



### Interferential Therapy

Acticare IC provides two channels of pre-modulated (two-pole) Interferential Current. The electronic pre-modulation ensures 100% modulation across the treatment zone.

Available modes include eight preset programs plus one fully user programmable mode (summarised in the table below). Maximum output is 100mA peak current shared between the two channels. There is no quadripolar (four-pole) mode, although four electrodes can be employed to cover a large area with the pre-modulated waveform.

### Clinical Applications

The four main clinical applications for which interferential therapy is commonly used are: pain relief, muscle stimulation, increase of blood flow and reduction of oedema.

#### Pain Relief

An Amplitude Modulation Frequency (AMF) in the range of 100-200Hz is generally accepted to stimulate the pain gate mechanisms, thereby masking pain symptoms. Stimulation with lower AMF (1-10Hz) is used to activate opoid mechanisms. Relief of pain may also be achieved by blocking C fibre transmission at AMF higher than 50Hz.

#### Muscle Stimulation

Stimulation of the motor nerves is possible with a range of AMF. Stimulation at low frequency (e.g. 1Hz) results in repeated short contractions, while stimulation at 50Hz will result in a sustained tetanic contraction. Mild stimulation below that of sustained tetanic contraction, with a sweep of 0-25Hz, has been observed to provide a combination of muscle stimulation, increase in blood flow and reduction in oedema.

(source: <http://www.electrotherapy.org>)

### Key Features

- ▶ Portable Interferential Stimulator
- ▶ Suitable for physiotherapists working in clinics and in the community; bed-side use on the ward; sports therapists; home use to accelerate recovery from injury and pain management
- ▶ High-efficiency digital waveform synthesis provides equivalent output power to a desktop unit in a portable device
- ▶ Multiple output modes including true sine-wave interferential and square wave (TENS etc.) from 1 to 500,000 pulses per second
- ▶ Two coupled outputs
- ▶ Desktop cradle for fast charging and mains operation
- ▶ Comprehensive range of accessories available

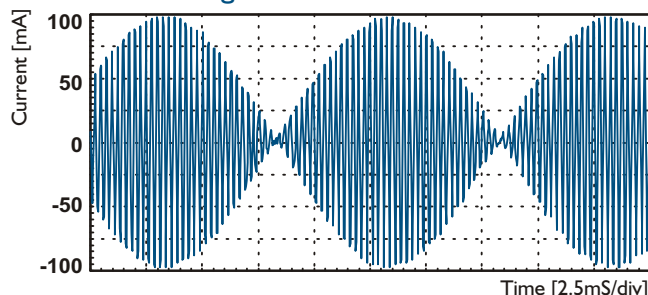
#### Many uses for rehabilitation and pain management:

- ▶ Treatment of acute injuries
- ▶ Accelerated rehabilitation
- ▶ Pain relief
- ▶ Muscle stimulation
- ▶ Increase of blood flow
- ▶ Reduction of oedema

#### Supports the following electrotherapy modalities:

- ▶ Interferential Current (pre-modulated output)
- ▶ Transcutaneous Spinal Electroanalgesia (TSE)
- ▶ Transcutaneous Electrical Nerve Stimulation (TENS) Constant, Burst, and Modulated modes
- ▶ High Frequency TENS
- ▶ Acupuncture-like TENS (AL-TENS) down to 1Hz
- ▶ Neuromuscular stimulation (NMES)
- ▶ Transcutaneous pulsed radio-frequency to 500kHz

#### Pre-modulated interferential waveform for 100% modulation throughout the treatment area



#### Eight preset plus one user variable interferential treatment program (AMF= Amplitude Modulation Frequency)

Name	Carrier	Base AMF	Peak AMF	Typical Application
PROG1	4kHz	0	10	Chronic Pain
PROG2	4kHz	0	25	Muscle Stimulation
PROG3	4kHz	0	100	Increased Circulation
PROG4	4kHz	10	150	Acute & Chronic Pain
PROG5	4kHz	50	200	Acute Pain
PROG6	4kHz	100	150	Acute Pain
PROG7	2kHz	0	10	Muscle Stimulation
PROG8	2kHz	0	25	Muscle Stimulation
VAR	2kHz or 4kHz	0Hz to 250Hz	0Hz to 250Hz	Any

## Square Wave Modes

In addition to sine-wave interferential, Acticare IC also supports a range of square wave output modes from 1 to 500,000 cycles per second.

These modes are fully programmable and allow an almost unlimited range of therapy options to be synthesized. They include TENS modes, Acupuncture-like TENS (AL-TENS) down to 1Hz, Neuromuscular stimulation (NMES), Burst and modulated modes, Transcutaneous Pulsed Radio-frequency (PRF) therapy up to 0.5MHz and Transcutaneous Spinal Electroanalgesia (TSE).

TSE is a high power form of TENS that uses very short high voltage pulses. Because of their high voltage and frequency, TSE pulses penetrate deep tissues and may be applied either peripherally, or directly over the spine, treating the CNS. More information is available in the document "Notes for Practitioners Using TSE".

There are three basic forms of square wave mode generated by Acticare IC:



**Biphasic** a square waveform with equal positive and negative pulses



**Monophasic** a square waveform with single positive pulses



**Twin peak** a square waveform with two repeated positive peaks



Acticare IC is supplied with a cradle for either mains operation or fast charging of the internal batteries and includes two leadwires and two sets of adhesive electrodes. A comprehensive suite of accessories is available including reusable rubber electrodes.



## Technical Specifications

### Interferential modes

Peak current	100mA into 500ohm load at 65V
Waveform type	Pre-modulated sine-wave
Carrier frequency	2,000 or 4,000 cycles per second
Preset modes	8 plus one user programmable
Amplitude modulated frequency	0 to 250 cycles per second
Sweep patterns	6 ^ 6, 6/6 and 1/1

### Square Wave Modes

TSE Modes	3 presets (500, 2500 & 10,000 pulses per second)
TENS Modes	6 presets including continuous, burst and modulated modes
High Frequency TENS	2 (500 pulses per second)
Advanced user programmable modes	Frequency: 1 to 500,000 pulses per second Pulse widths: 0.5 to 200 microseconds Output Voltage: 0 - 250 Volts Burst output repeating at: 1/4 to 2,000 Hertz Biphasic, Monophasic and Twin Peak Waveforms
Acupuncture-like TENS (AL-TENS)	User programmable waveform down to 1 pulse per second
Neuromuscular stimulation (NMES)	User programmable waveform
Treatment timer	10 to 180 minutes

### General Features

Output channels	Two coupled outputs
Treatment timer	1 to 30 mins (Interferential) 10 to 180 minutes (Sq wave modes)
Display	Liquid Crystal Display (LCD)
Real time clock	Time and date display
Pain Diary	Records pain scores and treatment date and time for 250 sessions
Size	100mm high, 72mm deep, 38mm wide
Power source	240V via supplied cradle or internal rechargeable batteries
Weight	235 grams
Approvals	CE marked in accordance with Medical Devices Directive (93/42/EEC) under supervision of Notified Body SGS UK Ltd



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