

SGM-STIM-1

CONSTANT CURRENT, HIGH ENERGY, SINGLE AND MULTIPLE PULSE STIMULATOR FOR TRANSCRANIAL ELECTRICAL STIMULATION

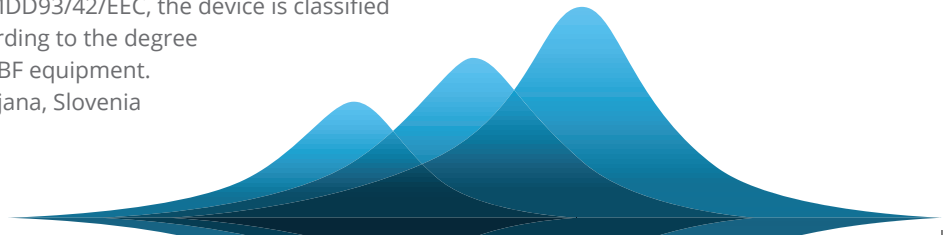


INTRODUCTION

Nowadays, intraoperative monitoring of motor evoked potential is the ultimate way to monitor the integrity of motor pathways. Development of motor-evoked potentials methods is critical to prevent intraoperative paraplegia, hemiplegia, and other types of motor deficit. The future of this method is closely related to the availability of appropriate electrical stimulators. According to research and clinical experience, a trans-cranial electrical stimulator is an appropriate tool for intraoperative eliciting of motor-evoked potentials. This is a very specific type of medical equipment and it must meet all the criteria for this delicate purpose.

Use of constant-voltage electrical trans-cranial stimulators has an inherent problem - output current delivered to the patient is closely related to the resistance (impedance) of the stimulating electrodes. Therefore, in order to overcome this problem, constant current stimulation principle is used in the SGM-STIM-1 trans-cranial electrical stimulator. A constant-current trans-cranial electrical stimulator has better control of electrical charge delivered to the patient than constant voltage and within reasonable limits is insensitive to changes of load impedance.

According to the Medical Device Directive MDD93/42/EEC, the device is classified as CLASS IIa equipment. Classification according to the degree of protection against electric shock is TYPE BF equipment. CE Mark Certificate No. MDD-098, SIQ Ljubljana, Slovenia



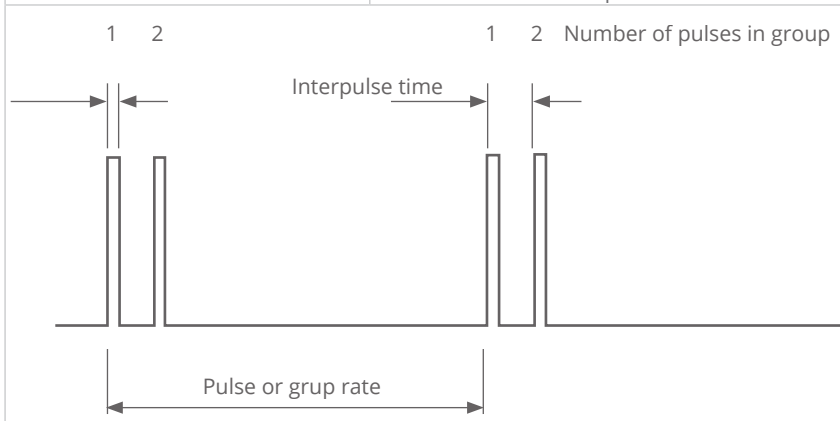
TECHNICAL SPECIFICATIONS

STIMULUS OUTPUT

Current range	0-250 mA in 1 mA steps
Pulse width	100 - 1000 microseconds square wave
Maximum output voltage	210 V
Number of electrodes	6

STIMULUS PULSE RATES

Pulse or group rate	0.1 – 4.0 Hz in 0.1 steps
Burst selections	Number of pulses – 1 to 9
Interstimulus time	1 - 10 ms in 0.1 ms steps



TRIGGER FACILITIES

Manual	Push button mounted on front panel
Auto	
External	TTL compatible positive edge logic signal
Trigger output	Positive TTL compatible signal 500 μ s wide

OTHER

Mechanical dimensions	250x263x85 mm
Weight	2 kg
Power	100 - 240 V @ 50-60 Hz
Rating	< 50VA
Startup time	30 sec

MAJOR FEATURES

- High intensity constant current multipulse stimulator.
- Current range: 0 to 250 mA.
- Available selection of six scalp stimulating electrodes and current polarity selection incorporated on the stimulator's front panel.
- Selectable stimulating train rates 0,1 to 4,0 Hz in steps of 0,1 Hz (externally and internally controlled, "trigger in" and trigger out").
- Number of pulses in the train: 1 to 9.
- Interstimulus time: 1-10 min 0,1 ms steps.
- Power supply voltage 110/220 V automatically detected.
- Set of necessary accessories including Output Extender SGM S1-801.

