

## EMI-RFI Filters

### Applications



### Benefits

- Prevents production downtime
- Cost effective
- Enerdoor application experience

### Features

- 5-Year warranty
- Din-rail mount
- Excellent attenuation



# EMI-RFI Filters and Glove Box Systems

## Introduction

This white paper discusses a recent Enerdoor success story using an EMI- RFI filter in conjunction with glove box systems. Glove box systems often use thermocouples in order to constantly monitor the temperature variation within the system.

Today, glove boxes are used in many different markets, including: Pharmaceuticals & Biotechnology, Defense Industry and Electronic/Lithium Batteries.

All electric or electronic devices have connections that are potential sources for electromagnetic or radio frequency interference (EMI-RFI). Both are known as electrical noise which may cause disturbance in normal operations. This can cause unexpected issues to occur, also known as “Ghost” problems. Audible noise or leaking water are examples of problems that a person can hear or see. “Electrical noise,” however, is the type of problem that can only be solved after careful analysis, using very expensive instruments.

Some glove box manufacturers do not use filters because they either have never had any performance issues in the past or do not need to meet any Agency requirements.

## The Challenge

A manufacturer of glove boxes shipped multiple systems to their customer, located in the US. Once the equipment was installed, the systems were displaying intermittent performance of the thermocouples, which are an important monitoring component within this single-phase system.

## The Solution

The Glove Box manufacturer immediately sent a service technician to the customer's site to resolve the problem. However, at the end of the first day, the technician was unable to fix the intermittent failure of the thermocouple.

Enerdoor had a prior relationship with this technician who then called our Engineer, looking for advice on what might be causing the failure and what Enerdoor might recommend for a solution.

Knowing that low voltage electronics like thermocouples, sensors, encoders, HMI screens and e-stops are very sensitive to high frequency noise, our Engineer believed that another machine nearby was probably injecting high frequency noise back onto the main line within the factory and that by installing a main filter next to the main breaker in the Glove Box, the issue would be solved.



## The Result

An overnight shipment of our FIN27G.020.M, single-phase EMI-RFI filter yielded exactly the result the technician was looking for and the system again functioned properly. Several more filters were shipped the next day and when the Glove Box manufacturer learned that by simply adding an inexpensive filter to their BOM, they could avoid significant service expenses, solidify future equipment orders, as well as maintain their brand's excellent reputation in the marketplace.

Electrical noise is everywhere on the modern manufacturing floor and is growing each year, as more and more drives and servos replace older equipment. Protecting your equipment from unanticipated high frequency noise by adding an EMI-RFI filter is money well spent.