

WBK61 and WBK62 - High-Voltage Adapters

Description

The WBK61 and WBK62 are single-channel high-voltage adapters that can be used with WaveBooks, or with WBK10 series expansion modules. In addition, WBK61 and WBK62 can be used with WBK11, WBK12, and WBK13 series cards.

<i>WBK61 and WBK62, Product Comparison</i>		
	WBK61	WBK62
Voltage Divider	200:1 fixed	20:1 fixed
Maximum Voltage	1000 Vpeak (on either input reference to earth ground)	100 Vpeak (on either input reference to earth ground)
Maximum Differential Voltage	2000 Vpeak (if neither input exceeds 1000 Vp rating to earth ground)	200 Vpeak (if neither input exceeds 100 Vp rating to earth ground)

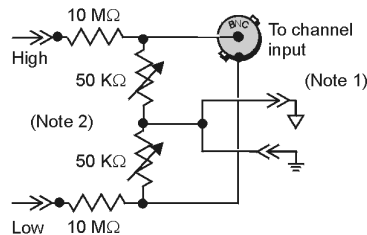
The channel output connection [for both the WBK61 and WBK62 voltage adapters] is made through a BNC-to-BNC coupler. Each model has two signal input-connections, one for low-signal input, and the other for high-signal input. The input channels are resistively isolated from ground, providing for safe connection of the test device. Series resistors, for both high and low channels, serve as attenuators and provide a maximum current limit of 100 μ A.

The WBK61 and WBK62 include:

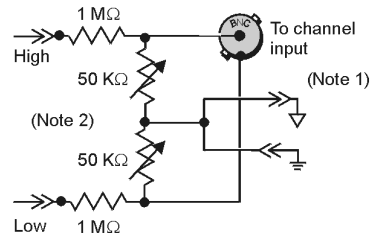
- Input HI, safety-style banana-jack
- Input LO, safety-style banana-jack
- 60-inch (152 cm) cables with probe tips and alligator clips
- Green stacking banana plug (for analog common)
- CN-110 BNC-to-BNC Coupler
- CN-111 Banana Plug/Alligator-clip earth-ground cable

The following figure provides a simplified schematic for each model.

WBK61, with 200:1 Divider Ratio



WBK62, with 20:1 Divider Ratio



Note 1: Channel input connections are made (BNC-to-BNC) to the WaveBook/512 data acquisition system, or to the WBK10 analog expansion module. Refer to Hardware Setup in regard to analog-ground and earth-ground connections.

Note 2: The variable resistors are factory-set at 50K Ω and not user-adjustable.

WBK61 and WBK62 Schematics

Hardware Setup

Refer to the following steps and figures to connect the high voltage adapter. Note that we will use the term “WBK61/62” to refer to both WBK61 and WBK62 since the installation of these models is identical.

WARNING



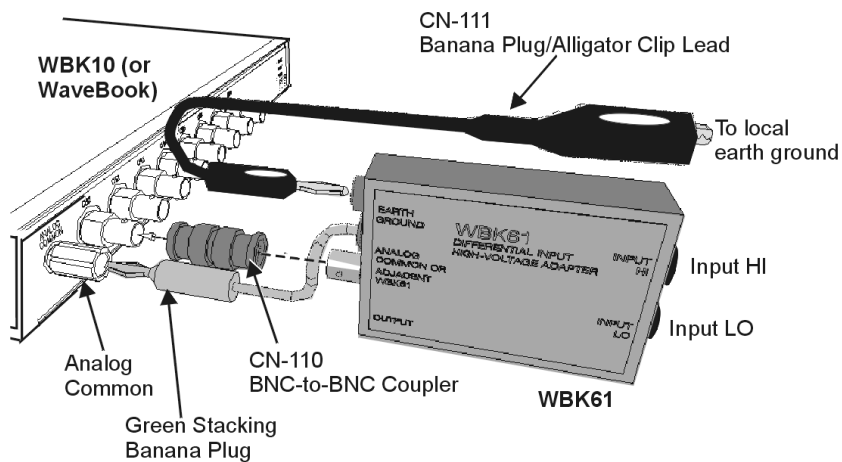
High voltages can cause death or severe injury. Do not connect or disconnect the probes from WBK61 or WBK62 when the leads are connected to a voltage source.

