

## DUAL CHANNEL NMES UNIT

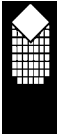


## Operators Manual



Spectramed, Inc.  
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Mount Vernon, Ohio 43050

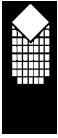
Phone: 1-800-643-1917  
Fax: 1-877-843-1917  
[www.spectramedonline.com](http://www.spectramedonline.com)



## Warnings

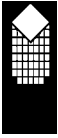
- \* This unit must be used with the guidance of a Physician or Physical Therapist
- \* Type BF equipment
- \* Do not insert lead wires into a mains power supply
- \* Do not immerse unit into water or any other substance
- \* Do not use the guardian NMES unit in the presence of a flammable anaesthetic gas mixture and air or with Oxygen or Nitrous Oxide
- \* If using rechargeable 9 volt PP3 Nickel Metal Hydride or Ni-Cad batteries be sure to use a CE approved battery charger
- \* Never connect the device directly to a battery charger or any other mains powered equipment
- \* Patient Electrodes are for single patient use only
- \* Keep out of reach of children





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## Prescription Information

Please read the following prescription information carefully before using your NMES unit. If you have any questions regarding this information, consult your Physician or Physical Therapist before proceeding.

**CAUTION:** Federal (U.S.A) law restricts this device to sale by, or on the order of a licensed Physician. This device should only be used under medical supervision for adjunctive therapy and for the treatment of medical diseases and conditions.

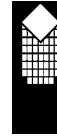
### Indications:

- \* Relaxation of muscle spasms
- \* Prevention of retardation of disuse atrophy
- \* Increasing local blood circulation
- \* Maintaining or increasing range of motion
- \* Muscle re-education
- \* Immediate post-surgical stimulation of calf muscle to prevent venous thrombosis

### Warnings:

- 1) Adequate precautions should be taken when a patient is suspected of having heart problems or diagnosed epilepsy.
- 2) Do not stimulate over the carotid sinus nerves, especially in patients with a known sensitivity to the carotid sinus reflex.
- 3) Electronic muscle stimulation should not be applied transcranially.
- 4) Electronic Muscle Stimulation may be contra-indicated in cases of phlebitis, thrombo phlebitis, varicose veins, and open infected wounds; except as prescribed by a physician.
- 5) Stimulation over antagonist muscles at a fracture site could cause dislocation or bone fragments.
- 6) Caution should be used in the transthoracic application of electronic muscle stimulator devices in that the introduction of electrical current into the heart may cause arrhythmia.
- 7) The safety of electronic muscle stimulation during pregnancy and delivery has not been established, therefore the use of this device upon pregnant women is not recommended.
- 8) Electronic muscle stimulator devices should be kept out of the reach of children.
- 9) Severe spasms of the laryngeal and pharyngeal muscles may occur when the electrodes are positioned over the neck and mouth. The contractions may be strong enough to close the airway or cause difficulty in breathing.
- 10) Do not operate potentially dangerous equipment; e.g., power tools or automobiles during periods of stimulation.

*Long term effects of chronic Electronic Muscle Stimulation are unknown.*



## Warranty

Spectramed, Inc. provides a warranty to the original purchaser that this product will be free from defects in the material, components and workmanship for a period of 3 years from the date of purchase [invoice date]. If Spectramed, Inc. are satisfied that the product/s is defective the purchaser may return this unit/s to Spectramed, Inc. or the appointed distributor for repair or replacement with a new unit. All returns must first be authorized by Spectramed, Inc. in advance. The liability of Spectramed, Inc. under this limited product warranty does not extend to any misuse or abuse such as dropping or immersing the unit in water or other liquid substance or tampering with the unit or normal wear and tear. Any evidence of tampering will nullify this warranty.

