

INSTRUCTION MANUAL



STIM-PRO T-400

axion GmbH

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V 1.1

INTRODUCTION

The primary functions of the STIM-PRO T-400 are pain relief and pain treatment with the TENS mode.

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What is pain?

Pain is a warning system and the body's method of telling us that something is wrong. Without it, abnormal conditions and injuries to vital parts of the body may go undetected. A persisting (long-term) pain is known as chronic pain. Pain occurs when information signals travel to the brain via nerve fibres, where it gets decoded, analyzed, and then reacted to. The pain information travels from the injured area along small nerves leading to the spinal cord. Here it travels up the spinal cord to the brain. The information is then interpreted, referred back and the pain is felt.

What is TENS?

TENS = **T**ranscutaneous **E**lectrical **N**erve **S**timulation, uses tiny electrical impulses sent through the skin to the underlying nerves. TENS does not cure any physiological problem; it only helps control the pain. TENS does not work to the same extent for everyone; however, most patients report that it is effective in reducing and even eliminating the pain.

It should only be used on medical advice or by prescription.

How TENS works

TENS can be applied in two operational modes:

The constant and weak activity with high frequency can block the transmission of the pain signals from reaching the brain. The brain cells process the pain signal. If the pain signal does not reach the brain, no pain is felt. The second operational mode of TENS is for the purpose of stimulating the body's own

natural pain control.

The "Burst"-mode (B) in a lower frequency may stimulate the organism, so that analgesic substances are set free which are called endorphins. For further details please refer to your doctor.

Scope of delivery

Each STIM-PRO T-400 is fully equipped with the following standard equipment.

- ▶ **1 piece** **TENS machine**
- ▶ **4 pieces** **Self-adhesive electrodes**
- ▶ **1 piece** **9V battery**
- ▶ **1 piece** **Storage case**
- ▶ **2 pieces** **Electrode cables**
- ▶ **1 piece** **Instructions manual**

GENERAL DESCRIPTION

The device is a battery-operated pulse generator that transmits electrical impulses via electrodes to the body. These impulses reach the nerves and muscles through the skin. The electronics of the STIM-PRO T-400 create electrical impulses that can be modified in intensity, pulse duration and frequency in the manual modes. All functions are easy to handle and the big display shows all parameter values clearly readable.

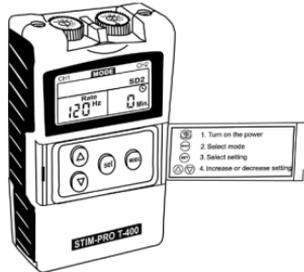
SAFETY INFORMATION

- ▶ Read the instructions carefully before using the device.
- ▶ Keep this device out of the reach of children.
- ▶ Do not place electrodes in the area of the carotid arteries!
- ▶ Do not place electrodes on the front of the throat!
- ▶ Be careful with stimulation over metal implants.
- ▶ User with an implanted electronic device like pacemakers should only use the device under medical supervision.
- ▶ Do not place electrodes above your heart!
- ▶ Use with caution during pregnancy. Consult a doctor first!
- ▶ Do not use electrodes on open wounds / injuries.
- ▶ Do not use if you have fever.
- ▶ Do not use if you have arrhythmia.
- ▶ Do not use if you have epilepsy.
- ▶ Never use the device when you are operating machines.
- ▶ Never use near explosive or flammable gases.
- ▶ Always TURN OFF the device before placing / removing electrodes.
- ▶ User with an implanted electronic device like pacemakers should only use the device under medical supervision.

OPERATING THE DEVICE

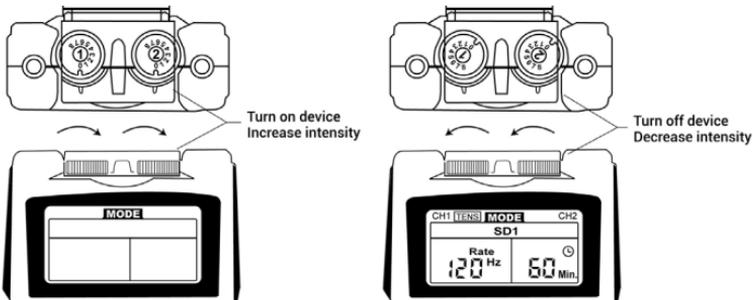
ON / OFF switch

Open the front lid of the device to reach the controls. The device can be switched on increasing the intensity with the regulators on top of the machine.

