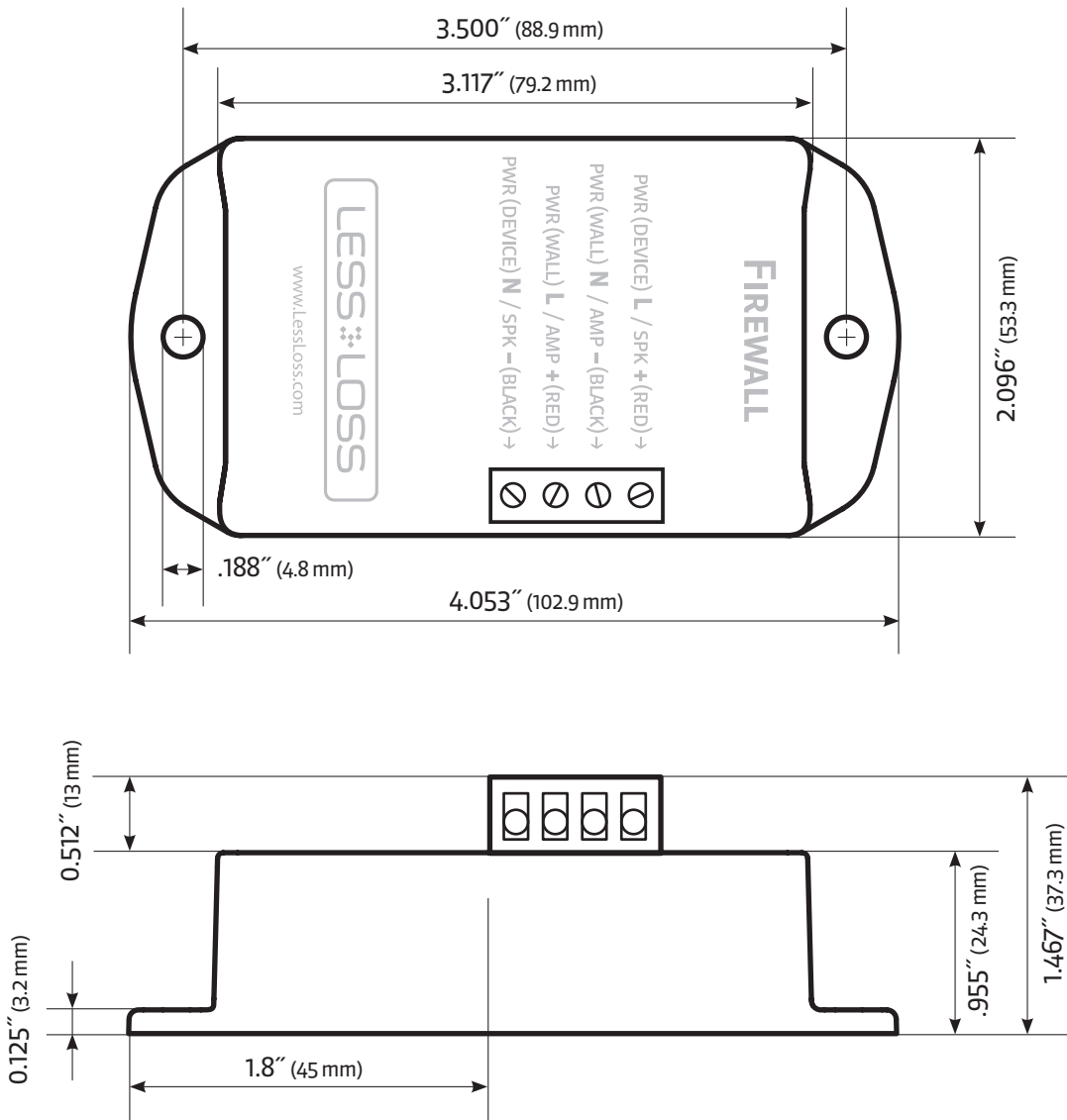


Firewall Module

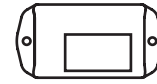
INSTALLATION AND USAGE GUIDE

Thank you for purchasing the Firewall. This device will perform in accordance to how you connect it. If you do not take the trouble to follow these installation directions, you will not reap all the benefit this device has to offer. So, please, take this guide seriously.

