

MHW INTERNATIONAL CORPORATION
A POWERFUL SOLUTION

M | CoolBlue®



Food Processing Industry

Since 2010, MH&W Filter Solutions has been an industry-leading provider of electronic power generating and filter components throughout North America. We have extensive experience working with a broad range of industries and applications, including the demanding food processing sector.

MH&W Filter Solutions specialized systems for motor drives help prevent production downtime and other costly problems caused by electromagnetic interference (EMI). We offer a complete line of high-quality products, which includes Aperam Magnetic's CoolBlue[®], NaLa[®], CoolTube[®], CoolBlue[®] Kits, SmartD Drives, and EPA filters.

By implementing these comprehensive solutions, facilities can prevent potential electromagnetic interference, reduce maintenance expenses, maximize operational efficiency, and achieve EMC compliance. In this eBook, you will learn more about how our products address the specific challenges unique to the food processing industry.



Challenges in the Food Processing Industry

Most food processing machinery, such as pumps and compressors, now runs on Variable Frequency Drives (VFDs), a trend that is only continuing to grow. Unexpected shutdowns caused by electromagnetic interference (EMI) in these VFD-driven systems can wreak havoc, resulting in spoiled products, lost revenue, and costly operational downtime.



What Is Electromagnetic Interference?

EMI is the accidental creation or induction of electromagnetic energy that can interfere with the standard operation of electronic components and systems. This interference (EMI), often originating from environmental factors or nearby hardware, can cause severe failure in sensitive electronics. Grasping the nuances of EMI and its impact on modern technology is vital for maintaining the reliability and integrity of electrical infrastructure. Variable Frequency Drives (VFDs) are a major cause of EMI.



The following external factors can cause electromagnetic waves:



- ✓ 50/60Hz Electric Currents
- ✓ AM/FM Radio
- ✓ Gamma Rays
- ✓ Infrared
- ✓ Microwaves
- ✓ Ultraviolet (UV) light
- ✓ Visible Light
- ✓ X-rays

The source of EMI can be produced intentionally, such as from an AM/FM radio and cellular communication, or unintentionally by inverters, motors, appliances, and other electronic devices. EMI can also occur from natural sources, such as electrostatic discharge from a lightning strike or UV light. Manmade sources of EMI include fan motors, HVAC equipment, treadmills, televisions, and other types of machinery.



Avoiding Unexpected Equipment Downtime

In the food processing sector, EMI often triggers technical faults and lasting hardware damage, causing expensive downtime for vital systems. This electrical interference is a frequent catalyst for plant shutdowns, as it disrupts robotic arms and conveyor drives. To prevent these disruptions, manufacturers must prioritize EMI mitigation to protect their production timelines and operational efficiency.

Variable Frequency Drives (VFDs) optimize motor performance, but they also produce harmful currents that degrade bearings and distort critical control signals. These currents interfere with PLC links, metal detectors, and sensitive sensors used for weight or temperature monitoring. Ensuring these diverse components operate without interference is essential for maintaining high output and the integrity of food products.

Equipment failure is often linked to the close physical proximity of multiple VFDs and motors operating simultaneously at similar frequencies. In the cramped environments typical of food processing plants, physically separating these machines is rarely a viable solution for noise reduction. Because of these spatial constraints, implementing targeted filtering solutions is a mandatory step in stabilizing the electrical environment.

By installing nanocrystalline chokes as high-frequency absorbers at the EMI source, manufacturers can neutralize interference before it spreads through the system. These specialized absorbers act as a first line of defense, significantly improving the reliability and service life of VFD-driven motor assemblies. Utilizing this technology allows plants to avoid common EMI pitfalls and ensures a more consistent manufacturing process.