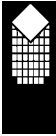
### Customer Service

Any queries should be addressed to Spectramed, Inc. at:  
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Design Registration Numbers: 2095095, 2095096, 2098278



## Specifications

### NMES

1. Dual channel: individually isolated circuits.
2. Amplitude: 0 - 25 mA; indication only; actual mA will tend to be less than indicated due to electrode impedance.
3. Type: Constant Current.
4. Waveform: Asymmetrical, rectangular bi-phasic with zero DC current.
5. Selectable pulse width: 50  $\mu$ S - 450  $\mu$ S [2% accuracy].
6. Pulse Rate selection: in the continuous mode 2 - 100 Hz [2% accuracy].
7. Mode: Work / Rest.
8. Time duration of the treatment selectable: 1 minute to 1 hour 39 minutes.
9. Low Battery Indicator: If the battery goes below 6.9 volts +/- 0.2 volts the battery symbol will flash on/off once every second.
10. If the battery voltage is below 6.6 (+/- 0.2) volts the unit will not turn on.
11. Open Electrode Detect: If an open circuit is detected at the output of channel A or B the output current will be reset at zero.
12. Physical dimensions: 108 x 62 x 23 mm.
13. Weight: 0.07KG without battery, 0.1KG with battery.
14. Environmental conditions for storage & transport:  
-10 to +50 degrees Centigrade  
0-90% Humidity.

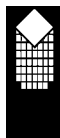


### CONTRA INDICATIONS:

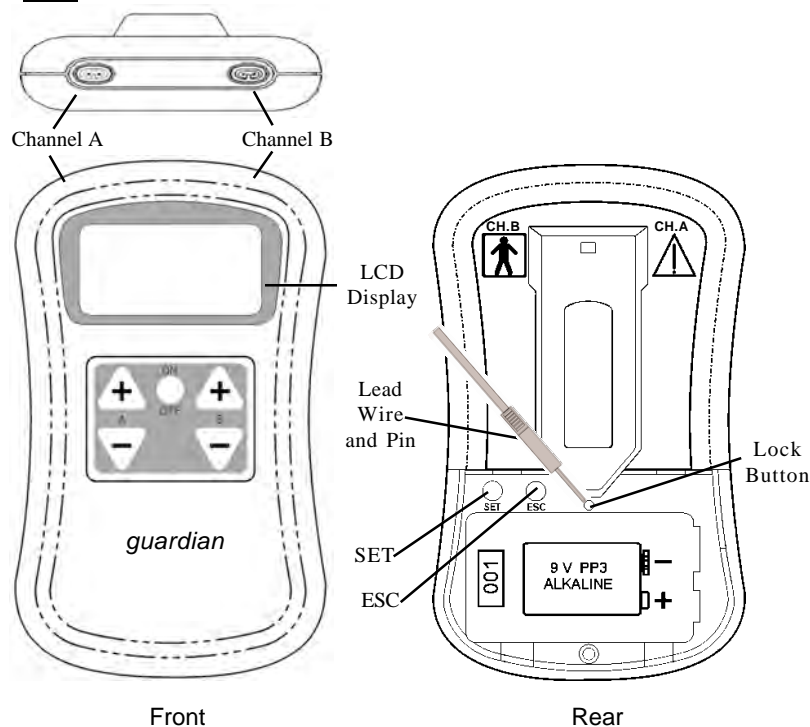
- 1) Electronic muscle stimulation devices are contra-indicated for patients with cardiac demand pacemakers.
- 2) Electronic muscle stimulation should not be used on patients with any form of cancer.

### PRECAUTIONS:

- 1) Precautions should be observed in the presence of the following:
  - a) When there is a tendency to hemorrhage following acute trauma or fracture
  - b) Following recent surgical procedures when muscle contractions may disrupt the healing process.
  - c) Stimulation over the menstruating uterus
  - d) Where sensory nerve damage is present by a loss of normal skin sensation.
- 2) Some patients may experience skin irritation or hypersensitivity due to the electrical stimulation or electrical conductive medium. The irritation can usually be reduced by use of an alternate conductive medium, or alternate electrode placement.
- 3) Operation of the intensity controls should be performed slowly since rapid increase in the power level may have the effect of startling a patient and may cause an unpleasant sensation or a secondary accident.



## Description of Unit & Functions



- \* **SET button** Displays the menu and changes the parameters for Pulse Rate, Pulse Width and Time for custom programs.
- \* **ESC button** Stores customized program and returns to the home position.