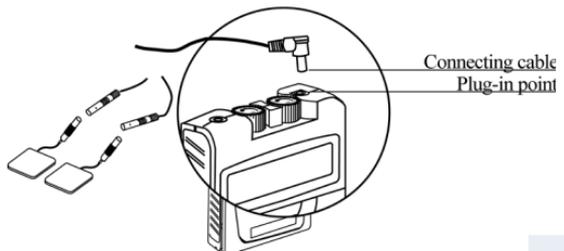


Regulating the intensity

The intensity can be adjusted stepless from 0-80mA by turning the intensity regulators on top of the device.



Connect the electrodes with the connecting cables. The device must be turned off when connecting the electrodes. The electrodes must be firmly attached to the skin.



Modus Auswahl-Taste

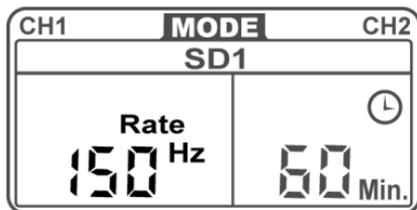
There are four TENS modes available: **(B)** Burst, **(N)** Normal, **(M)** / **(SD1)** / **(SD2)** Modulated, **(P)** Program mode. The modes are switched by pressing the "Mode" button. In the **program mode P** there are 12 pre-defined programs with fixed settings available (more information regarding the programs on pages 22-23).

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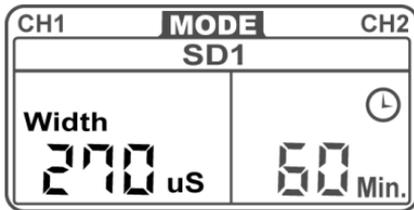
Regulating the frequency

The frequency is adjustable from 1 Hz to 150 Hz. The current value is shown on the LCD display. The frequency determines how many electrical impulses are transmitted through the skin every second. If no instructions regarding the frequency are given in therapy, set the control to 70 – 120 Hz.



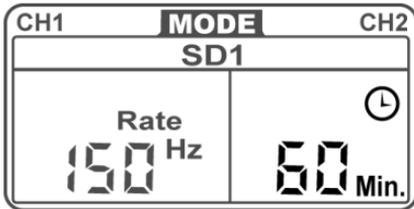
Regulating the pulse width

The pulse width can be adjusted from 30 μs to 300 μs . It regulates the time for which the electrical signal is applied. The current value is shown on the LCD display.



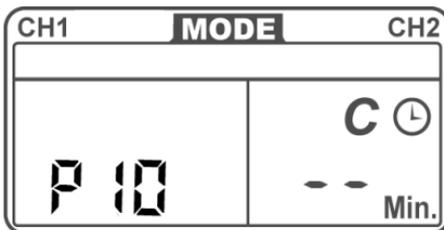
Timer

The device comes with a timer that can be adjusted from 1 to 60 minutes. It can also be set to continuous mode. The application ends automatically when the timer runs out.



Program mode

The programs are chosen by pressing or in program mode. The programs run with pre-defined settings that can not be altered (except in intensity).



Program mode (P)

The programs have proven to be helpful in most cases for the suggested applications. However, they might be used for the treatment of other injuries or discomforts as well. Every patient responds individually to stimulation current.

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P 01	Classic TENS mode (gate control effect)
	To be applied in most types of pain. Usually fast effect. Choose a convenient intensity. Frequency: 80 Hz Pulse width: 180 μ s
P 02	Low frequent burst TENS (release of endorphin)
	Used against acute pain. Choose higher intensity. Frequency: 2 Hz Pulse width: 180 μ s
P 03	Modulated TENS against habituation effect. With massage effect
	To be applied in most types of acute and chronic pain. Usually fast effect. Frequency: 80 Hz Pulse width: 70 -180 μ s (moduliert -70%)
P 04	Alternating frequency
	Application for example in case of stiff joints, neck pain, lumbago. Frequency: 15/2 Hz (wechselnde Frequenz) Pulse width: 180 μ s
P 05	Alternating frequency - Prof. Han stimulation
	Ideal for long-term application, since the alternating frequency causes a strong anti-habituation effect. Used e. g. against lumbago, arthrosis, neck, back and shoulder pain, muscular spasms. Frequency: 80/2 Hz (alternating frequency) Pulse width: 280 μ s
P 06	The special program for nausea, feeling of sickness, travel sickness, seasickness
	The electrodes should be placed above the acupuncture point C6. Frequency: 10 Hz Pulse width: 180 μ s

P 07 For sensible parts of the body

Due to the reduced duration of pulse these applications are to be specifically used in cases of tension headache, face pain, neck pain, herpes zoster, migraine.