Dimensions



Technical data



	up to 2.5 mm ²	up to 16 mm ²
Wire Sizes		
Solid Min	0.2 mm ²	0.5 mm ²
Solid Max	4.0 mm ²	16.0 mm ²
Stranded (flexible) Min	0.2 mm ²	6.0 mm ²
Stranded (flexible) Max	2.5 mm ²	16.0 mm ²
Wire Strip Length		
All wire sizes	7.0 mm	??? mm
Terminal Spacing		
Center to center	5 mm	16 mm ???
Screw Size		
All four terminals	M3, flat	1.0x5.5 mm, M4, flat
Temperatures		
Operating temperatures	-30°C-105°C	-30°C-105°C
Electrical		
Max Voltage	300 V	300 V
Max Current	20 A	20 A

Warning! This is of crucial importance!

Please familiarize yourself with the following essential installation instructions. The ultimate performance of the Firewall module depends completely upon your correct initial installation. If you do it incorrectly, you will never get top performance out of the Firewall module. The first time connection is absolutely crucial.

Also, not only is it crucial to connect the Firewall module correctly, it is also crucial to keep it connected correctly without swapping the L and N lines or their direction. This holds true always, but especially during the initial first day of use.

Initial and most obvious burn-in takes about 30 minutes. During this time, quite a remarkable change in sound will occur. This is normal. Initial hardness and lifelessness of the sound will begin to melt away, revealing more human, more warm colors. This process is little understood but has been extensively reported by many users and experimenters. As with all new gear, the high frequency 'freshness' or 'immaturity' of sound passes, but this holds especially true of the Firewall module. Please keep this important initialization phase of use in mind when connecting for the first time. The ultimate performance of the device depends completely upon correct use and adherence to proper connection.

Each label describes where each wire is to be connected, as follows:

Label on the Firewall Module	Explanation for Power Connection	Explanation for Speaker Connection
PWR (DEVICE) L / SPK + (RED)→	This terminal is to be connected to the L line which goes into the transformer of the device.	This terminal is to be connected to the +, positive, or red colored speaker signal line which goes into the loudspeaker.
PWR (WALL) N / AMP - (BLACK)→	This terminal is to be connected to the N line which goes into the wall outlet.	This terminal is to be connected to the -, negative, or black colored speaker signal line which goes into the amplifier.
PWR (WALL) L / AMP + (RED)→	This terminal is to be connected to the L line which goes into the wall outlet.	This terminal is to be connected to the +, positive, or red colored speaker signal line which goes into the amplifier.
PWR (DEVICE) N / SPK - (BLACK)→	This terminal is to be connected to the N line which goes into the transformer of the device.	This terminal is to be connected to the -, negative, or black colored speaker signal line which goes into the loudspeaker.



You will always get better results if you use solid core wire rather than multi-stranded wire, unless the multi-stranded wire is a true litz wire. In that case, make sure you burn off all the lacquer at the ends and solder the litz ends together before installation.

