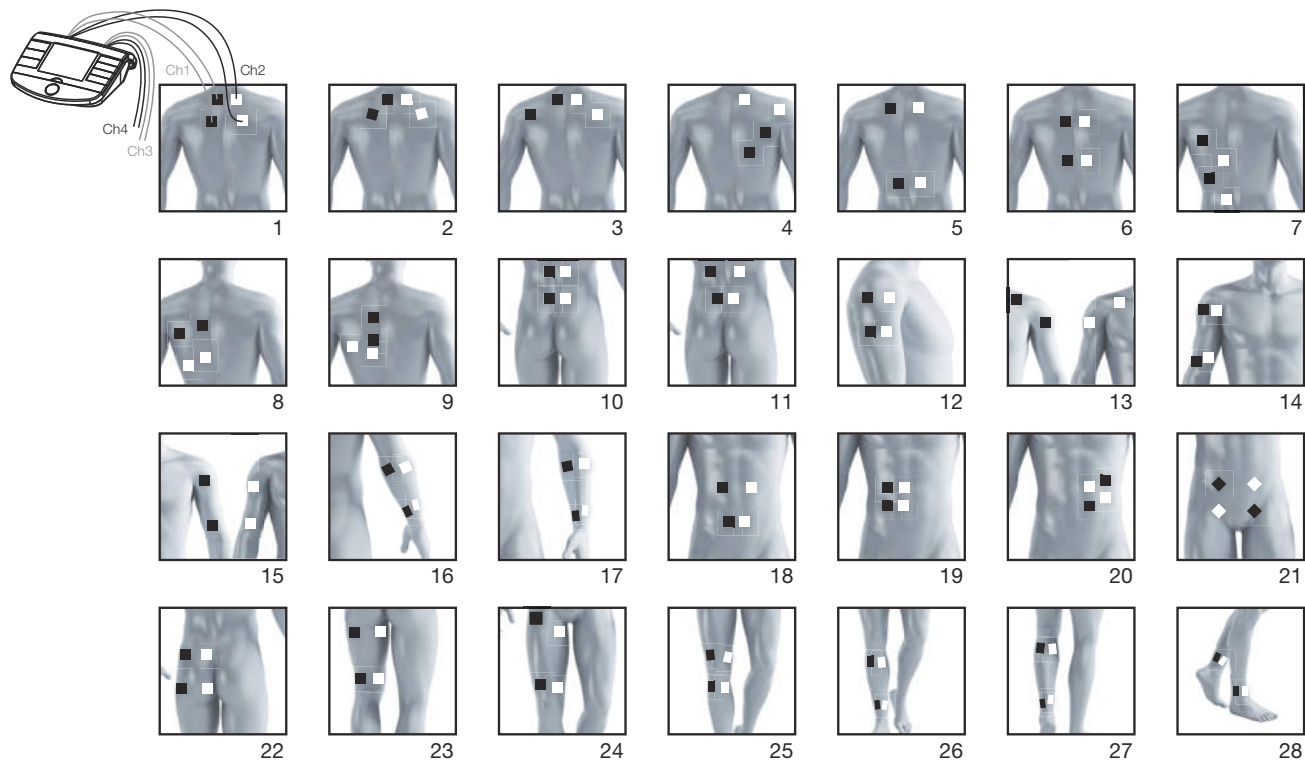


B



C







Read these instructions for use carefully and keep them for later use. Make them accessible to other users and note the information they contain.

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1. INCLUDED IN DELIVERY

Check that the exterior of the cardboard delivery packaging is intact and make sure that all contents are included in the delivery. Before use, ensure that there is no visible damage to the device or its components, and that all packaging material has been removed. If you have any doubts, do not use the device and contact your retailer or the specified

Customer Services address. **A**

A 8 x electrodes including gel pads

B 1 x EM 89 Heat device

C 1 x USB charging cable

D 1 x storage bag

2. GETTING TO KNOW YOUR DEVICE

What is the Digital TENS/EMS device and what can it do?

The Digital TENS/EMS device belongs to the group of electrostimulation devices. It includes three basic functions:

1. Electrical stimulation of nerve tracts (TENS)
2. Electrical stimulation of muscle tissue (EMS)
3. A massage effect triggered by electrical signals.

The device features two independent stimulation channels and eight electrodes with self-adhesive gel pads. It offers a wide range of functions for increasing general well-being, pain relief, maintaining physical fitness, relaxation, muscle revitalisation and combating tiredness. For these purposes, you can either choose from preset programs or specify your own to suit your individual needs. Electrostimulation devices utilise the operating principle of imitating pulses in our bodies – these simulated pulses are transferred to nerve and muscle fibres using electrodes, via our skin. The electrodes can be applied to many parts of the body, as the electrical pulses produced are completely harmless and, if

set up correctly, painless. In certain applications you may perceive just a slight tingling or vibrating sensation. The electrical pulses that are sent into the tissue influence the transmission of stimulation into nerves, nerve centres and muscle groups in the application area. Electrical muscle stimulation (EMS) is a widely used and recognised method which has been used in sports and rehabilitation medicine for years. Electrostimulation of muscles is generally only noticeably effective with regular use. Electrostimulation of muscles is not a substitute for regular training. However, it is a useful, supplementary training element.

Getting to know the TENS device

TENS (transcutaneous electrical nerve stimulation) is the electrical stimulation of nerves through the skin. TENS is an effective non-pharmacological method for treating different types of pain from a variety of causes. It has no side effects if administered correctly. The method has been clinically tested and approved and can be used for simple self-treatment.

The pain-relieving or pain-suppressing effect is achieved by inhibiting the transfer of pain to nerve fibres (mainly by means of high-frequency pulses) as well as by increasing the secretion of endorphins in the body, because they have an effect on the central nervous system which reduces the sensation of pain.

