

# Twin Stim<sup>®</sup> Plus

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Please read this operating manual carefully before using TwinStim Plus because it is unsafe to start using the device before reading the whole manual. The instructions on the following pages will show you how to use and care for your TwinStim Plus in a general manner. You should be particularly familiar with the prescription information and precautions before proceedings.

## **INTRODUCTION**

The TwinStim Plus provides you with exceptional versatility. This four Channel unit can be used for muscle stimulation (EMS) or pain relief (TENS) at four different body areas. Use TwinStim plus in the clinic or send it home with the patient. Create your own treatment program. This flexibility makes it easier for you to incorporate electrotherapy in your treatment regimen.

Twinstim Plus offers the best of both worlds – required EMS and TENS treatments in one compact unit. For patients that means – portable pain relief and rehabilitation that is easy to use. For you, it means a highly cost effective investment that afford greater convenience and flexibility in your day to day routine.

It runs 9V alkaline batteries or adaptor and is ergonomically designed for ease-of-operation with large display screen and buttons.

## **1. PRESCRIPTION INFORMATION**

### **1.1 INDICATION FOR USE**

- Electrical Muscle Stimulation is indicated for:
  - Relaxation of Muscle spasm.
  - Prevention or Retardation of disuse atrophy.
  - Increasing local blood circulation.
  - Muscle re-education.
  - Immediate post-surgical stimulation of calf muscles to prevent venous thrombosis.
  - Maintaining or increasing range of motion.

- ❑ TENS Current stimulation is used for symptomatic relief and management of chronic and/or as an adjunctive treatment in the management of post-surgical and post-traumatic acute pain problems.

## 1.2 CONTRAINDICATIONS

- ❑ Stimulation is contraindicated for patients using cardiac pacemakers. It shouldn't be used on patients with known myocardial arrhythmia without physician evaluation.
- ❑ Stimulation should not be applied transthoracically in any mode.
- ❑ Stimulation should not be applied transcerebrally.
- ❑ Stimulation should not be applied over the carotid sinus nerves, particularly on a patient with a known sensitivity to carotid sinus reflex.
- ❑ Stimulation should not be applied over swollen, infected, or inflamed areas or skin eruptions, e.g. phlebitis, thrombophlebitis, varicose veins, etc.
- ❑ Stimulation should not be applied over or in proximity to, cancerous regions.

## 1.3 WARNINGS



- ❑ For external use only.
- ❑ Safety of stimulation during pregnancy or delivery has not been yet established.
- ❑ Do not stimulate the eye area.
- ❑ This therapy is ineffective for pain of central origin.
- ❑ Interferential stimulation is of no curative value.
- ❑ Stimulation should not be applied over the neck or mouth. Severe spasm of the laryngeal and pharyngeal muscles may occur and the contractions may be strong enough to close the airway or cause difficulty in breathing.
- ❑ Stimulation is a symptomatic treatment and as such suppresses the sensation of pain, which would otherwise serve as a protective mechanism.
- ❑ Powered electrical stimulators should be kept out of the reach of children.

#### **1.4 PRECAUTIONS**

- ❑ Caution should be used for patients with suspected or diagnosed heart problems and epilepsy.
- ❑ Some patients may experience skin irritation or hypersensitivity due to the electrical stimulation or electrical conductive medium.
- ❑ Electrode placement and stimulation settings should be based on the guidance of the prescribing practitioner.
- ❑ Powered electrical stimulators should be used only with the leads and electrodes recommended for use by the manufacturer.

#### **1.5 ADVERSE REACTIONS**

Skin irritation and burns under the electrodes may cause possible allergic skin reaction to tape or gel.

## **2. INTRODUCTION**

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### **2.1 ELECTROTHERAPY**

Electricity has been used to treat pain for over 100 years. Electrical stimulation may directly block transmission of pain signals along nerves. In addition, electrical stimulation has been shown to promote the release of endorphins, which are natural painkillers produced by the body.

### **TENS**

Transcutaneous (through the skin) electrical nerve stimulation sends a painless electrical current to specific nerves. The current may be delivered intermittently. The treatment is believed to stimulate the body's production of endorphins or natural pain killers.

