

QUIETEST ELECTRONICS IN THE INDUSTRY.
OPTIMIZED FOR SINGLE CHANNEL RECORDING

SINGLE CONTROLLER AND ROE WILL RUN TWO
STEPPER MOTOR DRIVE MANIPULATORS

SELF-DETECTING, DAISY-CHAIN CAPABILITY ALLOWS
CONTROL OF FOUR MANIPULATORS FROM THE ROE-200

USER-FRIENDLY INTERFACE: SINGLE BUTTON ACCESS
TO ALL MAJOR FUNCTIONS

EASILY CONFIGURABLE VIRTUAL 4TH AXIS SET WITHOUT
EXTERNAL COMPUTER

ACCELERATED MODE FOR FAST, MANUAL MANIPULATOR MOVEMENT

EASY TOGGLE SELECTION OF MODE (SPEED/RESOLUTION, PULSED
DIAGONAL, ACCELERATED MODE)



MPC-200/MPC-385/MPC-325 MULTI-MICROMANIPULATOR SYSTEMS

Neurobiological experiments are becoming more complex. Many require multiple manipulators with control units that quickly become space and/or cost prohibitive. The **MPC-200** is the solution you have been asking for. A single controller capable of running 2 manipulators! Sutter Instrument has taken the simplicity of the **MP-225** controller and expanded it to run two manipulators from a single controller/ROE. The **MPC-200** works with our world-renowned mechanicals, the **MP-285 (MPC-385)**, **MP-225 (MPC-325)** or narrow format **MP-265 (MPC-365)**.

If two manipulators aren't enough, a second controller can be daisy chained to allow the single **ROE-200** to move up to four manipulators. Thus the system can be easily expanded to control highly sophisticated experiments.

The Sutter **MPC-200** is electrically quiet. Unique to the **MPC-200** is our multi-unit controller which

employs linear output circuitry to minimize electrical noise. Sutter adds additional manipulators or motorized translators to the same controller without requiring potentially noisy chopper drives. In all our manipulators, the 4th axis can be set up and changed without the need to connect an external computer and download and configure software. A separate configuration is allowed for each output on this manipulator controller. If desired, each manipulator can approach the prep at a different angle from the horizontal. The 4th axis can be configured between the X and Z axes or the Y and Z axes (useful when manipulator is rotated 90 degrees relative to the preparation).

Faster automated pipette exchange.

The **MPC-200** has faster "Home" and "Work Position" moves for quicker pipette exchange. Automation is set up and run via the same interface used in the **MP-225** controller; however, the speeds of the automated movement are much faster.

Accelerated manual mode.

For users who prefer manual pipette exchange we have added "Accelerated Mode" to the ROE. Using Accelerated Mode, the user can make quick manual moves in and out of a setup. Accelerated Mode amplifies the speed attainable in a manual move by smoothly accelerating to the maximum speed during sustained, fast turns of the ROE. Accelerated movement ends as soon as the user stops turning the knob. This mode can be fully disabled for those who feel the need for direct control of the pipette.

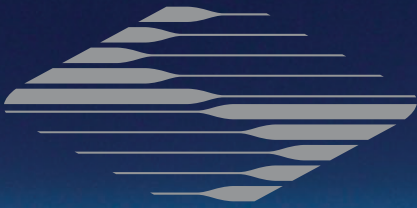
To provide the ultimate in flexibility, the **MPC-200** can be purchased separately or as basic systems such as the **MPC-385**, **MPC-365** and **MPC-325**. Additional component pieces can be added at any time, allowing the user to develop a system tailored to his or her particular needs. The controller is self-detecting, so there is no need for manual configuration of the components.



SUTTER INSTRUMENT

One Digital Drive • Novato • CA 94949 • Phone 415.883.0128
Fax 415.883.0572 • Web www.sutter.com • Email info@sutter.com





