Measuring and Modulating Brain Activity

neuroConn DC-STIMULATOR MC

Programmable, multi-channel direct, alternating and random noise current stimulator

Transcranial electrical stimulation (TES) using weak electric direct, alternating and random noise currents (tDCS/tACS/tRNS) over a period of several minutes changes the electrical charge in the nerve cell membranes and has a direct influence on neuro-transmitter channels. This serves to strengthen or diminish the excitability of the brain cells.
The multi-channel DC-**Stimulator** MC allows laptop-controlled, full-band stimulation from independent electrical sources using any desired signal type in the range of 0-1,000 Hz and currents of between 50-5,000 µA with a freely adjustable phase. The DC-**Stimulator** MC can also be used during functional magnetic resonance imaging (fMRI) and, in addition, can be combined with the NEURO **PRAX**® TMS/tDCS allowing full-band DC-EEG to be recorded during multi-channel transcranial electrical stimulation.

Areas of Application/Treatments

Research, hospitals and surgeries	I	Controlled, monitored and simultaneous tDCS/tACS/tRNS stimulation or sham stimulation of patient groups
Research, hospitals and surgeries	I	Controlled and monitored multi-channel tDCS/tACS/tRNS stimulation
Analysis and stimulation of the ROI	I	Software-controlled, multi-channel stimulation of selected regions of the brain and validation of TES with the help of functional magnetic resonance imaging (fMRI)
Analysis and stimulation	I	Development and evaluation of user-specific stimulation sequences

Moving thought

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CE 0118 EN DIN ISO 13485:2007

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DC-STIMULATOR MC Features

- 4 programmable, micro-processor-controlled constant current sources using independent channels (8,16 channels)*
- For transcranial direct current stimulation (tDCS), transcranial alternating current stimulation (tACS), cranial electrical stimulation (CES), galvanic vestibular stimulation (GVS) and transcranial random noise stimulation (tRNS)
- 4 channels, capable of alternating current, bipolar stimulation possible (8,16 channels)*
- Medical notebook for the use and programming of stimulation modes and stimulation sequences
- Various types of stimulation can be selected and combined, continuous stimulation, cyclical switching on and off of stimulation, sinusoidal stimulation (up to 1,000 Hz)
- Import of any stimulation sequences into the software to control the DC-STIMULATOR MC with customer-specific signal sequences
- High safety standard through multistage monitoring of the current path
- External trigger input*

DC-STIMULATOR MC Specifications

- Currents and wave forms of up to ± 5,000 µA**
- AC current adjustable up to 3,000 µA (peak-to-peak)**
- Frequencies of up to 1,000 Hz selectable and phase freely adjustable
- Freely selectable application duration**
- 16-bit D/A conversion
- Time resolution < 1 ms (sample rate 24,000 sps)
- Recording of stimulation sequences with 8,000 measurements/second with max. 1 % relative direct current fault tolerance
- Max. 0.02 % direct current fluctuation
- Current variance during stimulation < 0.02 %
- Voltage limit of 26 V
- Power supply via external medical power supply unit
- Dimensions: 420 mm x 395 mm x 170 mm (W x D x H)
- Weight: 4.2 kg

* Optional

** Currents of more than 2,000 µA and application times of more than 20 min. are for research only

fMRI Add-on for DC-STIMULATOR MC

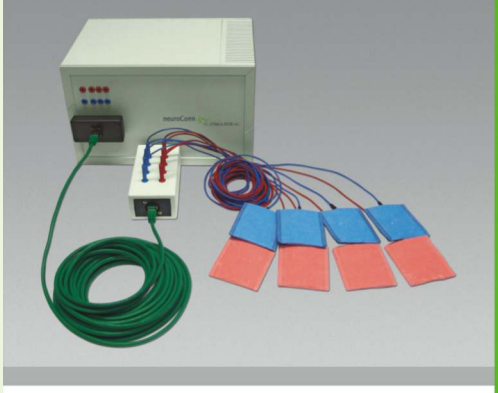
- Use of DC-STIMULATOR in fMRI
- No interference of the fMRI images during EPI sequence

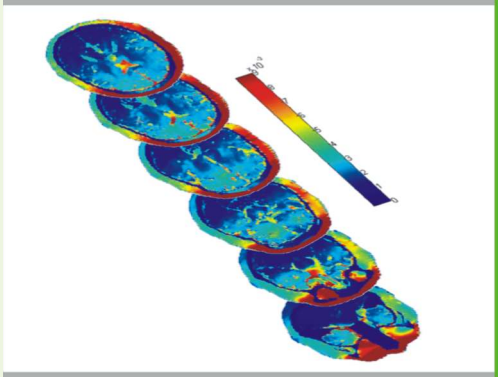
DC-STIMULATOR MC Option

- TRIGGER MODULE to connect external triggers safely

Particular Advantages of our Equipment

- Complete systems – and not just individual components – are CE-approved and are certified for use in many other countries around the world.
- We are the only supplier worldwide of CE-approved, fMRI-compatible transcranial DC stimulators (tDCS, tACS, tRNS).





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neuroConn supplies equipment for publicly funded multi-center studies into neurofeedback and non-invasive brain stimulation and is also a member of the "National Bernstein Network for Computational Neuroscience".

bcol transcranial stimulation