## Care & Maintenance

### Control Unit:

- \* Wipe the surface once a week with a damp cloth or antiseptic wipe
- \* Do not use cleaning sprays or alcohol based cleaning solutions

### Battery:

- \* Check periodically for any discharge from the battery
- \* Remove battery completely from unit if not in use for any extended period of time (typically one week)
- \* Low battery indicator of 6.9 volts shown on LCD display, when flashing change battery for a new one
- \* Preferably use a PP3 alkaline battery

### Lead Wires

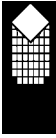
- \* The lead wires should be handled carefully and never stretched, as this can cause the stimulation to function below normal standards or not at all
- \* Examine lead wires before each treatment for loose connections or damage
- \* Avoid stretching and twisting the lead wires
- \* Store the lead wires carefully after each use

### Self-Adhesive Electrodes

- \* Check the short connectors have not become separated from the electrodes
- \* Replace electrodes onto plastic film after use. If they drop onto the floor debris will adhere to conductive gel rendering the electrodes ineffective

**Caution: Static electricity may damage this product**

*Note: Only appointed distributors/importers are approved to undertake servicing.*



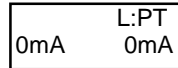
## Lock Mode Function

### Locking the Unit

Remove the battery cover and, using the end of the lead wire, gently press on the concealed lock button as shown in the diagram on page 6 until you hear a double bleep. {L:T} Lock time and Current will appear on the LCD screen. If you want to lock the parameters as well press the +/- button until {L:PT} appears. Press the ESC button to lock parameters in place.



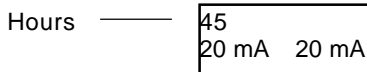
Ch.A Ch.B



Ch.A Ch.B

### To Unlock the Unit

To unlock the unit and display the lock information, remove the battery cover, using the end of the 2mm dia pin press the concealed switch once and you will hear a single bleep, this indicates the unit is now unlocked. The information for time in use and the average m A current used can be read on the front of the LCD display as seen on the diagram below. When you have noted the information press the ESC button to bring the unit back to the Home position.



Ch.A Ch.B



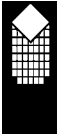
## Quick Start Instructions

1. Insert a 9 volt PP3 Alkaline battery. Alternatively insert a rechargeable Nickel Metal Hydride battery [Which has a much longer life than the Ni-Cad rechargeable batteries] into the battery compartment.
2. Insert lead wire/s into channel A and B if both channels are to be used.
3. Switch on the unit by pressing the ON/OFF key
4. To start press channel A + and B + button if you are using both channels.
5. To stop the program, press the ON/OFF button which will turn the unit off.

### Intensity Lock Out Feature

Once the stimulation current is raised above zero, with no button activity for greater than 10 seconds, the unit will lockout of the increase intensity buttons (A+ and B+).

To unlock channel A or channel B the A- or B- button needs to be pressed.



### Setting up the Custom Program

Remove the battery cover where you will see two buttons SET and ESC, these buttons are used to set up a customised program.

First press the ESC button to return to the home screen

1. Press the SET button and the Hz symbol will flash on/off, then press the + or – button on the front panel to adjust the Pulse Rate from 2 to 100Hz.
2. Press the SET button again and the  $\mu$ S symbol will flash on/off, then press the + or – button to adjust the Pulse Duration from 50 to 450  $\mu$ S
3. Press the SET button again and the Clock [Time] symbol will flash on/off, then press the+ or – button to adjust the time Channel A +/- button to alter the hours and Channel B +/- button to adjust minutes. [Maximum time 1 hour 39 minutes].
4. Press the SET button again and the WRK [Work] symbol will flash on/off, then press the + or – button to adjust the work period from 2 –99 seconds.
5. Press the SET button again and the RST [Rest] symbol will flash on/off, then press the + or – button to adjust the rest period 2 – 99 seconds.
6. Press the SET button again and the R:UP [Ramp up] symbol will flash on/off, then press the + or - button to adjust the ramp up period from 0.3 - 9.9 seconds.
7. Press the SET button again and the R:dN [Ramp down] symbol will flash on/off, then press the + or - button to adjust the ramp up period from 0.3 - 2.0 seconds.
8. Press the SET button again and ALT [Alternating] or SYN [Synchronous] symbol will flash on/off, then press the + or – button to select ALT or SYN.

After setting up the program, press the ESC button to install and store the custom program. Repeat the above procedure to re-program.

**Note:** You must press the ESC button before locking the unit.



## Program

Table 1

PC1	
Waveform	Asymmetrical Rect. Biphasic
Work Time	2-99 secs
Rest Time	2-99 secs
Pulse Duration	50-450 $\mu$ S
Ramp up	0.3-9.9 secs
Ramp down	0.3-2.0 secs
Frequency	2-100Hz
Session Time	1-99min
Output	Synchronous / Alternating 25mA
Stimulation type	Work / Rest