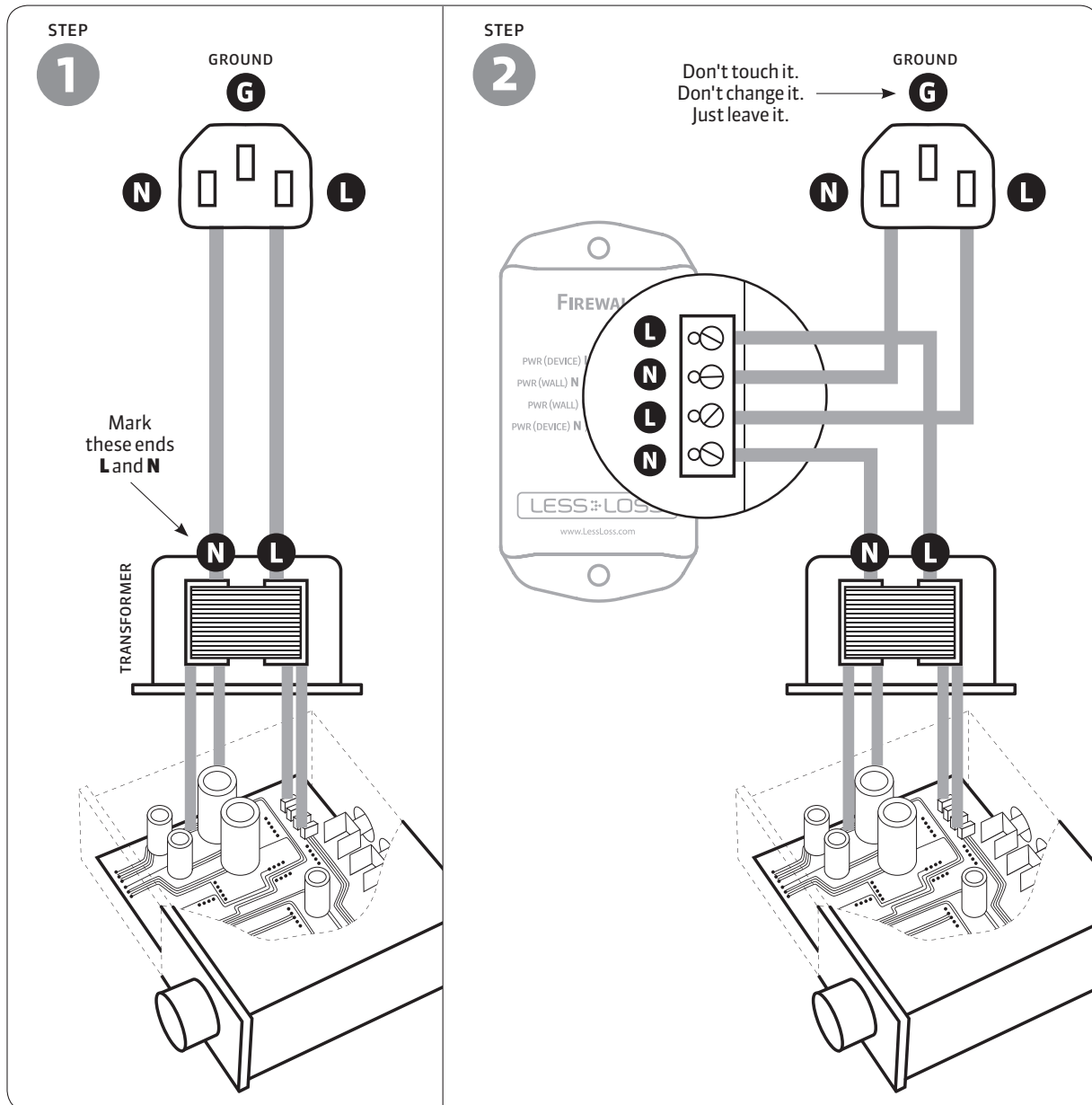


You will always get better results if you use only fresh wire which has never before been used. This way, the Firewall will assist in directionally burning in the wire properly (assuming proper connection).

Connection to Power

Connection is simple, in only two steps:

- 1 Locate **L** and **N** lines which connect IEC inlet and transformer.
Mark the lines **L** and **N** at the transformer end so you don't get confused.
- 2 Split those two lines and install the Firewall Module between them.
Do not touch the ground connection. Leave it as it is.