The method has been scientifically substantiated and approved as a form of medical treatment. Any symptoms that could be relieved using TENS must be checked by your GP. Your doctor will also give you instructions on how to carry out a TENS self-treatment regime.

Getting to know the EMS device

In sports and fitness, electrical muscle stimulation (EMS) is used to complement conventional muscle training, to increase the performance of muscle groups and to adjust physical proportions to achieve the desired aesthetic results, amongst other things. There are two different types of EMS application. One is for targeted strengthening of muscles (activating application), and the other is to achieve a relaxing, restful effect (relaxing application).

Getting to know MASSAGE

Thanks to integrated massage technology, the device is also able to relieve muscle tension and combat fatigue with a program based on the sensation and effects of a real massage.

The positioning suggestions and program tables in these instructions for use enable you to quickly and easily determine the appropriate application (depending on the affected area of the body) and set the device to achieve the desired effects. Thanks to the four separately adjustable channels, the Digital TENS/EMS device offers you the advantage of being able to set the intensity of the pulses independently from each other for four treatment areas on the body, for example to cover both sides of your body or to evenly stimulate larger areas of tissue.

The option to individually set the intensity of each channel also enables you to treat two separate areas of the body simultaneously instead of having to treat the individual areas in turn. This saves you time.
















To enable pain to be alleviated even more pleasantly, with the EM 89 Heat you can also switch on a soothing heat function, with two levels available and a maximum heat of 43°C.

Heat has been shown to promote circulation and relaxation. The heat function of the EM 89 Heat can be used with stimulation or on its own.

3. SIGNS AND SYMBOLS

The following symbols are used on the device, in these instructions for use, on the packaging and on the type plate for the device:

	WARNING
	Indicates a potentially impending danger. If it is not avoided, death or serious injury will occur.
	CAUTION
	Indicates a potentially impending danger. If it is not avoided, slight or minor injuries may occur.
	NOTICE
	Indicates a potentially harmful situation. If it is not avoided, the system or something in its vicinity may be damaged.
	Product information Note on important information
	Observe the instructions Read the instructions before starting work and/or operating devices or machines
	Protected against ingress of solid foreign objects greater than 12.5 mm in diameter. Protected against drops of water falling at up to 15° from vertical.
	Serial number
	Application part, type BF
	The electronic device must not be disposed of with household waste
	Do not dispose of batteries containing harmful substances with household waste
	CE labelling This product satisfies the requirements of the applicable European and national directives.
	Manufacturer

	The device can emit effective output values above 10mA, averaged over every 5-second interval
	Marking to identify the packaging material. A = material abbreviation, B = material number: 1–7 = plastics, 20–22 = paper and cardboard
	Separate the product and packaging elements and dispose of them in accordance with local regulations.
	The device may not be used by people with medical implants (e.g. pacemakers), as this may affect their functionality.
	Importer symbol
	Date of manufacture
	Temperature limit
	Humidity limitation
	Atmospheric pressure limitation
	Medical device (MDR symbol)
	Article number
	Unique device identifier (UDI) Identifier for unique product identification
	Type number
	Use by date
	Swiss authorised representative

4. INTENDED USE

TENS/EMS/massage purpose

The device is intended to treat pain using TENS technology (transcutaneous electrical nerve stimulation). This pain relief can be applied to different areas of the human body as identified in the following eight indication areas.

As a non-medical purpose, the device can also be used with EMS technology (electrical muscle stimulation) to strengthen the muscles, and for regeneration and relaxing massages.

TENS/EMS/massage target group

This device is intended for self-treatment in the home, and not in professional healthcare facilities. Suitable for use by all adults suffering from pain as indicated in the indications below.

Clinical benefits

Treatment of pain due to various causes.

Non-clinical benefits

- Muscle training to increase endurance and/or
- training to support the strengthening of specific muscles or muscle groups, and to achieve the desired changes to physical proportions.
- Acceleration of muscle regeneration after intense muscular output (e.g. after a marathon).
- Improving symptoms of muscular fatigue.
- Muscle relaxation for easing muscle tension.

Indications

Use of the device is advised for:

- Back pain – pain at rest and on exertion
- Joint pain – pain at rest and on exertion
- Neuralgia, including phantom pain
- Menstrual cramps
- Pain due to circulatory disorders – pain at rest and on exertion
- Headaches
- Pain after musculoskeletal injuries – pain at rest and on exertion
- Chronic pain due to various causes – pain at rest and on exertion

Contraindications

- The device must never be used near to the heart. The stimulation electrodes must not be placed on any part of the front ribcage (where the ribs and breastbone are located),

and especially not on the two large pectorals. This can increase the risk of ventricular fibrillation and induce cardiac arrest (see "General warnings" section).

- Do NOT use the device
 - On the skeletal skull structure, or around the mouth, throat or larynx.
 - In the neck/carotid artery area.
 - In the genital area.
 - If you have implanted electrical devices (e.g. a pacemaker).
 - If you have metal or electrical implants.
 - If you use an insulin pump.
 - If you have a high temperature (e.g. > 39°C).
 - If you have a known or acute cardiac arrhythmia or disorders of the heart's conduction system.
 - On acutely or chronically diseased (injured or irritated) skin (e.g. inflamed skin – whether painful or not, reddened skin, rashes (e.g. allergies), burns, bruises, swellings, both open and healing wounds, or post-operative scars that are healing).
 - If you suffer from a seizure disorder (e.g. epilepsy).
 - If you are pregnant.
 - If you have cancer.
 - After an operation, if strong muscle contractions could affect the healing process.
 - If you are connected to a high-frequency surgical device.
 - If you have an acute or chronic disease of the gastrointestinal tract.
 - In the case of a known allergy to the electrode material
 - On acutely or chronically affected (by injury or irritation) skin (e.g. inflamed skin – whether painful or not; reddened skin; rashes, e.g. due to allergies; burns; bruising; swelling; open and healing wounds and post-operative scars where the healing process could be impaired)



