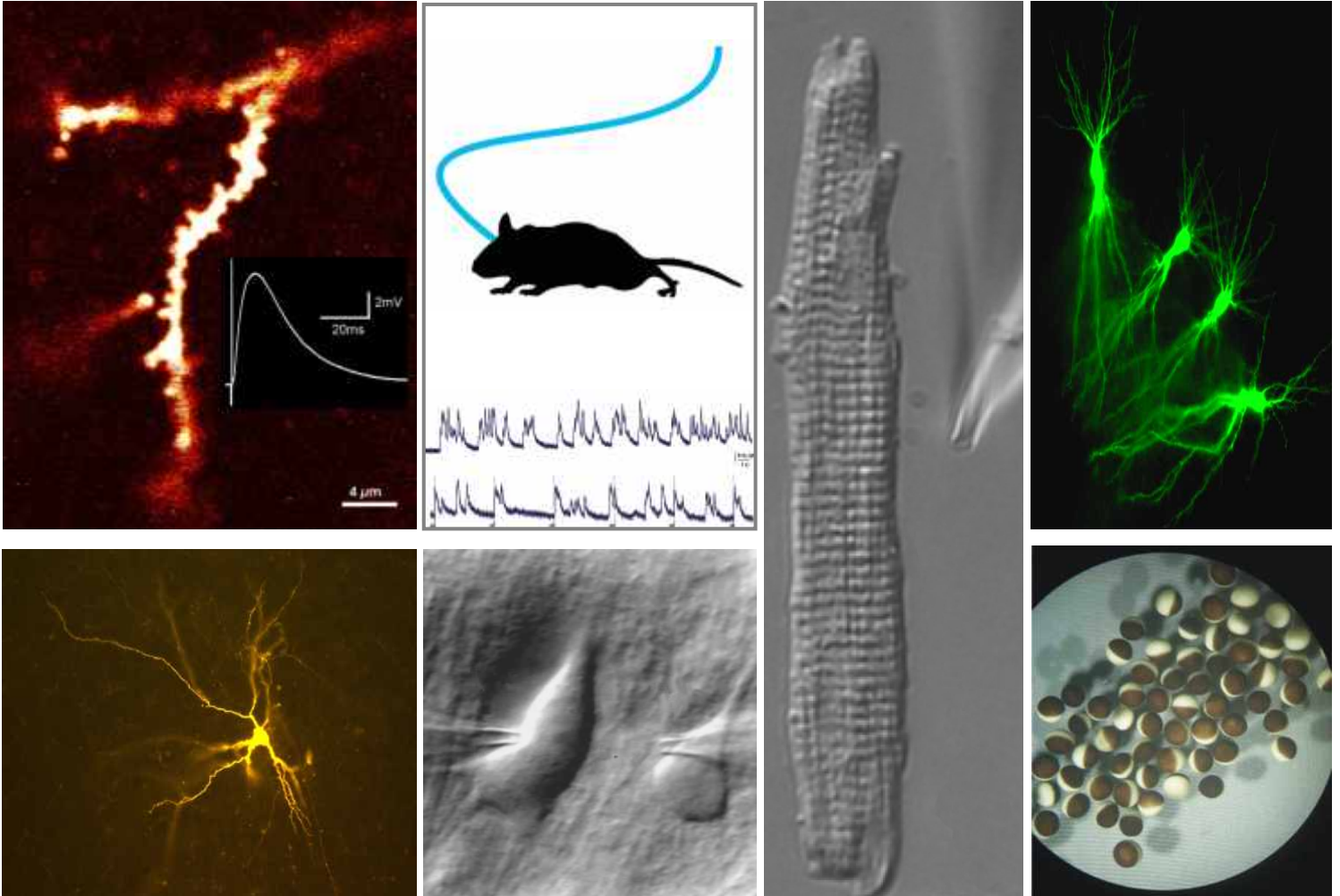


made to measure

Product Overview



For meanwhile over 33 years npi electronic GmbH develops and produces equipment for *in vitro* and *in vivo* research in the life sciences (especially physiological and pharmacological basic research) with main focus on neurosciences and excitable tissues.

Instruments include patch and voltage clamp amplifiers, oocyte amplifiers, extracellular amplifiers, stimulus isolators, voltammetric and amperometric amplifiers, filters, drug application systems, micromanipulators, temperature controllers and data acquisition systems. npi electronic can also supply integrated systems like the robotic ScreeningTool for ion channel drug screening using oocytes, and **complete setups including imaging and optogenetics**. npi electronic is expert in registration of bio-electrical signals and in microelectrode techniques.



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ELC-01X



ELC-03XS



SEC series



TEC series



RS-01R



BA-01X



BA-03X



VA-10X



Miniature Headstages



Versatile All-in-One Amplifiers

Juxtacellular dye filling, single cell transfection, extra- and intracellular recordings, whole-cell patch clamp in CC or VC mode, **single cell stimulation and electroporation**, iontophoresis, voltammetric and amperometric measurements. Optional with **seal resistance display** and **switchable headstage**.

Single Electrode Voltage & Current Clamp Amplifiers

Unique current and voltage/patch-clamp amplifiers providing high (>20 kHz) switching frequencies for accurate measurements with sharp microelectrodes and patch pipettes. With linear mode (optional) also suitable for juxtacellular filling.

Two Electrode Voltage & Current Clamp Amplifiers

Versatile current and voltage-clamp amplifiers with $\pm 150V$ output and no virtual ground. Versions for oocytes, and special versions for other preparations such as invertebrate neurons, muscle or plant cells.

