

Solution Profile



Meeting IEEE-519 with a Six-Pulse VFD

A six-pulse VFD with a Matrix® AP is a better and more cost effective solution to conform to IEEE-519 than a multi-pulse or AFE drive.

Use of VFDs & Harmonic Issues

Many industries across the globe use Variable Frequency Drives (VFDs) to efficiently control the electrical power needed to run motors, pumps, and other mechanical systems. Six-pulse drives are commonly used and are readily available. While they can help efficiency, the total harmonic distortion (THD) that is produced exceeds the limits set forth in the IEEE-519 standard.

In the past, resolving this meant using a multi-pulse VFD such as a 12 or 18-pulse drive, or an Active Front End (AFE) drive. Now, due to a technological breakthrough from MTE, you can use a six-pulse drive with the Matrix® AP passive harmonic filter to meet IEEE-519. This solution is smaller, more efficient, and more cost effective over other low harmonic drive solutions.

The Matrix AP Passive Filter

With the introduction of the Matrix AP and its patented Adaptive Passive Technology, you are no longer limited to multi-pulse or AFE drives for harmonic mitigation. The Adaptive Passive Technology virtually eliminates harmonic distortion by adapting to varying power loads. A six-pulse drive with a Matrix AP passive filter meets the IEEE-519 standard in a smaller, more efficient design that is easily installed.

The Benefits of a Matrix AP Filter with a Six-Pulse Drive

- Meets the **IEEE-519 standards** for harmonic mitigation over wide load range
- **Easy to install**
- **Smaller**, lightweight and durable design
- Features patented **Adaptive Passive Technology** to adapt to varying loads
- **Increases equipment life**
- **Decrease energy costs** with increased efficiency and lower heat loss
- Standard components with **shorter lead times**
- Filter **will not resonate** to utility
- **Performance Guarantee** – see mtecorp.com



Matrix AP: NEMA 1 Shown Above

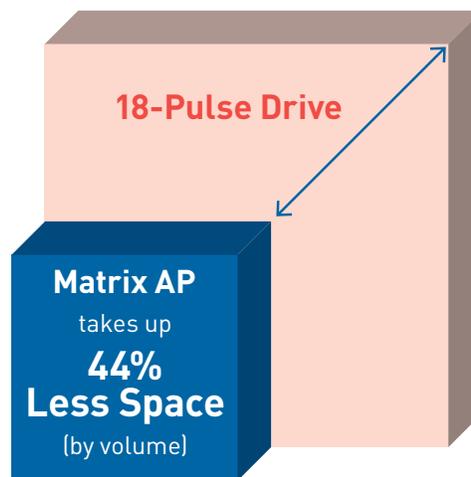
Harmonic Mitigation is Essential for Long Equipment Life

MTE offers a best-in-class product to protect equipment and improve power quality.

Matrix AP vs. 18-Pulse Drive (100hp system)

Overall Efficiency	Matrix AP 99%+	18-Pulse 98%	AFE 98%
Power Loss	The Matrix AP consumes approximately 665 less watts.		
THID Under Balanced Line Conditions	1-9% better THID performance for loads. 25-75% and equal performance for loads greater than 75%.		
THID% at Lower Loads	The Matrix AP can typically meet 5% THID at a 50% load.		

Size Comparison



Using a Matrix AP Harmonic Filter with a Six-Pulse Drive

When the Matrix[®] AP is used in a six-pulse drive system, it can provide a superior alternative to a 12 or 18-pulse drive. The Matrix AP Harmonic Filter, featuring MTE's innovative Adaptive Passive Technology, is the most advanced harmonic filter on the market today. Most traditional filters work at 100% power load, but severely under perform at lower levels. With the Matrix AP, you get proven performance without the bulk of an 18-pulse drive. The Matrix AP is different, because we know no one runs their process at full load all the time. With Matrix AP Harmonic filters, power quality, energy efficiency, and reduced downtime are easy to achieve.

Want to learn more?

Visit mtecorp.com to view the following:

- White papers for detailed specifications about the Matrix AP and its performance
- A Matrix AP video
- New IEEE-519 regulations
- More power quality solutions from MTE

DID YOU KNOW



In 2014, IEEE-519 standard regulations were updated. To learn more about whether or not your business is meeting IEEE-519 standards, visit our site at mtecorp.com and look for the Matrix AP.



MTE Corporation
 N83 W13330 Leon Road
 Menomonee Falls WI 53051
 (800) 455-4MTE • (262) 253-8200