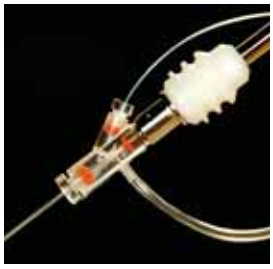
Microelectrode Holders

Microelectrode holders provide an important link between the living cell and high impedance amplifiers. Most holders are used to hold glass electrodes made from drawn capillary glass. The holder provides a stable connection between the amplifier head stage and the electrode. Typically a silver wire or silver chloride pellet is used to form a half-cell so that the electrolyte in the holder can form an electrical connection to the amplifier.



PPH-2P-BNC-0-1.5

BNC type holders

For use with all Heka amplifiers, most NPI electronic amplifiers, Dagan amplifiers, and any amplifier whose input uses a BNC type of connector. All BNC type holders are made of low noise polycarbonate (Teflon available upon request). All come standard with a Ag wire (Ag/AgCl pellet available upon request). Standard glass outside diameter is 1.5mm (other sizes available).

PPH-1P-BNC-0-1.5

PPH-2P-AXU-90-1.5

Axon / Molecular Devices type holders

For use with all Axon amplifiers including Axopatch 1 series, 200A, Axoclamp-2A series, and all Axon amplifiers with the universal connector input. All Axon style holders are made of low noise polycarbonate (Teflon available upon request). All come standard with a Ag wire (Ag/AgCl pellet available upon request). Standard glass outside diameter is 1.5mm (other sizes available).

PPH-1P-AXU-0-1.5

IPH-THP-2MMP-90-1.5

Injection / Ejection holders

All injection/ejection holders come with Al bar for easy mounting on a manipulator. Female luer fitting for pressure inputs are included as well. Connections to different amplifier headstages are available as well. Standard glass outside diameter is 1.5mm (other sizes available)

PPH-THP-NIC-0-1.5

Part numbers and ordering information

□ PH – □ P – ____ – □ – □ – □

P = Polycarbonate
T = Teflon
I = Injection*
(only availble in Polycarbonate)

Side Port Options
0 = No Side Port
1 = Standard Patch Perfusion Port
2 = Additional Side Perfusion Port
TH = Threaded Side Port
For Injection Only

Input Connector
BNC = Heka, Dagan and most NPI headstages
AXU = All Axon universal headstages
AXP = Axopatch 1 series & 200A patch clamp amplifiers
AXC = Older Axoclamp amplifiers
NIC = No input connector - injection holder only
2MMP= 2mm pin connector

Angle of Headstage Connector
0°, 30°, 45°, 90°

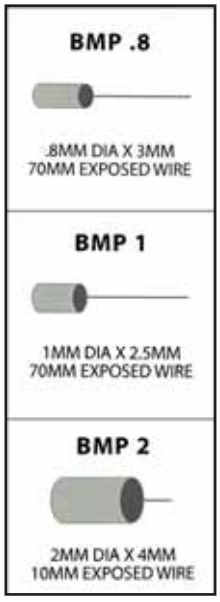
Glass OD
1.0mm, 1.2mm,
1.5mm, 2.0mm
*custom options available

P = Change Ag wire to Ag/AgCl Pellet

ALA Scientific Instruments, Inc.
E-Mail: Sales@alascience.com Web: www.alascience.com

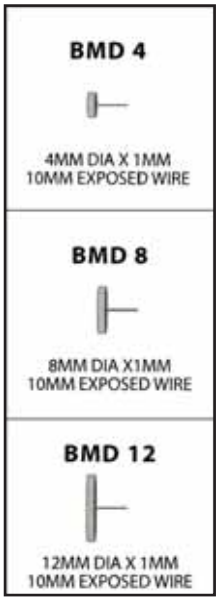
Ag/AgCl Pellets, and KCL Bridge Holder

A range of Ag/AgCl electrodes suitable for use as reference electrodes are available. Made from very high purity materials using a careful proprietary process which results in a fine grain, homogeneous mixture of silver and silver chloride. A careful sintering process strengthens and stabilizes the entire electrode assembly.



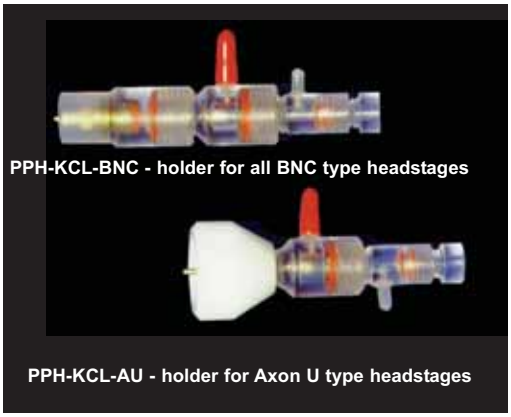
Ag/AgCl disk reference electrodes

Ag/AgCl electrodes are embedded on a .25 x 70 mm silver wire, in which the last 10 mm of the wire is uniformly coated with Ag/AgCl to a maximum diameter of 0.8 mm. They are reusable, resurfaceable, never needs chloriding, and are essentially non-polarizble. The BMP-0.8, and BMP-1 have a 70mm Ag wire. All others have a 10mm Ag wire.



Electrical Specifications:
Typical values of the key parameters, measured in 0.9% saline, between pairs of Ag-AgCl electrodes of the same size
• DC offset Voltage: 180µ V
• Drift: 25µ V/hr
• Noise: 1µ V p-p
(0.1-1 kHz with 50 Hz eliminated)

KCl Bridge Electrode Holder



Reference:
Snyder, Kriegstein, & Sachs, A convenient electrode holder for glass pipettes to stablize electrode potentials, Pflugers Arch. 438: 405-411 (1999).

Easy-to-use electrode holder for microelectrodes to stabilize electrode potentials and eliminate Cl^- from recording solution

- **Provides stable offset potential**
- **Eliminates need for Cl^- containing solutions in recording pipettes**
- **Improves noise performance**
- **Easy set-up and disassembly**
- **KCl bridge completes circuit from AgCl pellet to recording electrode via quartz capillary**
- **Connections for all amplifiers (BNC & AU type standard)**
- **Available for all size glass (1.5mm standard)**
- **Comes as a kit with parts needed to get started**