

WaveNow / WaveNano Universal Cell Cable

General Product Information

This cable is suitable for use with the WaveNow, WaveNano, and WaveNow^{XY} potentiostats.

1. Cable Kit Overview

1.1 Connection to the Potentiostat

One end of the WaveNow Series Universal Cell Cable (part #: AKCABLE5) has a male HD-15 connector which attaches to the HD-15 cell port on the potentiostat. The cell port offers connections for all of the signal, shield, and ground lines, and the other end of the cell cable brings each of these lines to convenient banana plug (or optional alligator clip) connection points (see: Figure 1-1).



Figure 1-1. WaveNow Series Universal Cell Cable

1.2 Coaxial Cable Line Description

The Universal Cell Cable breaks the cell port signals out to shielded coaxial cables which terminate at stackable banana plugs. The kit includes alligator clips that slide on to the banana plugs for electrode pin connections. The banana plug color indicates which signal is carried by a given line as per the standard Pine Research electrode color code (see: Figure 2-1).

Current is driven through an electrochemical cell between the working electrode and the counter electrode. The cell cable uses a pair of signal lines to drive charge between these two electrodes. The coaxial cable terminating at the RED banana plug should be connected to the working electrode, and the coaxial cable terminating at the GREEN banana plug should be connected to the counter electrode. Because the primary current path through an electrochemical cell is between the working electrode and counter electrode, most of the charge flowing through the cell travels through these two cables.

Potentials in the electrochemical cell are measured between the working electrode and the reference electrode. The cell cable uses a pair of high impedance sense lines to measure the potential between the working and reference electrodes. The coaxial cable terminating at the ORANGE banana plug senses the potential at the working electrode. The coaxial cable terminating at the WHITE banana plug senses potential at the reference electrode. Very little charge flows through these high impedance signal lines.

A separate DC Common (analog ground) line terminating at a BLACK banana plug is also provided. In some laboratory environments, connecting the DC Common to a Faraday cage shielding the electrochemical cell may help reduce interference from electromagnetic noise sources. Similarly, when using a rotating electrode, noise can sometimes be reduced by connecting the black DC Common banana jack to the rotator's DC Common connection (or, alternately, to the rotator's metal chassis).

2. Pine Research Instrumentation Color Scheme

Pine Research Instrumentation has adopted standard colors for cell cable connections (see: Figure 2-1). Note that a color version of the information shown below is also available on the Pine Research knowledgebase site, see:

<https://www.pineresearch.com/shop/knowledgebase/connector-colors/>


Color Code	Description	
WHITE	Reference Electrode (sense line)	
ORANGE	Working Electrode (sense line)	
RED	Working Electrode (drive line)	
GREEN	Counter Electrode (drive line)	
BLACK	DC Common (signal ground)	

Figure 2-1. Pine Research Electrode Color Code

3. Important Electrode Connection Information

3.1 Working Electrode Connections

The working sense line should be shorted together with the working drive line at a point very near to the electrochemical cell (see: Figure 3-1). To short the cables together, stack the ORANGE banana cable with the RED banana cable. Alternately, you may clip the alligator clip of the working sense line (ORANGE) to the alligator clip on the working drive line (RED).

When working with a Pine Research rotating electrode, be sure to connect the working electrode drive line (RED) **and** the working electrode sense line (ORANGE) to the appropriate disk electrode connection point on the rotator.

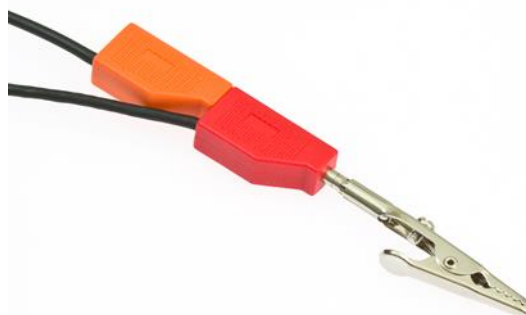


Figure 3-1 Working Electrode Drive and Sense

Reference Electrode Connections

Many reference electrodes are equipped with a “pin” connector. For this type of reference electrode, simply slide an alligator clip on to the WHITE banana plug and use the clip to attach to the pin connector (see: Figure 3-2).

