

FAQ's about KVAR (EC)

How Does the KVAR® Energy Controller (EC) work?

KVAR® EC fine tunes the electrical system from the inductive equipment (motors) back through the utility company's KVA electric meter, kilowatt hour meter (kWh) or demand meter. This fine tuning slows down the operation of the meter, reduces the amount of power drawn from the utility and therefore saves on electricity consumption. The KVAR® EC stores the reactive power to create the electromagnetic field (EMF) around the inductive windings of a motor by storing in its capacitors. As motors operate, reactive power is "pulled" and "pushed" to and from the KVAR® EC by the motor at 60 cycles/second. The KVAR® EC stores and releases what the motors need to function more efficiently. This unique approach reduces the heat generated on the lines and therefore reduces the strain placed on all the electrical components so they actually will increase their life expectancy. Electricity that is normally pushed back through the power distribution lines is now reclaimed and recycled by the KVAR® EC. The KVAR® EC reclaims, stores, recycles and supplies power to all inductive loads (motors). As you have already paid for this electricity, why waste a percentage of your investment. With the KVAR® EC, energy can be stored and used when needed. This whole process is called energy optimization.

What is an inductive load?

Inductive loads use magnetic fields, i.e., motors, solenoids, and relays. If it moves, it's probably an inductive load. Some examples of inductive motors are air conditioning units, refrigerators, freezers, washers, dryers, dishwashers, pool pumps, vacuum cleaners, furnace blower motors, computer fans, ceiling fans, well pumps, etc.

What is Power Factor?

Power factor is the percentage of electricity that's delivered to your home or business and used effectively, compared with what is wasted. For example, a 1.0 power factor means that all the electricity that's being delivered to your home is being used effectively for its purpose. However, most homes in America today have less than a .76 power factor. This means that approximately 76% of the electricity that is coming through your meter at your home or business that you are paying for is being used effectively; the other 24% that you are still paying for is being wasted by the inductive loads. So if your building has a low power factor, the utility has to deliver more electricity to be able to allow you to do the same work. However, the KVAR® EC increases that Power Factor above a .96 in most cases, thus increasing the effective use of your electricity, reducing the amount of electricity supplied and therefore saves you money.

How can I reduce the primary power factor surcharge penalty?

Most utility companies charge large commercial and industrial customers an additional fee, (up to 25% more), when their power factor is less than 85% (0.85). Companies can now avoid this additional fee by determining to an exact science how much capacitance is needed to optimize each motor to unity. Electricians using the KVAR® patented apparatus and methodology are trained to properly size the inductive loads and install the KVAR® EC systems at each motor. This proven method also eliminates the primary power factor penalty charge as well optimizing each motor to obtain maximum savings and utilization of the electricity purchased. No primary power factor correction capacitors or capacitor buildings are therefore needed.

Can the KVAR® EC be installed in every home or business?

Yes, as long as you have a circuit breaker panel with breaker switches and not the old screw in type fuses. Most homes use single phase. KVAR® has systems for 100, 200 and 400 amp single phase electrical panels. All systems are approved for indoor or outdoor installations. (Proper sizing may be the

superior method for some abnormal applications)

Are there 3-phase KVAR® EC for commercial applications?

Yes. Systems are available for 3 phase 200 and 400 amp panel mount applications, as well as for the more commercial applications as utilized in large induction motor assemblies. KVAR® has a patented apparatus and methodology for determining the exact amount of capacitance that is needed to optimize inductive motors to achieve maximum savings. These larger three phase motors would generally have the KVAR® EC installed at the motors' disconnect, after first having trained electricians carry out an individual sizing of the respective motors. This exact science enables the commercial customer to achieve the quickest return on investment (ROI). South River Contracting has purchased all of the necessary KVAR sizing equipment and has been trained in performing proper sizing of KVAR units.

Will the KVAR® EC affect any of my appliances, motors and their normal use?

Yes, most certainly but only in a positive way. Dirt and heat are the natural enemies of motors, and the KVAR® EC stores and then releases more accurately the power needed to allow the motors to function more efficiently, and in so doing reduces power surges, reduces the harmful effects from electro-magnetic fields and in so-doing increases the life expectancy of motors and appliances.

Is the KVAR® EC tested, certified and proved?

Yes, the KVAR® EC is UL Listed #E239850 and CSA Approved. NASA Tested, RoHS Compliant and Cleaner & Greener Certified.

How much can I expect to save per month by using the KVAR® EC?

