

Gain
from our
CONFIDENCE
EXPERIENCE

SILVERSTEIN™

Facial Nerve Monitor/Stimulator, Model S8

- The Only Choice for Non-Invasive Facial Nerve Monitoring
- Highly Sensitive, Cost Effective, and Easy to Use

The Silverstein™ Facial Nerve Monitor/Stimulator Model S8 uses adjustable, precisely controlled, low-energy pulses to stimulate the facial nerve. A highly sensitive muscle sensor detects the resulting muscle movement in the cheek and generates an audible or visual signal. The muscle sensor is a clothespin-shaped device (with an embedded strain gauge) that slides easily onto the patient's cheek. This allows detection of very fine contractions (finer than can be felt with the hand) and allows drapes to remain over the face undisturbed.

Pulses are delivered to the tissues using a pencil-shaped probe. The current intensity can be accurately adjusted using push-buttons on the probe. At very low settings, the nerve will respond only when direct contact with the nerve is made. Using higher settings, the surgeon can locate a facial nerve that may be obscured by bone and tissue. By probing the surgical site, and finding the lowest current that will elicit the least contraction, the surgeon can accurately locate the facial nerve.

FEATURES

- **Safe, Low Energy, and Precise Current Control:** Constant current, pulsed stimulation eliminates the hazards of non-pulsed or constant voltage stimulation methods
- **Special Tissue Resistance Compensating Circuitry:** Automatically adjusts for varying tissue resistance to provide accurate stimulation levels. Monitors the integrity of all cable connections and verifies that proper current is being delivered



- **Multiple Alarm Signals:** For noisy operating rooms, a high output audible alarm is provided, along with an alternate light signal. A foot switch that disables the alarm is provided
- **Non-invasive Cheek Muscle Sensor:** Slides onto patient's cheek
- **Battery Powered, Lightweight, and Portable:** Easily transported between operating rooms. Battery power eliminates shock hazard
- **May be Used with Silverstein Adaptor for Continuous Stimulation (SACS)™:** The SACS kit consists of a special coiled cable and modular clips that allow any microsurgical tool or air drill to be electrified with stimulating current and be used as a stimulating probe. This allows the surgical procedure to progress more quickly and provides the surgeon with a greater margin of safety
- **Shatterproof Case:** High impact ABS withstands accidental abuse

BENEFITS

- Easy-to-use, simple controls
- Non-invasive
- Clear and easy-to-read displays
- Quick stimulation level adjustment
- Fine muscle movement detection
- Does not pick up electrical artifact

CURRENT CHARACTERISTICS

The Silverstein™ S8 uses pulsed, constant current stimulation, which is safer than constant-voltage or non-pulsed DC stimulators. It allows direct stimulation of nerve tissue without risk of injury. Special circuitry limits current to the preset level.

TRAINING AND TECHNICAL SERVICE

To keep our prices low, on-site inservices are limited. Use our toll-free hotline and the device video for a pre-surgery review.

WR-MEDICAL ELECTRONICS CO. Focusing on the Nervous System Since 1962

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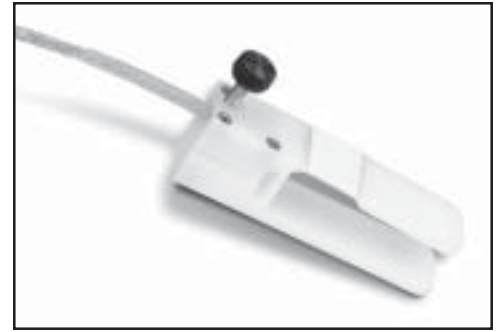
Accessories, Uses, Specifications, Warnings, and Service



Lighted LCD Display



Remote Control Stimulator Probe



Ultrasensitive Cheek Muscle Sensor

FURNISHED ACCESSORIES

- Base Unit
- Remote Control Probe with .55 Flexitip
- Monopolar Disposable Probes
- Pad Cable
- Cheek Muscle Movement Sensor
- Foot Switch
- Theratrod III Disposable Electrode Pads (pkg. of 30)
- Universal Battery Charger and Power Cord
- Carrying Case
- Instructions for Use
- SACS Kit, Complete
- In-service Video Tape

USES

The Silverstein™ has been used successfully to help locate and identify the nerves in these surgical procedures:

Facial Nerve

- **Ear surgery** (stapedectomy, tympanoplasty, mastoid tympanoplasty, revision mastoid tympanoplasty, singular neurectomy, transcoclear eighth nerve section)
- **Neuro-otologic Procedures** (acoustic neuroma, vestibular neurectomy, glomus jugulari tumors, neuromas of the ninth cranial nerve, skull base procedures, parotid gland surgery)

Trigeminal nerve (motor)

Intracranial procedures

Spinal accessory

Skull base—jugular foramen
Neck surgery

Hypoglossal

Skull base—jugular foramen
Neck surgery

TECHNICAL SPECIFICATIONS

- **Current output:** 0.0 to 10.0 milliamperes (mA) measured across a $1K \pm 1\%$ resistive load. Tolerance at 0.0 indicated, with a residual current of 0.05 mA, is ± 0.005 mA. Tolerance at 10.0 mA is ± 0.4 mA.
- **Pulse width:** 0.0002 seconds ± 20 microseconds
- **Pulse off time:** 0.1998 seconds
- **Pulse frequency:** 0.200 seconds (5 Hertz) ± 5 milliseconds
- **Dial accuracy:** Linear down to 0.15 mA, residual current of 0.05 mA at 0.0 indicated
- **Battery life:** Approximately 15 hours between charges
- **Size:** 10 x 10.25 x 5.5 inches (25.4 x 26.04 x 13.97 cm)
- **Weight:** 6.1 pounds (2.76 kg)

WARRANTY AND SERVICE

The Model S8 is warranted to be free of defects in material and workmanship for a period of two years from purchase, except for batteries, probes and cables, which are warranted for 90 days. Warranty is void if unit has been damaged by electrocautery or incorrect sterilization. Because of the specialized circuitry and repair techniques, we recommend you return it to us for any repairs. Loaner instruments are available at a nominal charge plus shipping, insurance, and supplies used. Pack the instrument carefully and insure the shipment.

QUALITY AND SAFETY

ISO 9001:2000 • ISO 13485:1996



WARNINGS AND CAUTIONS

Electrocautery

To avoid patient burns and damage to the unit, observe the electrocautery precautions in the operator's manual. Never allow the electrocautery and stimulator probes to contact each other or simultaneously touch tissues or fluids in the surgical field.

Other warnings and cautions

- Do not use this unit in the presence of explosive gases. This unit is not explosion proof.
- Do not steam sterilize sensor or remote probe. Do not immerse these items in fluids.
- Do not attempt to repair instrument. Call WR Medical Electronics Co. for servicing instructions.
- Do not attempt to use the instrument while recharging. See Instructions for Use for correct charging procedures.
- Check the battery condition prior to and during use.
- Charge the battery for 30–36 hours before each use. Do not charge longer than 36 hours.

CONTACT INFORMATION

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AVAILABLE FOR EXPORT

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