

# Ground Noise Reduction

## EMI-RFI Filters



### Applications

- Any size OEM equipment
- System integrators
- Electronic devices

### Features

- Reduces ground noise
- Easy installation
- Active device
- Works in the same frequency range as the VFD and servo drive switching

### Benefits

- Only one model for unlimited current
- Reduces RF noise inside machines

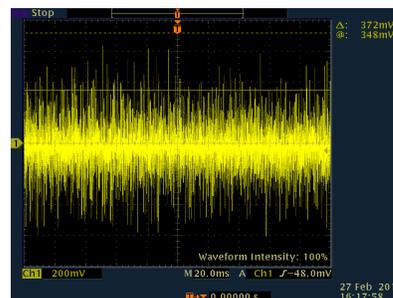
### Introduction

The Ground Noise Reduction filter is a new Enerdoor product designed to improve the quality of the PE ground inside machines. Today's industrial equipment has a combination of switching devices such as power supplies, servo drives and variable frequency drives (VFDs) and electronic components such as PLCs, sensors and safety devices.

### The Challenge

Servo drives, VFDs and other switching devices typically use IGBTs that switch in high frequency ranges. This phenomenon causes common mode noise in the high frequency band. This common mode noise is a typical disturbance between phase to PE ground.

Additionally, the shielded cable connected to the PE ground used between the VFD and the motor increases the level of disturbance on the PE ground. Vice versa, electronic components such as PLCs, sensors and safety devices require a very good quality PE ground in order to function properly.

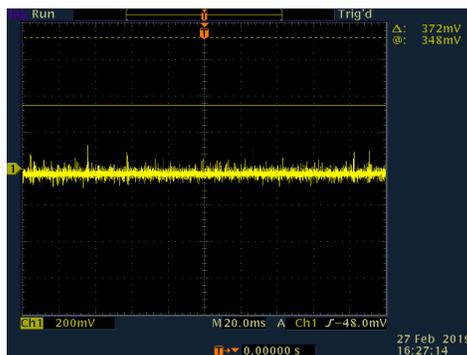


Measurement of PE ground noise in a machine with VFDs on, without a Ground Noise Reduction Filter installed.

## The Solution

The Enerdoor Ground Noise Reduction filter is designed to reduce radio frequency noise inside machines. The filter works as “buffer” and is typically connected between the incoming PE ground of the machine, which is considered the clean point, and the noisy PE ground point that needs filtering; such as the ground connection on a VFD.

The Ground Noise Reduction filter is designed to work in the same frequency range as the VFD and servo drive switching; which is the cause of the majority of PE ground interference.



Measurement of PE ground noise in a machine with VFDs on, with a Ground Noise Reduction Filter installed.

## About Enerdoor

Founded in 1992, The Enerdoor Group is an international leader in the development and production of power quality and electromagnetic solutions for automated machinery and industrial plants. The Group's broad range of products include: EMI/RFI filters, motor protection filters, harmonic filters, line reactors, surge arresters, voltage stabilizers, and customized solutions.

Unique to the industry, Enerdoor offers a global distribution and R&D network that provides flat rate on-site CE Certification at one set fee, with a guarantee to find a solution.

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