MH&W's Services for the Food Processing Industry

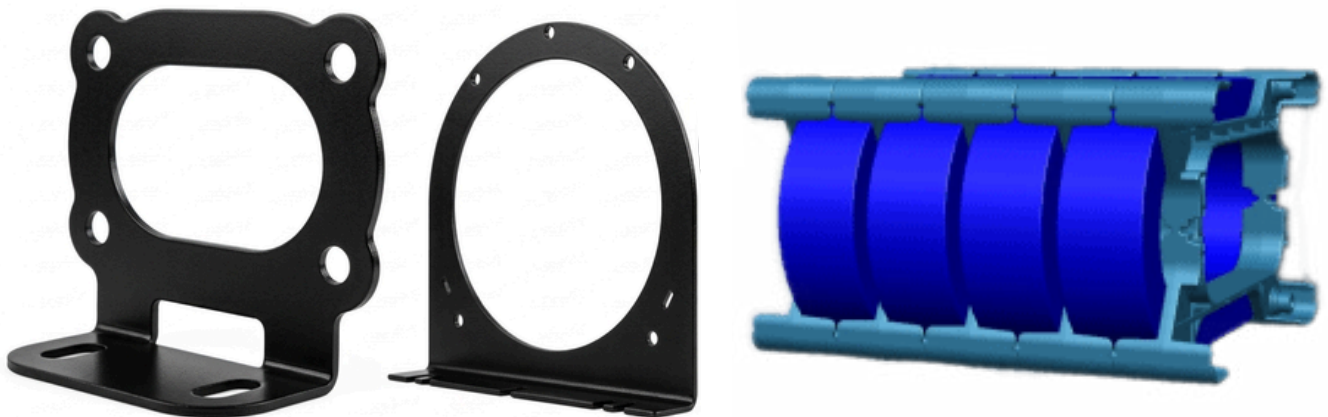
MH&W provides engineering and field support, as well as a full range of MH&W filter products for VFD and EMI protection:

Magnetic Cores and EMI/Noise Absorbers:

MH&W provides nanocrystalline magnetic cores to efficiently reduce both noise and EMI. Magnetec's CoolBlue® inductive absorbers' common mode toroid cores utilize nanocrystalline metal, which will certainly shield systems from motor-bearing currents. Magnetec's CoolTube® radiated emission chokes manage high-frequency radiated noise from VFD motor systems.

Powder-Coated Steel Brackets & Glass-Filled Nylon Brackets:

We also offer powder-coated steel and glass-filled nylon brackets to secure round and oval core shapes throughout the motor system. The products are durable and reliable for mounting and keeping cabinets clean.





Benefits of using Aperam Magnetic's CoolBlue[®] Solutions

Using Aperam Magnetic's CoolBlue[®] solutions in VFD motor systems can give food processing manufacturers a competitive edge through the following benefits:



