



## **MPC-325**

### **MP-225 Based Multi-Micromanipulator Systems**

The MPC-325 System consists of the MPC-200 controller and one to four MP-225 micromanipulators.

## **MPC-200 Controller and ROE**

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 one or two of our world-renowned mechanicals, the MP-285 (MPC-385), the MP-225 (MPC-325) or the narrow format MP-865 (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. Unlike the competition, our multi-unit controller employs linear output circuitry. Sutter adds additional manipulators 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 to 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.

## **MP-225 Micromanipulator**

The MP-225 manipulator represents an economical alternative to the MP-285 and MPC-365. In 2002, production and design changes allowed us to produce this motorized manipulator as a more affordable alternative to the industry standard MP-285. The mechanical design utilizes a miniature stepper motor and integral anti-backlash gear head. Pre-loaded ball bearing slides provide smooth movement throughout the 25 mm of travel. The methodology for mounting pipette holders and headstages used with the MP-285 has been maintained in the MP-225 to allow for cross compatibility.

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.

### **FEATURES**

- 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 one 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)
- Display indicates X, Y, Z coordinates, Mode, active manipulator
- Robotic Home and Work Position moves for easy automated pipette exchange
- Faster robotic moves than previous versions
- Definable 4th axis for coaxial pipette movement, angle selected by DIP switches
- Simple USB interface
- Toggle switch selects which manipulator is connected to input device
- LED and display indicate active manipulator
- Ultra-low drift, ultra-smooth movement
- Low-drift mechanical stability

### **TECHNICAL SPECIFICATIONS**

#### **Resolution and Full Travel**

Minimal microstep size is 62.5 nanometers per microstep

Display has single micron resolution

Full travel is 25 mm in each axis

#### **Maximum Speed**

*MP-225 mechanical*

3 mm/sec

#### **Long Term Stability**

*Drive Mechanism*

< 0.5 micron / 24 hr

#### **Dimensions**

*MPC-200 Controller*

15.75 in x 10.75 in x 3.5 in | 40 cm x 27.3 cm x 9 cm

*ROE-200*

10 in x 6 in x 4 in | 25 cm x 15 cm x 23 cm

#### **Weight**

*MPC-200 Controller*