

FISIOSONIC<sup>®</sup>  
plus

INNOVATIVE TECHNOLOGY  
IN ULTRASOUND THERAPY



APPLICATOR AT HIGH POWER



APPLICATOR FOR MANUAL TREATMENTS



OPTIONAL MULTIDISC APPLICATORS



BACKLIT LCD DISPLAY



ERGONOMIC KNOB



ERGONOMIC TROLLEY

fisio**line**  
biomedical instrumentation



**Fisio**line**<sup>®</sup> srl**

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ED.05/10 - Progetto Grafico: Ego, identità ed immagine Dogliani

The technical features and sizes of the appliances described herein are subject to modification, based on technological evolution and on the constant improvement of our production.

ultrasound

FISIOSONIC<sup>®</sup> PLUS

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**Fisiosonic® Plus is a new appliance for ultrasound therapy, using an innovative output stage called Class E.**

The mechanical efficiency obtained through the output stage in **Class E** is decidedly higher than the one that can be obtained by means of traditional output stages and allows the operator to issue high powers on the patient constantly and with a limited thermal effect.

In addition to their mechanical action, **Fisiosonic® Plus Class E** ultrasound waves at a frequency of 1MHz induce the phenomenon of **CAVITATION**. Said phenomenon consists in the production of microbubbles of vapour which implode, generating shock waves able to damage calcifications, reducing their mineral density. These latter are therefore disintegrated in minimum sized particles which are then absorbed physiologically.

Besides traditional methods, **Fisiosonic® Plus** has introduced two innovative functions: **sequential treatment and automatic frequency switching**. The sequential treatment offers the operator the opportunity of using multidisc scanning applicators with a wide contact surface to be applied by common elastic straps. The ultrasound emission is sequential and allows the operator to carry out a treatment with an automatic massage on a wide surface with no need for a manual dedicated intervention.

The automatic frequency switching is obtained by the new exclusive A.F.S. (AUTOMATIC FREQUENCY SWITCHING) device. This device makes it possible to exploit the various focalizations of 1 and 3MHz frequencies at the same time. For example the operator can set the output time at a frequency of 1MHz and at a frequency of 3MHz, thus varying the focalization and the depth of the ultrasound beam and **obtaining an actual specific massage under the skin**.

**Fisiosonic® Plus** comes with two different standard applicators: one applicator at high power, attached to the mechanical arm, in a 55mm diameter with multifrequency ceramic piezoelectric disc for automatic treatments and one applicator in a 35mm diameter with multifrequency ceramic piezoelectric disc for manual treatment.

The patient and the operator security are guaranteed by the appliance full respect of the requirements specified in the Directive 93/42/EEC, modified by the Directive 2007/47/EC, and in the Directive 2004/108/EC.

FISIOSONIC® plus



**VERSATILE MECHANICAL ARM FOR AUTOMATIC TREATMENTS**



**The appliance can be supplied with the following optional applicators:**

- applicator in a 21 mm diameter with multifrequency ceramic piezoelectric disc
- rotary multidisc scanning applicator
- multidisc scanning applicator with three multifrequency ceramic piezoelectric discs for automatic sequential treatments with variable scanning times
- double multidisc scanning applicator with six multifrequency ceramic piezo-electric discs for automatic sequential treatments with variable scanning times.

The applicators are waterproof for underwater treatments.

The instrument can be operated in two modes: continuous and pulsed. In the continuous operating mode the ultrasound energy causes a noticeable heating of the tissues being treated and submits them to a mechanical high frequency massage. The pulsed operating mode permits to modulate the radiofrequency energy through a square period wave of 10ms and duty-cycle 10% to 90%, in order to reduce the thermal effect and keep the peak pressure applied by the acoustic wave on the tissues steady.

The output power density can be adjusted in continuous from 0,1W/cm<sup>2</sup> to 3W/cm<sup>2</sup>.

**Fisiosonic® Plus** is equipped with self calibration systems and visual and sound contact control systems.

The appliance is equipped with an inlet for electrotherapy appliance connection (Modulo series). The operator can then carry out a combined therapy with any applicator. This method is very useful for instance to exploit a combination of mechanical effect, deep diathermy, antalgic currents and transdermal administration of medicine (ionophoresis and iontophoresis), with a sharp reduction of the treatment times and an improvement in terms of therapy results. Completely managed by a microprocessor of the last generation, **Fisiosonic® Plus** combines the handy application of 40 preset therapeutic protocols with the option of creating and storing new ones in its 10 free memories. The user's interface equipped with a membrane keyboard and a wide backlit LCD display, have a decidedly modern and professional look.