That depends on many factors, i.e., the size of your home, the amount and size of inductive motors, the rate at which you are charged per kilowatt-hour for electricity and how far you are away from power company transformers and generation stations. However, generally speaking users of the product have seen 8% - 25% in savings. A typical example for the residential or light commercial panel mount system: Electric bill is \$300 per month - 10% savings = \$30 per month for the next 25 years = \$9,000 20% savings = \$60 per month for the next 25 years = \$18,000 Electric bill is \$600 per month - 10% savings = \$60 per month for the next 25 years = \$18,000 20% savings = \$120 per month for the next 25 years = \$36,000 The more and larger the inductive motors, and the longer the run times of the motors, will mean the larger the savings! Larger Commercial systems should experience far greater savings too.

How long will it take for a KVAR® EC unit to pay for itself?

Generally a 2-3 year ROI is expected; however, in many installations a quicker ROI has been noticed.

How does the KVAR® EC savings compare with other energy savings techniques that I could incorporate in my home or business?

Replacing windows, adding insulation to the attic or walls, upgrading the present HVAC system, installing new lighting, new appliances, new solar panels or performing many other modifications or additions to your home or commercial business whilst being beneficial, generally fail to achieve anywhere near the 8% - 25% electrical savings realized through KVAR® EC, with 2 - 3 year ROI. A 10% saving can easily create an excitement in the market place, imagine what an 8%-25% can do, particularly with such a high focus on the need to reduce costs and save money!

How long will the KVAR® EC last?

With the exceptional quality and high standard of components used, coupled with the fact that there are no moving parts, predicted lifespan is 25 years.

Why haven't I heard of this product until now?

In reality, one could say smugness and cost effectiveness have driven the American market place into a state of complacency. Until recently, people have been content in the SUV, V-8 engine and wasting fuel era. There was little desire to "tighten" our energy belts due to the relatively low costs of petroleum products and electricity. However, reality is beginning to catch up and as the whole world is scrambling to save energy and reduce costs in every way possible, resulting in major marketing efforts being employed to highlight the benefit of these new "Green" technologies; hence the KVAR® EC.

How much does the KVAR® EC cost, and how do I receive it?

It depends on what system is needed for your home, business or industrial location. Contact South River Contracting of Roanoke, Inc. @ (540) 366-5552 for a price quote.

Does the KVAR® EC offer Surge Protection?

Yes, the KVAR® EC also protects the entire home against power surges, and provides a broad range of protection for hardwired appliances and most home electronics such as televisions, satellite equipment, entertainment systems, etc. The unit protects from power line surges as well as spikes caused by internal wiring problems, loose connections and fluctuating demand from large motors such as appliances, vacuum cleaners, heating and cooling equipment, etc.

Is the KVAR® EC Unit Warranted?

Yes, 5 year Manufacturers Warranty for full replacement, even if the systems are affected by lightning surges. Warranty is 12 years for the model PU-1200 (200 amp residential).

Is there a "Money Back Guarantee"?

Yes, 60-day money back guarantee. If in 60 days, you don't see reduction in usage on your electric bill, call and get the details on how to return the unit for a full refund of the purchase price. Installation or removal cost will not be refunded.

Who should install KVAR® EC unit?

Surface mounted panel systems can be installed within approximately 60 minutes by a qualified and KVAR trained electrician (which we employ). Each system is warranted by the manufacturer if installed by a trained electrician. Recessed or flush mounted panels will usually take longer to install.

Can the KVAR® EC panel units be taken with you when moving from your home or business?

Yes. On single and three phase panel systems, the unit can be relocated to another similar panel configuration although if the panel unit was left in place it would add a selling benefit to the new owner because of the added energy conservation.

How do the Utility Company's benefit and do they agree with power factor optimization?

The KVAR® EC improves the efficiency of the electrical system and the capacity of the existing distribution system is increased. Since no one wants a power plant in their neighborhood, power companies can now supply power to more customers without the generation or acquisition of additional power. They can reduce capital expenditures by leveraging the existing infrastructure.

How is the environment benefited by using the KVAR® EC?

There is less fossil fuel being used to generate power and it decreases of dependency on foreign oil. Climate change is a Global crisis. Planetary distress is our new reality. Energy efficiency is a commitment worth making. You help meet the planetary requirements and reap the financial savings.



Put the Brakes on High Energy Costs

Sales & Installations performed by:

South River Contracting of Roanoke, Inc.

5130 Hildebrand Road Roanoke, VA 24012

(540) 366-5552

Our Technicians/Electricians have been trained to properly size and install KVAR units.