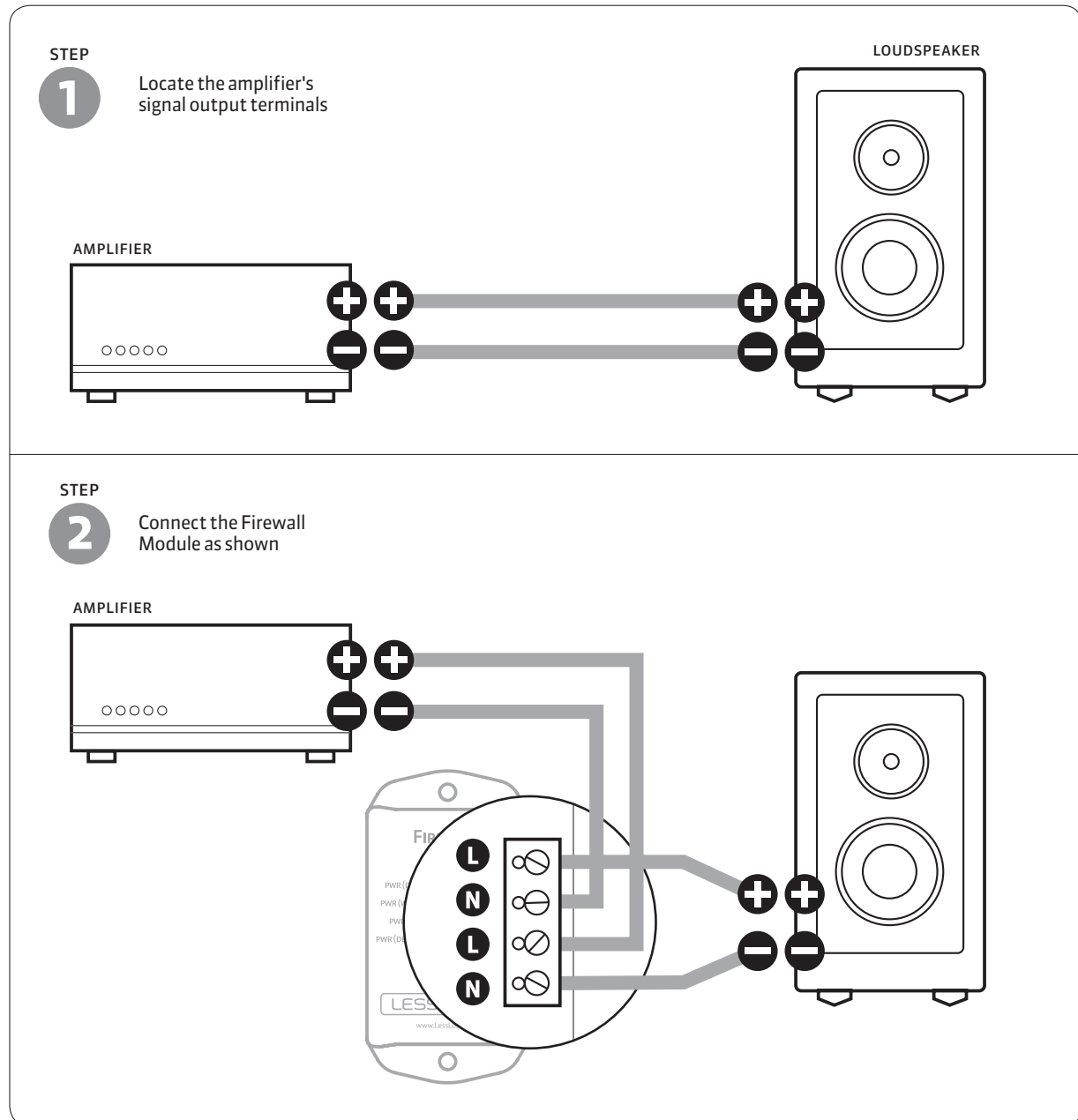


Electrical equipment can use, generate and store high voltage energy that can result in fatal electrocution. Do not operate the Firewall Module in an open environment where physical contact with the terminals can be made. Always consider safety first. Never handle power leads or power terminals unless the equipment has been unplugged from its power source and it has been positively established that any high voltage capacitors have been discharged to a known safe level. You must be thoroughly familiar with the high voltages present in your equipment before installing the Firewall Module. When in doubt, consult a trained technician. Before using the LessLoss Firewall Module, you must agree that LessLoss cannot be held responsible for any malfunction of equipment or any detrimental effects to your well-being, including, but in no way limited to, the loss of sleep, addiction, etc.

