PHASEBACK
APPLIED ENERGY
MADE IN THE USA
KEEPING BUSINESSES RUNNING..
DC CHOKE

Applied Energy LLC

3011 Mackinaw Meadows Drive

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www.phaseback.com

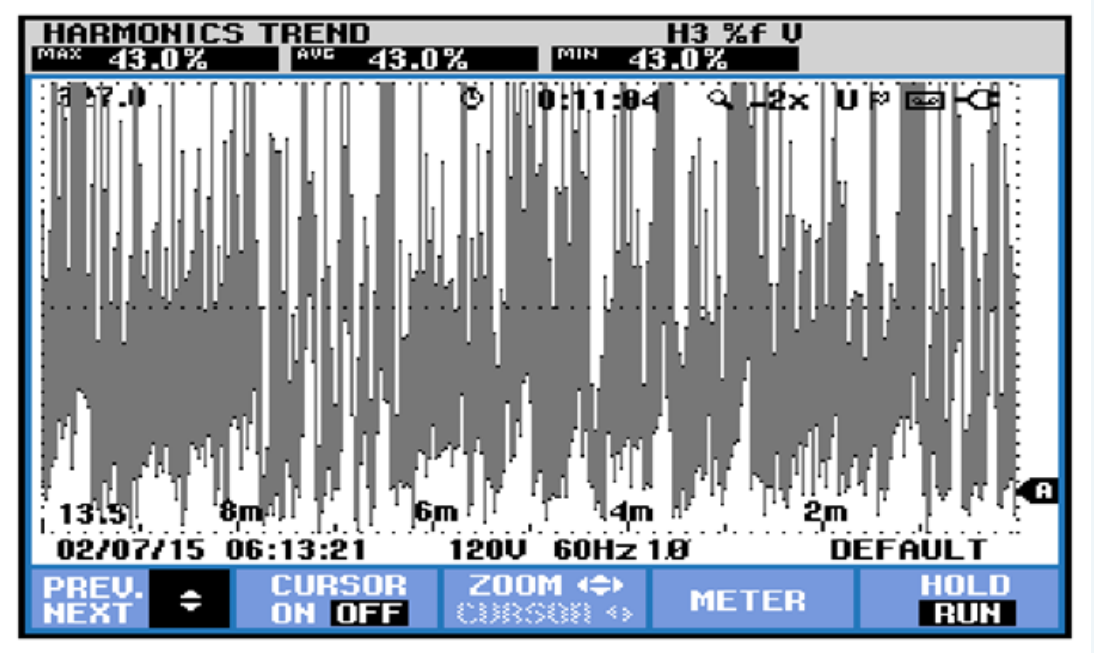
# PHASEBACK

# DC CHOKE

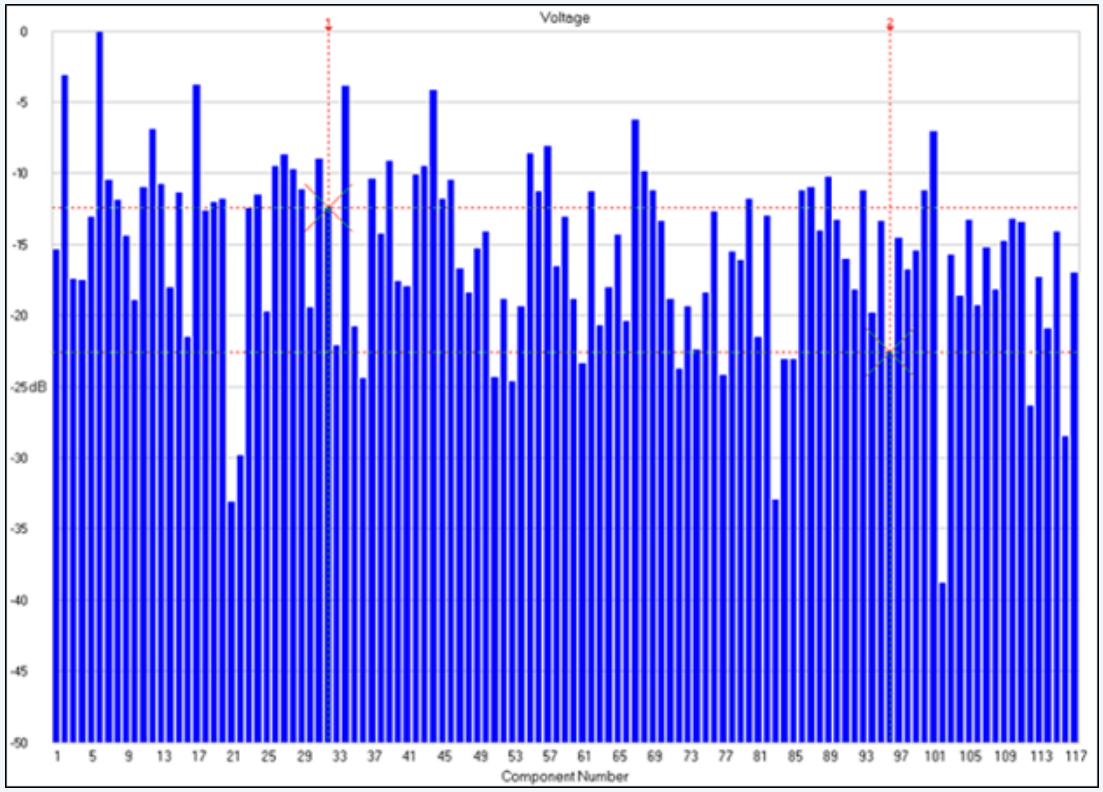
PATENT NO. 9875841

For Low, Medium & High Voltage

DC Systems




*Full-Spectrum AC Noise Removal for DC Circuits by the Phaseback DC Choke*



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## APPLICATIONS

- Industrial Controls & Automation Systems
