HBio

multichannel systems

HUGO SACHS ELEKTRONIK

STG5hv

Reliable electrical field stimulation for skeletal muscle tissue baths.



Applications:

- *In vitro* or cell culture stimulation
- Neuronal stimulation
- Skeletal muscle contractile physiology
- Neuromuscular transmission and nerve–muscle coupling
- Force–frequency and length–tension relationships
- Fatigue and recovery studies
- Pharmacological testing and drug screening
- Metabolic and excitation–contraction coupling research

Fully programmable electrical stimulation for tissue and muscle

Electrical field stimulation (EFS) used in tissue baths is a non-contact method to stimulate and activate tissue (nerves or muscle) using an electric field generated in the surrounding solution, rather than directly stimulating with electrodes attached to the tissue. A dissected muscle, nerve, tissue, vessel, or vessel ring is mounted in a physiological bath between two electrodes and connected to a force transducer, enabling precise measurement of contractile responses while preserving tissue integrity. EFS is widely used to study muscle physiology, neuromuscular transmission, and drug effects under highly reproducible conditions.

The STG5hv can also be used for direct stimulation with touching electrodes, e.g. for pacing an isolated perfused heart.

High-voltage, precisely-timed pulses in tissue baths

The STG5hv Stimulus Generator is designed to deliver the high voltage and precise timing required for uniform field stimulation in tissue bath setups. Researchers can confidently apply standardized EFS protocols, ensuring reliable muscle activation and high-quality physiological data across experiments.

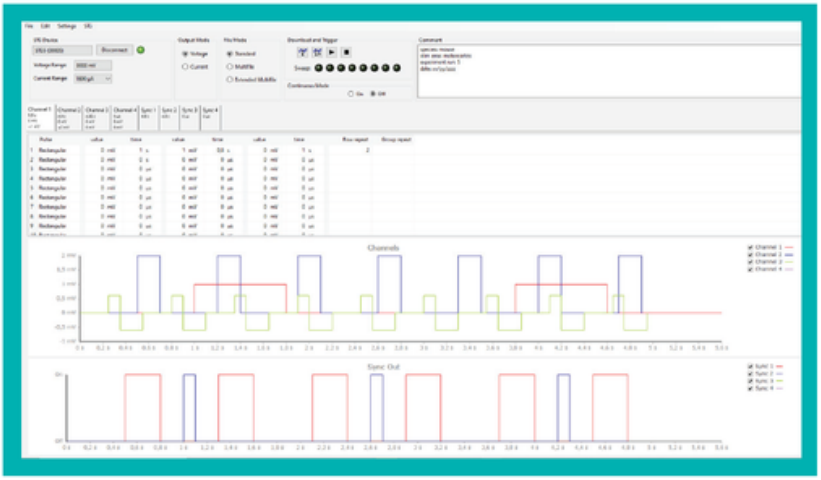
- **High-voltage output** to generate consistent electric fields across the entire muscle preparation
- **Precise control of pulse width & frequency** to selectively stimulate motor nerves or muscle fibers
- **Stable, reproducible stimulation protocols** for twitch, tetanic, and fatigue experiments
- **Noninvasive activation** that avoids tissue damage associated with direct electrode stimulation
- **Flexible integration** with organ baths, force transducers, and data acquisition systems

Robust, user-friendly software

The STG5hv includes **MC_Stimulus III** software, an intuitive and easy-to-learn solution that allows you to create and save custom light patterns quickly and easily – just define your waveform parameters, enter duration and repetition, and hit “Start.”

MC_Stimulus III also offers:

- Quick amplitude adjustments – select strength to choose a light with low or high intensity
- Grouped or synchronized stimulation
- Trigger-based workflows
- Support for complex feedback loops





Ordering information

Product Description	Part Number
STG5hv Base Unit	89-1416
STG5hv Satellite Unit	89-1417

Ready to learn more?

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