### **ELECTRICAL MUSCLE STIMULATION**

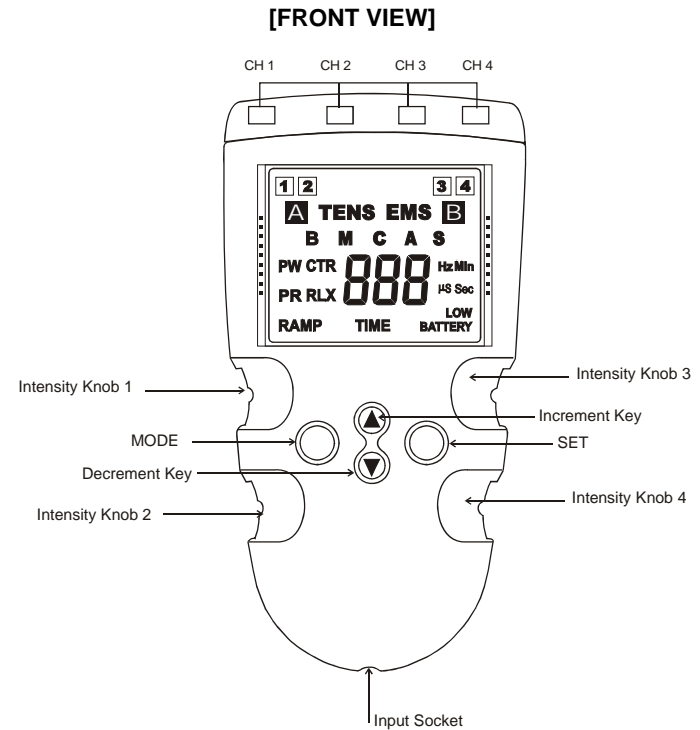
Electrical muscle stimulation is a therapy for the purpose of tissues stimulation for therapeutic response in which muscles are stimulated to relax; and produce analgesia to increase dormant motion .

### **2.2 CONDITIONS THAT EFFECT USE**

The unit should not be used in wet environment. Electrodes should be in firm contact with the body.

### 3. CONTROLS & FUNCTIONS

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#### KEYS & FUNCTIONS:

##### **INTENSITY KNOB : 1, 2, 3, 4**

To turn the unit ON/OFF. Each knob also controls the power of outputs respectively.

##### **MODE KEYS:**

Press the key until desired mode is selected. It offers two different waveforms from A (1,2 Channel) and B(3, 4 Channel.)

## **TENS**

**Mode 1** : BURST - Burst of 7 pulses, selectable pulse width & pulse rate

**Mode 2** : MODULATION – Pulse width varies from set value to 50% of set value automatically and returns back. Selectable Pulse width and Pulse rate.

**Mode 3** : CONVENTIONAL : Continuous output, Selectable Pulse width and Pulse rate

## **EMS**

**Mode 1** : CONVENTIONAL : Continuous output, Selectable pulse width and rate

**Mode 2** : SYNCHRONOUS : Continuous output, selectable Pulse, Relaxation time, Contraction time, Ramp Up and Down.

**Mode 3** : ALTERNATE : Output within 1 & 2 or 3 & 4 alternate as per set values of ON & OFF time, selectable Pulse width, Pulse rate, contraction time, relaxation time.

## **SET KEY :**

To start the protocol selections.

## **INCREMENT & DECREMENT KEYS :**

To increase or decrease the flashing values.

## **INPUT SOCKET**

Insert the adaptor pin in the input socket given at the bottom of twinstim, when device is running on adaptor.

## **OUTPUT CHANNEL**

Four o/p channel are given on the top of TwinStim to connect the electrode cable pin.

## LCD DISPLAY

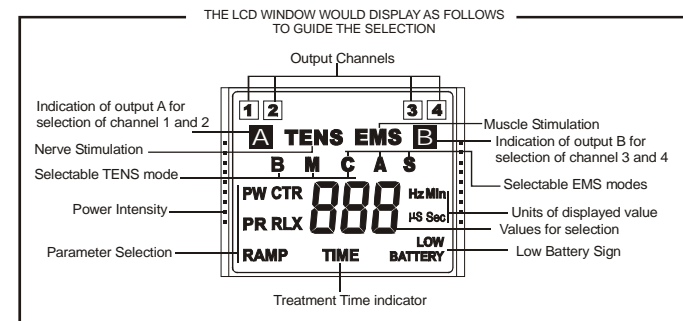
The display shown below will help you in the selection of the desired parameters.

## LOW BATTERY SIGN

*Replace the Battery.*

## TIMER :

LCD will display treatment time with all other parameters, which can be set as required. When treatment time is over ; Buzzer beeps to alert you.