- Power Stations & Plants
- Wastewater Treatment Facilities
- Oil & Gas Industry
- Onshore & Offshore Platforms
- Solar & Wind Systems
- Communications
- Chemical Companies
- Automotive
- Aerospace
- Work Boats & Cargo Vessels
- LED Surge Protection

## OUR CLIENTS

- US Coast Guard
- US Navy
- Automotive Companies
- Papermaking Industries
- Fertilizer Manufacturers
- Plastics Manufacturing
- Fireproofing Manufacturer
- Lighting Manufacturers
- Food & Agriculture Companies

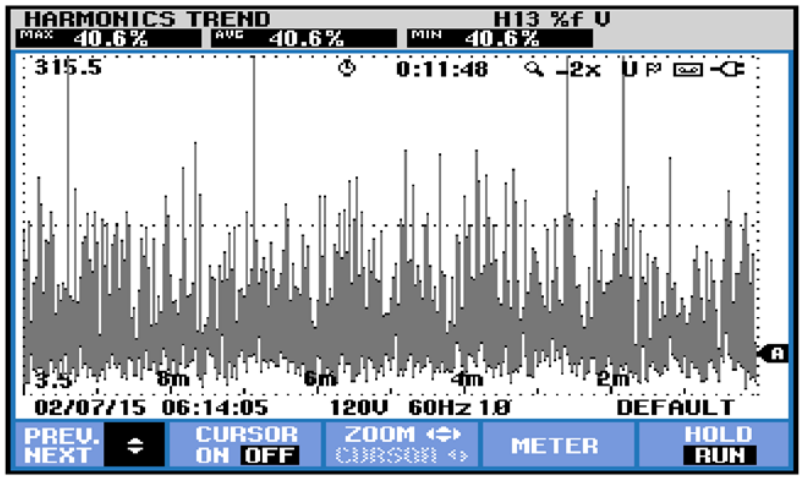
# AC NOISE SUPPRESSING PHASEBACK DC CHOKE

