INTRACELLULAR

EXTRACELLULAR

PATCH CLAMP

STIMULATION

NEUROSCIENCE & ELECTROPHYSIOLOGY INSTRUMENTATION

1976 2016

A-M SYSTEMS

40TH ANNIVERSARY

Isolated High Power Stimulator

Model 4100

Model 4100 Isolated High Power Stimulator: the new standard-bearer for stimulation instrumentation.

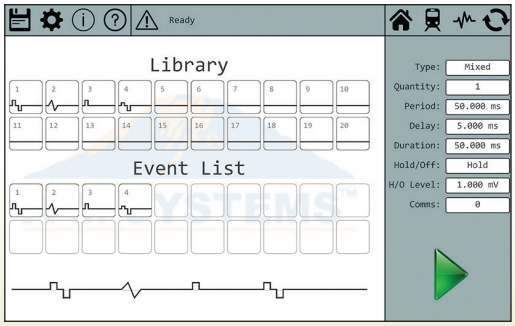
The Model 4100 Isolated High Power Programmable Stimulator is our most powerful, flexible, and convenient single-channel stimulator. Perfect for a wide variety of applications, including optogenetics and field stimulation, the Model 4100 is designed to be your lab's workhorse stimulator, delivering maximum performance at a fair price.

POWERFUL	±200 V pulses at 100 mA
FLEXIBLE	Monophasic, Biphasic, Ramp, & User-Defined waveforms
CONVENIENT	Front Panel, Windows®, Apple®, LabVIEW™, MATLAB®, & Android™ compatible
AFFORDABLE	Built-in isolator eliminates need for an additional external SIU

OPTOGENETICS FIELD STIMULATION BEHAVIOR
INSTRUMENT SYNCHRONIZATION LESION MAKING

- Complete computer control
- Line-Powered: No batteries required
- Internal isolation: No external SIU required
- Accepts arbitrary waveform inputs

Software Control



The 4100 can deliver stimulus trains comprised of monophasic, biphasic, and ramped waveforms. The 4100 can also scale and isolate any unique, custom, or biologically generated signal you can provide.

The 4100 can provide pulse durations between 1 µs and 25 hours long. The 4100, with its built in memory, can easily deliver traditional protocols such as LTP/LTD stimulation studies, Paired Pulses protocols, and Stepped Pulses with a single trigger pulse.

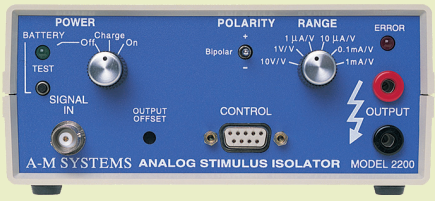
Isolated Pulse Stimulator

Model 2100

- Pulse width from 1 µs to over 15 minutes
- Excellent timing accuracy! Better than 0.02%
- Monophasic or biphasic pulse outputs
- Optically-isolated; No separate stimulus isolator required!
- TTL sync outputs, triggering & gate

Analog Stimulus Isolator

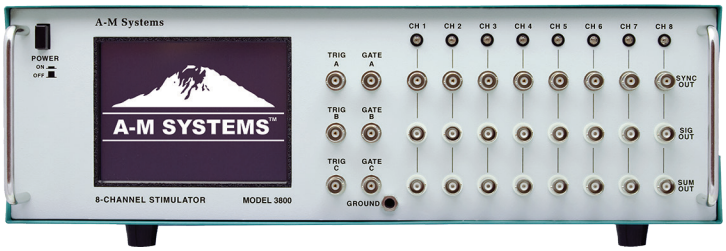
Model 2200



- Constant current or constant voltage
- Can isolate any input waveform shape
- Maximum output ±50 V Biphasic (100 V monophasic), or 5 mA
- Uses rechargeable batteries; charger included

MultiStim 8-Channel Programmable Stimulator & Optional SIU

Model 3800



The Model 3800 MultiStim 8-Channel Programmable Stimulator is a highly flexible, programmable pulse generator that can produce independent, complex pulse trains on 8 channels simultaneously. When combined with its optional SIUs, the Model 3800 can produce scaled, isolated constant current or constant voltage pulses.

