

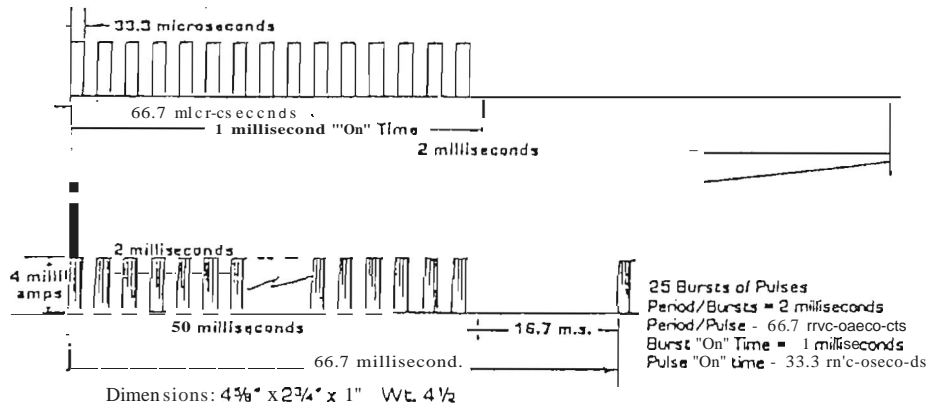
LISS STIMULATORS

APPLICATION NOTES---MONOPOLAR/BIPOLAR

I. Description and Definitions

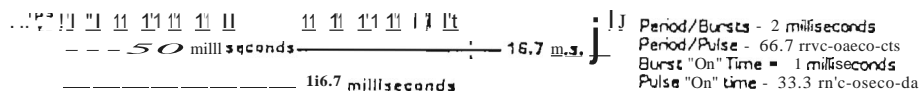
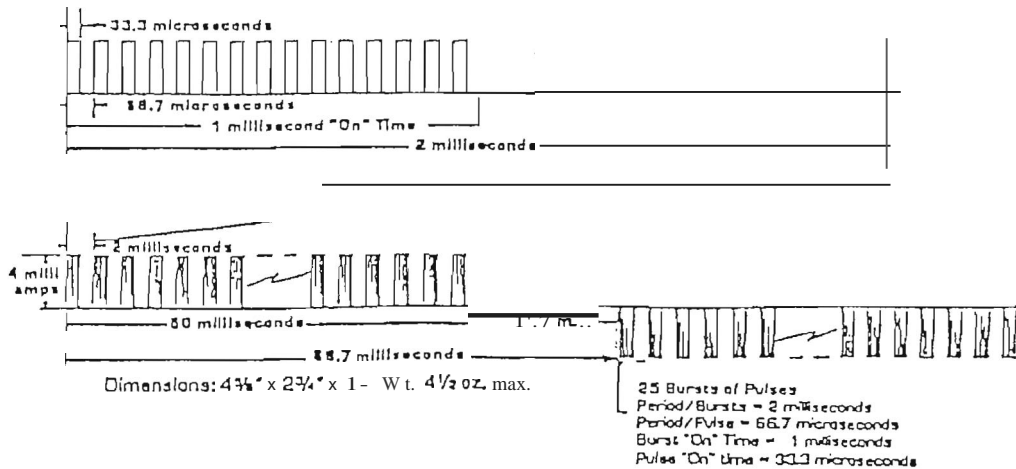
A. The Monopolar waveform of the LISS Cranial Stimulator, the LISS Body stimulator and the LISS Dental Analgesia Device (T-Mode*) contains a 15,000hz square wave carrier which is rectified, and varies (via intensity adjustment) from zero to a maximum of 4 milliamperes. The first modulating signal of 15hz provides an "on" time of 50 milliseconds and an "off" time of 16.7 milliseconds. The second modulating signal of 500hz changes the "on" time series of 15,000hz carrier pulses (750 pulses in 50 milliseconds) into 25 mini bursts of 15 pulses each of the 15,000hz carrier signal (375 pulses in the same 50 milliseconds).

