SENSAPEX

ZERO DRIFT MICROMANIPULATORS

The new state of the art of micromanipulation

- Compact plug-and-play systems with unlimited scalability
- Zero drift solid-state drives with integrated closed-loop control
- 20 mm range with 5 nm resolution and 50 nm repeatability
- Virtual and physical 4th axis options
- Easy to use electrode exchange mechanisms
- Millisecond level synchrony for automated positioning

www.sensapex.com

"A good micromanipulator is solidly constructed and compact, so that the moment arm from the tip of the electrode, through the body of the manipulator, to the cell in the chamber, is as short as possible. Ideally, the micromanipulator should be attached close to the chamber; preferably bolted directly to the microscope stage."

The Axon Guide: Electrophysiology and Biophysics Laboratory Techniques. 3rd Edition (2012).

"Importantly, approaching a cell at the lower speeds is smooth with minimal tip vibration thus minimizing tissue and cell disruption during patch formation. Once a recording is established in cell-attached or whole-cell modes the manipulators are extremely stable allowing for prolonged monitoring of neuronal activity."

Dr. Kenneth Pelkey, McBain lab, NIH.

Micromanipulator

Positioning range:	20x20x20 mm3 (XYZ)
Resolution / repeatibility:	5 nm / 50 nm
Max. speed:	10 mm/s
Load:	0 - 150 g
True approach angle:	0 - 45 I 90* degrees
4th axis:	virtual I physical (optional)
Table mounting:	Bolt
Electrode exchange**:	Side rotate I flip + slide
Dimensions:	42x77x95 mm

*Requires 4th physical axis

**Handedness, mounting and electrode exchange options are customer exchangeable

Touch Screen Controller

- Intuitive user interface with touch screen display
- Easy speed adjustment and manipulator selection
- Programmable memory positions
- Two RWs per controller; unlimited no. of manipulators*
- Millisecond level control synchrony between manipulators
- Fast computer interface through Ethernet
- Open source SDK & development community

Batteries:	Li-ion (rechargeable), up to 1 week usage time
AC charger:	90-264 V, 50-60 Hz
Dimensions:	120x95x123 mm

*Connecting more than two manipulators requires connector hub

Rotary Wheel remote interface

- Four knob version available for 4th virtual or physical axis
- Quick buttons for speed and manipulator selections
- USB connector to Touch Screen Controller

Dimensions: 170x53x170 mm

"The connections from the fulcrum of the micromanipulator to the cell should be as short, stiff and light as is feasible. Lightweight e.g. piezo-driven manipulators mounted on the stage may be the best arrangement, otherwise more remote mounting requires manipulator of massive construction to achieve stability and precision, such as the Huxley design".

Microelectrode Techniques: The Plymouth Workshop Handbook", editor David Ogden, 2nd edition (1994).

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