⚠ WARNING

Undesirable side effects

- Skin irritation
- Feeling of pressure at the electrode location
- Slight redness, burning and pain of the skin after treatment
- Paraesthesia
- Discomfort
- Sleepiness
- Vibration of muscles

- Tension
- Headaches
- Increased menstrual bleeding
- Allergic reactions to components

5. GENERAL WARNINGS

⚠ WARNING

The device is not a substitute for medical consultation and treatment. Always consult your doctor first in the event of pain or illness. Before using the device, consult your doctor if any of the following apply to you:

- If you suffer from an acute medical condition, in particular if you suspect or have been diagnosed with high blood pressure, a blood coagulation disorder, propensity to thrombo-embolic conditions or recurrent malignant growths.
- If you have any skin conditions.
- If you have unexplained chronic pain in any part of the body.
- If you suffer from diabetes.
- If you have any sensory impairment that reduces the feeling of pain (e.g. metabolic disorders).
- If you are receiving medical treatment.
- In the event of complaints linked to the stimulation treatment.
- If you suffer from persistently irritated skin due to long-term stimulation at the same electrode site.
- Stimulation should not be carried out
 - on or through the head,
 - directly on the eyes,
 - over the mouth,
 - on the front of the neck (particularly not the carotid sinus), or
 - with the electrode surfaces placed on the chest, upper back or
 - across the heart.

ONLY USE DIGITAL TENS/EMS DEVICE:

- On people.
- For the intended purpose and as specified in these instructions for use. Any form of improper use can be dangerous.
- For external use only.

- With the supplied and reorderable genuine replacement parts to ensure safe use. Failure to do so voids the warranty and may result in risks for the user. Only use the replacement parts specified in the accompanying documents.
- This device is NOT intended for use by people with restricted physical, sensory or mental skills or a lack of experience and/or a lack of knowledge, unless they are supervised by a person who has responsibility for their safety or they receive instructions from this person on how to use the device.
- Children must not play with the device.
- The device is only intended for domestic/private use, not for commercial use.

⚠ CAUTION

- Do not use in humid environments (e.g. in the bathroom) or when bathing or showering.
- Do not use after consuming alcohol.
- Always pull gently on electrodes to remove them from the skin to prevent injuries in the unusual case of highly sensitive skin.
- Hold the device away from sources of heat and do not use it in close proximity (approx. 1 m) to shortwave or microwave devices (e.g. mobile phones), as doing so can result in unpleasant current peaks.
- Do not expose the device to direct sunlight or high temperatures.
- Protect the device from impact, dust, dirt and moisture.
- Never immerse the device in water or other liquids.
- The device is suitable for self-treatment.
- For hygiene reasons, the electrodes may only be used on one person.
- If the device does not work properly, or if you feel unwell or experience pain, stop using it immediately.
- Switch off the device or the respective channel first before removing or moving the electrodes to prevent unintentional stimulation.
- Do not modify electrodes (e.g. by cutting them). Doing so increases the current density, which is potentially hazardous (max. recommended output value for the electrodes is 9 mA/cm², an effective current density beyond 2 mA/cm² requires increased caution).
- Make sure that the electrodes are in full contact with the skin.
- Using worn-out electrodes can cause skin irritation to occur, because an even distribution of current over the entire surface is no longer guaranteed. For this reason, the electrodes should be replaced if any discolouration occurs.
- Do not use whilst asleep, driving a vehicle or operating machinery.

- Do not use whilst undertaking any activity where an unexpected reaction (e.g. strong muscle contractions even at low intensity) could be dangerous.
- Ensure that no metallic objects (e.g. belt buckles or necklaces) come into contact with the electrodes during stimulation. If you are wearing jewellery or have piercings in the area to be treated (e.g. a navel piercing), these must be removed before using the device; failure to do this could result in spot burns.
- Keep the device away from children to prevent potential hazards.
- Make sure not to confuse the electrode cables and their contacts with your headphones or other devices, and do not connect the electrodes to other devices.
- Do not use this device whilst using other devices that transmit electrical pulses to your body.
- Do not use in the vicinity of highly flammable substances, gases or explosives.
- During the initial few minutes, use the device while sitting or lying down to minimise the risk of accidental injuries as a consequence of isolated cases of vagal responses (feeling of faintness). If you feel faint, switch off the device immediately, lie down and support the legs in an elevated position (approx. 5–10 minutes).
- Treatment of the skin with moisturising lotions or ointments beforehand is not recommended as this considerably increases electrode wear and may cause uncomfortable current peaks.
- Keep packaging material away from children (risk of suffocation!).
- Store the device in a dry place (use indoors only). To avoid the risk of fire and/or electric shock, protect the device from high humidity and water.

Damage

- If the device is damaged, do not use it and contact your retailer or the specified Customer Services address.
- To ensure that the device functions effectively, do not drop it or dismantle it.
- Check the device for signs of wear and tear or damage. If there are such signs of wear and tear or damage or if the device was used improperly, it must be returned to the manufacturer or retailer before further use.
- Switch the device off immediately if it is faulty or not working properly.
- Never attempt to open and/or repair the device yourself. Repairs may only be carried out by Customer Services or authorised retailers. Failure to observe this will void the guarantee.
- The manufacturer is not liable for damage resulting from improper or incorrect use.