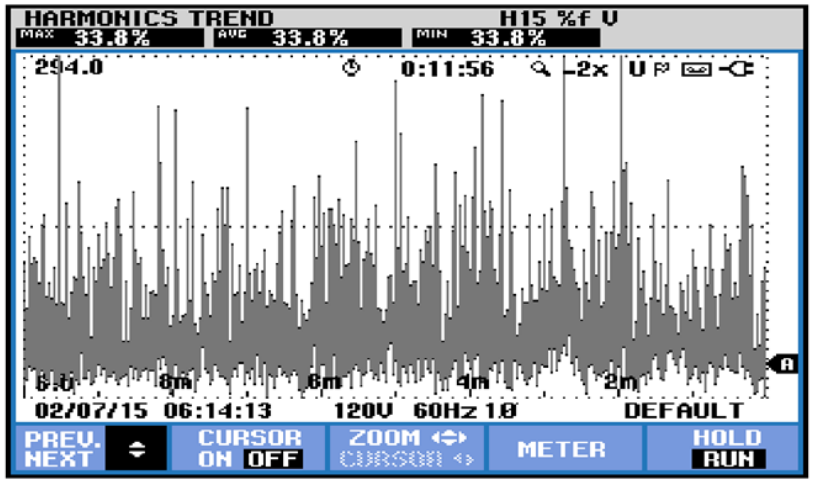
The Phaseback DC Choke reduces AC noise in a DC circuit at all frequencies, and all harmonics. It reduces AC noise at a rate exceeding 4 times that of a similarly sized traditional choke or inductor.

Additionally, the Phaseback DC Choke provides benefits not available in other chokes.

## HOW THE PHASEBACK DC CHOKE WORKS

## HARMONIC REDUCTION & CANCELLATION




*Examples of Harmonic Noise Removed by the Full-Spectrum Phaseback DC Choke*

Because of its unique design, the Phaseback DC Choke is not constrained by the limitations of typical chokes. The Phaseback DC Choke takes advantage of a property called mutual counter-electromagnetic inductance. In other words, it combines the properties of series and parallel opposing magnetic forces.

**The Phaseback DC Choke has been tested and proven to remove all harmonic frequencies above DC through 296,829Hz, while conventional chokes must be tuned to two or three specific frequencies.**

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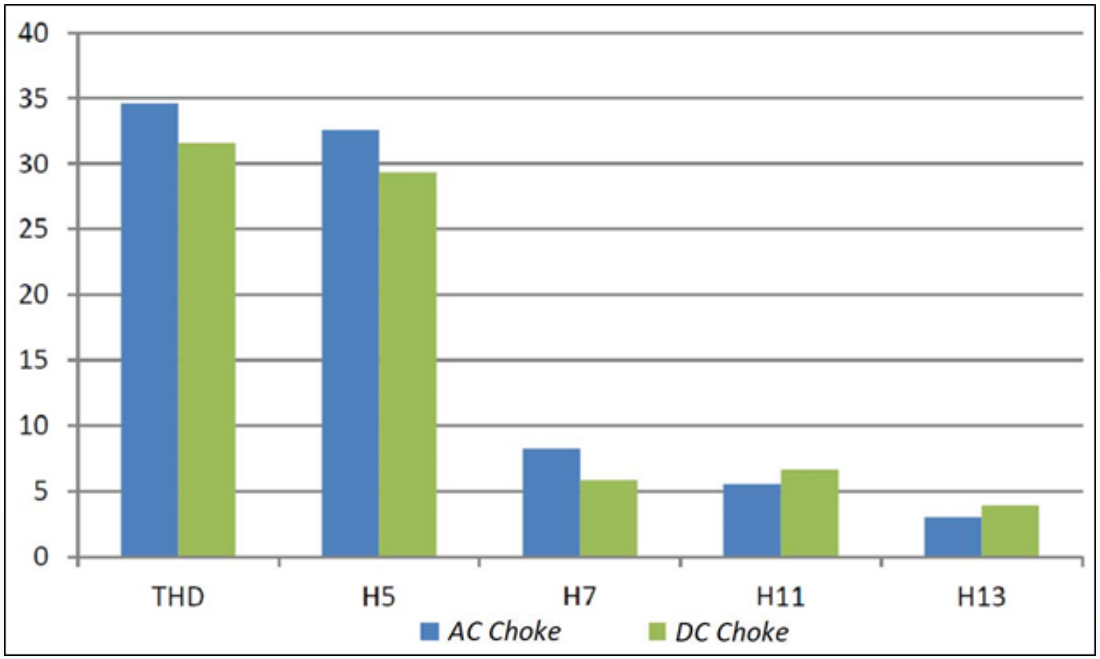



