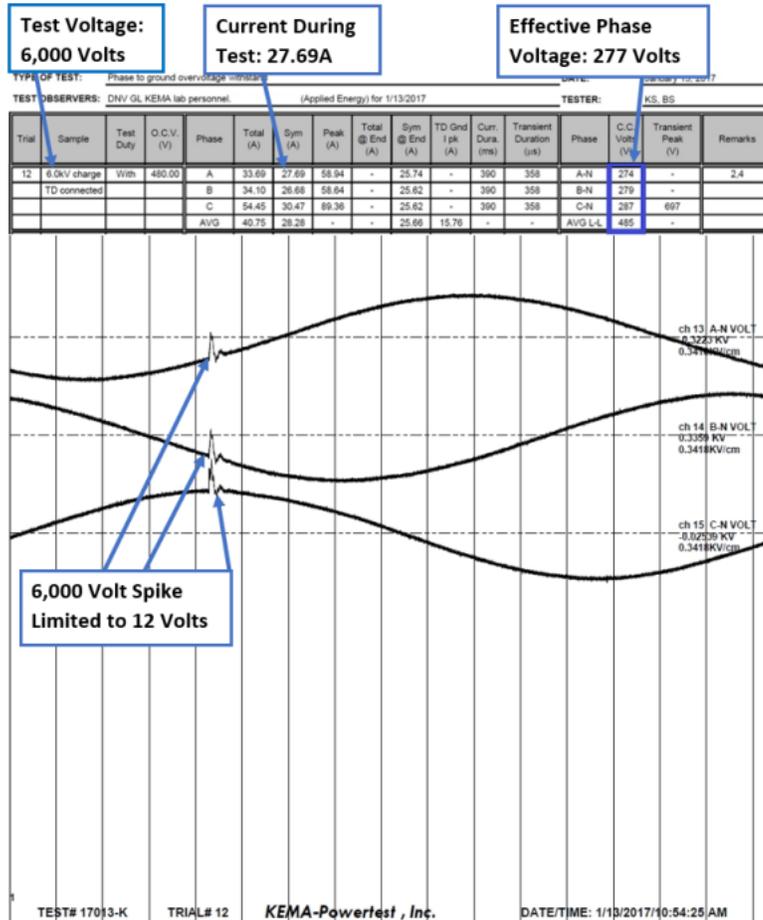


Power Quality Starts With POWER

Power starts with Voltage. Voltage x Current x Power Factor = Watts of Power.
Without Voltage there is no Current or Power

We may have lost our understanding of Physics when thinking about **Power Quality and Energy Conservation**. Think about it. If we can fix the Voltage issues by using Voltage based solutions, we gain efficiency, economy, & simplicity.

- **Trying to solve Voltage problems** with Current operated devices is very inefficient, & frankly only made sense before we had **Phaseback VSGR**.
- Trying to remove voltage harmonics using a wave trap or Amp Trap inductive / capacitive filter wastes hundreds of amps and is not effective when compared to **Phaseback VSGR**.



- The **Phaseback Voltage Stabilizing Ground Reference (VSGR)** solves this problem using less than 1 amp and does a better job filtering voltage harmonics than the 350 kVA Amp Trap filter which drew about 400 amps.
- **Trying to limit voltage spikes** with MOV based TVSS, SPD devices cause a high current surge of thousands of amps trying to pull the source voltage down, after allowing a high voltage spike generally 2 to 10 times nominal voltage or more. The **VSGR** limits the phase voltages which will not exceed the nominal system voltage & **uses only thousandths of 1 Amp**.
- **Adding line reactors and chokes** to drives, which resist a change in current, for voltage harmonic correction is not effective at low speed or light load and does little for noise at the point of common coupling. The **VSGR** can reduce the phase voltage harmonics by 85% and reduce the peak voltage by 45% to remove all voltage spikes from the source, drive and reflected noise from the long motor leads.
- **Yes, it all starts with VOLTAGE.** The **VSGR** also limits ground current and fault current better than a HRG, removes electrical noise from 180 Hz through 3.5 Gigahertz and has been proven to

prevent arc flash making the entire power system safer to work around. The **VSGR SAVES LIVES AND SAVES MONEY** as the improved efficiency provides a 1 to 2 year payback.

- The picture above is a chart from the KEMA Lab ARC FLASH TEST. the load was not interrupted because the **Phaseback VSGR** removed the 6kV surge instantaneously and prevented an event - An Arc Flash Event! The current draw for 390ms was 40.75 Average Total Amps.

Think about it: If current operated devices like amp-traps, MOVs and inductors solve power quality problems, why have the power quality losses quadrupled over the last 15 years?

If it don't make cents it won't save dollar\$.

Read all about it at www.Phaseback.com

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