Notes on handling batteries

⚠ WARNING

- **Risk of explosion! Risk of fire!** Failure to comply with the points mentioned can result in personal injury, overheating, leakage, venting, breakage, explosion, or fire.
- Always use the correct or supplied charging cable/charger/mains adapter for charging.
- Avoid continuous charging or overcharging. Unplug the charger when charging is complete.
- Charge the device under supervision, paying attention to any heat generated, deformation, or release of gases. If in doubt, stop charging.
- If batteries/charging cables/chargers are defective, stop using them and dispose of them properly as soon as possible (see chapter on disposal).
- Do not throw the device or batteries into a fire.
- Never forcibly discharge, heat, disassemble, open, crush, deform, encapsulate, modify, or knock the device or batteries.
- Never short-circuit batteries or the connections of the battery-powered device.
- Protect the device or batteries from direct sunlight, rain, heat, and water.
- Exposure of batteries to an environment with extremely high temperatures or an extremely low air pressure may result in explosion or leakage of flammable liquids and gases.
- If fluid from a battery comes into contact with your skin or eyes, wash the affected areas with water and seek medical assistance.

NOTICE

- This device contains a battery that is not replaceable. Once a battery has reached the end of its service life, the device must be disposed of properly (see chapter on disposal).

6. DEVICE DESCRIPTION

Buttons:

The associated drawings are shown on page 4.

1 ON/OFF button 

2 ENTER button

3 MENU button

4 Adjustment buttons **Ch1 / Ch2 / Ch3 / Ch4**

5 Heat button 

7 Electrode connection, channels 3 and 4

6 Electrode connection, channels 1 and 2

8 Charging socket

Display (full screen):

9 Menu **TENS / EMS / MASSAGE**

11 Button lock

13 Program number

15 Display for frequency (Hz) and pulse width (μs)

17 Electrode positioning indicator

19 Pulse intensity, channel 2 **Ch2**

21 Pulse intensity, channel 4 **Ch4**

10 Favourite program set 

12 Battery level

14 Timer function (display of remaining time) and on/off time

16 Low/high heat function **LOW / HI**

18 Pulse intensity, channel 1 **Ch1**

20 Pulse intensity, channel 3 **Ch3**

7. INITIAL USE

You must fully charge the EM 89 Heat before you use it for the first time. To do so, proceed as follows:

1. Connect the USB charging cable to a suitable mains adapter (output voltage max. 5V/2A), see "Replacement parts and wearing parts" section and the EM 89 Heat (mains adapter not included, available as a servicing item).
2. Then insert the mains adapter into a suitable socket. You cannot use the device while it is being charged.
3. Do not pull, twist or sharply bend the cables **B 2**.
4. After the charging process is complete, apply the provided gel pads to the electrodes. To do this, carefully remove one of the protective films **B 3**.
5. Carefully attach the gel pad to the electrode and gently peel off the protective film **B 4**. Ensure that the edge of the gel pad does not protrude over the electrode. Applying gel pads slightly askew will not affect their function.

⚠ WARNING


Peel off the protective film slowly and carefully. Make sure that the self-adhesive gel pad is not damaged, as damage or unevenness on the gel pad may cause skin irritation.

8. HOW TO USE

8.1 Starting use

Step 1: Find a suitable program in the program tables (see “Program overview” section).

Step 2: Place the electrodes on your target area (for positioning suggestions, see page 5 “Information on electrode positioning”) and connect them to the device.

Step 3: Hold the ON/OFF button  pressed for at least one second to switch on the device.


Step 4: Press the **MENU** button to navigate through the **TENS** / **EMS** / **MESSAGE** menus and confirm your choice by pressing the **ENTER** button.


Step 5: Use the **Λ/V** adjustment buttons to select the program number you want and press the **ENTER** button to confirm your selection. At the start of the stimulation treatment, the pulse intensity of **Ch1** / **Ch2** / **Ch3** and **Ch4** is set to “00” by default. No pulses are sent to the electrodes yet.

Step 6: Use the **</>** intensity adjustment buttons on the right-hand side as relevant for **Ch1** / **Ch2** / **Ch3** and **Ch4** to select your preferred pulse intensity. The indicator for pulse intensity in the display changes accordingly. The grey electrodes belong to channels 1 and 3, the red electrodes to channels 2 and 4.

Step 7: You can activate the heat function using the Heat button. The first press of the button activates the low heat level, the second button press activates the high heat level, and the third button press deactivates the heat function.

8.2 Notes on use

- After 30 seconds of inactivity, the device's illuminated display switches off automatically. You can reactivate it by pressing any button (except the ON/OFF button .
- The device switches itself off automatically if you do not use it for one minute (automatic switch-off). When switched on again, the LCD screen of the menu selection appears with the most recently used menu flashing.
- A brief acoustic signal is output when a valid button is pressed. Two brief acoustic signals are output when an invalid button is pressed.



- You can pause the stimulation at any time by briefly pressing the ON/OFF button . To continue the stimulation, set your preferred pulse intensity again.

GENERAL INFORMATION


If you wish to return to the previous selection menu, press the **MENU** button. By pressing and holding the **ENTER** button, you can skip individual setting steps and start stimulation treatment straight away.

Button lock

Locks the buttons to avoid them being pressed unintentionally.

1. To activate the button lock, hold down the **ENTER** button for approx. 3 seconds, until the  symbol is visible in the display.
2. To deactivate the button lock, hold down the **ENTER** button again for approx. 3 seconds, until the  symbol disappears from the display.

Pausing use

You can pause the stimulation at any time by briefly pressing the ON/OFF button . To continue the stimulation, set your preferred pulse intensity again.

9. HEAT

In addition to the TENS/EMS/Message programs, the EM 89 Heat also offers two heat levels which can be activated as required for all programs, see “Starting use” section. The heat supplied via the gel pads relaxes the muscle and improves circulation. You can activate the first level of the heat function by pressing the Heat button. Then wait a moment until the temperature stops increasing. If the temperature is too low for you, you can activate the second level of the heat function by pressing the Heat button again. If you would like to deactivate the heat function, you can do so by pressing the Heat button again.