#### **4. ACCESSORIES**

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**TwinStim Plus** comes complete with all the necessary components to perform Nerve & Muscle Stimulator. The list of the items included is given below:

<b>CONTENTS</b>	<b>Qty.</b>
ELECTRODE CABLE	04
ELECTRODES	08
UNIT	01
ADAPTOR	01
MANUAL	01
WARRANTY CARD	01
CARRY BAG	01

## 5. TECHNICAL SPECIFICATION

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<b>Number of Outputs</b>	Four
<b>Number of Channels</b>	Four
<b>Stimulation types</b>	TENS & EMS
<b>Output waveform</b>	Symmetrical biphasic square wave

**TENS** 

**Mode 1** : BURST - Burst of 7 pulses, selectable pulse width(selectable from 50  $\mu$ s to 250 $\mu$ s in steps of 10  $\mu$ s) & pulse rate(1 Hz to 20 Hz in steps of 1 Hz & from 20 Hz to 120 Hz in steps of 5 Hz).

**Mode 2** : MODULATION – Pulse width varies automatically from set value to 50% of set value & they returns back over a fixed period, selectable pulse width(selectable from 50  $\mu$ s to 250 $\mu$ s in steps of 10  $\mu$ s) and pulse rate(1 Hz to 20 Hz in steps of 1 Hz & from 20 Hz to 120 Hz in steps of 5 Hz).

**Mode 3** : CONVENTIONAL : Continuous output, Selectable pulse width(selectable from 50  $\mu$ s to 250 $\mu$ s in steps of 10  $\mu$ s) and rate(1 Hz to 20 Hz in steps of 1 Hz & from 20 Hz to 120 Hz in steps of 5 Hz).

**EMS** 

**Mode 1**: CONVENTIONAL: Continuous output, Selectable pulse width (selectable from 250 to 400  $\mu$ s in steps of 10  $\mu$ s) and rate (1 Hz to 20 Hz in steps of 1 Hz & from 20 Hz to 120 Hz in steps of 5 Hz).

**Mode 2 SYNCHRONOUS:** Continuous output, selectable Pulse width (250 to 400  $\mu$ s in steps of 10 $\mu$ s), Pulse rate (1Hz to 20Hz in step of 1Hz & from 20 to 120 Hz in steps of 5 Hz.), relaxation time (selectable from 01 sec to 30 sec in steps of 1 sec.) Contraction time (selectable from 01 sec. to 30 sec in steps of 1 sec.) Ramp Up and Down. (Selectable from 1 sec to 9 sec in step of 1 sec.)

**Mode 3 ALTERNATE:** Output within 1 & 2 or 3 & 4 toggles as per set values of ON & OFF time, selectable pulse width(selectable from 250 to 400  $\mu$ s in steps of 10  $\mu$ s), rate (1 Hz to 20 Hz in steps of 1 Hz & from 20 Hz to 120 Hz in steps of 5 Hz),contraction time & relaxation time.

**Treatment Time** 1 to 60 minutes

**Power** 9V Adaptor or alkaline battery operated

**Output Voltage** 40 Volts peak to peak on 500 ohms load.

**Output Current** 80 mA max.

**Display system** Customized LCD

## **7. HOW TO USE TWINSTIM PLUS**

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- a) The TWINSTIM PLUS may be susceptible to interference originating from short-wave diathermy units operating in closed proximity to it. Avoid operating the TWINSTIM PLUS adjacent to and simultaneously with operating short-wave devices.
- b) Do not use sharp objects to operate the membrane panel switches. If the tough outer layer of the membrane is broken, moisture may leak into the switches resulting in switch failure.

### **7.2 OPERATING INSTRUCTIONS**

#### **PREPARING ELECTRODES**

- ❑ Use only the leads and electrodes provided with the unit by manufacturer.
- ❑ We strongly encourage careful maintenance of the electrodes. This includes the lead wires as well as the pads. Worn cables and/or poor pads (or the wrong sized pads) can have a significant impact upon treatment results.
- ❑ Make sure that the entire surface of the electrode make firm contact with the patient.
- ❑ Prepare skin prior to electrode application. This will ensure the efficient current condition necessary for proper treatment. Cleaning of skin shall eliminate any impairment to current conduction on the patient's skin such as an oily or dry surface, or excessive hair coverage. Shaving may be necessary depending upon the density of hair coverage. Failure to provide for maximum current conduction efficiency could result in skin irritation relating to increase in current density at electrode site.
- ❑ Reusable electrode should not be used longer than the time specified on the package. This could result in ineffective treatments or skin irritation.

