OMNISTIM® FX² PRO
Multi-Modality Electrical Stimulation System with EMG Patterned Electrical Neuromuscular Stimulation

PRODUCT HIGHLIGHTS
The Pro is the latest generation in ACP’s widely recognized Omnistim® FX² line of electrical stimulation systems. With multi-modality capabilities, including the revolutionary Patterned Electrical Neuromuscular Stimulation (PENS) Waveform, this patented workstation offers unmatched capabilities serving a broad range of patient conditions. With new condition-specific protocols, the FX² is easier to use than ever, offering faster therapist set-up and greater treatment flexibility.

- Easy-to-use clinical protocol driven treatment menu for increased therapist comfort and efficiency
- Updated exterior design with integrated carrying handle for improved portability
- Lead wire tester for easy evaluation of lead wire integrity to avoid device returns
- Color coded output controls, lead wire connectors and lead wires eliminate confusion when setting up electrode placements and adjusting intensity
- Multi-modality system offers unparalleled treatment flexibility serving a variety of clinical applications:
  - Patterned Electrical Neuromuscular Stimulation (PENS) for neuromuscular re-education
  - Interferential Current (IFC) stimulation with full-field and varied frequency protocols for nerve block and pain management applications
  - Medium Frequency Alternating Current (MFAC or Russian Stimulation) for treatment of disuse atrophy, spasm reduction and muscle strengthening
  - Low Voltage Pulsed Current (LVPC or asymmetric biphasic) electrical stimulation for muscle re-education associated with innervated muscle
- Patented “PENS” technology (Patterned Electrical Neuromuscular Stimulation) extends traditional electrical stimulation capabilities by simulating normal muscle firing patterns for neuromuscular re-education:
  - Triphasic PENS protocols support early restoration of agonist / antagonist muscular timing patterns to enhance recovery of function following trauma or injury (neuromuscular re-education)
  - Biphasic PENS protocols enhance recovery of normal ballistic movement patterns at normal speeds and help eliminate abnormal gait patterns and upper extremity spasticity during the recovery process (muscle re-education)
  - Functional rehabilitation protocols for cycling, walking, and ADLs
  - Hand control feature for therapist and patient assisted ADLs
CONTROLS AND FUNCTIONS

PAIN CONTROL
- IFC SENSORY
- TENS - LVPC SENSORY
- IFC MOTOR
- TENS - LVPC MOTOR
- SENSORY NERVE BLOCK

NEUROMUSCULAR RE-EDUCATION
- U.E. TRIPhasic PENS
- U.E. BIPhasic PENS
- I.E. TRIPhasic PENS
- I.E. BIPhasic PENS
- TENS - LVPC MOTOR
- MFAC RECIPROCAL INHIBITION

MUSCLE RE-EDUCATION
- MFAC SURFACE DEEP MUSCLE
- LVPC SURFACE MUSCLE

FUNCTIONAL RE-EDUCATION
- SLOW CYCLE
- FAST CYCLE
- SLOW WALK
- MEDIUM WALK
- FAST WALK

FUNCTIONAL RE-ED ASSISTED
- MFAC HAND CONTROL
- LVPC HAND CONTROL

CLINICAL APPLICATIONS

Clinical Indications:
- Muscle Re-education
- Reduction of Disuse Atrophy
- Improve ROM
- Increase Local Blood Flow
- Reduce Spasm / Spasticity

Patient Conditions:
- Incontinence
- Muscle Disuse Atrophy
- Spasticity
- Post-Surgical Joint Rehabilitation
- Torticollis
- Neuromuscular Diseases
- Spinal Cord Injury
- Frozen Shoulder Syndrome / Adhesive Capsulitis
- Lower Back Spasm
- Patello-Femoral Dysfunction
- RSD / CRPS
- Post-Stroke Rehabilitation

OMNISTIM® FX² Pro . . . Revolutionizing Rehabilitation
The Omnistim® FX² Pro’s patented “Patterned Electrical Neuromuscular Stimulation” or “PENS” closely replicates the live-firing pattern of muscles as identified in EMG studies. This form of stimulation is applicable for nerve and muscle re-education following injury, surgery or muscle disuse atrophy. The system uses bi-phasic asymmetrical pulsed currents to induce contractions in the agonist and antagonist muscles. By providing high intensity, precisely timed sensory input to these targeted muscles, the system is able to closely replicate the normal firing activity of sensory neurons and muscle stretch receptors during voluntary activity.

Traditional Electrical Stimulation Currents

The Omnistim® FX² Pro’s broad capabilities include Medium Frequency Alternating Currents (MFAC) and Low Voltage Pulsed Current (LVPC). Two separate generators produce medium frequency (2,000, 2,500, 4,000, 5,000 or 10,000 Hz) alternating current in continuous, modulated modes or asymmetric biphasic pulsed currents. In addition, two isolated output circuits with independent intensity controls are provided. The output of each circuit is easily determined in milliamps through the display screen. The digital timer allows the operator to select treatment times and monitor remaining treatment minutes.

