Power Conditioning

What is “Power Conditioning”?

The process of improving the overall quality of the power fed to your facility by the distribution company is called Power Conditioning – It generally involves addressing several power quality issues and it is often confused with Power Factor Correction - Perhaps because power factor correction is one of the 6 major components of power quality – Our customized systems go beyond just addressing your Power Factor Issues:

1. Intermittent Power Supply Failure Ride Through
2. Voltage Regulation
3. Current Balancing
4. Harmonic Mitigation
5. Surge & Transient Protection
6. Power Factor Correction

Why Is It Important?

•Up to 500ms of Ride-through
With On/Off testing verified power quality improvements, you can benefit from a 500-300ms intermittent power supply failure ride through. This is in most cases sufficient to ride through common utility side auto fault reclosures which are typically 240ms in duration and can cause sensitive equipment such as PLCs to reset and result in lost production time.

• Elimination of Poor Power Factor Penalties
Another major benefit is the guaranteed kW & kWh savings, approx. 2%, from stabilizing the voltage, balancing the current phase to phase, mitigating harmonics, and improving power factor to over 95%.

• Surge & Transient Protection
With a 10-year warranty and unlimited surge & transient protection, your equipment will be protected from all major surges including lightning strikes.

• Extend the lifespan of your equipment
The On/Off testing verified power quality improvements reduces unnecessary premature wear and tear on your electrical equipment resulting in less downtime and replacement cost.

70 East Beaver Creek Rd unit 32 Richmond Hill, ON L4B 3B2 Phone : 1 866 895 4545

How Do We Accomplish This?

The process involves incorporating multiple modules to achieve improved power quality –

First step is to utilize the right amount of capacitance to improve the Power Factor - The goal is to bring the Power Factor (P.F.) to above 90% to avoid utility P.F. penalties and reduce the effects of inductive loads in your facilities.

In addition to active capacitance, zig -zag reactors are incorporated to eliminate voltage distortions and harmonics, TVSS module and controller in order to deliver the On/Off testing verified power quality improvements. Having these individual technologies in place does not allow for the desired On/Off testing verified cumulative power quality improvements and savings.

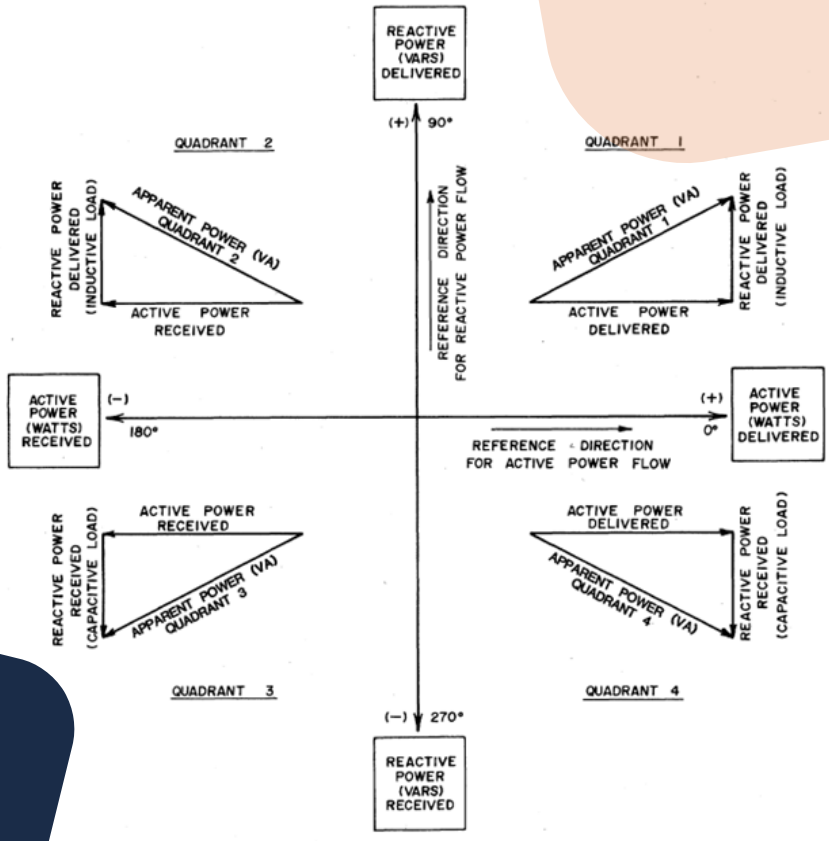

FIGURE 7. Power flow directions in four quadrants.

Is Power Conditioning right for you?

If any of these conditions are true for you, power quality improvements will deliver improved operations and savings.

- Process interruption or equipment trips from unexpected sags, blibs, flickers etc
- Power Factor Penalties on your monthly bills, ie. P.F. below .90
- Traditional stand-alone Capacitor Banks need repair or replacement
- Funding for new PFCC (Power Factor Correction Capacitor) in the budget

Traditional PFCC Vs. Power Conditioning System

Benefits	PFCC	Power Conditioning Equipment
P.F. Penalty Avoidance	YES	YES
Guaranteed Savings	NO	YES
Verified Improvements	NO	YES
Intermittent Supply Failure Ride Through	NO	YES
Voltage Regulation	NO	YES
Current Balancing	NO	YES
Harmonic Mitigation	NO	YES
Surge & Transient Protection	NO	YES

What are the next steps?

Provided copies of the last 12 months electric bills we can, at no cost, provide you with preliminary numbers for what a power conditioning system will cost and the expected kW & kWh savings.

If you like the no cost preliminary numbers, we can perform a power quality audit to firm up our preliminary numbers and guarantees. All projects include the On/Off testing verified power quality improvements and savings report.

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