If you want to use the heat function separately, without additional stimulation, proceed as follows:

Step 1: Position the electrodes in your preferred target area. (See “Information on electrode positioning” section for positioning suggestions) and connect them to the device. To use the heat function, always apply both electrodes of the channel being used. The channels used are shown on the display.

Step 2: Press and hold the ON/OFF button for at least one second to switch on the device.

Step 3: Press the Heat button to access heat function adjustment.

Step 4: Use the **Λ/V** adjustment buttons to select your preferred treatment time and press the ENTER button to confirm your selection.

Step 5: The first level of the heat function is set, and the **LOW** symbol lights up. Then wait a moment until the temperature stops increasing. If the temperature is too low for you, you can activate the second level of the heat function by pressing the Heat button again. The **HI** symbol appears. Pressing the Heat button again switches the device back to the lower heat level (**LOW**).



If the heat function is not working properly, make sure that both electrodes of the channel being used are connected to the body. To do this, pause usage, apply the electrodes correctly and continue usage. If both electrodes are applied correctly, the corresponding channel is shown on the device display.

10. PROGRAM OVERVIEW

The Digital TENS/EMS device features a total of over 70 programs:

- 15 TENS programs
- 35 EMS programs
- 20 MASSAGE programs

In all of the programs you can set the pulse intensity of the four channels individually.

You can also set various parameters in TENS programs 13-15 and EMS programs 33-35 to adjust the stimulating effect to the application area.

10.1 TENS program table

Prog. no.	Effective application areas, indications	Running time (min)	Possible electrode positioning
1	Pain in upper limbs 1	30	12-17
2	Pain in upper limbs 2	30	12-17
3	Pain in lower limbs	30	23-27
4	Ankle pain	30	28
5	Shoulder pain	30	1-4
6	Pain in the back	30	4-11
7	Pain in buttocks and back of thighs	30	22, 23
8	Pain relief 1	30	1-28
9	Pain relief 2	30	1-28

Prog. no.	Effective application areas, indications	Running time (min)	Possible electrode positioning
10	Endorphin effect (burst)	30	1-28
11	Pain relief 3	30	1-28
12	Pain relief – chronic pain	30	1-28



TENS programs 13-15 can be set individually (see “Customisable programs” section).

10.2 EMS program table

Prog. no.	Effective application areas, indications	Running time (min)	Possible electrode positioning
1	Warming up	30	1-27
2	Capillarisation	30	1-27
3	Strengthening the upper arm muscles	30	12-15
4	Maximising the strength of the upper arm muscles	30	12-15
5	Explosive force of the upper arm muscles	30	12-15
6	Tightening the upper arm muscles	30	12-15
7	Shaping the upper arm muscles	30	12-15
8	Tightening the forearm muscles	30	16-17
9	Maximising the strength of the forearm muscles	30	16-17
10	Shaping the forearm muscles	30	16-17
11	Tightening the abdominal muscles	30	18-20
12	Maximising the strength of the abdominal muscles	30	18-20
13	Shaping the abdominal muscles	30	18-20
14	Toning the abdominal muscles	30	18-20
15	Strengthening the thigh muscles	30	23, 24
16	Maximising the strength of the thigh muscles	30	23, 24

Prog. no.	Effective application areas, indications	Running time (min)	Possible electrode positioning
17	Explosive force of the thigh muscles	30	23, 24
18	Shaping the thigh muscles	30	23, 24
19	Toning the thigh muscles	30	23, 24
20	Strengthening the lower leg muscles	30	26, 27
21	Maximising the strength of the lower leg muscles	30	26, 27
22	Explosive force of the lower leg muscles	30	26, 27
23	Shaping the lower leg muscles	30	26, 27
24	Toning the lower leg muscles	30	26, 27
25	Strengthening the shoulder muscles	30	1–4
26	Maximising the strength of the shoulder muscles	30	1–4
27	Tightening the shoulder muscles	30	1–4
28	Strengthening the lower back muscles	30	4–11
29	Maximising the strength of the lower back muscles	30	4–11
30	Tightening the gluteal muscles	30	22
31	Strengthening the gluteal muscles	30	22
32	Maximising the strength of the gluteal muscles	30	22



EMS programs 33-35 can be set individually (see “Customisable programs” section).

10.3 MESSAGE program table

Prog. no.	Effective application areas, indications	Running time (min)	Possible electrode positioning
1	Tapping massage 1	20	1–28
2	Tapping massage 2		
3	Tapping massage 3		
4	Kneading massage 1		
5	Kneading massage 2		
6	Pressure massage		
7	Relaxing massage 1		
8	Relaxing massage 2		
9	Relaxing massage 3		
10	Relaxing massage 4		
11	Spa massage 1		
12	Spa massage 2		
13	Spa massage 3		
14	Spa massage 4		
15	Spa massage 5		
16	Spa massage 6		
17	Spa massage 7		
18	Relaxing massage 1		
19	Relaxing massage 2		
20	Relaxing massage 3		

⚠ WARNING

Do not apply the electrodes to the front wall of the chest, i.e. do not massage the large left and right pectoral muscles.

10.4 Information on electrode positioning

The associated drawings are shown on page 5.

The useful positioning of electrodes is fundamental to the intended success of electrostimulation applications.

We recommend that you consult your doctor to establish the ideal electrode positions for your intended application area.

The figure on the display is intended as an initial aid to help you position the electrodes.