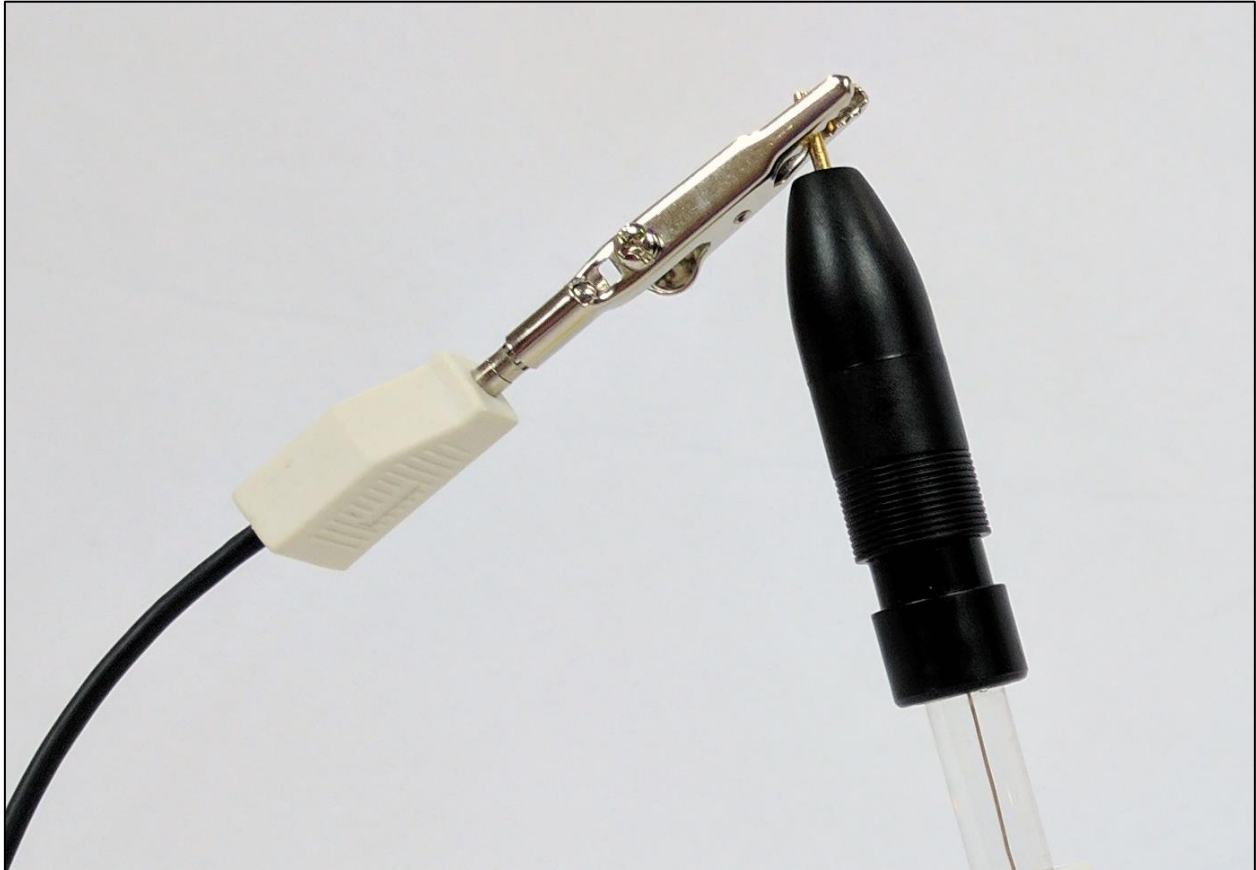


Figure 3-2. Reference Electrode Connection

4. Contact Us/Support

Please contact Pine Research Instrumentation with any of your needs including general and technical questions, pricing/quote assistance, selection guidance, applications questions, etc. We are here to serve you. Contact us via the means provided below.

4.1 By Phone

Our offices are located in Durham, NC in the eastern US time zone. We are available by phone Monday through Friday from 9 AM EST to 5 PM EST. You can reach a live person by calling +1 (919) 782-8320.

4.2 By E-mail

Send an email to pinewire@pineresearch.com. This is the general sales email and our team will ensure your email is routed to the most appropriate technical support staff available. Our goal is to respond to emails within 24 hours of receipt.