



Smart Solutions for Reduced Utility Costs

Reduce harmonic distortion and significantly reduce utility bills!

Traditionally used to improve power quality, equipment life, and reduce heat loss, harmonic filters can also reduce utility costs. As energy demands increase, utility companies are turning to smart meters as a means to measure the total amount of power consumed. Smart meters, built with new electrical billing technologies, detect inefficiencies resulting in dramatically higher utility cost. The use of harmonic filters can lower these costs.

The challenge:

The use of a Variable Frequency Drives (VFDs) / Variable Speed Drives (VSDs) helps run an electric motor more efficiently but they also introduce harmonic distortion.

Harmonic distortion negatively affects power quality which can lead to electrical equipment interference and energy waste. Unmitigated harmonic distortion reflected back to the grid causes power quality problems to the broader population.

Smart meters, unlike old mechanical meters, are capable of measuring total current draw including harmonics distortion that goes back to the grid.

Smart meter deployment is expected to reach over 80 million by 2015 which will allow the utilities to capture and charge for the total energy used including harmonics.

The solution:

Reduce the harmonic distortion to decrease the current draw measured by the smart meter for a lower utility cost.

MTE's Matrix[®] AP filter, with its patent pending adaptive passive technology, reduces harmonic distortion over a wide range of loads and outperforms all competitors.



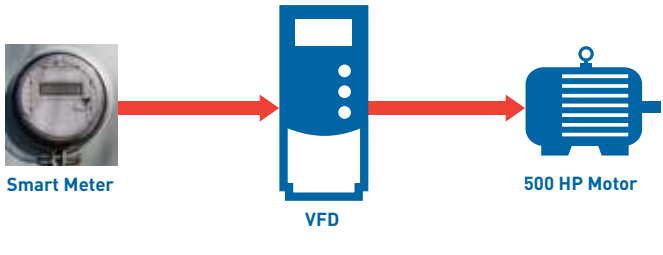
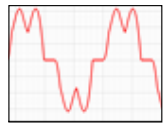
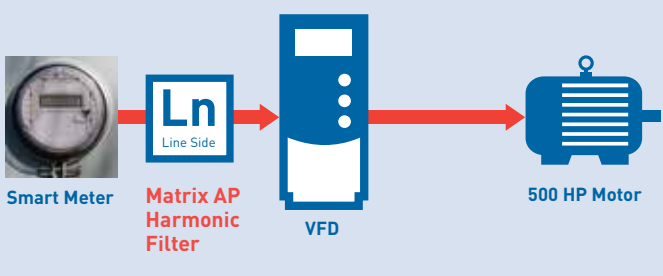
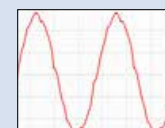
The result:

Harmonic filters improve power quality, improve equipment life, reduce heat loss, and can reduce utility costs.

On a 500 HP motor at 100% load, utility costs can be reduced by over \$1,309/month.*

On the same 500 HP motor at 75% load, utility costs can be reduced by almost \$1,137 / month.*

*see back for illustration

Reducing Utility Costs With a Harmonic Filter	Current Draw Waveform	Current Draw at 100% Load	Current Draw at 75% Load
 <p>Smart Meter → VFD → 500 HP Motor</p>		522A	397A
 <p>Smart Meter → Matrix AP Harmonic Filter (Ln Line Side) → VFD → 500 HP Motor</p>		497A	378A
Total Savings:		25A 499 KWH/day \$1,309 / month*	19A 379 KWH/day \$1,137 / month*

***NOTE:** Numbers shown are examples only. Please consult MTE to determine calculations for specific applications. Calculated at 9.93 cents per kwh.

The Matrix AP Harmonic Filter, with MTE’s innovative adaptive passive technology, is the most advanced harmonic filter that provides improved power factor and energy efficiency. Using the patent pending adaptive passive technology, the filter adapts to various loads while providing optimized THID performance. It guarantees a THID performance of 8% MAX at 30% load and 5% MAX at full load and helps meet IEEE-519 requirements.



Matrix AP Benefits

- Adaptive passive technology offers best-in-class harmonic reduction in virtually all applications
- Efficient performance delivers lower heat generation and helps keep the entire electrical system running smoother and longer
- Simplified wiring for quick, easy installation and serviceability
- Modular design allows flexibility in system integration
- Robust product design is backed by a three-year warranty



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