Connection to Loudspeaker Line

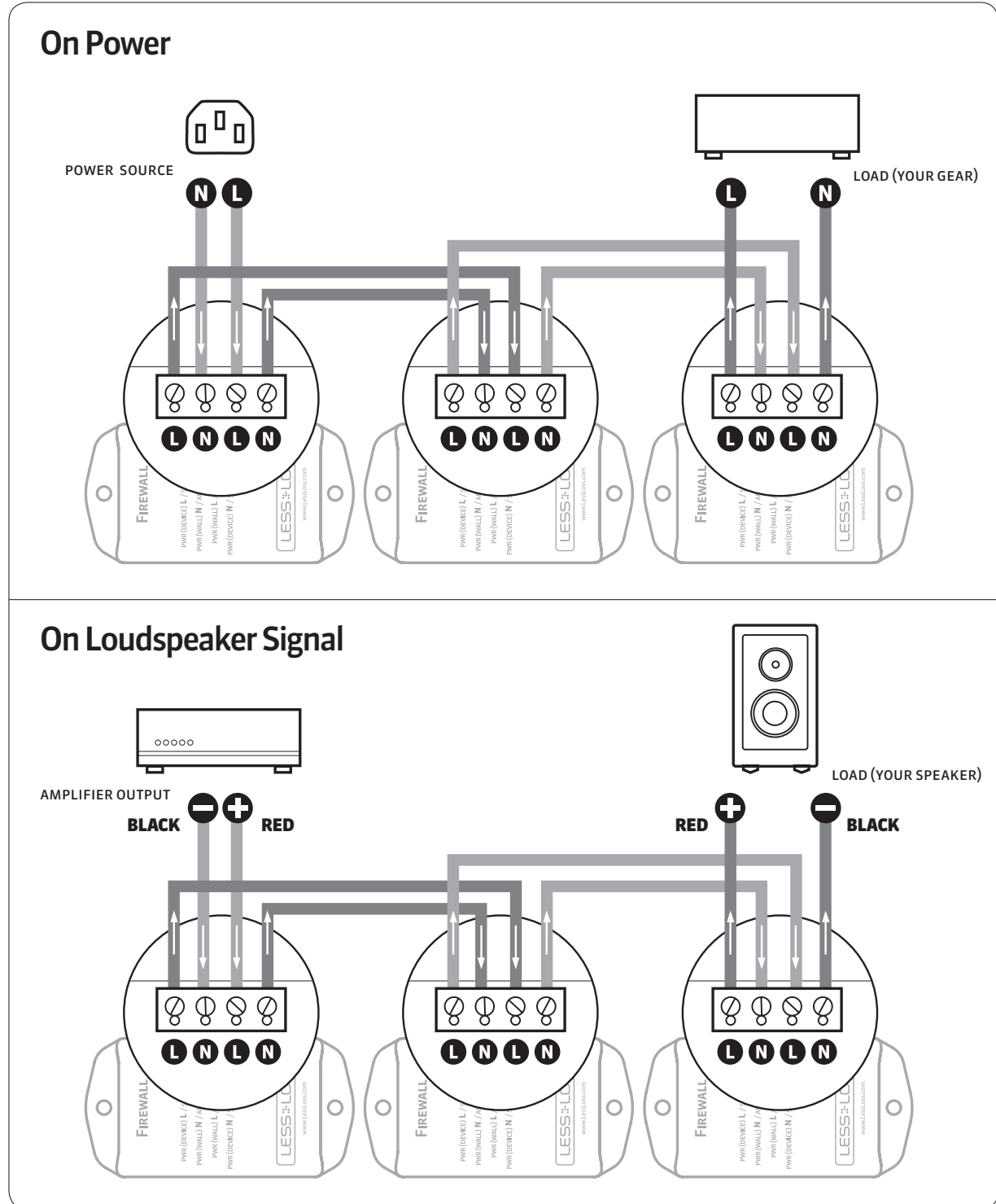
Connection is simple, in only two steps:

- 1 Locate **positive (+/Red)** and **negative (-/Black)** terminals on your amplifier.
- 2 Connect the Firewall Module between the terminals on your amplifier and your loudspeaker cable.



