

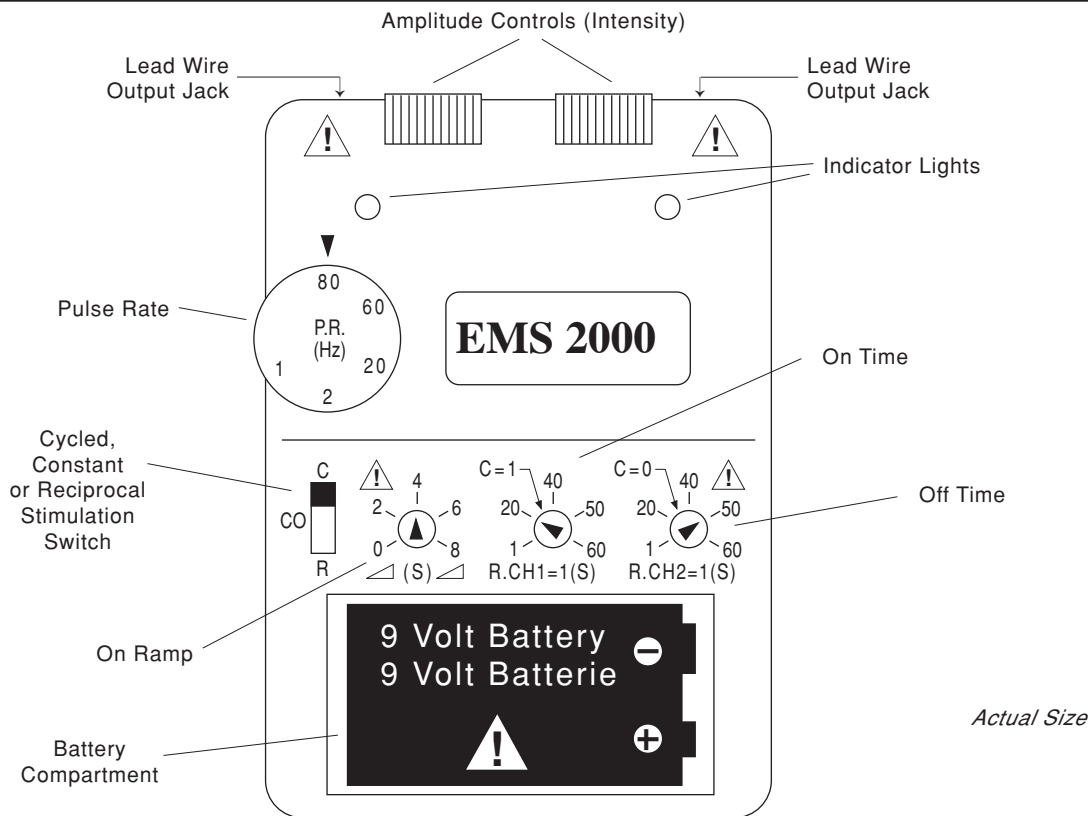
# EMS 2000<sup>TM</sup>



## ELECTRICAL NEUROMUSCULAR STIMULATOR

**BioMEDICAL**<sup>®</sup>  
LIFE • SYSTEMS

# EMS 2000™



## SPECIFICATIONS

|                             |  |
|-----------------------------|--|
| <b>Size</b>                 | 3.9" x 2.75" x 1"<br>(9.90 cm x 6.98 cm x 2.54 cm) |
| <b>Weight</b>               | 4.6 oz (132 grams)                                 |
| <b>Channels</b>             | Dual   |
| <b>Waveform</b>             | Symmetrical biphasic square                        |
| <b>Pulse Rate (adj.)</b>    | 1 to 80 Hz   |
| <b>Pulse Width</b>          | 300 $\mu$ s  |
| <b>Stimulation Modes</b>    | Cycled, constant and reciprocation                 |
| <b>On Ramp</b>              | 0 - 8 seconds                                      |
| <b>Off Ramp</b>             | 2 seconds (preset)                                 |
| <b>On Time</b>              | 1 - 60 seconds                                     |
| <b>Off Time</b>             | 1 - 60 seconds                                     |
| <b>Output Voltage</b>       | 0 - 49V  |
| <b>Output Current</b>       |  |
| <b>Intensity (adj.)</b>     | 0 - 98 mA  |
| <b>Battery</b>              | 9V battery   |
| <b>Number of Electrodes</b> | 2 pair   |
| <b>Number of Lead Wires</b> | 4 lead   |
| <b>Tolerances</b>           | $\pm$ 10%  |

Output parameters are across a 500 ohm resistance.

## SAFETY

### Indications:

External electrical neuromuscular stimulation using bi-phasic output is indicated as therapeutic adjunct for prevention or retardation of muscle spasm; muscle reeducation; maintaining and increasing the range of motion; increasing local blood circulation and as an immediate post-surgical stimulation of calf muscles to prevent venous thrombosis.

### Contraindications:

Use of electrical stimulation may be hazardous for patients with certain demand-type cardiac pacemakers. EMS devices should not be applied to malignant tumors.

### Warnings:

Stimulation should not be applied over the carotid sinus. Severe spasm of the laryngeal and/or pharyngeal muscles may occur when electrodes are placed over the neck or mouth. (These contractions may be strong enough to close the airway or cause difficulty in breathing.) Stimulation should not be applied transcranially. Adequate precaution should be taken with patients with suspected heart problems or epilepsy. Caution should be exercised in the transthoracic application of EMS devices so that the introduction of electrical current into the heart does not cause arrhythmias. The safety of electrical stimulation for use during pregnancy has not been established. The long-term effects of chronic electrical stimulation are unknown. EMS devices should be kept out of the reach of children. Persistent use of stimulation in the presence of skin irritation may be injurious.

Simultaneous connection to RF surgery equipment can cause a burn. Operation near (e.g. 1m) short wave or micro wave therapy equipment can change the output values of the stimulator.

PRECAUTIONS should be exercised when stimulation is used:

- after a recent surgical procedure where muscle contraction may disrupt the healing process;
- after acute trauma or a fracture where there is a tendency to hemorrhage;
- over the menstruating uterus;
- where sensory nerve damage has caused the loss of normal skin sensation.

Some patients may experience skin irritation or hypersensitivity due to electrical stimulation. This irritation can usually be reduced by using an alternate electrode site or alternate conductive medium.

### Adverse Effects:

Improper use of stimulation may result in skin irritation and burns beneath the electrodes.

### Caution:

EMS devices should only be used under medical supervision for adjunctive therapy in the treatment of medical diseases and conditions.

Dependent upon government regulation, this device may or may not require a medical prescription. Federal law (USA) restricts this device to sale by, or on the order of, a physician so licensed by the State. Keep out of reach of children.

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