Model 3820

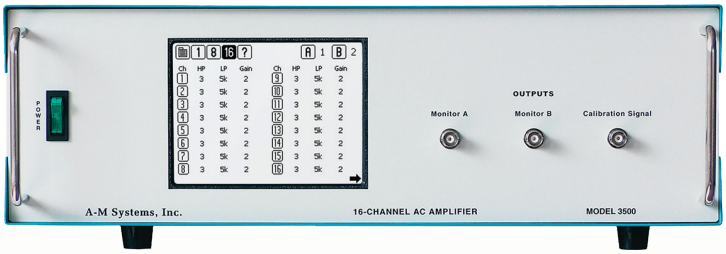
- Touch screen or computer control
- Pulse Widths: 1 µs – 250 hours; ±10 V amplitude
- Monophasic / biphasic, paired & stepped pulse protocols
- Combine channels for custom protocols

With SIU:

- ± 60 V at 20 mA
- Constant Current or Constant Voltage
- Single SIU can produce biphasic pulses

16-Channel Extracellular AC Amplifiers

Model 3500 and Model 3600



The Model 3500 is a true differential amplifier perfect for studies such as EEG and EKG.

The Model 3600 utilizes a 16-channel headstage to enable spike recordings using high-impedance electrodes.

Model 3500 & Model 3600	
• 16 independent high gain, low noise channels	
• Control via front panel touch screen or Windows program	
• Parameter sets stored on-board and/or on a PC	
• Built-in Output Monitors & Calibration Signal	
• High Pass, Low Pass, and Notch Filters	
• TTL Control	
Model 3600	Model 3500
• Two headstage options for use with high impedance electrodes » Stimulating and recording headstage » Miniature record-only headstage	• True differential, common reference or ground reference recording options • Can pass stimulation signals directly to electrodes

Microelectrode AC Amplifier

Model 1800

- Two independent channels
- Includes two headstages
- Recording gains: x100, x1,000, or x10,000
- Low noise (2.5 µV peak-to-peak max., 10 Hz–10 kHz)
- High Pass, Low Pass and Notch Filters

Four-Channel Differential AC Amplifier

Model 1700

- Four independent channels
- Recording gains: x100, x1,000, or x10,000
- 2.5 µV rms noise max (10 Hz–100 kHz)
- High common-mode rejection
- Optional headstage available

Patch Clamp Amplifier

Model 2400

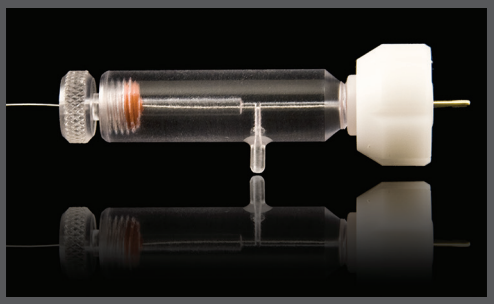
- Full-featured amplifier with voltage and current clamp modes
- Capacity, series resistance, and whole cell compensation
- Telegraph outputs for all major front panel controls
- Displays command potentials, cell currents, and voltages
- Dual-range low-noise resistive feedback headstage (1 GΩ/10 MΩ; 10 GΩ/10 MΩ; 10 GΩ/100 MΩ)

Neuroprobe Intracellular Amplifier

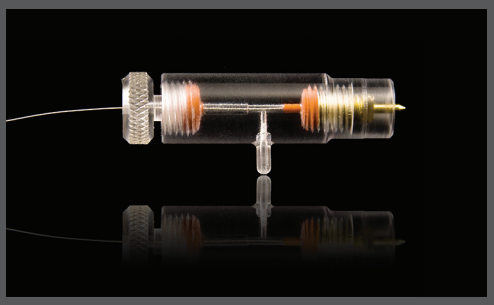
Model 1600

- Digital meter displays membrane potential, injected current, or electrode resistance
- Square-wave generator for electrode test and adjustment of capacitance compensation
- Current injection system allows simultaneous stimulating and recording by a single electrode

Microelectrode Holders



Straight, Axon Universal Connector with Silver Wire & Suction Port

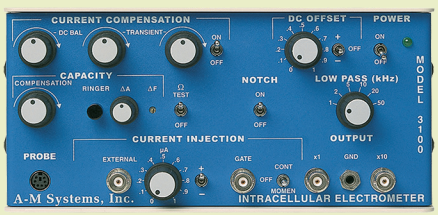


Straight, BNC Connector with Silver Wire & Suction Port

- Axon Universal, Axon Legacy, BNC, and 2 mm Pin connectors
- Silver Wire or Silver/Silver Chloride Pellet
- With or without Suction Ports
- With or without Perfusion Ports
- Straight, 30°, 45°, or 90°
- Custom holders can be made to your design!