Frequency: 80 Hz

Pulse width: 60 μ s

P 08 Chronic pain

Application in case of pains in the neck, hip, shoulders, elbows, rheumatic pains, back pain (lumbago), menstrual problems and knee arthrosis.

Frequency: 10 Hz

Pulse width: 200 μ s

P 09 Rheumatic pain

Pains due to rheumatoid arthritis, radiating pain on arms/legs/feet, through modulation suitable for long-term use.

Frequency: 50 Hz

Pulse width: 250 μ s

P 10 Sweep-Mode 2 – 125 Hz

In cases of therapy-resistant complaints, stimulation both on sensory and motor basis, against habituation effect.

Frequency: 5 - 125Hz

Pulse width: 120 μ s

P 11 Frequency and pulse width modulation (6 seconds cycle)

To be applied in most types of chronic and acute pain.

Frequency: 2 - 100Hz

Pulse width: 150 - 260 μ s

P 12 Frequency modulation (6 seconds cycle)

Used against pain in back, knee, shoulder, legs, elbow and neck as well as against rheumatic pain.

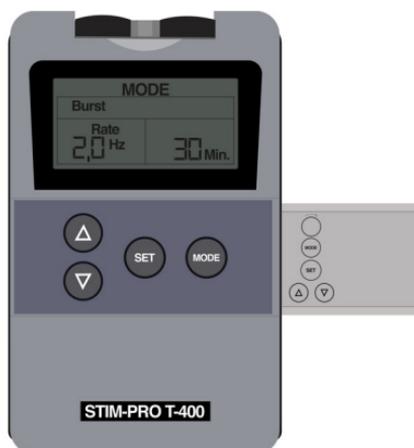
Frequency: 7 - 80Hz

Pulse width: 260 μ s

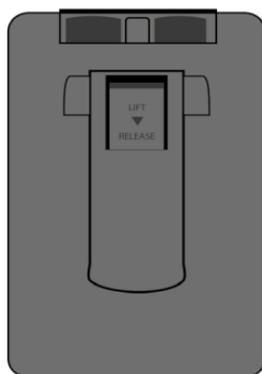
CONSTRUCTION OF THE DEVICE

Front

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Back

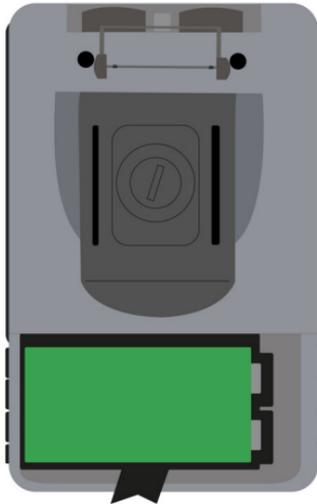


CHANGING BATTERIES

When the low battery indicator is shown, the battery needs to be replaced. Remove the battery if the device is not likely to be used for some time.

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- ▶ **Make sure the power is off.**
- ▶ **Open the battery compartment by sliding down and removing the front cover.**
- ▶ **Remove the battery.**
- ▶ **Insert the new battery. Please check that the polarity is correct!**
- ▶ **Close the battery compartment. Attach the cover to the bearings at the bottom of the device and slide upwards.**



MAINTENANCE, TRANSPORTATION AND STORAGE OF THE DEVICE

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- ▶ Non-flammable cleaning solution (containing 70% of alcohol) is suitable for cleaning the device.
- ▶ Stains and spots can be removed with a cleaning agent.
- ▶ Do not submerge the device in liquids or expose it to large amounts of water.
- ▶ Return the device to the carrying box with sponge foam to ensure that the unit is well-protected before transportation.
- ▶ If the device is not to be used for a long period of time, remove the battery and put it back into the carrying box and keep it in a cool, dry place.
- ▶ The packed TENS device should be stored and transported under the temperature range of -20°C $\sim +60^{\circ}\text{C}$, relative humidity 20% \sim 95%, atmosphere pressure 500 hPa \sim 1060 hPa.