The following applies to the selection of electrode positions:

Electrode spacing

The greater the distance between electrodes, the larger the stimulated tissue volume. This applies to the area and depth of the tissue volume. At the same time, however, the stimulation intensity applied to the tissue decreases with more distance between electrodes. As a result, greater distances between electrodes mean a larger tissue volume is stimulated, but less intensively. As such, you must increase the pulse intensity to boost stimulation in this case.

The following guidelines apply when choosing the electrode distances:

- effective spacing: approx. 5-15 cm
- with spacing of less than 5 cm, the device will primarily apply strong stimulation to surface structures.
- with spacing in excess of 15 cm, large areas and deep structures will be very weakly stimulated.

Relationship between electrodes and muscle fibre structures 

Adapt the current flow direction to the fibre structure of the muscle, according to the muscle layer you would like to treat. If you are targeting superficial muscles, position the electrodes parallel to the fibre structure (A-B / C-D) and if you are targeting deeper layers of tissue, position the electrodes across the fibre structure. You can do this by positioning electrodes as crosses (i.e. diagonally), such as A-D / B-C.



For pain relief treatment (TENS) using the Digital TENS/EMS device and its 4 separately adjustable channels and 2 electrodes each, it is advisable either to position the electrodes of a channel so that the area affected by pain is between the electrodes or to position one electrode directly on the area affected by the pain and the other electrode at a minimum distance of 2-3 cm. You may use the electrodes of the second channel to simultaneously treat additional areas affected by pain or use them in conjunction with the electrodes of the first channel to restrict the area affected by pain (position electrodes opposite). In this case, we again recommend positioning electrodes in a cross arrangement.



Tip for the Massage function: always use at least 4 electrodes for optimum treatment.



Use the electrodes on skin that is clean and preferably free from hair and grease in order to prolong the life of the electrodes. If required, clean the skin with water and remove hair prior to treatment.



If an electrode comes loose during use, the pulse intensity of the corresponding channel is reduced to the lowest level. Apply the electrode again and reset your preferred pulse intensity.

11. CUSTOMISABLE PROGRAMS

(Applies to TENS 13-15, EMS 33-35)

The TENS 13-15 and EMS 33-35 programs can be set individually according to your needs.

- TENS 13 is a program that you can also customise. In this program, you can set the pulse frequency to between 1 and 150 Hz and the pulse width to between 80 and 250 µs.
- The TENS 14 program is a **burst** program that you can also customise. Various pulse sequences run in this program. Burst programs are suitable for all areas of application to be treated with changing signal patterns (to minimise the level of becoming accustomed to the treatment). In this program you can set a pulse width between 80 and 250 µs.
- TENS 15 is a program that you can also customise. In this program, you can set the pulse frequency to between 1 and 150 Hz. The pulse width changes automatically during the stimulation treatment.
- EMS 33 is a program that you can also customise. In this program, you can set the pulse frequency to between 1 and 150 Hz and the pulse width to between 80 and 320 µs.
- EMS 34 is a program that you can also customise. In this program, you can set the pulse frequency to between 1 and 150 Hz and the pulse width to between 80 and 450 µs. You can also set the working time and resting pause for this program to between 1 and 30 seconds each.

The EMS 35 program is a **burst** program that you can also customise. In this program, the intensity varies over time. Burst programs are suitable for all areas of application to be treated with changing signal patterns (to minimise the level of becoming accustomed to the treatment). In this program, you can set the pulse frequency to between 1 and 150 Hz and the pulse width to between 80 and 450 µs. You can also set the working time and pause time for this program to between 1 and 30 seconds each.

1. Position the electrodes on your preferred treatment area (for positioning suggestions, see "Electrode positioning") and connect them to the device.
2. Select the EMS 34 program as described in the "Starting use" section (step 3 to step 5).
3. Use the **▲/▼** adjustment buttons to select your preferred working duration ("on time") and press the **ENTER** button to confirm (This step is omitted for the TENS 13, TENS 14, TENS 15 and EMS 33 programs).
4. Use the **▲/▼** adjustment buttons to select your preferred resting duration ("off time") and press the **ENTER** button to confirm (This step is omitted for the TENS 13, TENS 14, TENS 15 and EMS 33 programs).
5. Use the **▲/▼** adjustment buttons to select your preferred pulse frequency and press the **ENTER** button to confirm (This step is omitted for the TENS 14 program).
6. Use the **▲/▼** adjustment buttons to select your preferred pulse width and press the **ENTER** button to confirm (This step is omitted for the TENS 15 program).
7. Use the **▲/▼** adjustment buttons to select your preferred treatment time and press the **ENTER** button to confirm.
8. Use the **</>** adjustment buttons as relevant in each case for **Ch1** / **Ch2** / **Ch3** and **Ch4** to select your preferred pulse intensity.

12. FAVOURITES PROGRAM

With the favourites program, you can define a favourite from the 70 TENS/EMS/MAS-SAGE programs.

This makes it easier and quicker for you to access your favourite program.

If you have set a favourite program, when you switch on the device the favourite program will be automatically accessed and started. You can then start stimulation directly in your favourite program. A heart **♥** on the display indicates that you are in the favourite program.

The choice of favourite program may be based on your personal preference or, for example, the advice of your doctor.

Setting the favourite program

1. Select your preferred program from the 70 programs and the corresponding settings as described in the "Starting use" section.
2. To set the selected program as a favourite, press and hold the **▼** button for 5 seconds.

3. The saving of the favourite program is confirmed by a long acoustic signal. The **♥** symbol also appears on the display. This shows you that you are in the favourite program. When the device is switched on again, your favourite program is accessed directly.



Now you can no longer change to a different program. To access the other programs again, you must delete your favourite program (see the following section).

Deleting favourite program

To delete the favourite program and access the other programs again, press and hold the **▼** button for approx. 5 seconds. The pulse intensity of **Ch1** / **Ch2** / **Ch3** and **Ch4** must be set to **00** in this process. Deletion of the favourite program is confirmed by a long acoustic signal. The previously displayed favourites program symbol **♥** goes out.