# Unmatched Noise Suppression

*These graphs depict the percentage of harmonic noise removed by chokes.*

*Pictured (upper): Traditional chokes, limited effective range.*

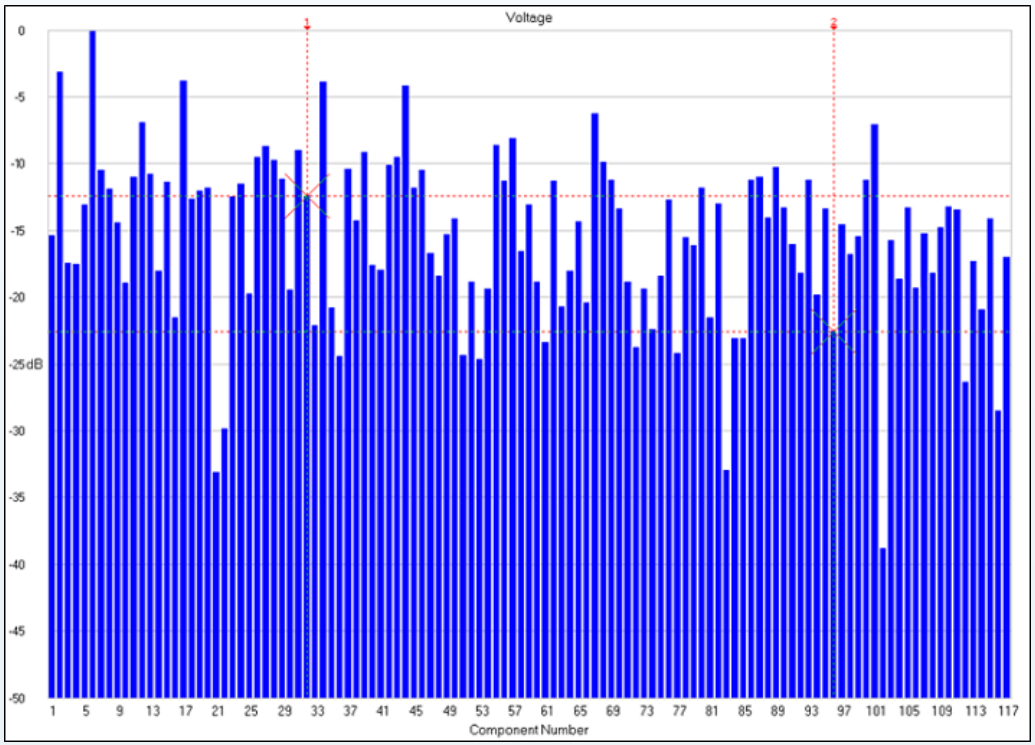
*Compare against the Phaseback DC Choke, a true full-spectrum choke (lower).*

Unlike typical DC chokes, the Phaseback DC Choke's method of filtration does not rely solely on eddy currents and hysteresis losses for current control.

The Phaseback DC Choke uses a revolutionary approach for removing AC noise from DC current using a cold process of electromagnetic cancellation.

It uses AC counterelectromotive force, allowing DC current to pass unimpeded without power loss or generation of heat. This process simultaneously blocks AC noise from both the source and the load.

Instead of dispersing electrical noise in the form of heat, Phaseback DC Choke simply dissipates the noise in the form of cold electromagnetism.



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## PHASEBACK DC CHOKE

# IMMEDIATE APPLICATIONS

Due to its revolutionary design, the Phaseback DC Choke immediately enables the advancement of existing technologies, and opens the door for an entirely new dimension of DC power devices.