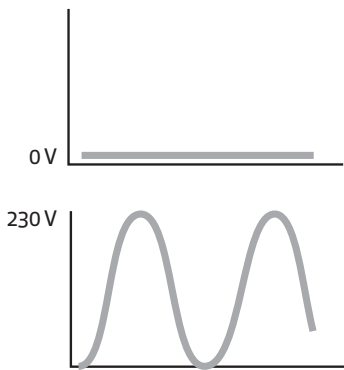
Daisy Chaining Multiple Firewall Modules in Series

The Firewall Module does not color the sound nor influence dynamic performance. Unlimited sound quality improvement is available through daisy chaining multiple units in series.



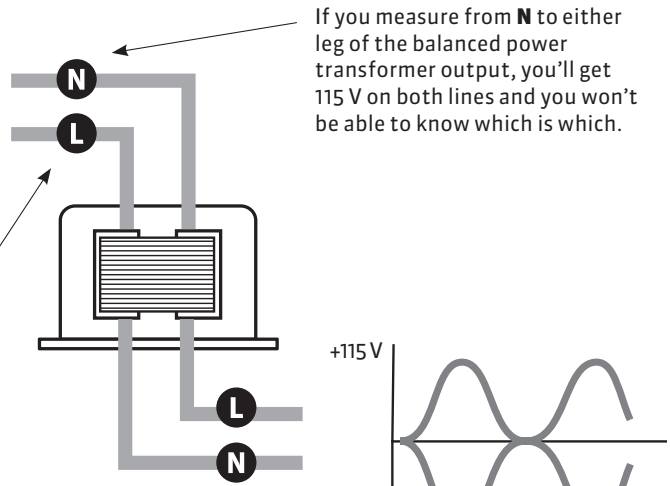
How to Distinguish **L** and **N** on Balancing Transformer Output

Unbalanced power source

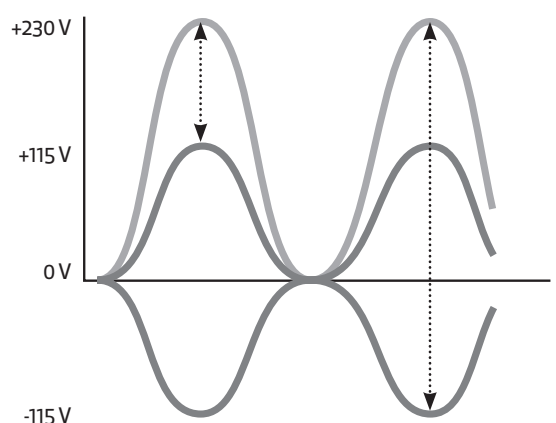
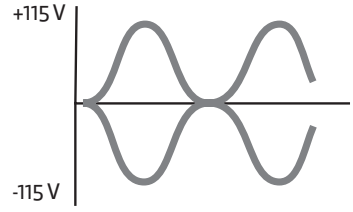


If you measure from **L** to either leg of the balanced power transformer output, you'll get 230V from 0, plus 115V from 0 in the opposite polarity, for a total of 345 V difference between **L** in and **N** out; and you'll get 230 V from 0 and 115 V from 0 in the same polarity, for a total Voltage difference of only 115 V, and this will then be known to be the **L** line on the balanced power output (**L** out).

Balanced power output



If you measure from **N** to either leg of the balanced power transformer output, you'll get 115 V on both lines and you won't be able to know which is which.



115 V measurement from **L** in to **L** out

345 V measurement from **L** in to **N** out