WARNING



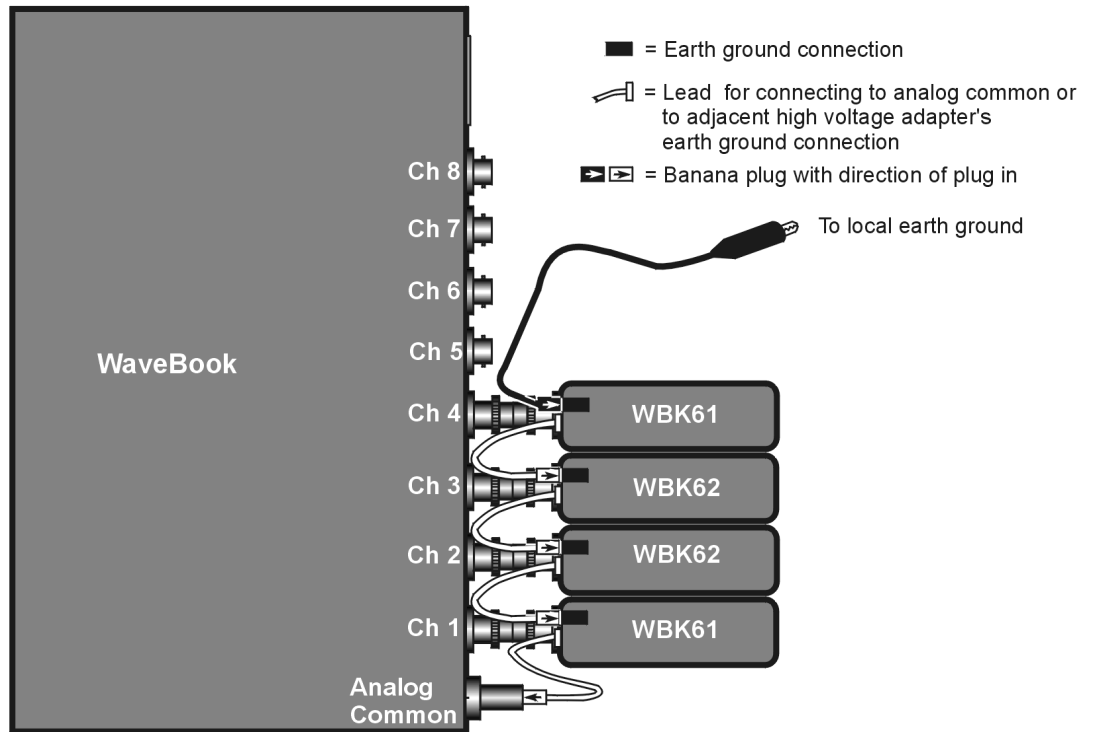
Failure to properly connect a WBK61 or WBK62 to the acquisition device (WaveBook or WBK10) and to ground will result in unsafe operation.

1. Connect WBK61/62 to any input channel(s) of the WaveBook or WBK10 series module using the supplied BNC-to-BNC coupler (CN-110). Refer to the following figures.
2. *If connecting only one WBK61/62*, connect the green stacking banana plug to analog common (J12) on the WaveBook or WBK10 series module.



A WBK61 Being Connected to a Channel 1 BNC

If connecting two or more WBK61/62s, connect the green stacking banana plug of the first WBK61/62 to analog common (J12) on the WaveBook or WBK10 series module. Connect the other WBK61/62 stacking banana plugs to the adjacent WBK61/62 earth ground connections (see following figure).



Example: Two WBK61 and two WBK62 High Voltage Adapters Connected to a WaveBook/512

3. **If connecting only one WBK61/62**, connect the green *banana plug/alligator clip* lead (CN-111) from the WBK61/62 earth ground connector to the local earth ground.

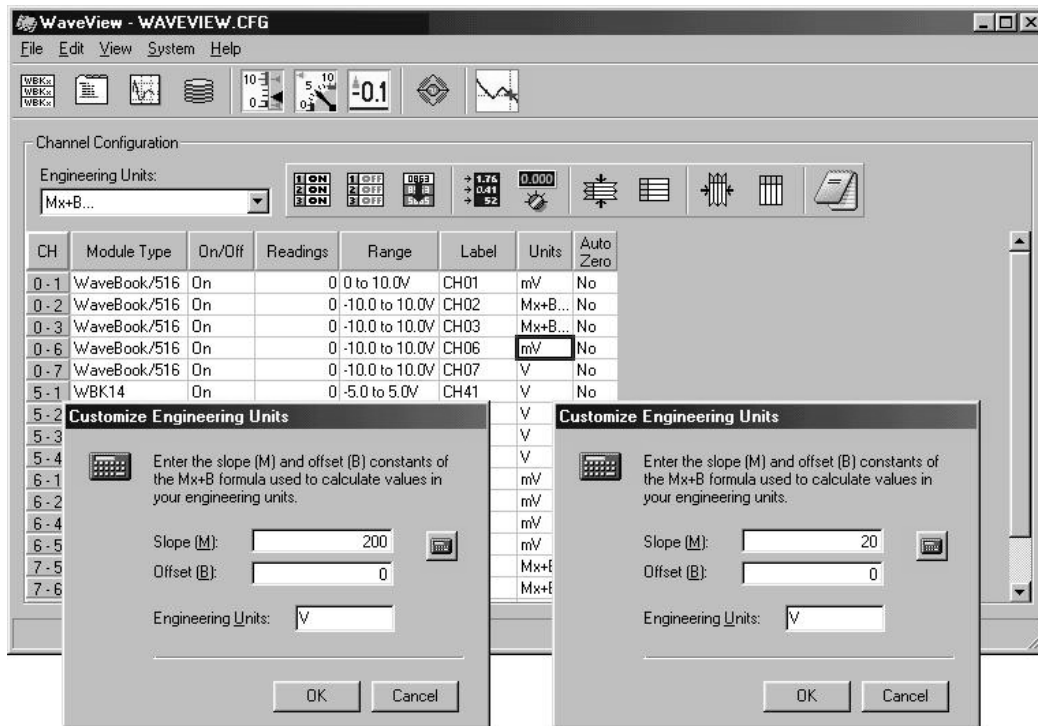
If connecting two or more WBK61/62s, connect the green *banana plug/alligator clip* lead (CN-111) from the *last* WBK61/62 earth ground connector to the local earth ground. Refer also to step 2 and the above figure.

