ENERDOOR
Engineered by Finmotor

EMI-RFI
Parallel Filters

Parallel Filters

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

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, the IEEE519 and IEC 61000-3-12 Standards cover harmonic distortion ranges from 50/60 Hz to 3 kHz. The FCC and IEC Standards cover ranges from 150 kHz up to several GHz.

Although these Standards 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 in this "black hole" category. This results in errors for devices such as PCs, servers, UPS, sensor lights, security badges, automatic doors or gates and similar systems.

The Solution

The Enerdoor Parallel Filter series reduces radio frequency interference generated by equipment and protects machinery from electrical noise coming from the main line of a facility.

It is a unique solution available from 0 - 750 Vac and operates at any current value, as it is a parallel vs. series device.

This series works in the frequency range of 10 kHz to 6 MHz, offering a solution for applications with low frequency concerns and is available in a compact, din-rail or panel mount package. There are two important parallel filter lines: The FIN230SP.001.M and the FIN730.001.M; with the difference between the two being the attenuation loss and frequency resonance.

The FIN230SP.001.M parallel filter is the most general-purpose filter recommended by Enerdoor for OEM equipment. The FIN230SP family is affected starting at 70 kHz to 6 MHz and reduces interruptions due to quick spikes and dips.

The FIN730.001.M parallel filter is a more specific design for regenerated systems and OEM equipment and is best utilized in the low frequency range of 10 kHz to 4 MHz.

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 wanting to protect equipment from unexpected noise present at the end-user facility
- System integrators aware of potential noise issues in the field wanting to minimize the risk of equipment malfunctions
- Any type of end-users: from hospitals to large industrial plants, in which RF interference can compromise the proper function of sensing devices
- OEMs using multiple drives that prefer one main filter to protect the entire system

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