

DC-STIMULATOR

Measuring and Modulating Brain Activity

for therapeutic application



Programmable direct current stimulator for use in clinics and practices

The DC-STIMULATOR is a clinical stimulator designed to be used in clinics and medical practices. Using this device, doctors and psychologists can carry out transcranial direct current stimulation (tDCS) using weak currents up to 2 mA over 15 to 30 minutes.

tDCS represents part of interventional neurophysiology; the electrical charges and densities administered during tDCS are below the threshold for releasing a stimulus and take modular effect to existing neuronal elements. Depending on duration, current intensity, current density and frequency used, the transcranial Electrical Stimulation influences cortical activity.

The DC-STIMULATOR is used for tDCS for reduction of depressive symptoms. It can be applied as monotherapy or in combination with other treatments. For patients with selective serotonin reuptake inhibitor (SSRI) medication and failure to another drug, no further benefit of tDCS beyond unspecific (placebo) effects can be expected.

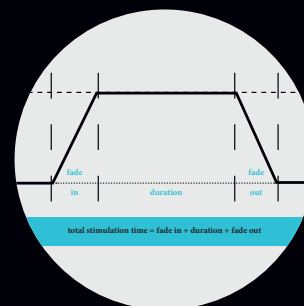
Advantages of the DC-STIMULATOR:

- highest patient safety standards due to multistage monitoring of the current path, automatic termination of the stimulation as well as continuous monitoring of the electrode impedance
- intuitive menu navigation via display and four buttons
- individual setting and saving of the stimulation parameters
- optional: study mode for double-blind active and sham stimulation

DC-STIMULATOR Features

- microprocessor-controlled constant current source
- 1 channel (anodal and cathodal stimulation possible)
- high safety standard through multistage monitoring of the current path
- stimulation mode: tDCS (continuous stimulation, adjustable, fade in and fade out)
- study mode for „blind“ operation of real and pseudo stimulation, encoded from a code list of 200 codes, independently adjustable settings (can be saved to avoid accidental modification of study parameters)*
- external trigger input*

* optional



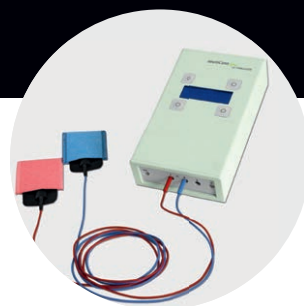
tDCS: total stimulation time =
fade in + duration + fade out

DC-STIMULATOR Specifications

- adjustable current up to 2,000 μA in increments of 250 μA
- adjustable application time up to 30 min
- max. 1 % relative direct current fault tolerance
- max. 0.02 % direct current fluctuation
- internal 16 bit D/A conversion
- internal time resolution < 1 ms (sample rate 2,048 sps)
- "tDCS" stimulation mode: duration 1,800 s, increment 30 s, duration of fade in / fade out 1-120 s, increment 1 s
- power supply from built-in rechargeable batteries
- approx. 6 h stimulation time @ 1 mA, approx. 7 h for complete recharging
- alphanumeric display with backlight
- membrane keypad with 4 keys
- contact-protected electrode connection in accordance with DIN 42802-2 (\varnothing 1.5 mm)
- power consumption approx. 0.5-1.5 W (depends on display brightness and applied current)
- dimensions: 13.5 cm x 22.5 cm x 5.5 cm (W x D x H)
- weight (incl. batteries): 0.8 kg

DC-STIMULATOR Technical data

- Trigger Module to connect external trigger safely



DC-STIMULATOR with
rubber electrodes and sponges



Direct current stimulation with
rubber electrodes and sponges



Direct current stimulation with
electrode cap