The results obtained by the experiments carried out at University have proven that besides the effectiveness in reducing the mineral density in fibro-calcific lesions and in the metaplasias of the soft tissues, **Fisiosonic® Plus** is essential in improving extensibility and tissue mobility, which is reduced in chronic degenerative processes.

**COMBINED THERAPY: ULTRASOUND THERAPY AND ELECTROTHERAPY**



FISIOSONIC® plus



**WATERPROOF APPLICATORS FOR UNDERWATER TREATMENTS**



**Optional accessories:**

- A** - Multifrequency applicator Ø 21 mm.
- B** - Rotary multidisc scanning multifrequency applicator (3 discs Ø 10 mm.).
- C** - Multidisc scanning multifrequency applicator. (3 discs Ø 30 mm.).
- D** - Double multidisc scanning multifrequency applicator (6 discs Ø 30 mm.).
- E** - Elastic band.

**technical features:**

- MODEL: FISIOSONIC® PLUS
- COMMERCIAL CLASSIFICATION: instrument for ultrasound therapy in Class E.
- TECHNICAL CLASSIFICATION: medical device, Class 1 type BF.
- MEDICAL DEVICE CLASS: IIa (93/42/EEC directive).
- SIZE: 320x430x980 mm.
- WEIGHT: 25 Kg.
- POWER: ~230V single phase (~115V available upon request).
- LINE FREQUENCY: 50-60 Hz.
- POWER CONSUMPTION: 80VA.
- LINE FUSES: 1,6A slow (2 fuses).
- LINE TRANSFORMER: isolation between main and secondary windings 4000V.
- ULTRASOUND FREQUENCY: 1MHz ±5%; 3MHz ±5%; 1MHz and 3MHz ± 5% switched through A.F.S. (AUTOMATIC FREQUENCY SWITCHING).
- POWER DENSITY ON THE TRANSDUCERS: it may be regulated continuously from 0,1 up to 3W/cm<sup>2</sup>.
- OPERATING MODE: continuous (CW) or pulsed.
  - a) Continuous mode: ultrasound energy is generated continuously and the output power density is selected by the user within the above mentioned interval.
  - b) Pulsed mode: the carrier is modulated by a square wave with a frequency of 100Hz and duty cycle ranging from 10% up to 90%.
- contact CONTROL DEVICE visual and acoustic, and self-calibration.
- ENTRANCE for the connection to the electrotherapy appliances (Modulo series).
- DISPLAY: wide, backlit LCD.
- TIMER: treatment time, ranging from 1 min. up to 30 min. with resolution 1 min.
- ACOUSTIC SIGNAL at end of treatment.
- PRESET PROGRAMS: 40 for the main pathologies.
- FREE PROGRAMS: 10 user's programs.

**standard accessories:**

- Multifrequency applicator Ø 55mm 1/3 MHz – 24cm<sup>2</sup> contact surface - attached to the mechanical arm
- Multifrequency applicator Ø 35mm 1/3 MHz – 10cm<sup>2</sup> contact surface.
- Ultrasound gel. - Power supply cable. - User Manual.

**optional accessories:**

- Multifrequency applicator Ø 21 mm 1/3 MHz 3,5cm<sup>2</sup> contact surface
- Rotary multidisc scanning multifrequency applicator (3 discs) 1/3 MHz 32cm<sup>2</sup> contact surface.
- Multidisc scanning multifrequency applicator (3 discs) 1/3 MHz 52cm<sup>2</sup> contact surface.
- Double multidisc scanning multifrequency applicator (6 discs) 1/3 MHz 52cm<sup>2</sup> contact surface each applicator.

**reference standards**

- EN 60601-1 (IEC 60601-1), CEI 62-5, IEC 60601-2-5, EN 60601-1-2 (IEC 60601-1-2), EN 60601-1-4 (IEC 60601-1-4), EN 61689 (IEC 1689).
- CE MARKING: the appliance complies with the requirements specified in the Directive 93/42/EEC, modified by the Directive 2007/47/EC, and in the Directive 2004/108/EC.

FISIOSONIC® plus

**SPECIFIC FOR:**



CALCIFICATIONS



EPICONDYLITIS



MUSCULAR LESIONS



IMPINGEMENT SYNDROME



TENDONITIS