

Toshiba Marketing Information

The following information comes from Frost & Sullivan, a Market Research Company that Toshiba hired to do specific research for targeted markets they want to pursue.

1. Question: How many drives are sold annually in the USA or North America by all VFD manufacturers?

Answer: There are 3.2 million Variable Frequency Drive (VFD) units sold in North America each year, (\$1.94 Billion in 1999). The figures were gathered between May and July 2000. The anticipated market growth is projected to be 8.2% annually, and is considered to be in a growth stage between now and 2006. The vast majority of the units sold are 100Hp or less (80%).

2. Question: What percentage of VFD's sold annually would be good candidates for the ZERO GROUND system solution?

Answer: Taking into consideration the quality of most VFD's in the marketplace today, (units are being "cheapened" to reduce costs in an attempt to gain market share at the cost of performance) the vast majority of VFD's produce varying degrees of line spikes. I would say upwards of 60 to 70% of the VFD's sold each year could utilize the ZERO GROUND System.

3. Question: What is the average motor lead length used in a typical VFD application?

Answer: Most VFD's in industrial applications are mounted less than 50' from the motor, however in Paper Mills, Foundries, Mines, Waste Water Treatment Plants and HVAC applications, the VFD's can be mounted 300 to 500 feet, or more, from the motor, (there are deep well oil drilling applications that exceed 5000 feet in motor lead length). The reasons customers use for mounting the VFD's so far away from the motor is that the customer wants to keep the VFD out of the harsh environment surrounding the motor. What the customer doesn't realize is that by doing this, they inadvertently increase the probability of voltage spikes being discharged in the motor insulation leading to motor winding or bearing failure. The ZERO GROUND System would alleviate this phenomenon.

4. Question: In addition to new installs, what if any potential exists for the ZERO GROUND System for retrofits on VFD's already in operation?

Answer: There are numerous existing installations that could use the ZERO GROUND System. Many customers have tried replacing their VFD's when they experience problems or have installed expensive ancillary equipment (line reactors or Long Lead Filters) at considerable cost to try and overcome the problems they've encountered. My "best guess" would be that at least 40% of the existing VFD population would be good candidates for the ZERO GROUND System.