### FLEXIBLE IMPLEMENTATION

**The Phaseback DC Choke is more effective, less expensive, and more flexible than traditional DC Chokes.**

**The Phaseback DC Choke can be designed into new equipment, and can also be implemented into existing equipment and applications.**

### BENEFITS

- Voltage Stabilization
- Harmonic Reduction
- Energy Consumption Reduction
- Extended Equipment Life
- Equipment Heat Siganture Reduction
- Removes AC from DC Current
- Blocks AC noise from the Source and Load

- Reduces power consumption & heat in cell phones, laptops, and other battery powered consumer devices
- Allows for higher speed processors and memory
- Protects DC crane drives and controls for safer, smoother operation
- Minimizes harmonics generated by VFDs
- Provides advanced, precise voltage control for green energy systems, such as solar and wind turbines
- Protects battery chargers in electric cars
- Protects UPS systems from shortened battery life
- Protects satellites and spacecraft from issues caused by AC noise, and even solar flares

## Some of our R&D Applications Include...

- Exploring the heatless magnetic generation effects for MRI and other EM devices
- Potential applications ranging from nano-technology to DC power systems in large ocean vessels
- Using a secondary coil to recover the EM fields and convert them to usable energy
- Adding a toroidal core for miniature circuits, explore effects of various materials
- Increasing CPU frequency limits and reducing heat generation

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## CONTACT INFORMATION


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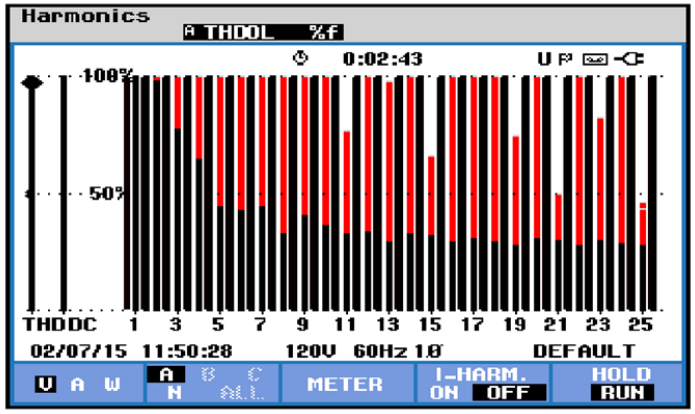
## REQUEST A QUOTE

**Phaseback DC Chokes are built to order, and are designed for your specific need. For a quote, go to our website and fill out our form, or call our offices to speak to an engineer about your power quality issues.**

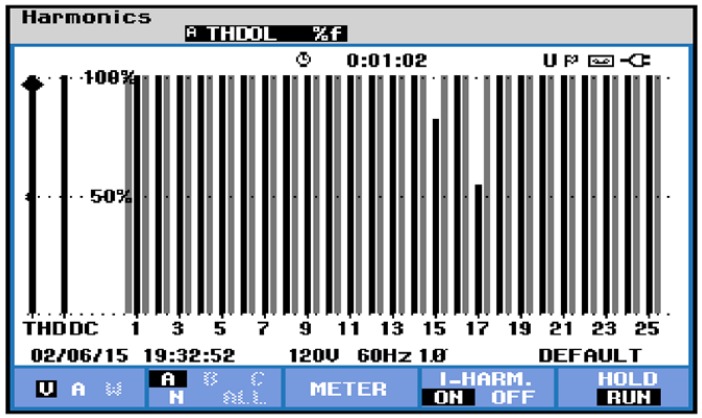
# PHASEBACK DC CHOKE

The Phaseback DC Choke is the only AC noise filter that eliminates harmonic noise in a DC circuit at all frequencies. Its design represents a vast improvement over existing AC noise filters for DC circuits. In addition to its vastly superior size:performance ratio, the Phaseback DC Choke is the world's first and only heatless choke system.

The laws of physics do not change, but our understanding of them does; the DC Choke works on a fundamental electromagnetic principle that reacts at the speed of current flow, is shock proof, vibration proof and works in the harshest conditions.




*Above: Harmonic Spectrum Filtered*
*Below: Inter-Harmonic Spectrum Filtered*




# HOW TO BUY

Applied Energy, LLC is committed to providing our customers with complete solutions to power quality problems.

Featuring a full line of patented products for both AC and DC power systems, Applied Energy has all the tools necessary to enable proper utilization of power for our clients. Contact us to find out how we can help you.

For more information, visit our website at www.phaseback.com
For direct contact, call our offices, or fill out our Contact Form at
www.phaseback.com/contact