

SERVICE & SUPPORT

Thank you for choosing Sutter Instrument products. To guarantee the highest standards of quality and performance, every instrument is fabricated on site by highly skilled technicians. The instrument contained herein has been assembled with care and tested to assure it meets rigid quality control standards.

We hope that our instruments and products continually meet your needs. However, should a problem arise, please contact our technical support staff to discuss your concerns. If the instrument requires factory service, we will furnish shipping instructions. Items under warranty will be repaired free of any costs, for parts or service. Both delivery and return shipping costs are the responsibility of the owner.

This product carries a limited warranty of 2 years for parts and labor.

Our office hours are 8:00 am to 5:00 pm Pacific Time, Monday through Friday.

Phone	1.888.883.0128
Fax	1.888.883.0900
Intl. Phone	+ 1.415.883.0128
Intl. Fax	+ 1.415.883.0572

Sutter Instrument
One Digital Drive
Novato, CA 94949

info@sutter.com
www.sutter.com



IPA™ INTEGRATED PATCH AMPLIFIER

with

SutterPatch™ DATA ACQUISITION AND ANALYSIS SOFTWARE



QUICK START GUIDE



IPA™ OVERVIEW



Please read these instructions carefully before installation. If you have any questions or need additional information, contact Sutter Instrument.

OPERATING SYSTEM REQUIREMENTS

Windows 7 or later: 64-bit versions

Mac OS X 10.11 (El Capitan) or later

INSTALL HARDWARE

1. Attach IPA Headstage to amplifier (front panel: HEADSTAGE)
2. Attach IPA Breakout Cable to amplifier (rear panel: AUXILIARY I/O)
3. Attach USB cable to USB ports on amplifier (rear panel: USB) and your computer
4. Attach power cord to amplifier and power outlet

INSTALL IGOR PRO 7/ SUTTERPATCH™ SOFTWARE




1. Power on computer
2. If you have internet access, download the latest version of the SutterPatch installer software from www.sutter.com/AMPLIFIERS/SutterPatch.html
3. If internet access is not available, attach the included USB flash drive to your computer.
4. Double click on 'SutterPatch_installer_with_Igor'
5. Follow the prompts of the installer
6. Open Igor Pro and activate the Igor license as instructed

affix label here

INSTALL DRIVER: (Windows Only)

1. Turn on the IPA amplifier
2. If asked for driver files:
 - a. Browse to "C:/Program Files/SutterPatch" folder on your computer
 - b. Select 'Next'
 - c. You should see 'Windows has successfully updated your driver software'
3. If computer does not ask for files:
 - a. Open Device Manager
 - b. Right-click on 'Sutter Patch Clamp Amplifier-IPA'
 - c. Select 'Update Driver Software'
 - d. Browse to the "C:/Program Files/SutterPatch" folder and select, 'Next'
 - e. You should see 'Windows has successfully updated your driver software'
4. Safely eject the flash drive and remove from the computer.

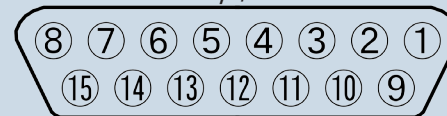
TEST SYSTEM

1. Model Cell:
 - a. Attach Model Cell to IPA headstage and tighten the collar
 - b. Attach ground wire to IPA headstage and model cell (gold plugs)
 - c. Surround with aluminum foil for shielding and ground to the headstage ground connector
2. Click icon to launch Igor: 
3. SutterPatch window will open. Press 'Start'
4. Dashboard window:
 - a. Click on the Acquire Data icon: 
 - b. Click on the Membrane Test icon: 
5. Scope / Analysis window*:
 - a. Put the Model Cell switch in the Bath position and click 'Bath' button.
Pipette Resistance = ~10 MΩ
 - b. Put the Model Cell switch in the Seal position and click 'Seal' button.
Seal Resistance > 10,000 MΩ
 - c. Put the Model Cell switch in the Cell position and click 'Cell' button.
Series Resistance = ~10 MΩ
Membrane Resistance = ~500 MΩ
Membrane Capacitance = ~28 pF

* Actual values will depend on IPA filter settings

BACK PANEL

Auxiliary I/O Port



Auxiliary I/O Pinout Legend

Pin	Function	Pin	Function	Pin	Function
1	Digital Output 1	6	Digital Output 6	11	Aux Analog Input 3
2	Digital Output 2	7	Digital Output 7	12	Aux Analog Input 4
3	Digital Output 3	8	Digital Output 8	13	Aux Analog Output 1
4	Digital Output 4	9	Aux Analog Input 1	14	Aux Analog Output 2
5	Digital Output 5	10	Aux Analog Input 2	15	Signal Ground