4. Connect the input leads (CA-152) to the WBK61/62 *Input HI* and *Input LO* jacks.
5. Connect the test leads (CA-152) to the circuit under test. You may use alligator clips (CN-109) to connect test leads.

If desired, set the applicable WaveBook channel(s) to the appropriate scale by setting the $mx+b$ function in the WaveView program as discussed in the following section, *Software Setup*.

Software Setup

Depending on your application, you will need to set several software parameters so that *WaveView* will organize data to meet your requirements. Of special importance is the correct setting of the scaling factor. This is done using the $mx + b$ equation.



For WBK61 Applications, set "m" to 200.

For WBK62 Applications, set "m" to 20.

WaveView Configuration Main Window

with "Customize Engineering Units" dialog boxes for setting $Mx + B$ and Engineering Units*

*Note: In actual applications only one Customize Engineering Units box is displayed.

To configure units for WBK61 and WBK62, you must use the *Customize Engineering Units* dialog box to ensure the units are correctly scaled. This is done as follows:

1. Right-click on the *Units* column (in *WaveView*'s main window).
2. Select $mx + b$ in the *Units* box. The *Configure Engineering Units* dialog box will appear.
3. For WBK61: set m to 200 (see previous figure)
For WBK62: set m to 20 (see previous figure)



Reference Notes:

- For detailed software setup information, refer to the "Software Setup" in chapter 3.
- For detailed *WaveView* information, refer to the *WaveView Document Module*.
- If you intend to write your own computer programs, refer to the *Programmer's Manual* (p/n 1008-0901) as needed. Note that the API does not contain functions that are specific to WBK61 or WBK62.

WBK61 and WBK62 - Specifications

Name/Function:

WBK61, High-Voltage Adapter with Probes, 200:1 Voltage Divider

WBK62, High-Voltage Adapter with Probes, 20:1 Voltage Divider

Number of Channels: 1

Dimensions: 83 mm × 61 mm × 19.5 mm (3.25" × 2.375" × 0.77")

Cables: 60" leads with detachable probe tips and alligator clips

Output Connector: BNC female

Voltage Divider:

WBK61: 200:1 fixed

WBK62: 20:1 fixed

Maximum Voltage

WBK61: 1000 V_{peak} (on either input reference to earth ground)

WBK62: 100 V_{peak} (on either input reference to earth ground)

Maximum Differential Voltage:

WBK61: 2000 V_{peak} (if neither input exceeds 1000 V_p rating to earth ground)

WBK62: 200 V_{peak} (if neither input exceeds 100 V_p rating to earth ground)

Frequency Characteristics: approximates a single-pole frequency response

-3 dB Bandwidth: 200 kHz minimum

Voltage Ranges:

Note: For the following ranges, the asterisk (*) indicates that the range is obtained with the use of a WBK11, WBK12, or WBK13.

WBK61 Effective Ranges:

Unipolar: +1000V, 500V, 200V, 100V*, 40V*, 20V*

Bipolar: ±1000V, 500V, 200V, 100V, 50V*, 20V*, 10V*

WBK62 Effective Ranges:

Note: For the WBK62 ranges that are followed by two asterisks (**), the WaveBook/512 (or WBK10) will exhibit superior performance with no WBK62 present.

Unipolar: +100V, 50V, 20V, 10V**, 4V**, 2V**

Bipolar: ±100V, 50V, 20V, 10V, 5V**, 2V**, 1V**

Measurement Errors:

The following values include total system error, i.e., they include errors from WaveBook/512, WBK10, WBK11, WBK12, and WBK13. The value for gain error does not include offset error.

Gain Error:

0.1% FS (unipolar)

0.2% FS (bipolar)

Offset Error:

0.1% FS (unipolar)

0.2% FS (bipolar)