13. THERAPY MEMORY

Your device records the treatment time in the therapy memory. This allows you to record how long you have been using the device in total or for a specific period of time for your treatments. This may be helpful when consulting your doctor.

Accessing the therapy memory

To access the therapy memory, switch the device on using the ON/OFF button and press and hold the **▲** button for 3 seconds.

The elapsed treatment time appears in the display. The top two numbers stand for hours; the minutes are shown below.

Resetting the therapy memory

To reset the treatment time memory (therapy memory) to **00** press and hold the **▼** button for 3 seconds.

Press the Menu button to return to selecting a program, or switch the device off using the ON/OFF button.



The treatment time memory cannot be accessed if a favourite program is activated.

14. ELECTRIC CURRENT PARAMETERS

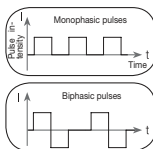
Electrostimulation devices operate with the following electrical current parameters, which may affect the stimulation results differently depending on the setting:

14.1 Pulse shape

This describes the time function of the stimulating current.

A distinction is made between monophasic and biphasic pulse currents. In monophasic pulse currents the current flows in one direction, and in biphasic pulse currents the electrical pulse alternates its direction.

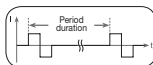
The Digital TENS/EMS device only provides biphasic pulse currents as these relieve muscles, cause little muscle fatigue and offer safer use.



14.2 Pulse frequency

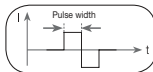
The frequency indicates the number of individual pulses per second and is displayed in Hz (Hertz). It can be calculated by determining the cyclic value for the time period. The relevant frequency determines which types of muscle fibres react most favourably. Slow-reaction fibres react more easily to lower pulse frequencies of up to 15 Hz, whereas rapid-reaction fibres only respond from approximately 35 Hz up.

Pulses of approx. 45–70 Hz are linked with constant tension in the muscles and quicker fatigue. Higher pulse frequencies are therefore better to use for speed strength and maximum power training.



14.3 Pulse width

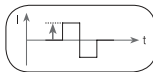
This indicates the duration of an individual pulse in microseconds. Among other aspects, the pulse width therefore determines the penetration depth of the electricity, where usually larger muscle mass requires a larger pulse width.



14.4 Pulse intensity

Adjusting the intensity level depends on the individual sensitivity of each user and is determined by a variety of variables, such as site of application, blood supply to the skin, skin thickness and the quality of the electrode contact. The setting should be effective but must never cause any unpleasant sensation, such as pain at the site of application. While a gentle tingling indicates sufficient stimulation energy levels, any setting that causes pain should be avoided.

If using the device over an extended period, you may need to adjust the intensity level as your muscles start to adapt to the pulse intensity.



14.5 Cycled pulse parameter variation

In many cases it is necessary to cover the overall tissue structure at the site of application by applying several pulse parameters. In the Digital TENS/EMS device, this is achieved by the provided programs, which automatically make a cyclical pulse parameter change. This also prevents individual muscle groups at the site of application being affected by fatigue.

The Digital TENS/EMS device provides useful preset current parameters. You can change the pulse intensity at any time during use. In 6 programs you can also set various parameters for stimulation yourself.

15. CLEANING AND STORAGE

Gel pads

- To ensure that the gel pads remain adhesive for as long as possible, clean them carefully with a damp, lint-free cloth under lukewarm running water and pat dry with a lint-free cloth.



Before cleaning with water, remove the connection cable from the device.

- Following treatment, stick the electrodes back onto the carrier foil on the gel pad.

Cleaning the device

- Clean the device after use with a soft, slightly damp cloth. If it is very dirty, you can also moisten the cloth with a mild soapy solution.
- Do not use any chemical or abrasive cleaning agents for cleaning.



Ensure that no water enters the device.

Reuse of the device

Once it has been properly prepared, the device can be used again. Preparation includes cleaning of the surface of the device using a cloth moistened with a mild soapy solution.

Storage

- Do not make sharp bends in the connection cables or the electrodes.
- After use, stick the electrodes back onto the carrier foil for the gel pads.
- Store the device in a cool, well-ventilated location.
- Never place any heavy objects on the device.
- In order to achieve as long a battery service life as possible, fully charge the battery at least every 6 months.

16. DISPOSAL

For environmental reasons, do not dispose of the device in household waste at the end of its service life. Dispose of the device at a suitable local collection or recycling point in your country. Observe the local regulations for material disposal. Dispose of the device in accordance with EC Directive Waste Electrical and Electronic Equipment (WEEE). If you have any questions, please contact the local authorities responsible for waste disposal. You can obtain the location of collection points for old devices from the local or municipal authorities, local waste disposal companies or your retailer, for example.



Used, completely flat batteries must be disposed of via specially designated collection boxes, recycling points or electronics retailers. You are legally required to appropriately dispose of the batteries.

The codes below are printed on batteries containing harmful substances:

Pb = battery contains lead


Cd = battery contains cadmium

Hg = battery contains mercury.



17. PROBLEMS AND SOLUTIONS


The device does not switch on when the ON/OFF button  is pressed. Solution

- (1) Make sure that the ON/OFF button  has been pressed and held for at least one second.
- (2) Make sure that the battery is fully charged.
- (3) Charge the battery if necessary.
- (4) Contact Customer Services.

The electrodes do not stick to the body. Solution

- (1) Clean the gel pads using a damp, lint-free cloth. If they still do not stick securely, the electrodes must be replaced.
- (2) Clean the skin prior to any application; do not use skincare lotions or oils prior to treatment. Shaving may increase the life of gel pads.

