

Technical Bulletin

FECA-TE-142

Surge Protection Information for AC Drives

Inverter type	FRENIC Series of AC Drives
Software version	All
Required options	None
Related documentation	Instruction and Users Manuals
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Revision	None

Introduction

Surge voltages are damaging to electrical components when not properly accounted for. Surges can be either internal or external. The most common source of an external surge is by a lightning strike or induced voltage from lightning. External surges can also come from common connection points on a transformer to other businesses. Internal sources can come from capacitor banks, switching activity, resonant circuits, thyristors, and system faults (Short circuit, arching, and grounding).

Specifications

All Fuji Electric drives have surge protection by IEC 61000-4-5: Lightning and industrial surges.

This protection level is confirmed following Surge test.

Common mode: 2KV 1.2 μ s/50 μ s voltage waveform to L1/R-E, L2/S-L3/TE

Normal mode: 1KV 1.2 μ s/50 μ s voltage waveform to L1/R-L2/S-L2/S-L3/T, L3/T-L1/R

Resources

However, if there will be excessive surge to the drive, please use external Surge protection devices.

You can find and buy various devices by these sites.

<http://www.digikey.com>

<http://www.automationdirect.com>

<http://www.grainger.com/>

Additional Information

Note:

IEC 61000-4-5:2014 relates to the immunity requirements, test methods, and range of recommended test levels for equipment with regard to unidirectional surges caused by over-voltages from switching and lightning transients. Several test levels are defined which relate to different environment and installation conditions. These requirements are developed for and are applicable to electrical and electronic equipment. The object of this standard is to establish a common reference for evaluating the immunity of electrical and electronic equipment when subjected to surges. The test method documented describes a consistent method to assess the immunity of an equipment or system against a defined phenomenon.

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