- MFAC and LVPC modes offer fully adjustable ON/OFF times, as well as Ramps to support a wide variety of applications for muscle re-education and the reduction of muscle spasms associated with innervated muscle.
- Hand control feature for therapist and patient assisted ADLs

Additional Technology and Features

- 20 pre-programmed upper and lower extremity treatment protocols provide easy-to-use muscle re-education applications for all patient types
- Evidence-based protocols are well researched and parameters are supported in refereed literature
- Easy to adjust parameters accommodate varied patient responses and individualized treatment needs
- Independent output controls with “Start,” and “Stop” buttons provide easy adjustment of stimulation output
- Integrated numbering guide for quick set-up, simplicity-of-use and therapist efficiency
- Hand remote for expanded applications and greater therapist control over functional stimulation program
- Manufactured to meet or exceed CE, AAMI TES and FDA standards for maximum clinical efficacy and patient and operator safety
- Portable lightweight battery or AC line powered
- The Omnistim® FX² Pro’s “Cycling” Protocol is easily integrated with ACP’s Omnicycle™ Rehabilitation System for advanced neuromuscular re-education applications
**PRODUCT SPECIFICATIONS**

- **CONVENIENT CARRY HANDLE**
- **LINE POWER INDICATOR LIGHT**
- **SMART CHARGE BATTERY RECHARGING SYSTEM**
- **OUTPUT CONTROL LED ILLUMINATES WHEN STIMULATION IS ACTIVE ON THAT CHANNEL**
- **BLUE/GREEN COLOR CODED LEAD WIRE OUTPUTS MATCH BLUE/GREEN LEAD WIRES & BLUE/GREEN OUTPUT CONTROLS**
- **FULL SAFETY SYSTEMS WITH PATIENT SAFETY HAND CONTROL**
- **AUX INPUT FOR REMOTE HAND CONTROL OPERATION**

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### OMNISTIM® FX² PRO TECHNICAL SPECIFICATIONS

**Stimulation System:**
- **Output:** Constant voltage up to preset current; the system then operates in constant current mode.
- **Output Amplitude:**
  - **IFC Mode:** FD 0-70 mA peak, FF 0-99 mA peak, 500 ohm load.
  - **MFAC Mode:** 0-99 mA peak to peak, 500 ohm load.
  - **LVPC Mode:** 0-99 mA peak into 500 ohm load.
  - **HVPC Mode:** 0-225 volts peak into 500 ohm load.
- **Channel Isolation:** Independent channels transformer isolated.
- **Line Leakage:** Less than 50 microamps.

**IFC (Interferential Therapy) Mode:**
- **Type:** Frequency Difference or Full Field IFC.
- **Waveform:** Bipolar Square Wave at a 2,000, 2,500, 4,000, 5,000 and 10,000 Hz carrier frequency.
- **Frequency Difference Modulation Rate:** 0 to 250 Hz.
- **Beat - Sweep:** Presettable from lowest to highest frequency modulator rate.
- **Full Field Burst Rate:** 0 - 250 Hz.
- **Rate Scan Time:** Adjustable 0-20 seconds.
- **Vector:** 45° or 90° fast or slow scan (7 or 74 sec).

**MFAC (Medium Frequency Alternating Current) Mode:**
- **Waveform:** Bipolar Square Wave at a 2,000, 2,500, 4,000, 5,000 and 10,000 Hz carrier frequency.
- **Burst Frequency:** Adjustable from 0 to 250 Hz.
- **Burst Rate Scan:** Sweeps from 0 to ± 50% of preset pulse rate.
- **Rate Scan Time:** Adjustable 0-20 seconds.

**LVPC (Low Voltage Pulsed Current) Mode:**
- **Waveform:** Asymmetric Biphasic Square Wave.
- **Pulse Rate:** 0 to 250 Hz.
- **Phase Duration:** 40 to 300 µsec.
- **Modulation:** Phase ± 20% in 8 seconds.

**PENS (Patterned Electrical Neuromuscular Stimulation) Modes:**
- **Waveform:** Asymmetric Biphasic Square Wave.
- **Pulse Rate:** 50 or 100 Hz.

**MODEL NUMBER:** 100FX2C

- **Phase Duration:** 40 to 100 µsec.
- **PENS Patterns:** Biphasic and Triphasic Upper Extremity, Triphasic Lower Extremity, Cycle and hand controlled Walk EMG patterns.

**Hand Control Activation:**
- **On/Time:** Adjustable from 0-30 seconds.
- **Off/Time:** Adjustable from 0-199 seconds.
- **On/Off Ramps:** Adjustable from 0-9.9 seconds independently.
- **Channel Timing:** Alternate, Simultaneous or Channel B delayed 0-9.9 seconds.
- **Treatment Timer:** Adjust for 1-99 minutes in one minute increments.

**Patient Safety Systems:**
- **Activation:** Output levels are reset to zero at the start and completion of treatment. A patient safety hand control turns off the stimulation and sounds the buzzer if pushed.

**General:**
- **Dimensions:** 6.5” (16.5cm) W x 12” (30cm) D x 3.5” (9cm) H.
- **Weight:** (Includes batteries) 4.5 lbs (2.03 kgs).
- **Operating Power:** 100-240 volts AC 47-63 Hz 50 watts or 4 x 1.5 volt “D” cell alkaline or NiCd rechargeable batteries. Charge LED indicator lights when the unit is running on line power or charging. The indicator light flashes on charge completion. Rechargeable batteries run the system for 5-10 hours dependent on protocol used with full charge.
- **Push Buttons:** Membrane switch label. Output controls feature LEDs above switches which light when stimulation is active on that channel.
- **Lead Wire Tester:** Indicates a make or break in the lead wire by Green or Red LED, respectively.
- **Lead Wire Color Coding:** Green and Blue coding for lead wires, output controls and channel identification.
- **Audio Indicator:** Buzzes to signal treatment completion and start of On/Off timing cycles. May be turned on or off for timing cycle alert.

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Patented in U.S.A.: No. 5,562,718

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