SELECTABLE LINKING OF ONE, TWO OR MORE MANIPULATORS AND TRANSLATOR

UNLIMITED MEMORIZED POSITIONS

SIMULTANEOUS CONTROL VIA ROE AND COMPUTER GUI

POSITIONAL INFORMATION MIRRORED BETWEEN GUI AND ROE

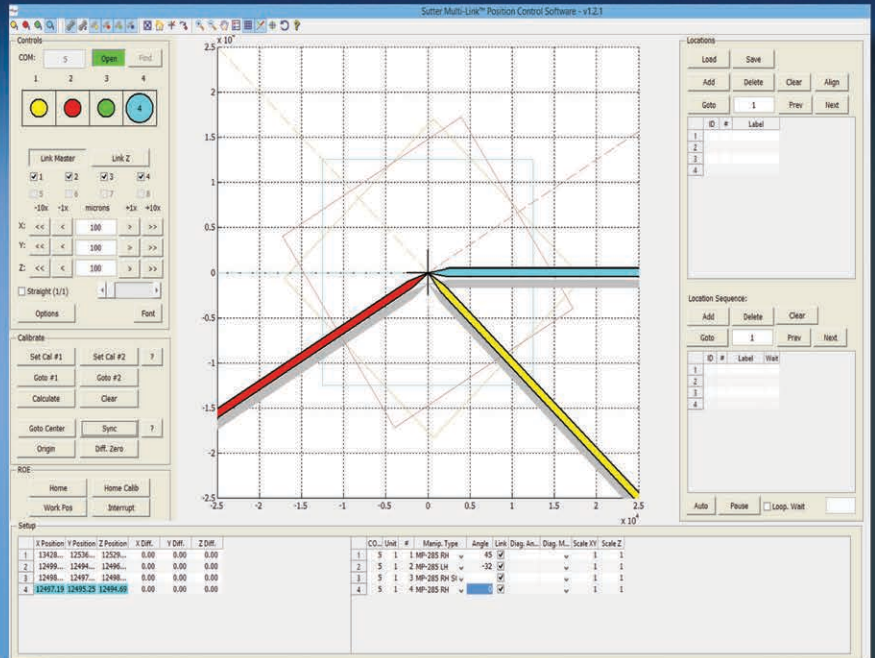
PIPETTES ARE COLOR COORDINATED TO SELECTED MANIPULATOR LED ON ROE

SUPPORTS MOUNTING OF MANIPULATORS AT ANY MOUNTING ANGLE IN THE X-Y PLANE

EXTENDED VERSION CONTROLS UP TO 8 MANIPULATORS

BACKWARDS COMPATIBLE WITH ALL EXISTING MPC-200 CONTROLLERS

PRICE: FREE! AVAILABLE ON OUR TECHNICAL SUPPORT/SOFTWARE PAGE AT WWW.SUTTER.COM



MULTI-LINK™ POSITION CONTROL SOFTWARE

The **Multi-Link™** Position Control Software is a new stand-alone program that interfaces with our **MPC-200** manipulator controllers. **Multi-Link** is an intuitive GUI that uses the **MPC-200** driver Sutter developed for the NIH freeware μ Manager. It operates any Sutter Instrument device that can be connected to the **MPC-200**, including: manipulators, motorized microscopes (**MOM®** and **SOM®**), the **MT-800** translator (with or without focus drive), and the **MPC-78** platform stage (with or without focus drive) and the **3DMS** stage.

The most powerful aspect of the **Multi-Link** software is the ability to link the movement of multiple devices together. The lead pipette can be used to direct the movement of a microscope translator (objective/camera), or the translator can function as the leader and thereby keep the pipettes in the field of view. The leading device can be

controlled through the manual input knobs of the **ROE-200** or the computer GUI via a mouse or other PC interface.

Multi-Link easily memorizes multiple working locations and can rapidly switch between them. The user simply moves the microscope to a region of interest and clicks to save the location. Turning on "Link" will then coordinate all linked devices (usually manipulators) with moves made by the microscope via a motorized translator. Switching between memorized positions will bring all linked devices to that location. Link, intuitive and easy to use, will allow users to bring all their pipettes to a working location in seconds! The memory positions available in the **Multi-Link** software allow for most of the same robotic functionality found in our **MP-285**. Memorized locations can be repeated in looped operation.

While all features found in the **ROE-200** have been replicated in **Multi-Link**, full functionality of the ROE is retained, allowing movement of any connected device by turning the knobs on the ROE or by clicking and dragging the pipettes in software. Moves made in the GUI update the positional information displayed on the ROE, and moves made with the **ROE-200** are updated in **Multi-Link**.

All the features of the **Multi-Link** software, from Link to the virtual pipette GUI, will increase the success rate of your experiments and save time. Another outstanding feature of this software is the price. Sutter is including this software at no charge with all **MPC-200** systems. The software is also available as a **FREE** download for those with existing **MPC-200** systems!

(continued on back)



One Digital Drive • Novato • CA 94949 • Phone 415.883.0128
Fax 415.883.0572 • Web www.sutter.com • Email info@sutter.com



ADDITIONAL FEATURES

Accurately linked moves require "Calibration". A calibration protocol within the software automatically determines the mounting angle of each manipulator in the X-Y plane, so that Linked movement of the pipette will always be accurate. With two simple moves, the software automatically determines the mounting angle of each pipette with respect to the objective/camera.

The **ROE-200** always displays the coordinates in an absolute scale, from 0 to 25000 μ m.

Multi-Link[™] displays coordinates in either absolute or relative scale. Press one button to set the relative origin in all three axes and move in a positive or negative direction with respect to the Relative origin.

Multi-Link can also multiply the coordinates by a user-defined Scaling factor. The Scaling factor allows the user to match the position information displayed in **Multi-Link** to that of third-party and/or home-made stages, translators, focusing knobs, or other stepper motor devices.

One of the most innovative features of **Multi-Link** is the GUI representation of all manipulated pipettes. In addition to being a great teaching tool, the GUI allows a user to visualize the relative position of all pipettes in an experiment. Zoom out to see the location of each pipette at each memorized Location, even when these positions are outside the microscope's field of view. Drag the virtual pipettes from one memorized position to another and the manipulators will move the real pipettes in real-time.

All the features of the Multi-Link software, from Link to the virtual pipette GUI, will increase the success rate of your experiments and save time. Another outstanding feature of this software is the price. Sutter is including this software at no charge with all MPC-200 systems. The software is also available as a FREE download for those with existing MPC-200 systems!