## SECURING ELECTRODES TO PATIENT

**General information:** Placement of electrodes may be by the quadripolar or bipolar and contact will ensure treatment comfort and efficiency. Electrodes should never be placed in such a manner as to produce current flow through the cardiac area.

The therapy should be applied to the tissues with the following steps:

- ❑ The patient should be suitably positioned ensuring maximum comfort and suitable exposure of the body part to be treated.
- ❑ The points where electrodes are to be placed should be marked.
- ❑ The electrodes should be applied on the marked points.
- ❑ The patient should be explained about the subjective sensory motor feeling that he/she will experience. The patient should experience a sensation of deep, sufficiently strong but pleasant vibrations at rhythmical frequencies and a pleasant tingling sensation.
- ❑ Patient should be explained to immediately inform the therapist, of any unpleasant sensation or any other discomfort.
- ❑ Review precautions, contraindications and side effects/adverse reactions listed above.

Having reviewed the previous chapters you are now ready to begin your treatment programme.

## START TREATMENT

- (a) Insert the electrode cable pin in the output jacks.
- (b) Turn the unit ON by any of the Intensity Knobs.
- (c) The LCD display will show the channel (which is turned ON) with section A/B and default parameter.

MODE : TENS – Burst  
PW : 50  $\mu$ s  
PR : 120 Hz  
Time : 30 Minutes

Press Mode Key to change mode

- Keep pressing the mode key till desired mode appears on screen, leave it.
- The default will display.
- To change it, press Set Key, Use  $\Delta$  or  $\nabla$  key to bring the desired value.
- Press Set Key again
- Next selectable parameters will start flashing, use  $\Delta$  or  $\nabla$  key to select and set.
- similarly all the parameters can be selected on this set of Output (A/B).

Follow the same procedure for second set of outputs.

Now Increase the power of each output by rotating the respective knob till a strong and comfortable stimulation is felt.

Unit will turn OFF after the treatment time is over. Turn OFF the knobs. Take the electrodes & place them as instructed.

## 8. MAINTENANCE

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### CLEANING

The soiled unit should be cleaned with a damp cloth.

- ❑ Follow the care of electrodes as indicated on the package.
- ❑ For routine cleaning of the electrode cables use soap and water. Thoroughly dry after cleaning.

### WARNING

- ❑ Do not pull out cables.
- ❑ Electrode wires should be kept loosely winded or breakage may occur.

### STORAGE

- ❑ Keep the unit properly covered, when not in use. This will help to keep out of dust.
- ❑ Make special space to keep the unit, after the treatment is over.



**CAUTION:** Do not store the unit in a damp area. Dampness may affect device and cause rust.

### ELECTRODES CARE

There are many kinds of electrodes. Use the electrodes recommended by your physician and obey the instructions attached to the electrodes.

### REUSABLE ELECTRODES

After using any of these electrodes, grasp the corner of the electrode and gently remove it from your skin. Do not pull on the electrode snap or wire connection. Reapply the release liner to the adhesive side of the electrode. Store the electrode in a resealable pouch or plastic bag. To prolong the life span of electrodes, remoisten them by applying a few drops of tap water when they show signs of drying out or losing their adhesives. Apply the water with your fingertip.

After repeated usage, reusable electrodes begin to lose their adhesives and therefore deliver less stimulation and shorten battery life. Replace reusable electrodes as needed.

### **DISPOSABLE ELECTRODES**

These electrodes use a solid polymer gel and come with a built-in tape patch. They can be worn while showering, but long soaks in hot baths will loosen them. When electrodes are not adhering well or fail to deliver proper stimulation, remove and replace them.

### **BATTERY REPLACEMENT**

- ❑ Turn the amplitude control to the “OFF” position. Slide the body enclosure part upward. This exposes the battery for removal.
- ❑ Slide the enclosure into the grooves on the case and push down until the battery and control panel are covered.

