The smallest multi-function patch clamp system available

PatchMAX 100A

Incredibly small footprint

This patent-pending design has an 8" x 8" footprint; it is the smallest multi-function patch clamp system available. The automated patch clamping system replaces the microscope and the manipulator in the traditional rig. Complete with one automated manipulator, a manual XY stage, a data acquisition board & control system, and a perfusion chamber with the platform, this system can automatically guide electrode to make a seal on oocytes, suspended cells and cells on cover slips.

Automatic membrane detection

The specially designed perfusion chamber guarantees that when oocyte or cells are dropped into the chamber, it always reaches the known position. The tip of the pipette can reach this position with an accuracy of 0.05 mm. The movement of the patch pipette is controlled by a computer and can be programmed to stop when the tip touches the cell membrane.

High seal success rate

The pipette positioning system provides widely different approach speeds and proximity criteria, allowing the researcher to fine tune the process for the perfect seal. The computer controlled system eliminates human errors so the success rate of making gigaohm seals using the PatchMAX 100A is over 90%.

Save and reuse sealing parameters

The approach and sealing parameters can be saved and reused. Once you have found the perfect set of parameters, you can save it to a file for use at other times, or by other researchers.

Noise-free recording

The system is noise-free during recording. The motorized stage is tuned so that the electrode is stationary when the power is turned off. You will be able to do single channel recording without worrying about noise from the motor.

Low drift

The two modular dovetail linear stages allow you to set, lock and forget. They are less susceptible to shock and vibration. The motorized stage can hold its micro-step position (50 nm resolution) overnight, even without current! The patch pipette is fixed by a supporting arm so even when the electrode holder is touched, the tip of the patch pipette does not move much.

Less labor-intensive and vibration free

With the PatchMAX 100A, patch clamp experiments become less stressful and labor-intensive. Since the manipulator is controlled by a computer, you do not need to touch the manipulator during the experiment. Your computer will control the process of excising a patch in a manner that is precise and always reproducible.

Use standard glass electrodes

Unlike the conventional high-throughput systems, this system does not use expensive "seal chips." Instead, standard glass electrodes are used. All of your techniques with fabricating patch pipettes still apply, and the cost of the experiment is low.

Manual control mode

Not only can you run the protocol for making a seal, but you can also control the manipulator manually as easily as clicking a mouse. Thus the manipulator can act like a traditional manual manipulator. The manipulator comes with a standard mount so it can be removed for other type of experiments.

Rapid solution change

Two specially designed perfusion chambers allow fast solution change.

PatchMAX 100A Ordering Information

Part No.	Product Description	
Ne-ezPATCH 100A	ezPATCH 100A	
Ne-PatchMAX 100A	PatchMAX 100A	
	Complete NeoBiosystems product line available.	

U.S./Canada prices shown. International prices add 10%. Email or visit web store for latest prices.

Specifications

Major Components

- One micro-manipulator, which includes a motorized linear stage and a manual XY stage
- Perfusion chamber I and platform
- One PCI data acquisition board with BNC interface
- Mechanical error: < ± 0.05 mm
- Dimension: 8 in x 8 in x 9.5 in
- Weight: 8 lb
- Line voltage: 100 VAC to 120 VAC, or 220 VAC to 240 VAC

Motorized Stage

- Travel: 28 mm
- Resolution: 0.05 µm
- Maximum speed: 4 mm/s
- Lowest speed: 0.5 µm/s
- Serial/USB interface

Manual XY Stage

- Modular Dovetail Linear Stages
- Set, lock, and forget; less susceptible to shock and vibration
- 0.5 in travel

Data Acquisition Board

- Sixteen analog Inputs, 16-bit, 250 kS/s, Input Impedance: > 10 GΩ in parallel with 100pF
- Two 16-bit analog outputs, 740 kS/s per channel. Output impedance: 0.2Ω
- 24 digital I/O lines, 32-bit counters; digital triggering
- Analog input range: ± 10 V
- Analog output range: ± 10 V

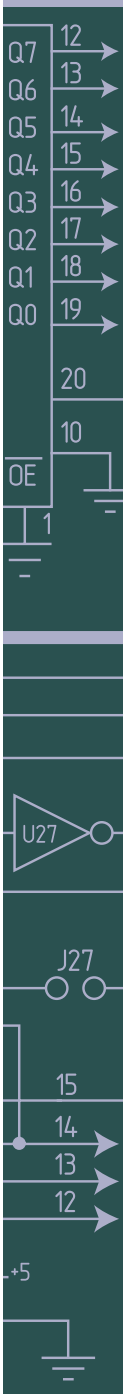
Perfusion Chamber

- Accepts 1/16" tubing

Computer Requirements

- Windows 2000 or XP with 2.0 GHz CPU
- At least 1 USB port
- 1 PCI slot

PATCHMAX 100A



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