

# Motor Protection

## The Enerdoor Snubber

### The Snubber – FIN47SNB

#### Applications

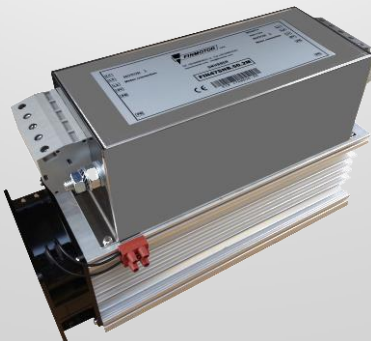
- VFDs
- Servo drives

#### Benefits

- Suitable for open and closed loop applications
- Protects motor insulation and bearings
- Increases production and lowers costs

#### Features

- Low power loss
- Reduces temperature
- Very stable and difficult to saturate
- Compact case



#### **Introduction**

This white paper discusses Enerdoor's newest developed product the FIN47SNB snubber and how it benefits markets facing voltage wave reflection issues due to their use of variable frequency drives (VFDs).

Voltage wave reflection is a function of the voltage rise time ( $dV/dt$ ) and the length of the motor cables.

This phenomenon creates additional overvoltage spikes causing premature degradation and failure to motor insulation and bearings.

#### **The Challenge**

It can be challenging for OEMs, system integrators and distributors to ensure the installed motors are well protected. Applications using a VFD can negatively affect the longevity of the motor, in particular winding insulation and bearings.

Production downtime and cost associated with replacing or repairing motors impacts the performance of machinery and systems.

#### **The Solution**

Enerdoor's goal was to create a solution, using low power loss, in order to contain the overvoltage spikes.

The Enerdoor snubber FIN47SNB is a unique solution that reduces common mode and differential mode noise.

The snubber is used in parallel to the system and is an ideal solution for clients in need of improving the reliability of winding insulation and bearings.

It offers very low power loss and full protection in both differential and common mode filtering.

The Enerdoor snubber FIN47SNB protects any type of motor configuration, including: 3-phase, 3-phase plus ground, and 3-phase plus star point plus ground.

The parallel concept allows for easy installation in new or existing applications. The following features of the FIN47SNB make this product highly reliable:

- Fan
- Remote indicator
- Thermic pad

## The Result

Enerdoor's unique R&D and field testing lead to the design of a very innovative product line for industrial and commercial motors controlled by VFDs. Unlike similar products, the FIN47SNB is able to protect both winding insulations and bearings at the same time. The Enerdoor snubber is recommended to be installed in close proximity to the motor. For applications with short motor cable between the drive and motor, such as <10 meters or 30 feet, the snubber can be installed inside the cabinet in parallel to the output side of the VFD.

