
**MP-225**
Motorized Micromanipulator

The MP-225 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. While the MP-225 feature set is less comprehensive than the MP-285, it includes the most popular features with an efficient user interface. 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 controller uses low-noise, linear-drive output circuitry identical to that found in the MP-285. 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.

The MP-225 is designed primarily for positioning patch and intracellular recording pipettes. We have retained and refined the features most desired for this type of work. An extended version of the popular rotary optical encoder (ROE) is the sole input device available with the MP-225. Like the MP-285, the manipulator has a synthetic 4th axis for diagonal advancement of the pipette; 16 different angles are selectable via DIP switches. Speed and resolution of movement are easily selected with a multiple position thumbwheel, allowing fast/coarse movement and slow/ultra-fine movement in 10 increments. Two commonly used robotic movements have been incorporated for user convenience. A single button press can initiate a move to a Home position for pipette exchange or to a user defined Work position for quick location of the pipette near the recording location. A display on the ROE gives position location. As all controls are located on the ROE, the controller can be moved to a less accessible area of your setup and does not need to occupy prime space in an equipment rack.

As always, our technical support team is available to address your particular needs and answer all questions before and after your purchase.

**FEATURES**

- Highly stable for experiments intolerant of pipette drift
- Submicron (62.5 nm) minimal resolution for fine movement
- Convenient thumbwheel selects resolution/speed of movement
- 25 mm of motorized travel on all three axes
- 4th axis for coaxial movement of pipette, angle selected by DIP switches on ROE
- ROE button press actuates move to Home position for pipette exchange
- ROE button press actuates move to Work position near recording location
- Continuous display (in microns) of axes positions located on ROE
- DIP switches on ROE select direction of movement produced by turn of ROE knob
- Modularized, compact design easily adaptable to your setup
- Universal mounting system for headstage or pipette holder
- Mounting adapters included with manipulator

**TECHNICAL SPECIFICATIONS**

**Travel**
1 in | 25 mm on all three axes

**Resolution**
Six microstep sizes selectable (um/ustep): 0.0625, 0.125, 0.25, 0.5, 1.0 and 2.0
Finer movement settings use the 62.5 nm microstep size but fewer microsteps are commanded per encoder knob turn

**Maximum Speed**
2.0 mm/sec

**Drift**
*Drive Mechanism*
< 0.5 microns in 20 hours

**Drive Mechanism**
Integral miniature stepper motor anti-backlash gearhead

**Dimensions**
*Mechanical*
4 in x 5.5 in x 6 in | 10 cm x 15 cm x 15.5 cm
*Controller*
16 in x 11 in x 3.75 in | 40.6 cm x 28 cm x 9.6 cm

**Weight**
*Manipulator*
2.95 lbs | 1.3 kg
*Controller*
10 lb 11 oz/4.5 kg

**Electrical**
115/230 Volts
50/60 Hertz power line