Permanent Solution



Protect Electronics



No Maintenance



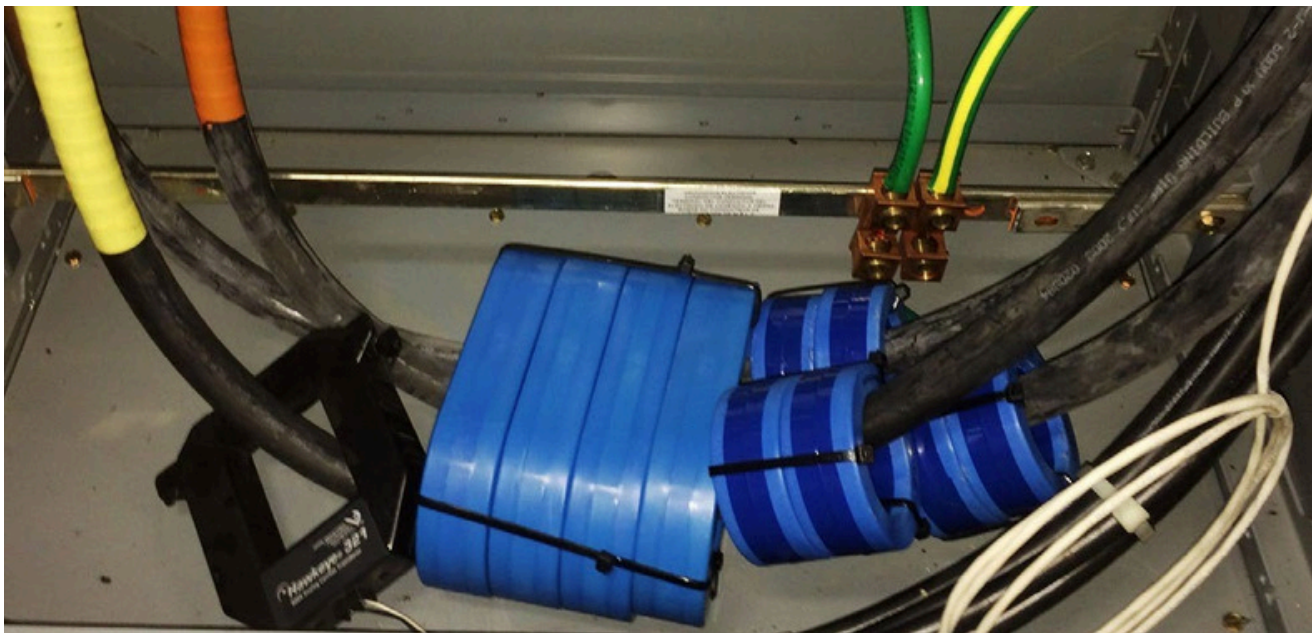
Easy Installation



Bearing Protection



Reduce Downtime



Benefits of Working with MH&W

Identifying the source of noise in a pulp and paper processing facility is essential to prevent errors, shutdowns, and major malfunctions. Since 2010, MH&W's engineers, in collaboration with Aperam Magnetic Components engineers, have provided long-lasting solutions as a leading provider of nanocrystalline products for filtering and power conversion.

When you work with MH&W, you can expect to experience the following benefits.



High Quality

At MH&W, we partner with Aperam, a premier, publicly traded manufacturer renowned for their high-quality nanocrystalline products. Following their acquisition of Magnetec, Aperam continues to provide the industry-leading material integrity essential for eliminating noise in pulp and paper machinery, effectively preventing costly shutdowns and equipment malfunctions.



Technical Expertise

At MH&W, we provide "boots on the ground" engineering expertise throughout the Americas, working directly onsite to solve complex interference issues. By collaborating closely with Aperam Magnetic Components' world-class engineers, we ensure our customers receive the highest level of technical support and material precision. Together, we deliver specialized nanocrystalline solutions that guarantee system reliability and peak performance for every application.



Customization

While CoolBlue® kits cover most needs, MH&W works directly with Aperam Magnetic Components engineers to tackle any custom design challenge. When standard components aren't enough, we develop tailored solutions by modifying cores and protective products to meet the unique specifications of your VFD motor system. No matter the complexity, our collaborative engineering team is ready to deliver a custom fit.



Our Reach

As Aperam Magnetic Components right-hand partner, MH&W provides dedicated engineering and distribution throughout the Americas. While we handle the Western Hemisphere, our collaboration with Aperam ensures that CoolBlue solutions are available globally through their extensive manufacturing network. This partnership allows us to protect VFD-driven motor systems on a worldwide scale, combining our local technical support with a truly global reach.



Competitive Pricing

MH&W offers competitively priced, high-performance solutions for the pulp and paper industry, helping you lower operational costs by reducing downtime, improving energy efficiency, and cutting down on expensive emergency maintenance and repairs.

Food Processing Industry Solutions From MH&W

CoolBlue[®] Inductive Absorbers are designed to reduce electrical noise and high-frequency disturbances caused by variable frequency drives in motor-driven systems. In the food and beverage industry, where conveyors, pumps, and compressors run continuously, this helps protect motors and bearings from damaging currents. By mitigating EMI and unwanted high-frequency energy, CoolBlue[®] solutions improve overall system reliability and reduce unplanned downtime. This is especially important in environments where consistent operation is critical to maintaining product quality and meeting production demands. Their compact design allows for easy integration into existing systems without major modifications. Overall, CoolBlue[®] Inductive Absorbers help extend equipment life while lowering maintenance requirements.

About MH&W

Since 1964, MH&W has pioneered innovative magnetic components for power conversion and filtering. Since 2010, we have specifically led the North American market in nanocrystalline technology, developing high-performance solutions to eliminate noise in VFD, EV, Wind, and Solar applications.

Our engineering team leverages decades of technical expertise to provide both standard and custom-engineered components that give our customers a distinct competitive edge. From complex power challenges to demanding industrial filters, the MH&W team is ready to deliver the foresight and reliability your systems require.



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