### **SKIN CARE**

- ❑ Apply electrodes on clean, dry and unbroken skin only.
- ❑ Before applying electrodes and after removing – always wash the site with mild soap and water. Then rinse and dry thoroughly.
- ❑ Excess body hair in the electrode placement site should be clipped and not shaved.
- ❑ If clinician recommends skin prep usage-follow instruction as directed.
- ❑ When applying electrodes, do not stretch skin or electrodes.
- ❑ When removing electrodes – always peel back in direction of hair growth, or moisten edges or underside of electrode.
- ❑ Applying unflavored Milk of Magnesia over electrode placement sites after removing electrode helps maintain the natural pH of the skin and reduces irritation problems.



- ❑ If perspiration occurs in the area of the electrodes causing the electrodes to slide out of position, wipe area with unscented antiperspiration pads and allow drying before reapplying electrodes.
- ❑ If skin irritation arises and persists from the use of Electrical Muscle Stimulator and certain type of electrodes, discontinue usage immediately and consult your clinician.

## 9. TROUBLE SHOOTING

If none of the displays are lighting up after pressing the rocker switch to "ON" position then –

- Return the power switch to "OFF" position.
- If the device still does not come ON, inform supplier.

OBSERVATION	POSSIBLE CAUSES	REMEDY
Weak stimulation or No Stimulation even at max Amplitude setting.	Poor electrode contact or Insufficient gel on the Electrode.	Check the electrodes or Supply sufficient gel
	Electrode conduction is Low Lead wire is worn out	Change electrodes Change electrode wires.
Stimulation strong	Improper electrode Placement	Check electrode Placement
Uncomfortable Stimulation or too Strong Stimulation	Amplitude too high	Reduce
Skin irritation at electrode Placement site	Improper contact/Gel dried up.	Wet or change the electrode
Sudden high intensity While increasing Amplitude	Increasing amplitude too fast	Increase amplitude Slowly giving time to patient to his comfort.
Unit doesn't switch ON	Battery deeply discharged	Replace the Battery

## **11. WARRANTY**

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This product warranty extends to the original consumer /purchaser of the product.

### **WARRANTY DURATION**

This product is warranted to the original consumer for a period of (1) year from the original purchase date.

### **WARRANTY COVERAGE**

This product is warranted against defective materials or workmanship. This warranty ceases if the product has been damaged by accident, in shipment, unreasonable use, misuse, neglect, improper service, commercial use, repair by unauthorized personnel or cause not arising out of defect in materials or workmanship. This warranty does not extend to any units which are used in violation furnished by manufacturer, or to units which have been altered or modified, or to damage to products or parts thereof which have had the serial number removed, altered or defaced or rendered illegible. The warranty doesn't cover normal wear & tear or replacement of battery, elec. cord, electrode, elastic bands & other accessories.

### **WARRANTY DISCLAIMERS**

This warranty is in lieu of all warranties expressed or implied and no representative or person is authorized to assume for manufacturer/ any other liable in connection with the sale of our products. There shall be no claims for defects or failure of performance or product failure/ any theory of tort, contract or commercial law including, but not limited in negligence, gross negligence, strict liability, breach of warranty and breach of contract. Some states do not allow the exclusion or limitation of implied warranties or consequential damages, so the above limitations may not apply to you.

Manufacturer is not responsible or liable for Indirect special or consequential damages arising out of or in connection with the use performance of the product or other damage with respect to loss of property or loss of revenues or profit.

## **LEGAL REMEDIES**

This warranty gives you specific legal rights, and you may also have other rights that vary from state.

## **WARRANTY PERFORMANCE**

During the above one-year warranty period, a product with a defect will be repaired or replaced with a reconditioned comparable unit at distributor's option when the product is returned to the distributor. The repaired or replacement product will be in warranty for the balance of the one-year warranty period and an additional one-month period. No charge will be made for such repair or replacement.

## **CONSUMER SERVICE.**

For in warranty service for a product covered under the warranty period, no charge is made for service and return postage. Please return the product insured, packed with sufficient protection, postage insurance, prepaid to the address. Customer's duty/brokerage fee, if any, must be paid by the consumer.

## **OUT OF WARRANTY SERVICE**

There will be charges rendered for repairs made to the product after the expiration of the aforesaid one (1) year warranty period, after purchaser is advised appropriately.

This distributor cannot assume responsibility for loss or damage during shipment. For your protection, carefully pack the product for shipment and insure it with the carrier. Ensure that you return the unit and accessories related to your problem and also that you indicate full return address. Also send a copy of sales receipt or other proof of purchase to determine warranty status. C.O.D. shipments cannot be accepted.