Waveform Analysis



B. The Bipolar waveform is composed of the same frequency specification as noted above. However, each basic 15hz signal is alternated positively and then negatively. In this manner, the first 66.7 millisecond period (50 milliseconds of "on" time and 16.7 milliseconds of "off" time) is noted to be above the zero axis but the succeeding 66.7 millisecond period is below the axis.

Waveform Analysis



II Special Application Procedures and Limitations

A. Monopolar Treatment Techniques

1. DO NOT USE SELF-STICK CONTACTS with the Monopolar device because there is a small amount of Direct current in its output signal. Therefore, it is possible to irritate the skin if self-stick contacts are used due to the potential iontophoresis which can act upon the electrical transmission ions in the self-stick contacts. Hence, use only water based techniques with the monopolar waveform.

2. The Monopolar device seems to reduce pain even in those etiologies where increase in blood flow or lymph flow is important. Therefore, for Diabetic Neuropathy leg dysfunction where pain in the leg is present due to a lack of blood flow, use the red contact above (lumbosacral or popliteal fossa) and the black contact below (plantar surface, medial malleolus, and/or lateral malleolus) for 20 minutes three to five times per day.

Reverse the contacts for reducing pain associated with lymphedema or venous flow deficiency.

3. Use a pan of water or bath tub technique. (Red contact--out of the water at the back of the neck or at the vertex of the head and the black contact in the pan or bath tub of water.) This technique is useful for both monopolar & bipolar.

4. Control the perception threshold at a particular contact, by enlarging the area of contact using 4" x 8" sponges, 1" x 24" sponges, or other means of enlarging the contact area. This technique is useful for both monopolar and Bipolar.

5. For patients who are very sensitive to electrical energy, use the Monopolar device. The body responds to the Monopolar device more pleasantly.

B. Bipolar Treatment Techniques

1. SELF-STICK CONTACTS CAN BE USED successfully with the Bipolar device due to the "Zero d.c." aspects of the waveform.

2. Biochemical studies have shown that normal volunteers treated for twenty minutes with the Bipolar device have had almost twice the level of change in their neuro-biochemical status as compared to the same people having been treated with the Monopolar device. Therefore, when maximum pain control is desired, use the Bipolar device. When it is prudent or necessary to use self-stick contacts, use the Bipolar device.

contact, by enlarging the area of contact (using 4" x 8" sponges, 1" x 24" sponges, or other means of enlarging the contact area.

III. First Choice Selection-Monopolar or Bipolar*

MET Notes No.	Application	Selection	
		Monopolar	Bipolar
1-1-1	Migraine Headache Treatment	X	
1-1-2	Migraine Headache Prophylaxis		X
1-2-1	Tension Headache		X
1-3-1	Sinus Headache		X
1-4-1	Tic Doloreux	X	
1-5-1	T M J - Alternate 1	X	
	T M J - Alternate 2		X
1-6-1	Post Herpetic Facial Neuralgia	X	
1-7-1	Relaxation (Stress Reduction)	X	
1-8-1	Reflex Sympathetic Dystrophy	X	
1-9-1	Spasticity Reduction (C.P.et al)	X	
1-10-1	Depression Symptom Reduction		X
1-11-1	Drug Detoxification		X
1-12-1	Anxiety Symptom Reduction		X
1-13-1	Insomnia Symptom Reduction		X
2-1-1	Neck Pain		X
2-2-1	Shoulder Pain		X
2-3-1	Elbow Pain		X
2-4-1	Back Pain		X
2-5-1	Leg Pain (Diabetic Neuropathy)	X	
2-6-1	Pain Associated w/M.S.	X	
2-7-1	Carpal Tunnel Syndrome pain	X	
2-8-1	Post Operative Pain	X	
2-9-1	Arthritic Pain		X
2-10-1	Phantom Limb Pain	X	
2-11-1	Finger Pain		X
2-12-1	Shingles Pain (Inter Costal)	X	
2-13-1	Decubitis Ulcer	X	
2-14-1	Gastroenterological Pain		X

* The recommendations defined above identify which device to use first. If patient requires more benefit than was initially received, use the alternate device.

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2-8-1	Post Operative Pain	X	
2-9-1	Arthritic Pain		X