There is no noticeable stimulation. Solution

- (1) Press the ON/OFF button  to interrupt the program. Ensure that the electrodes are in firm contact with the treatment area.
- (2) Ensure the connection plug is firmly connected to the device.
- (3) Increase the channel intensity again.
- (4) Gradually increase the pulse intensity.
- (5) The battery is flat; please charge it.

The battery symbol is displayed. Solution

Charge the device, following the instructions from the "Initial use" section.

You are experiencing an uncomfortable sensation at the site of the electrodes. Solution

- (1) Reduce the intensity of the affected channel.
- (2) The electrodes are not positioned correctly. Check their positions, and re-position them if necessary.
- (3) The gel pads are worn. This may cause skin irritation, as even distribution of the current across the entire area is no longer guaranteed. They should therefore be replaced.

Skin in the treatment area turns red. Solution

Immediately stop treatment and wait until your skin has returned to its normal condition. If the redness is under the electrode and disappears quickly, there is no risk – this is caused by the locally stimulated, increased blood flow.

However, consult your doctor before you continue treatment if the skin irritation persists and if it is accompanied by an itchy sensation or inflammation. This may be caused by an allergic reaction to the adhesive surface.

The electrodes become too hot. Solution

Switch to the lower heat level or switch the heat function off entirely.

The program can no longer be changed. Solution

It may be that the favourite program is set. This is indicated by the ♥ symbol on the display. To access the other programs again, you must delete your favourite program. To do this, follow the instructions in the "Favourites program" section.

A recurring acoustic signal sounds on the device and I can no longer increase the electrode intensity. Solution

- (1) The gel pads are not correctly applied to the skin. Please check the adhesion of the pads, and re-attach them if necessary.
- (2) The gel pads may be worn out and are no longer able to conduct the current. Please replace the gel pads.

18. REPLACEMENT PARTS AND WEARING PARTS

To purchase replacement parts, please visit www.beurer.com or contact the corresponding service address (according to the service address list) in your country. Replacement parts are also available from retailers.

Designation	Item number and/or order number
8 x gel pads (45 x 45 mm)	Article 646.55

USB charging cable	Article 110.096
Electrodes including cable	Article 164.210
EU mains adapter	Article 110.094
UK mains adapter	Article 110.095

19. TECHNICAL SPECIFICATIONS

Type	EM 89
Output waveform	Biphasic rectangular pulses
Pulse duration	50–450 µs
Pulse frequency	1–150 Hz
Output voltage	max. 100 V _{pp} (at 500 Ohm)
Output current	max. 200 mA _{pp} (at 500 Ohm)
Voltage supply	Lithium-ion battery, 4000mAh, 3.7V
Treatment time	adjustable from 5 to 100 minutes
Intensity	Adjustable from 0 to 50
Maximum temperature of the heat settings	low LOW (41°C at an ambient temperature of 25°C., 46°C at an ambient temperature of 40°C); high HIGH (43°C at an ambient temperature of 25°C., 48°C at an ambient temperature of 40°C)
Electrodes used	Silver electrodes with carbon coating 40 x 40 mm
Mains adapter to be used	Output: 5V, 2A Material number: See "Replacement parts and wearing parts" section
Operating conditions	5°C to 40°C (41°F to 104°F), with a relative air humidity of 15-90% and air pressure of 70-106 kPa
Storage conditions	0 to 40°C (32°F to 104°F), with a relative air humidity of ≤90%
Transport conditions:	-25°C to 70 °C (-13°F to 158°F), with a relative air humidity of ≤90%
Dimensions	Approx. 142 x 159 x 53 mm
Weight	Approx. 341 g

Altitude limit for use	3,000 m
Maximum tolerated atmospheric pressure	700 hPa to 1060 hPa
Expected service life of the device	Information on the service life of the product can be found on the homepage

The serial number is located on the device.

The device is maintenance-free. Inspections and calibration are not necessary.



If the device is not used according to the specifications, it may not work correctly!

We reserve the right to make technical changes to improve and develop the product.

This device complies with the European standard EN 60601-1-2 (Group 1, Class B, in compliance with IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-8 and IEC 61000-4-39) and is subject to special precautionary measures with regard to the electromagnetic compatibility. Please note that portable and mobile HF communication systems may interfere with this device.

More details can be requested from the stated Customer Service address or found at the end of the instructions for use.

For this device, a functional test and instruction in accordance with the German Medical Devices Operator Ordinance (MPBetreibV) is not required. It is also not necessary to carry out safety checks in accordance with the German Medical Devices Operator Ordinance (MPBetreibV).

Notes on electromagnetic compatibility

⚠ WARNING

- The device is suitable for use in all environments listed in these instructions for use, including domestic environments.
- The device may not be fully usable in the presence of electromagnetic disturbances. This could result in issues such as error messages or the failure of the display/device.
- Avoid using this device directly next to other devices or stacked on top of other devices, as this could lead to faulty operation. If, however, it is necessary to use the device in the manner outlined above, this device as well as the other devices must be monitored to ensure they are working properly.

- The use of components other than those specified or provided by the manufacturer of this device can lead to an increase in electromagnetic emissions or a decrease in the device's resistance to electromagnetic interference; this can result in faulty operation.
- Keep portable RF communication devices (including peripheral equipment such as antenna cables or external antennas) at least 30 cm away from all device parts, including all cables included in delivery. Failure to comply with the above could impair the performance of the device.

20. GUARANTEE/SERVICE

More information on the guarantee and guarantee conditions can be found in the guarantee leaflet supplied.

Notification of incidents

For users/patients in the European Union and identical regulatory systems, the following applies: If a major incident occurs during or through use of the product, notify the manufacturer and/or their representative of this as well as the respective national authority of the member state in which the user/patient is located.



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