

SICCE green technology today

Consumers are demanding affordable, environmentally friendly products that meet green standards. At SICCE, we listen. Our cutting edge Synchronous Motor Technology (SMT) addresses your concerns.

For decades, SICCE's top engineers have lead the industry in developing green products that perform far beyond expectations and save money in electrical consumption. SICCE spends millions of dollars in research and development every year to develop not only new products, but to push the Power Factor and performance of our existing products.

If you're creating a reflection of nature in your aquarium or garden, choose the pumps engineered to work with the environment.

Learn more about Power Factor and how our pumps are better for the environment and pay for themselves in energy savings.



Syncra DW

SICCE - the Green Choice



Syncra Pond Pump with Fountain



Syncra Silent Pump

“Power Factor”



What is Power Factor?

Power Factor is a measure of how efficiently electrical power is consumed. In the ideal world, Power Factor would be unity (or 1 like a standard light bulb). Unfortunately, in the real world, Power Factor is reduced by highly inductive loads to 0.56 or less. This induction is caused by equipment such as lightly loaded electric motors, water pumps, compressors, transformers, and fluorescent lighting ballasts.



What does it do to my electricity bill?

Already many states like California and all of Europe identify this as a charge on your electric bill. The truth is everyone pays it because it costs the electric company money and it is passed on to you by up charges on your price per kilowatt.

kW consumed is (VOLTS x AMPS x 1.73 x Power Factor) / 1000. The electric company supplies you VOLTS x AMPS and they have to supply extra to make up for the loss caused by poor Power Factor. When the power factor falls below a set figure, the electricity supply companies charge a premium on the kW being consumed, or, charge for the whole supply as kVA.

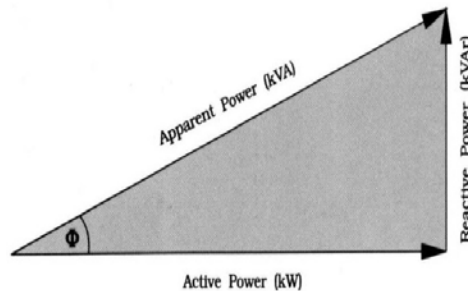


What causes Power Factor to change?

Inductive loads cause the AMPS to lag behind the VOLTS. The wave forms of VOLTS and AMPS are then "out of phase" with each other. The more out of phase they become then the lower the Power Factor. Power Factor is usually expressed as Cos Phi. (ϕ)

The power can be measured as a triangle. Active power is the base line and is the real usable power measured in kW. Reactive power is the vertical or that part of the supply which causes the inductive load. The reactive power in is measured in kVA (kilo volt-amperes reactive).

Apparent power is the hypotenuse. This is the result of the other two components and is measured in kVA.



The effects of power factor

Consider a canal boat being pulled by a horse. If the horse could walk on water then the angle (Phi) ϕ would be zero and $\text{COSINE } \phi = 1$. This means all of the horse power is being used to pull the load.

However the relative position of the horse influences the power. As the horse gets closer to the barge, angle $\phi 1$ increases and power is wasted, but, as the horse is positioned further away, then angle $\phi 2$ gets closer to zero and less power is wasted.

Simply if two boats were being pulled at the same speed and the energy or power meter were on the boat alone they would both show the same watts. But if the real meter was on the horse, the horse in $\phi 1$ is costing more to operate.



How do Sicce pumps compare to other similar pumps that claim similar wattage on the box?

Our computer tests have shown other pumps with Power Factors as low as .56 compared to our equal (comparable gallons per hour) pumps with a power factor of .92 Our larger pump models can achieve power factors even closer to 1. This saves a consumer 100's of dollars a year and gives us the most Green pumps in each category.