

### Applications

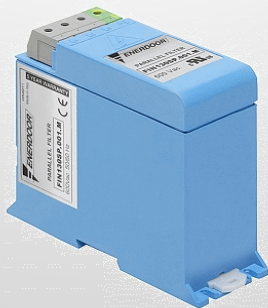
- VFDs
- OEMs with drives
- OEMs without drives
- System integrators
- End users

### Benefits

- Compact case
- Protects equipment

### Features

- Only one model
- High attenuation in low frequency range



# EMI-RFI Parallel Filters

## Introduction

This white paper discusses Enerdoor's EMI-RFI Parallel Filter and how it fits into our application centered approach when introducing unique products to solve customer specific or market driven needs.

For the past 25+ years, this hybrid EMI-RFI filter solution has proven itself across a broad spectrum of industrial applications.

## The Challenge

There are several Standards from different agencies that provide regulations based on specific frequency ranges. For instance, IEEE519 and IEC 61000-3-12 cover harmonic distortion ranges from 50/60 Hz to 3 KHz. FCC and IEC Standards cover ranges from 150 KHz up to several GHz.

Although these Standards are able to cover a very wide range of frequencies, there still exists a "black hole" between 4 KHz to 150 KHz, not covered by any International Standards. VFDs and servo drives that are known to create high frequency noise are also producing noise in the 50 KHz to 150 KHz range that falls into this "black hole" category. This results in faults related, but not limited to, devices such as PCs, servers, UPS, sensor lights, security badges, automatic doors or gates and similar systems.

## The Solution

The Enerdoor Parallel Filter is a unique solution available in voltages from 0-750 Vac and operates at any current value, as it is a parallel vs. serial device.

It works in the frequency range of 10 KHz to 5 MHz, offering a solution for applications with low frequency concerns.

There are two important parallel filter lines: The FIN230SP.001.M and the FIN730.001.M

The difference between the two is the attenuation loss and the frequency resonance. The FIN730 family would be affected starting at 50 KHz and continuing up to 3-4 MHz. The FIN230SP family would be affected starting at 100 KHz and continuing up to 5-7 MHz. In addition, the FIN230SP helps reduce interruptions due to quick spikes and dips.

**The Enerdoor Parallel Filter is best utilized in the following applications:**

- OEMs using VFDs and servo drives in markets not governed by specific electrical regulations.
- OEMs that want to protect equipment from unexpected noise present at the end-user facility.
- System integrators aware of potential noise issues in the field who want to minimize the risk of equipment malfunctions.
- Any type of end-users: from hospitals to large industrial plants in which radio-frequency interference can compromise and affect the proper function of sensing devices.
- Used in combination with Enerdoor EMI-RFI filters for OEMs using multiple drives that prefer one main filter to protect the entire system.

**The Result**

Available in a compact, din-rail or panel mount package, the Enerdoor Parallel Filter series reduces radio-frequency interference generated by the equipment and protects it from electrical noise coming from the main line of the facility.

The FIN230SP.001.M Parallel Filter is the most general purpose application recommended by Enerdoor for OEM equipment. This filter reduces interruptions due to quick spikes and dips.

The FIN730.001.M Parallel Filter is a more specific design for regenerated systems and particular OEM's equipment. This filter helps more with the low frequency range at 50 KHz.