Series Resistance Measurement

Measuring series resistance in oocyte experiments.

Bridge / Current Clamp Amplifiers

Versatile, wide-bandwidth, high impedance current-clamp amplifiers for recordings with sharp and patch electrodes. Features x10 current range for electroporation and juxtacellular filling (BA-01X, BA-03X), as well as potential gain and filters for extracellular, juxtacellular recordings (BA-03X).

Voltammetric / Amperometric Amplifier

Picoampere range current amplifier that is intended to be used for voltammetric or amperometric measurements with 5 μm carbon fibers.

Multisite Recordings with Miniature Headstages

Amplifiers for *in vitro* and *in vivo* experiments, also in freely moving animals with **compact, light-weight headstages**. Available for up to sixteen recording sites, with stimulation, position LEDs and acceleration sensor.



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Isolated Stimulators



Stimulus Generators and Isolators

Isolated stimulators with line power supply or batteries. Up to ± 100 V / ± 50 mA **monopolar** or **bipolar** output. Several trigger capabilities with adjustable duration and output amplitude, or direct input from data acquisition system. Stimulation with voltage or current.

Timers



Timer Series

Easy-to-use timing units for generating square pulses of fixed amplitude (TTL, +5 V) and variable length and delay. Features also pulse or burst modes. Several timers can be cascaded.

Extracellular Amplifiers

EXT-02 B Series



EXT-02 B Series

Two recording channels **with stimulus control**. Small headstages with differential inputs. High and low pass filters with six corner frequencies and gain up to 10000. Expandable by audio monitor and/or electrode resistance meter. One power supply for up to four EXT-02 B amplifiers, one RES-08 B and one AUDIS-08 B system.

EXT-02F



EXT-02F Series

One or two-channel amplifier with external power supply, high and low pass filters, gain up to 10000, differential input and audio monitor. Optionallly, the EXT-02F can be equipped with headstages.

EXT-T2



EXT-T2 - Extracellular Amplifier for Two Tetrodes

Amplifier with internally adjustable high pass and low pass filters and gain up to 1000. Also available with MiniHeadstage for recording in freely moving animals.

EXT-16



EXT-16 - 16-Channel Extracellular Amplifier

Amplifier with adjustable high pass and low pass filters (one for all channels), gain up to 10000 and current injection unit (option). 2 amplifiers combined allow 32 channel recording.



NEW

NEW

made to measure

FOM-02M



**Devices for
Optogenetics
and
Fluorescence
Measurements**

FOM-02D



Optogenetics and fluorescence measurement *via* the same fiber; up to 2 LEDs and 2 photo detectors (Silicon PM); exchangeable filter cubes; SMA or FC/PC coupling

EPMS-07 series



Modular System

Modular system for recording and processing of bio-electrical signals in electrophysiology. The system is housed in a 19" rackmount cabinet with a power supply, and has room for up to 7 plug-in modules. An extra low-noise version with external power supply is available as well as a housing with 3 plug-in slots.

ELC-01MX



Extracellular loose-patch clamp amplifier

SEC-03M



Single electrode VC/CC amplifier

BA-01M



Bridge amplifier

EXT-10C



Extracellular amplifiers

EXT-10 2F



EXT-T1M



Tetrode amplifier

R/I-T1M



Electrode resistance meter

BF-48DGX



8-pole BESSEL filter

DPA-2FX/2FS



High/low pass filter

DPA-2FL



Low-noise filter

LPBF-01GX



Low pass filter



**EPMS-07 series
(continued)**

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MVCS-02M



Iontophoretic amplifier

MVCC-02



Balance for MVCS

PDES-01TM



Pneumatic drug ejection

PDES-01DM



Pneumatic drug ejection

ISO-STIM 01M



Isolated stimulator

TMR-02M



Timer

ION-01M



Ionsensitive amplifier

VA-10



Amperometric/voltammetric amplifier

INR-01-T



Signal envelope/integrator

DI-01



Differentiator integrator

WD-01



Window discr.

AUDIS-03M



Audio monitor

Special modules are available on request

PEXT-01



Extracellular Amplifier / Drug Ejector

Amplifier with high and low pass filters and gain up to 10000. Drug ejector with analog or digital timer and analog or digital manometer.

MVCS series



High Speed Iontophoresis Amplifiers

Spatial resolution of 1 μm and time resolution of 500 μs . Suitable for receptor mapping and for simulating synaptic events. Also available for slower applications.

microJECT



PDES series



High Speed Pneumatic Drug Ejectors

< 1 ms injection time with *microJECT*. Digital and analog versions available comprising one or two channels. One channel digital versions also available with a hold channel.



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TC/PTC series



Accurate Temperature Controllers

Precise control and low-noise operation make them ideal for electrophysiological setups.

LHBF-48X



Signal Conditioner

Low and high pass BESSEL filter with adjustable gain, offset compensation and differential input.

AUDIS-01D/16



Audio Monitor

Acoustic signal monitor with pitch and noise mode. Threshold allows blanking of baseline noise.

INT-20X



Breakout Box for CellWorks, WinWCP, WinLTP or RELACS

Convenient breakout box for CellWorks, WinWCP, WinLTP or RELACS; available with PCI or USB 2.0 interface.

npi electronic distributes:



Drug application systems, recording chambers, electrode holders etc.
www.alascience.com



Micromanipulators
www.marzhauser.com



Micromanipulators and mounting solutions
burleigh.thorlabs.com



Axon patch clamp amplifiers and data acquisition systems
www.moleculardevices.com



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Small piezo micromanipulator
www.sensapex.com



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