Intracellular Electrometer

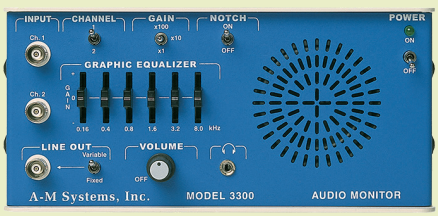
Model 3100



- Low noise
- Input impedance: 10^{13} Ω
- Bias current: adjustable to zero
- DC balance with transient suppression circuitry

Audio Monitor

Model 3300



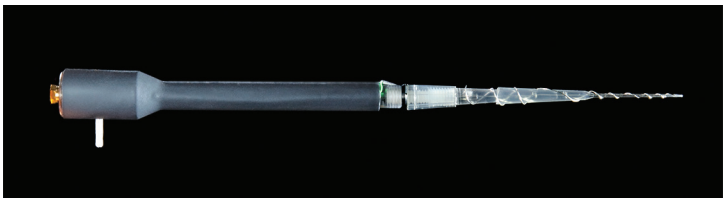
- Two input channels
- 6-band frequency equalizer for custom sound performance
- 3 gain settings
- Headphone jack

AC/DC Amplifier

Model 3000

- Differential or single-ended recordings
- DC and AC modes
- Optional headstage for use with high-impedance electrodes
- High Pass, Low Pass, Notch Filters

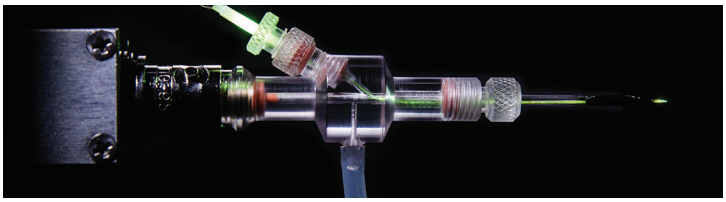
Bipolar Suction Electrode



With Built-In Shielding

- Bipolar
- Easy pin connectors for connection to amplifiers
- Large internal volume
- Use with glass capillary pipettes, disposable pipette tips, or small diameter tubing
- Accepts capillary glass with OD between 1.2 mm – 1.5 mm

Optopatcher®



Fits All Patch Clamps, Including Axon and Heka

- Unmatched accuracy in applying optical stimulation to an in-vivo patch-clamp protocol
- Simultaneous patch-clamp recording and optogenetic activation through the same electrode
- Designed for glass diameters of 1.2 mm to 2.0 mm
- Optical fiber connects to any source cable terminating in a 1.25 mm ceramic ferrule

Wire & Rod

A-M Systems offers a wide variety of fine bare, fine insulated wires, and straightened rods for your electrode manufacturing needs. We also have the ability to provide custom diameters and lengths of any item for your unique applications.

Need a custom size or length? Just ask us!

Wires	Bare Wire	Insulated Wire	Straight Rod
Gold	0.001" – 0.005"	0.001" – 0.005"	—
Platinum	0.001" – 0.005"	0.001" – 0.005"	0.001"
Platinum-Iridium	0.001" – 0.005"	0.002" – 0.005"	—
Silver	0.001" – 0.025"	0.001" – 0.025"	0.001" – 0.005"
Stainless Steel	0.002" – 0.020"	0.002" – 0.010"	0.001" – 0.010"
Tungsten	0.001" – 0.020"	0.002" – 0.010"	0.002" – 0.010"

HumBug Noise Eliminator

The HumBug Noise Eliminator from Quest Scientific removes line frequency noise from electrophysiological signals without filtering or requiring ongoing user attention. That means more time getting results, and less time solving continuously evolving noise and ground loop problems.

Connectors

Electrodes

- Epoxy-Insulated
- Parylene-Insulated
- Suction Electrodes
- Ag/AgCl Electrodes

Capillary Glass

- With or Without Filaments
- Standard Boroscilicate
- Patch Clamp Glass
- Thin-Wall Glass
- Multi-Barrel Glass

Patch Cords

Illuminators

Dental Cement

A-M Systems is a leading manufacturer of high-quality, precision neuroscience and electrophysiology instrumentation and supplies for the research community worldwide. Since 1976, our unwavering commitment to product excellence, competitive prices and customer service has earned us satisfied customers in more than 100 countries.

Our Neuroscience and Electrophysiology Division designs, manufactures and distributes a wide range of scientific instruments, including stimulators, intracellular and extracellular amplifiers, and patch clamp amplifiers. Leading universities and research institutions use our instruments and accessories to perform ground-breaking investigations into learning and memory, Alzheimer's and Parkinson's diseases, and models of stroke, deafness and blindness.

Our Pulmonary Division designs and develops superior respiratory and pulmonary care products under U.S. and international standards. Our branded and OEM pulmonary function test filters, viral-bacterial filters, breathing circuits, and 3L calibration syringes are found in hospitals and clinics around the world.

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A-M Systems is committed to producing and delivering innovative, high-quality products and services efficiently and affordably. To learn more about how A-M Systems can help you meet your research objectives, please contact us today.

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