SAFETY CHECKS

For safety reasons, review the following checklist once a week.

- ▶ Check the device for deformation of the housing or damage to the output sockets.
- ▶ Make sure that the descriptions and labels are not damaged.
- ▶ Check the cables and electrodes for damage.

- ▶ The device must be subjected to safety checks and maintenance by authorized technicians before use and each re-use, but at least every 24 months.
- ▶ Please consult your distributor if there are any problems with the device and accessories.
- ▶ The manual must always be carried with the device.

MALFUNCTIONS

Should any malfunctions occur while using your device, check the following points. If none of these can solve the problem, please contact the customer service.

- ▶ Check if the cables are correctly connected to the device.
- ▶ The display does not turn on? Replace the battery.
- ▶ Check the cables for possible damage. If a cable is visibly damaged, replace it immediately with a new one. Use only accessories from the manufacturer of the device.
- ▶ There is no stimulation current? Check if the electrodes are correctly connected to the same channel and if the intensity is high enough.

CONFORMITY TO SAFETY STANDARDS

The STIM-PRO T-400 device is in compliance with the EN 60601-1-2:2007 and 60601-1:2006 safety standards.

TECHNICAL DESCRIPTION

01	Channel	2 channels with adjustable intensity
02	Intensity	Adjustabl 0 - 80 mA with a load of 500 Ohm on each channel
03	Pulse amplitude	Asymmetrical, bi-phasic square pulse
04	Output Voltage	0 - 50 V
05	Power Source	1 pc. 9,0V battery
06	Size	10,2 cm (L) x 6,2 cm (W) x 3,4 cm (H)
07	Weight	150 g incl. battery
08	Frequency	Adjustable from 2 - 150Hz
09	Pulse width	Adjustable from 50 - 300µs
10	Modes	5 TENS modes with adjustable parameters: Burst, Normal, Modulation, SD1, SD2. P-Mode with 12 pre-defined programs (P)
11	TENS Burst mode (B)	Burst frequency adjustable from 0.5 - 5Hz Pulse width adjustable from 50 - 300µs
12	TENS Normal mode (N)	Frequency adjustable from 1 - 150Hz Pulse width adjustable from 50 - 300µs
13	TENS Modulation mode (M)	Die Frequenz wird innerhalb von 5 Sekunden auf 50% des Einstellwertes gebracht. In den folgenden 5 Sekunden wird der Wert wieder auf den Einstellwert erhöht.
14	SD1 mode (SD1)	The SD1 (Strength-Duration) mode consists of automatic modulation inten-sity and pulse width in 40% range. The intensity is always increasing while the pulse width is decreasing and vice versa. The intensity is decreased by 40% while the pulse width is increased by 40% in 5 seconds. In the next 5 seconds, the intensity is increased by 40% while the pulse width is decreased by 40%. Total cycle time is 10 seconds.
15	SD2 mode (SD2)	As SD1 mode, but with 70% modulation.
16	Program mode (P)	Explanation of the programs on p. 22 - 23
17	Low battery indicator	A low battery indicator will show up on the LCD when the battery is low. Replace battery soon.

18	Operating condition	Temperature 0° C to 40° C Relative humidity 30 % - 75 % Air pressure 700 hPa - 1060 hPa
19	Notice	All technical values include a tolerance of +/- 5 %

WARRANTY

All TENS models carry a warranty of 24 months from the date of delivery. The warranty applies to the stimulator only and covers both parts and labor relating thereto. The warranty does not apply to damage resulting from improper handling, the failure to follow the operating instructions, loss or dropping.

Manufacturer:
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Mollenbachstr. 13
71229 Leonberg, Germany
www.tens-ems.com/en



1.  Advice for operation
2.  Degree of electrical protection
3.  Do not insert the plug into the power supply socket of 230V
4.  Timer
5.  Low battery indicator
6.  Read the instruction manual
7.  Direct current (DC)
8.  Manufacturer
9.  Serial number